



MAN-CO MFG., INC.

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*MFG: MANCO
NAME: TIP TOP
Type: NON-KIDDL*

DAILY INSPECTION CHECKLIST

TIP TOP

1. Check blocking outriggers and landing gears
2. Check center ram screw jacks
3. Check leveling
4. Inspect steps, handrails and exit gates
- 5.A Inspect walkway platform, handrails and support jacks
B Inspect platform to catwalk clearance in case of settling
6. Check car locking nut and safety key
7. Inspect car brakes and check operation
8. Inspect inside fence and snap keys
9. Check all electrical connections and plugs
10. Check for water condensation in air tanks
11. Check air pressure gauges and regulators for proper operation
12. Inspect drive belts and guards
13. Check compressor oil level
14. Check oil on Trico oilers, check center ram
15. Inspect compressor unloading valve
16. Inspect platform link rod pins and snap keys
17. Inspect air hoses for leaks
18. Check drive wheel brake control
19. Inspect cars, steering wheels, and mounting nuts
20. Operate Tip Top through one complete ride cycle of proper operation.
Ride should run at 10 RPM maximum for Folding Tip Top; 8½ RPM maximum
for Non-Folding Tip-Top
Hurricane • Paratrooper • Super Slide • Tip Top • Round Up • Riptide

MAN-CO Builds Thrills!

TIP TOP

OPERATION & MAINTENANCE MANUAL

KILINSKI MFG. COMPANY

P.O. Box 12768
Salem, Oregon 97309
(503) 363-3665

INTRODUCTION

This manual is intended to be used as a general guide for the operation and maintenance of the Folding Tip Top. Kilinski Manufacturing Co. is constantly striving to improve performance, efficiency and safety; therefore, certain improvements may not be reflected in the text of the manual. Any major revisions or additions to the manual will be sent to you free of charge. Specially engineered features purchased for individual rides may not be incorporated in the manual.

WARRANTY

Kilinski Manufacturing Co. does hereby warranty all parts and materials which are manufactured by us against failure under normal use and service for a period of one hundred eighty (180) days after the date of sale. Under these conditions, all such parts and materials will be invoiced to the customer upon shipment by us of required replacement parts. Full credit will be allowed on such parts subject to the following conditions:

- (A) If they are returned to us, freight PREPAID, within a period fifteen (15) days after date of invoice.
- (B) After our examination of said parts they prove to our satisfaction that such defects did exist. This is our sole obligation under this warranty.

On parts which are purchased and not manufactured by Kilinski Manufacturing Co., the original manufacturer's warranty will apply. However, the same policy as above does exist if replacements are ordered and shipped by us.

It is our desire to serve our customers promptly and efficiently; however, the laxity of some of our customers in returning warranty parts has brought about this policy which must be adhered to unless other arrangements are made in writing with an official of our Company.

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SPECIFICATIONS

CAPACITY	800 Customers Per Hour
SEATING	48 children or 32 adults
SET UP & TAKE DOWN TIME	2 men/2 hours
MAXIMUM HEIGHT	32 feet
SPACE REQUIRED	55 feet x 55 feet
GROSS WEIGHT	40,000 pounds
LIGHTING	Flashing Tip Top letters Deluxe center lighting Outer banjo lights

POWER REQUIREMENTS

TOTAL POWER REQUIRED	Approximately 34 KW, 220 Volt, 3 Phase
POWER	7½ HP electric motor for rotation 25 HP electric motor for compressor
LIGHTING	220 volt, single phase

CAUTION: Failure to supply adequate ground to the frame can cause serious electric shock hazard. Proper grounding prevents the metal parts of the Tip Top from being energized (to high voltage) in the event of a short circuit. The lead supplied with the Tip Top contains a ground wire that may be connected to ground at the power supply. Another means of grounding is with a ground rod. Check local regulations for ground rod requirements and specifications.

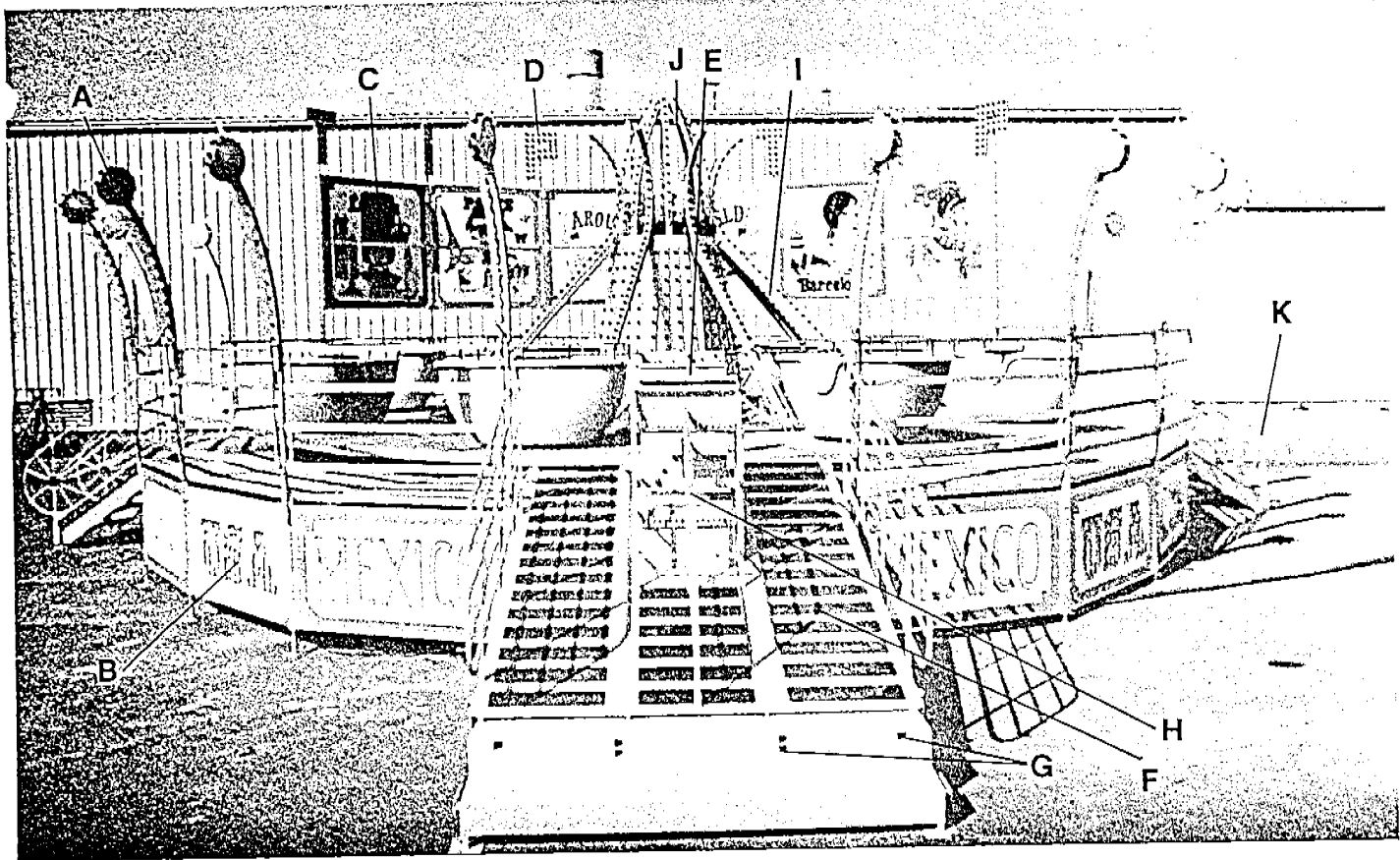
THE FOLDING TIP TOP FEATURES

Trailer-mounted on a 40' trailer with 9.00x20 tires, air brakes, 12 volt lighting system.
Three phase electric power-208/230/440 volt.
Deluxe lighting and decorations.
Air Compressor (electric).
Flashing electric Tip Top letters.
100 foot rubber lead wire.
Deluxe painted bally.

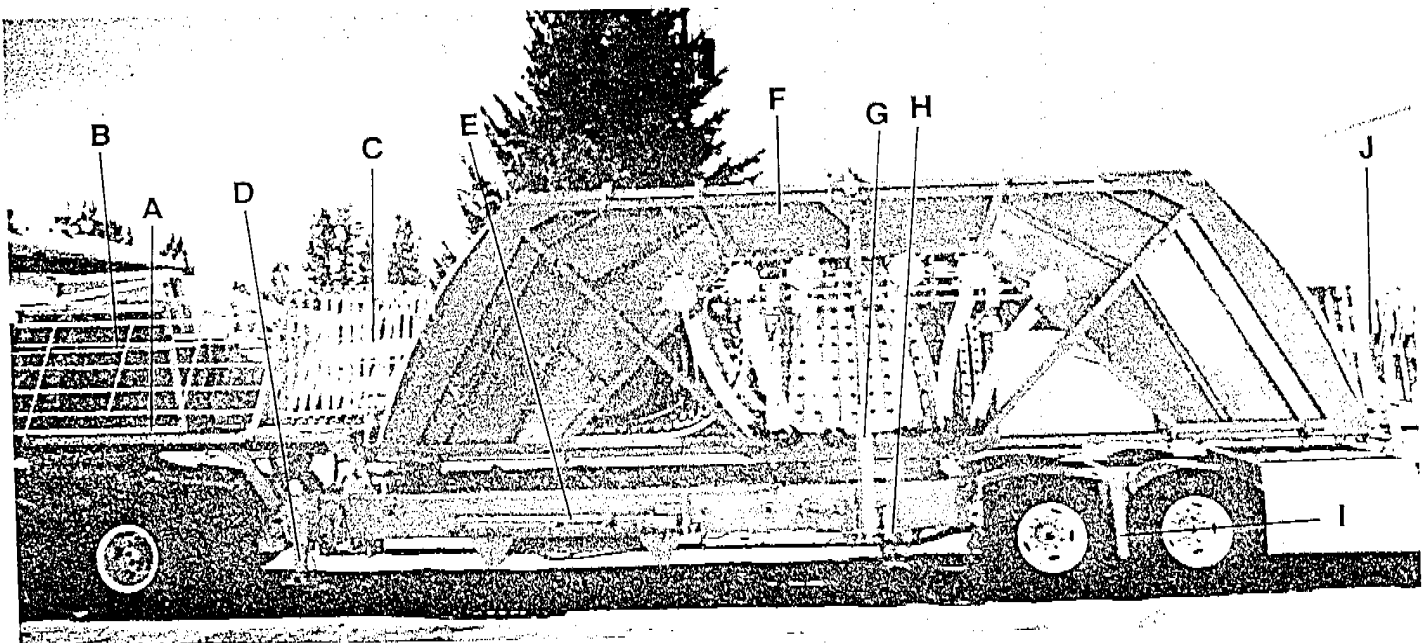
TIP TOP ASSEMBLY INSTRUCTIONS

The manufacturer strongly recommends that the owner of the Tip Top closely follows the assembly instructions in this manual. These instructions detail the fastest and safest assembly procedure. NOTE: The ride must be loaded and stored according to the manufacturer's instructions in order to be reassembled properly.

GENERAL DESCRIPTION OF THE TIP TOP

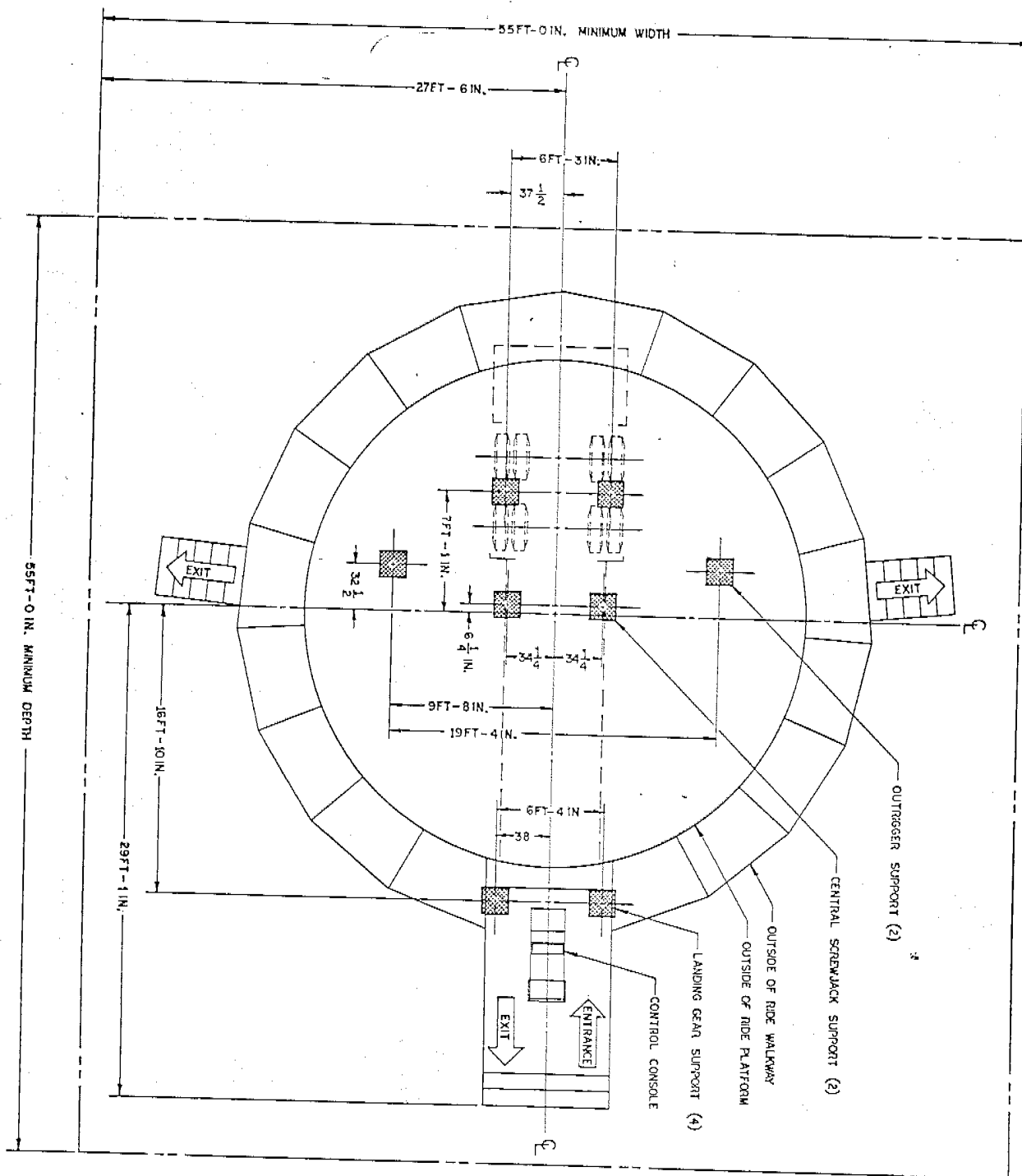


- a. Banjo Lights
- b. Ballys
- c. Decorative Panels
- d. Electric Tip Top Sign
- e. Control Console
- f. Gooseneck Ramp
- g. Storage Slots In Step Riser
- h. Storage Rack Behind Control Console Seat
- i. Platform Support Braces
- j. Arch Lights
- k. Platform Steps



- a. Gooseneck
- b. Stored Walkway Platform Sections
- c. Stored Walkway Support Frame Sections
- d. Front Landing Gear
- e. Stored Outrigger
- f. Large Rotating Platform Section
- g. Platform Hydraulic Cylinder
- h. Center Screw Jack
- i. Rear Landing Gear
- j. Stored Steps

NOTE: All references to the left and right sides are determined by standing at the back of the ride and facing the ride.



— MIDWAY —

KILINSKI MFG. COMPANY			P.O. BOX 1878 PALESTINE, OHIO 43080	
TOLERANCES: UNLESS NOTED			DRAWN BY: PETE T	
DECIMALS	FRACTIONS	ANGLES	DATE: 3-13-81	
± .013	± 1/32		SCALE:	
REV. DATE			REVISION	
C 5/13/81			C	
REVISED & REDRAWN			DRAWING NO. 2T-509	
DESCRIPTION			SPACE DIAGRAM - FOLDNIG TIP TOP	
NEXT ASSEMBLY				

TIP TOP ASSEMBLY INSTRUCTIONS

1. POSITION THE RIDE FOR OPERATION

Center the Tip Top in a minimum area of 55 feet by 55 feet. Position the front end of the trailer to face the midway. (Refer to Drawing 2T-509)

2. LOWER THE FRONT LANDING GEARS TO GROUND LEVEL AND REMOVE THE TRACTOR (Fig. 1)

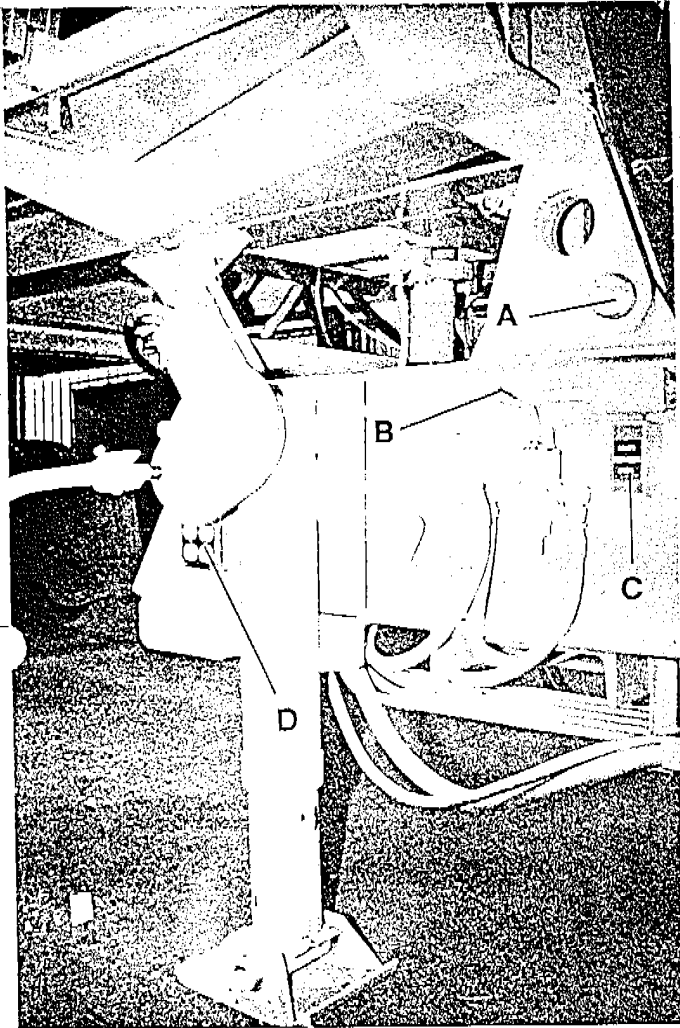


Fig. 1

3. LOWER THE REAR LANDING GEARS AND INSTALL THE SAND SHOES ON THEM

- To lower the rear landing gears, crank handles must be installed on the crank holders. The crank handles are stored on each side of the trailer, in the space between the stored outrigger and the side of the trailer frame. (Fig. 2)
- Install the crank handle to the crank holder and pin in place.
- Lower the landing gear enough for the sand shoe to be installed. The sand shoes are stored on the rear fenders. (Refer to Fig. 96)
- Remove the pipe from between the sand shoe ears. Align the holes in the ears on the sand shoe with the holes in the end of the mounting pipe at

the end of the landing gear. Run the sand shoe pipe through all holes. Run a bolt through the sand shoe pipe and secure in place with a nut. (Fig. 3)

e. Continue to lower the landing gear to ground level. (Fig. 4)

f. Repeat on the other side.

g. NOTE: Be sure to adjust the landing gears so they take some of the weight of the ride off the tires.

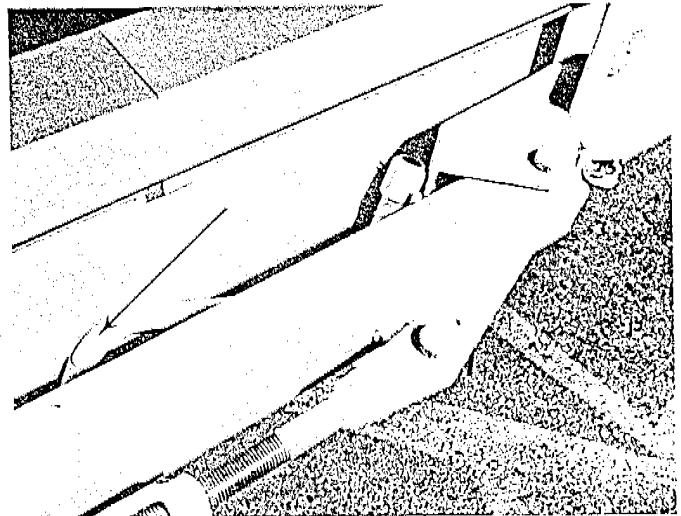


Fig. 2

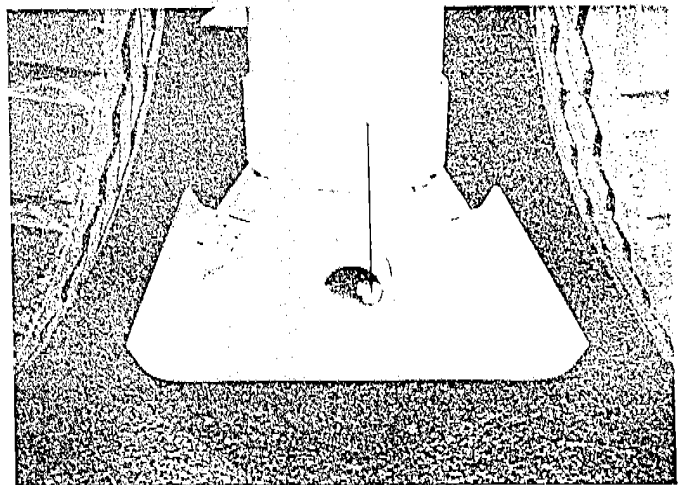


Fig. 3

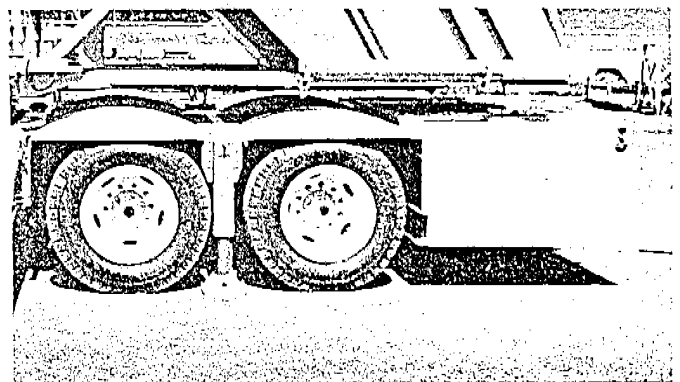


Fig. 4

4. LEVEL THE MAIN FRAME

- a. Use the 4 landing gears to level the frame.
- b. Check the level at the following points:
 - (1) Across the back end of the trailer frame.
 - (2) Across the main bearing rocker shaft at the front of the trailer. (Fig. 5)
 - (3) Along the length of the trailer frame. (Fig. 6)
 - (4) Across the dual axle. (Fig. 7)
- c. Once ride is level, fold the crank handles on the front landing gears into storage position.

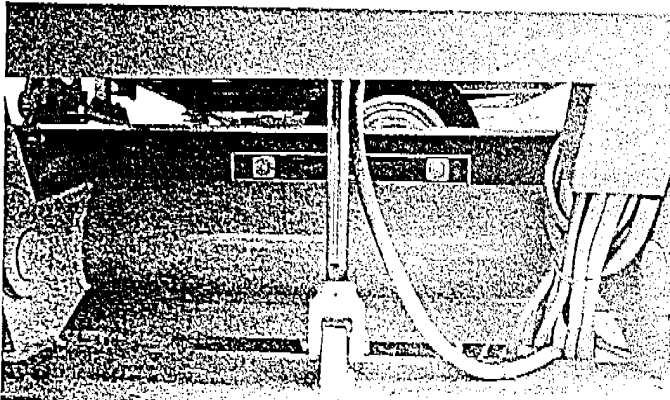


Fig. 5

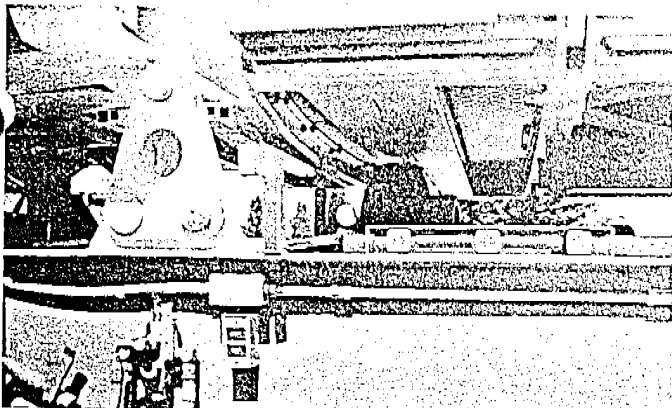


Fig. 6

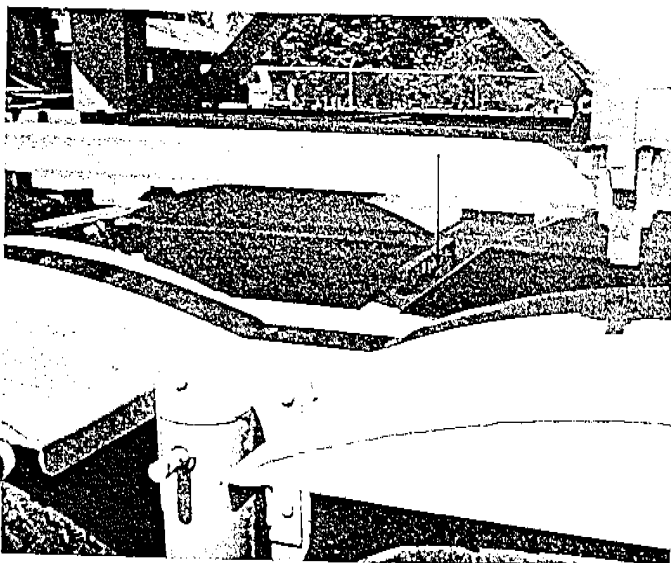


Fig. 7

5. LOWER THE CENTER SCREW JACK AND PLACE BLOCKS UNDER THEM. PRELOAD THE CENTER OF THE RIDE AGAINST LOAD STRESSES DURING OPERATION

- a. Lower a center screw jack as far as it will go.
- b. NOTE: The blocking that goes under the screw jack must stand about $\frac{1}{4}$ inch higher than the base of the lowered screw jack.
- c. Crank the rear landing gear down to raise the main frame enough to slide the blocking under the base of the screw jack.
 - (1) Lower the main frame, using the rear landing gear crank. Be sure the screw jack rests firmly on the blocking.
 - (2) Continue to crank the rear landing gear handle about $\frac{1}{4}$ to $\frac{1}{2}$ turn to take more load off the rear tires and to pre-load the center of the ride against shock load stresses. (Fig. 8)

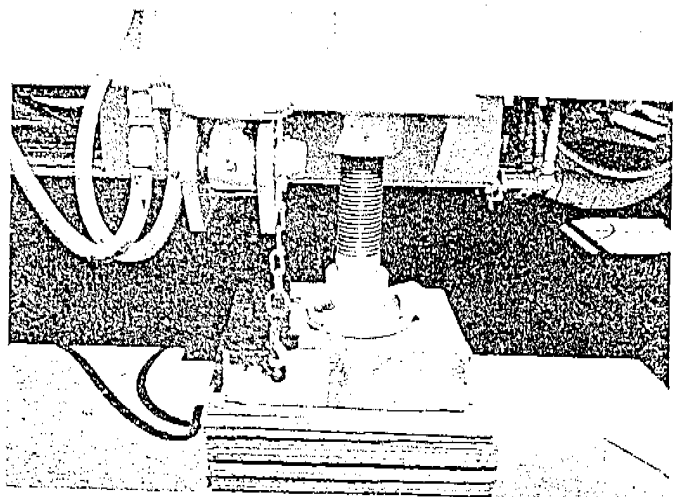


Fig. 8

- d. Remove the crank handle from the rear landing gear and store it back on the side of the trailer frame. (Refer to Fig. 2)
 - e. Repeat on the other side.
 - f. CAUTION: Check the preload adjustment periodically once the ride has been in operation. Tighten the center screw jacks with the rear landing gears if the jacks have worked loose during operation.
- #### 6. INSTALL THE OUTRIGGERS AND THE OUTRIGGER TURNBUCKLES TO BOTH SIDES OF THE MAIN TRAILER FRAME
- a. The outriggers are stored on the sides of the main trailer frame. (Refer to Fig. 2)
 - b. Install an outrigger to the top set of double ears on the side of the trailer frame, just forward of the rear tires (a). Run a pin through the holes in the ears and top of the outrigger. SNAP KEY IN PLACE. Install the outrigger turnbuckle to the lower ear on the side of the trailer frame (b). PIN AND SNAP KEY IN PLACE. (Fig. 9)
 - c. Snug the turnbuckle. NOTE: The outriggers are intended to stabilize the ride only. Do not tighten the turnbuckle too much.

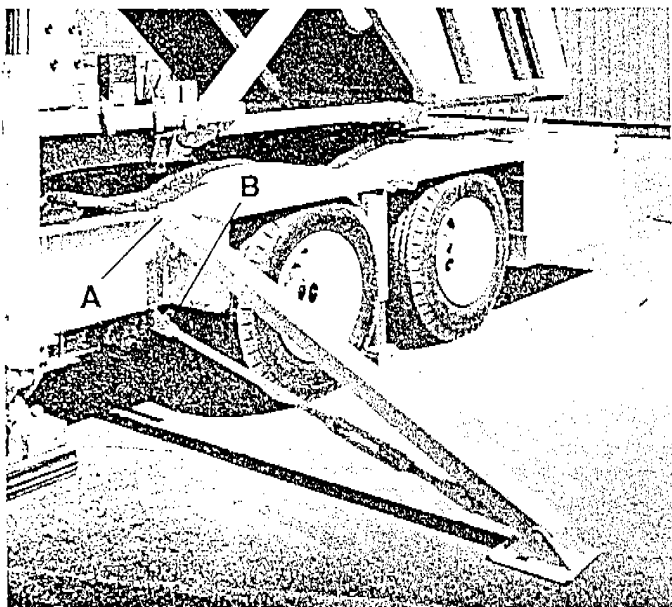


Fig. 9

- d. Repeat on the other side.
- e. CAUTION: Check the turnbuckle adjustment periodically once the ride has been in operation. Tighten the turnbuckles if they have worked loose during operation.

7. LOWER THE GOOSENECK

- a. The gooseneck is secured to the trailer frame with a large triangular hinge on each side of the gooseneck. Each hinge houses three large pins. Remove the lower rear pins (a) from the 2 triangular hinges. (Refer to Fig. 1)
- b. The hydraulic control lever (b) that raises and lowers the gooseneck is located on the left side of the trailer frame, just under the triangular hinge. Hydraulic pump start and stop buttons (c) are located in the same area. (Refer to Fig. 1)
- c. Connect the electrical service to the ride. IMPORTANT: "Bump" the hydraulic pump switch and check for correct rotation of the hydraulic pump. An arrow on the electric motor indicates the correct rotation. If the pump does not rotate in the same direction as the arrow indicates, switch the position of the black and red wire connections on the pump motor control in the main switch box. (Fig. 10)
- d. Before lowering gooseneck, install the gooseneck support legs to the end of the ramp.
 - (1) The support legs are stored in the narrow space along the length of the trailer frame. (Refer to Fig. 81) NOTE: The gooseneck support legs are round.
 - (2) Insert the support legs in the sockets under the gooseneck ramp (a). Secure in place by tightening two set screws on both legs. (Refer to Fig. 22)
- e. In order to lower the gooseneck, pull up on the hydraulic control lever.
- f. Once the gooseneck is all the way down,

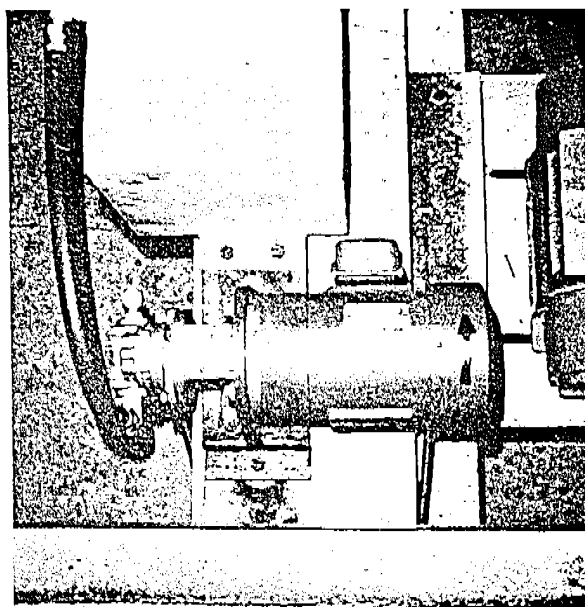


Fig. 10

replace the pins (a) in the top holes of the triangular hinges. Snap key in place from behind the hinges. (Fig. 11)

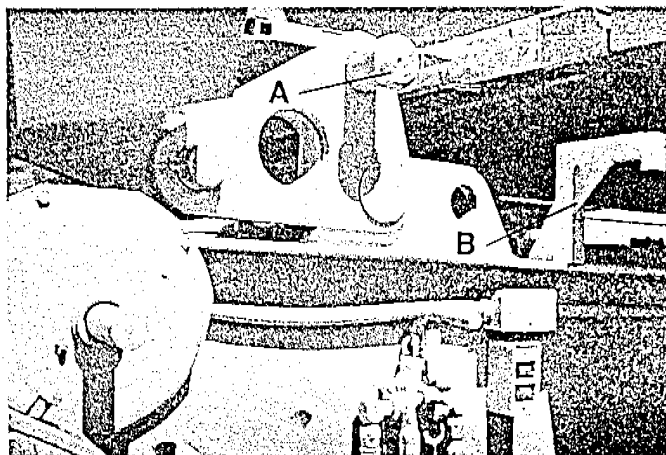


Fig. 11

- g. Turn off the hydraulic motor.
 - h. Adjust the height of the support legs to support the end of the ramp at the desired level.
- #### 8. REMOVE THE WALKWAY PLATFORM STEPS, HANDRAILS, STEP JACK SUPPORT FRAMES AND THE STORAGE RACK FROM THE BACK END OF THE TRAILER. SET ASIDE.
- (Refer to Fig. 91)
- #### 9. SET UP WALKWAY PLATFORM
- a. Storage information for walkway platform assembly parts:
 - (1) The following assembly parts are stored on the gooseneck:
 - 2 walkway starting bars (a)
 - 2 large walkway support frames (b)
 - walkway support frame sections (c)
 - walkway floor sections (d) (Fig. 12)
 - walkway handrail sections (Refer to Fig. 76)
 - (2) The center back walkway support

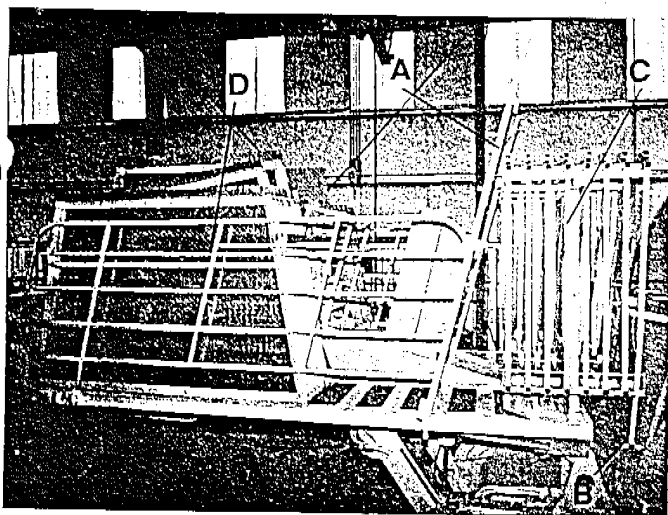


Fig. 12

frame section is stored on the underside of the right rotating platform section. (Refer to Fig. 82)

- (3) The jack stands for the walkway support frame sections are stored in the narrow space along the length of the trailer frame. (Refer to Fig. 81) NOTE: The legs on the jack stands are square.

- b. Please note the proper position of the walkway platform (a) in relation to the position of the rotating platform (b) once the walkway platform has been completely set up. The walkway platform forms a circle around the ride. The outside edge of the rotating platform just meets the inside edge of the walkway. In operation position, the level of the rotating platform is slightly higher than the walkway. (The manufacturer suggests about 4 inches.) (Fig. 13)

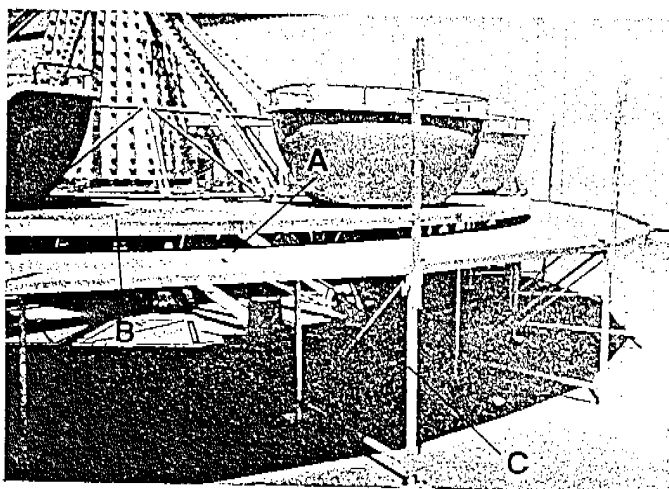


Fig. 13

- c. **IMPORTANT:** Set up all of the walkway platform on one side of the ride before setting up the walkway platform on the other side of the ride. Start setting up the walkway platform on the gooseneck and work around to the back of the ride. Set up the center back section, then set up the walkway on the other side in the same manner.

- (1) NOTE: All the assembly parts for the right side of the walkway platform are stored on the right side of the gooseneck. All the assembly parts for the left side of the walkway platform are stored on the left side of the gooseneck. The assembly parts for the right side of the platform cannot be used to set up the left side of the platform. The assembly parts for the left side of the platform cannot be used to set up the right side of the platform.

- (2) HOW TO KNOW WHICH SIDE OF THE WALKWAY PLATFORM TO SET UP FIRST:

Note how the walkway support frame sections (c) are loaded on the gooseneck. (Refer to Fig. 12) The group of walkway support frame sections that is resting on top of the stack was loaded from one side of the gooseneck only. The sections can be unloaded from that same side only. Example: If the top group of support frame sections can be unloaded from the right side, it is a part of the assembly for the right side of the walkway platform. Therefore, set up the right side of the walkway platform first, using only the assembly parts stored on the right side of the ride. NOTE: Do not unload the walkway support frame sections before you are instructed to do so.

- d. From the side that is to be set up first, position the walkway starting bar in operation position on the gooseneck ramp handrail.

- (1) Lift the walkway starting bar (a) out of the 2 storage sockets on the gooseneck ramp handrail. (Refer to Fig. 12)
- (2) Lower the bar so the bottom hook on the bar is at ground level. The top 2 hooks on the starting bar slip into the same sockets that were used for storage. The top hook (a) goes in the top socket on the handrail, the middle hook (b) goes in the socket on the gooseneck ramp floor. (Fig. 14)

- e. Remove the holding rack from the walkway floor sections. (Refer to Fig. 79)

- (1) Unload the platform floor section that is stored closest to the control console first. Install this section next to the gooseneck.
- (2) A mounting bracket (b) is located on the trailer frame, just behind the gooseneck triangular hinge. (Refer to Fig. 11)

- (3) Slip one pin on the walkway floor section down in the mounting bracket on the trailer frame. Slip the outside pin on the floor section down in the socket on the starting bar (c). (Refer to Fig. 14)

- f. Remove the two locking rods that secure the

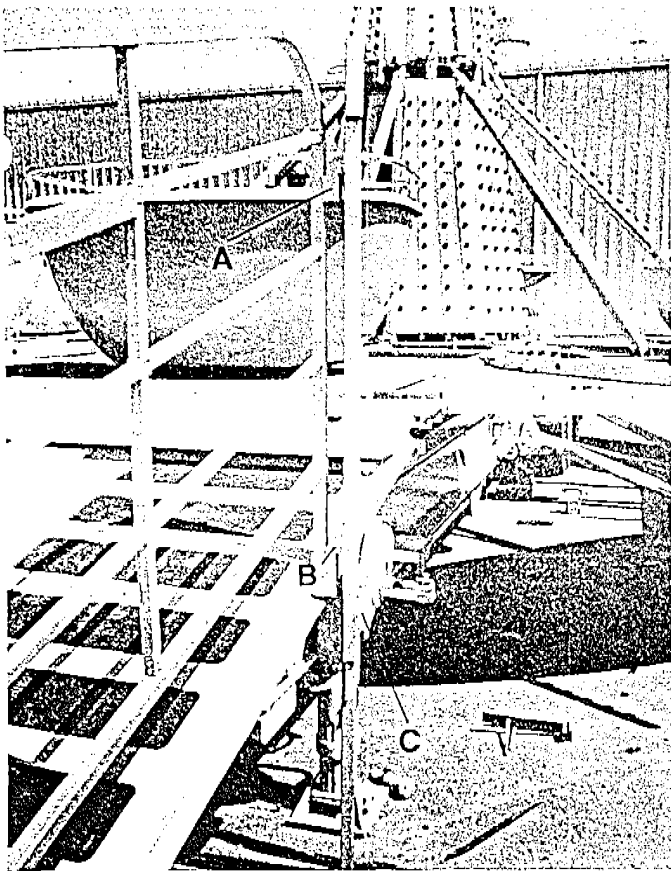


Fig. 14

walkway support frame sections to the storage rack. (Refer to Fig. 86)

- (1) Unload the large walkway support frame section (b). It is stored closest to the center of the ride. (Refer to Fig. 12)
 - (2) Install jack stands to the legs of the large walkway support frame section. Run a snap key in a hole in each jack stand leg. Allow the support frame legs to rest on the keys (a). (Refer to Fig. 17)
 - (3) Slip the pins on the walkway floor section in the sockets in the walkway support frame.
- g. Unload the next walkway support frame section that is stored closest to the center of the ride. Set it up in the same manner as the first support frame section. NOTE: As you set up the walkway platform, unload each walkway support frame section in sequence, working toward the last frame section that is stored closest to the control console.
- h. Unload the next walkway floor section that is stored closest to the control console. Install the floor section between the two support frames in the same manner as the first floor section. NOTE: As you set up the walkway platform, unload each walkway floor section in sequence, working from the control console out to the last floor section that is stored next to the outside handrail on the gooseneck ramp.
- i. NOTE: Level each section before an adjoining section is set up. Check the level along the width

and the length of the walkway floor section. Adjust the level by adjusting the position of the snap keys in the jack stand legs. (Figs. 15 & 16)

- j. NOTE: The fourth walkway floor section that you unload from storage should be the exit section. It can be identified by the absence of a kick ledge. This section can be exchanged with another section if you need to set up the exit area in a different location.

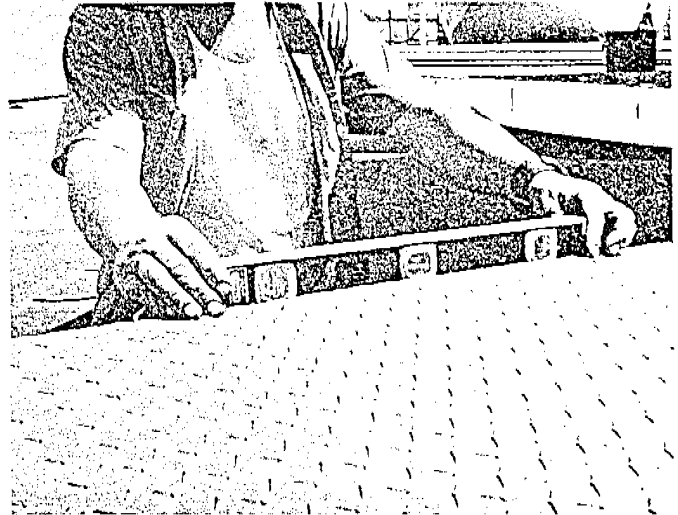


Fig. 15

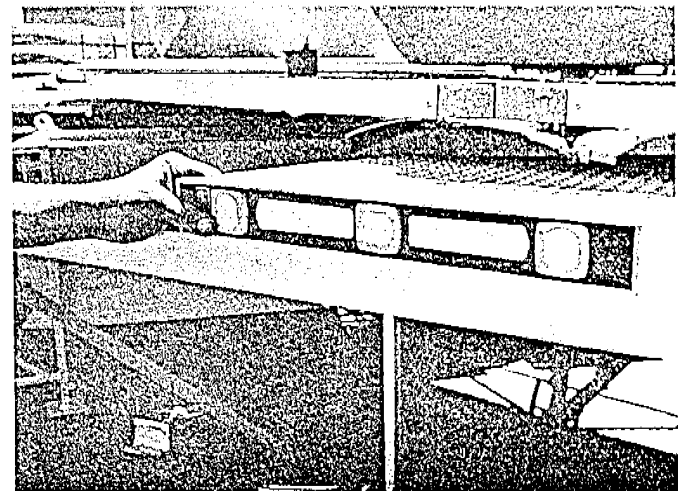


Fig. 16

- k. Install the center back section after the first side of the walkway platform is completely set up.
- (1) The center back walkway support frame section is stored on the underside of the right rotating platform section. (Refer to Fig. 82)
 - (2) Install jack stands to the center back walkway support frame.
 - (3) Two walkway support frame attachment bars are stored against the back end of the trailer. (Refer to Fig. 83) Lift the attachment bars out of their storage sockets and reposition them in the same sockets so they point directly away from the trailer (b). *Snap Key in Place.* Slide

the two fastening bars on the back walkway support frame (c) over the two attachment bars on the trailer. (Fig. 17)

(4) NOTE: Adjust the position of the walkway platform so the last walkway floor section fits with the center back. It may be necessary to push and pull the framework of the entire semicircle to make the adjustment.

(5) Install the pins on the center back walkway floor section in the sockets on the trailer frame and the walkway support frame (d). (Refer to Fig. 17)

(6) Level the center back walkway floor section.

1. Set up the other side of the walkway platform in the same manner. Be sure to start at the gooseneck and work around to the center back.

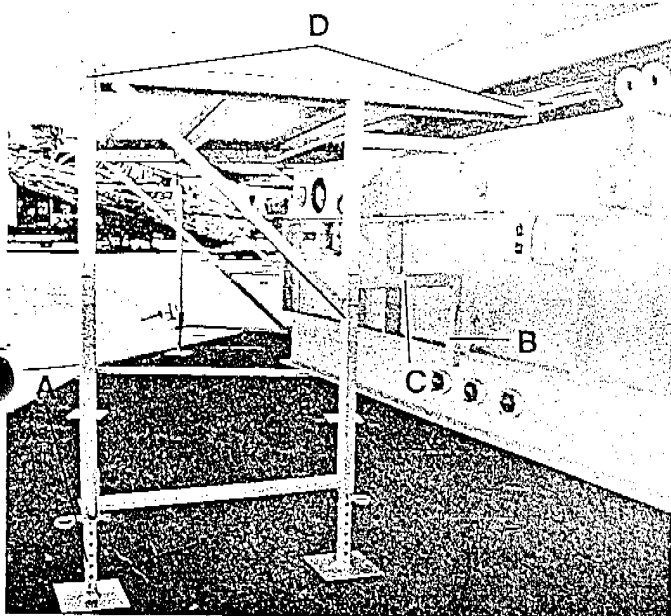


Fig. 17

10. SET UP THE WALKWAY PLATFORM STEPS

a. Install the step jack support frames (a) at the 2 exit areas of the walkway platform. Secure each step jack support frame to the 2 vertical bars that extend up from the walkway support frame sections at either side of the exit areas. (Fig. 18)

(1) Slide the pins at the top of the step jack support frame into the inside sockets at the top of the vertical bars (a). (Fig. 19)

(2) At platform floor level, two ears extend out from each vertical bar (b). Hook the lower pins on the step jack support frame in the ears on the bar. (Refer to Fig. 19)

b. Hook the holes in the fastening plate on the steps over the knobs on the step jack support frame (b). (Refer to Fig. 18)

c. Install the jack stands in the sockets under the lower step (c). Install the snap key in a hole in each jack stand leg. Allow the steps to rest on the keys. NOTE: The jack stands for the steps have round legs. (Refer to Fig. 18)

d. Slide the legs of the handrails for the steps into the sockets at both sides of the steps (d). (Refer to Fig. 18)

e. Repeat on the other set of platform steps.

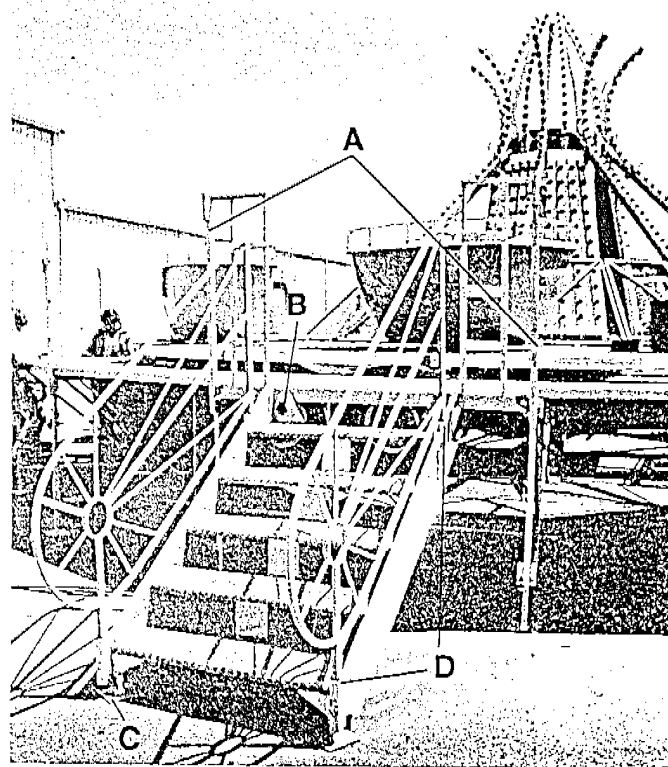


Fig. 18

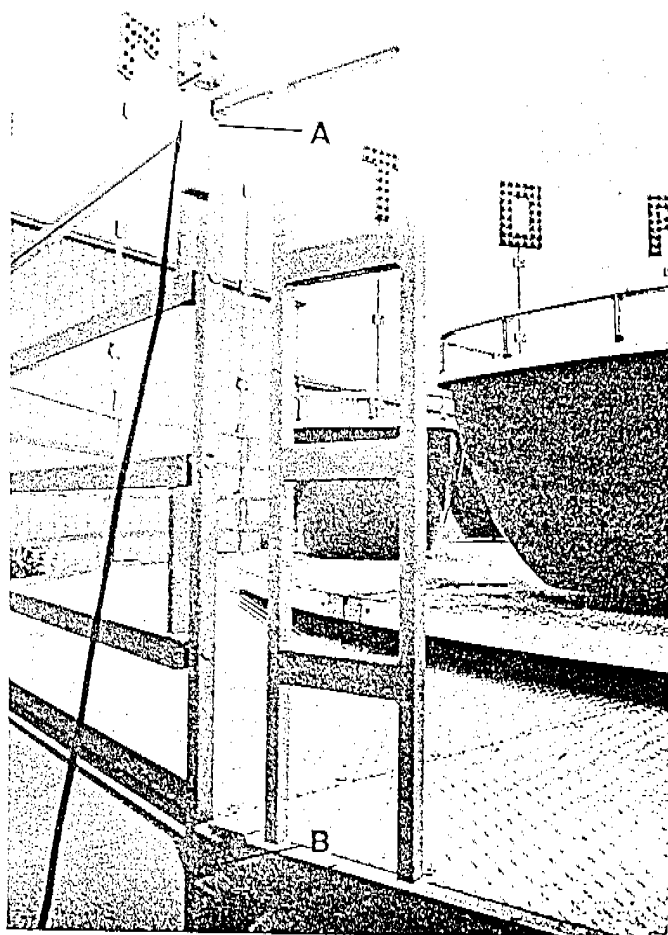


Fig. 19

11. INSTALL THE WALKWAY HANDRAILS AROUND THE OUTSIDE OF THE WALKWAY PLATFORM

- a. The walkway handrail is made up of upper and lower sections. The lower sections are stored on top of the upper sections on the gooseneck ramp. (Refer to Fig. 77)
- b. **IMPORTANT:** Completely set up the handrail on one side of the ride before setting up the handrail on the other side.
- c. **NOTE:** Install all the lower handrail sections before installing the upper handrail sections. Start at the back of the ride and work around to the gooseneck.
- d. The handrail sections are installed to the vertical bars that extend up from the walkway support frame sections (c). (Refer to Fig. 13)
- e. To install the lower handrail sections, slide the slots in the ends of the handrail cross bars over the lower pins on the vertical bars. (Fig. 20)



Fig. 20

- f. Install the upper handrail sections to the vertical bars. Start at the back of the ride and work around to the gooseneck.

- (1) **NOTE:** The ends of the top cross bars are cut at a slight angle (a). Position each top handrail section so the widest part of the angle fans to the outside. (Fig. 21)
- (2) Slip the hooks on the top handrail section down in the inside sockets at the top of the vertical bars (b). **NOTE:** The hooks from the adjoining top handrail sections will fit into the same sockets (Refer to Fig. 21)

- (3) Slide the pins on the vertical bars into the slots in the ends of the lower cross bar of the top handrail section (c). (Refer to Fig. 21)

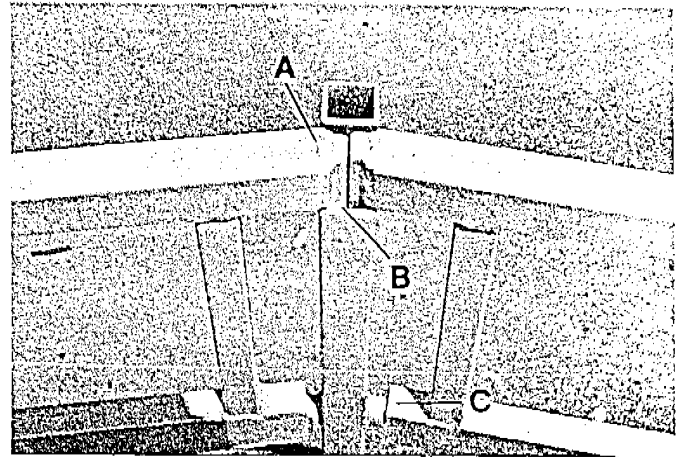


Fig. 21

12. REMOVE ALL STORAGE RACKS FROM THE GOOSENECK AND STORE UNDER THE RIDE

13. LOWER THE STEPS AT THE END OF THE GOOSENECK RAMP

- a. Remove the 2 jack stands from storage under the upturned steps. (Refer to Fig. 74)
- b. Install the jack stands in the sockets under the lower step (b). Run a snap key in a hole in each jack stand leg. (Fig. 22)
- c. Unhook the retaining hooks from the pins on the gooseneck ramp handrails. Lower the steps to the ground. Rest the retaining hooks on the pins at the side of the lower step (c). (Refer to Fig. 22)
- d. Adjust the height of the steps by adjusting the snap keys in the holes in the jack stand legs.

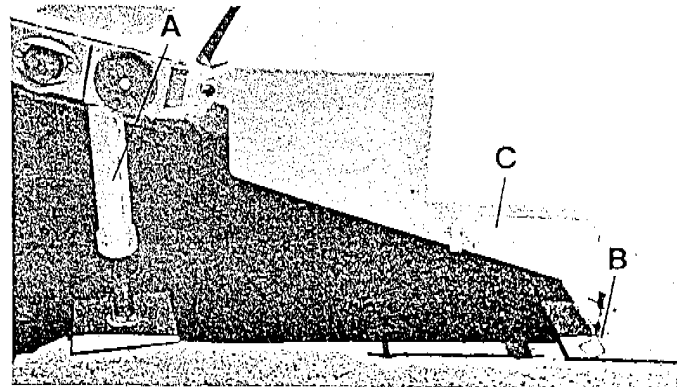


Fig. 22

14. RAISE THE BRIDGE. INSTALL THE SIDE EXTENSIONS TO THE BRIDGE. FOLD THE HINGED PLATE OVER TO OPERATION POSITION

- a. The bridge (a) spans the area between the end of the gooseneck ramp and the rotating platform. (Fig. 23)
- b. In storage, the bridge is at a lower level than the rotating platform. Raise the bridge to the same level as the rotating platform for

operation. The bridge rests on 4 bolts, 2 on each side. The height of the bridge is adjusted by adjusting the 2 nuts on each bolt. (Fig. 24)

- (1) Run the top nuts up to the top of the bolts.
- (2) Adjust the lower 4 nuts, raising the bridge to be level with the rotating platform.

- (3) Run the top 4 nuts back down to meet the angle iron on the bridge support. Tighten the nuts in place.

c. The side extensions to the bridge are stored on either side of the control console. (Refer to Fig. 80)

d. Install the side extensions (b) to both sides of the bridge. The extension that is stored on the right side of the control console is installed on the right side of the ride. The extension that is stored on the left side is installed on the left side. Slide the bars that are under the side extensions into the sockets under the bridge. *Snap Key Place*. (Refer to Fig. 23)

e. In storage, the hinged plate rests on top of the gooseneck ramp. For operation, fold the hinged plate over to rest on the bridge. (Fig. 25)

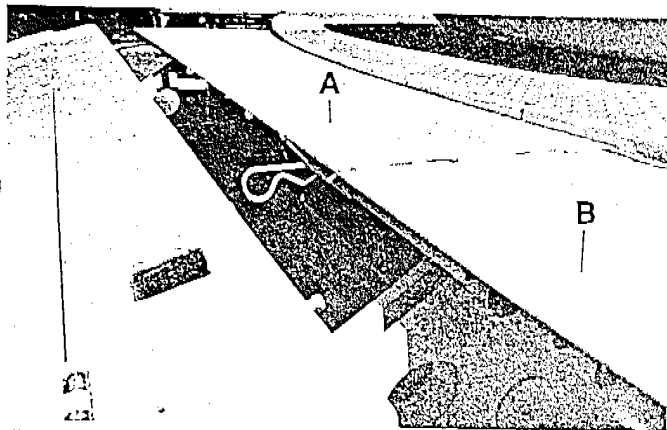


Fig. 23

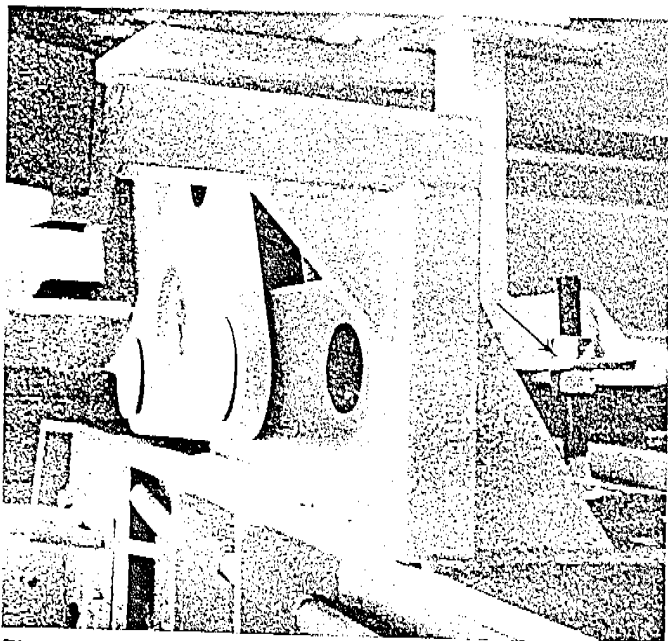


Fig. 24

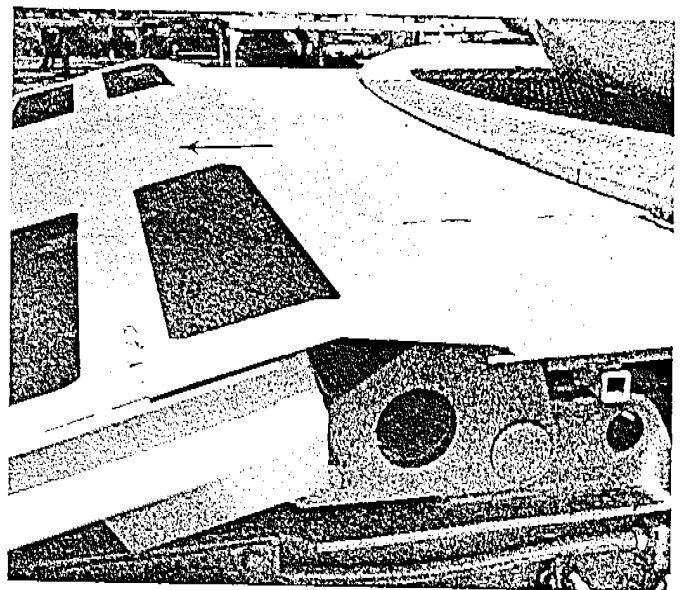


Fig. 25

15. INSTALL THE BANJO LIGHTS AROUND THE WALKWAY HANDRAIL

- a. The banjo lights are stored against the raised sections of the rotating platform. There are six on each side. (Refer to Fig. 72)

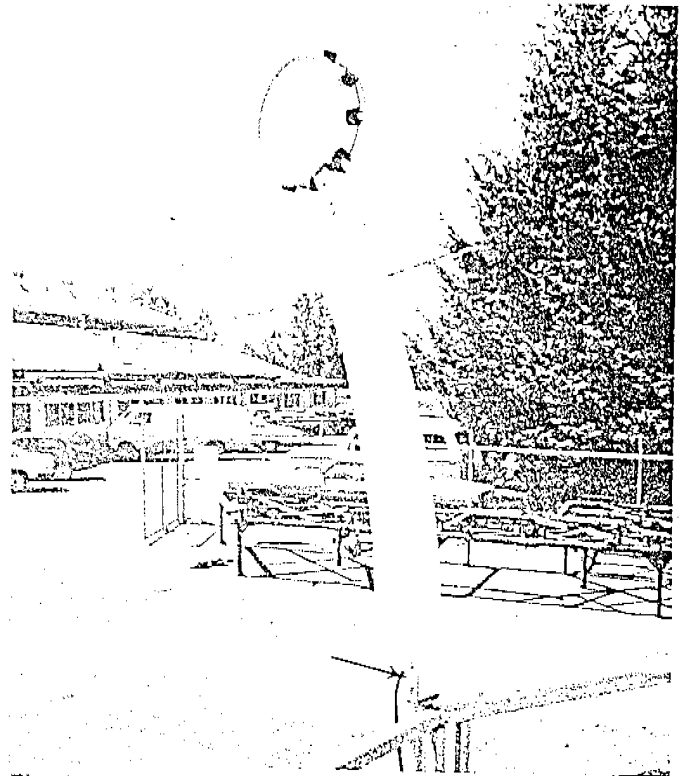


Fig. 26

- b. The banjo lights are installed on the walkway handrail, six on each side of the ride. Install the first banjo light next to the gooseneck and work around toward the back of the ride.

- (1) Slide the leg at the base of the banjo light into the outside socket at the top of the vertical bar that extends up from the walkway support frame. Position the banjo light so it arches away from the center of the ride. (Fig. 26)

- (2) NOTE: The front banjo lights are plugged into the four-square sockets located on both sides of the trailer frame, just in front of the front landing gears (d). (Refer to Fig. 1) The side banjo lights are plugged into the four-square sockets located half way down both sides of the trailer frame (a). (Fig. 27)

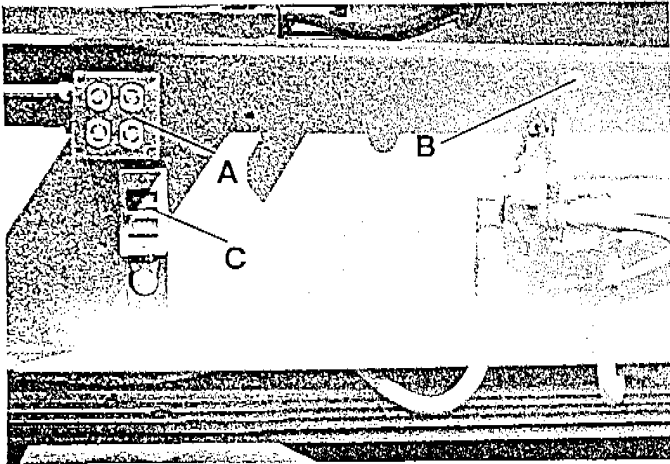


Fig. 27

16. REMOVE THE TWO ROTATING PLATFORM JACKS

- The rotating platform jacks are located under the rotating platform frame, on either side of the trailer frame, behind the rear tires.
- Rotate the fastening plate on the jack (a) to lower the support head on the jack. (Fig. 28)

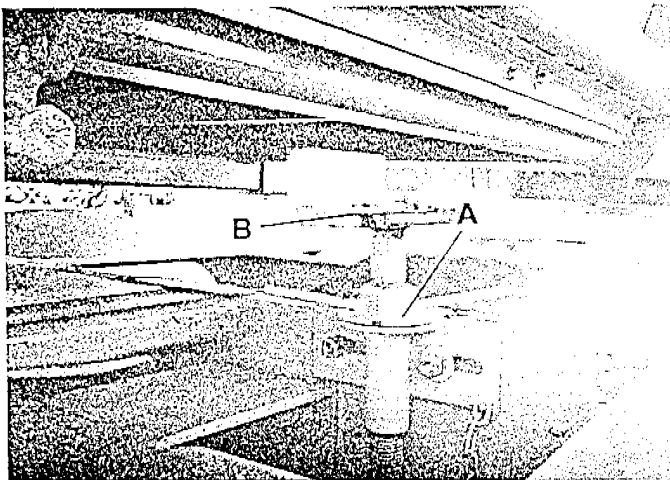


Fig. 28

- NOTE: It is necessary to turn the rotating platform slightly to remove the platform jack.
- Repeat on the other side.
- CAUTION: The platform jacks must be removed. The ride cannot operate with the jacks in position under the rotating platform.

17. LOWER THE LARGE ROTATING PLATFORM SECTIONS

- Hydraulic control levers (b) are located half way down the sides of the trailer frame. The lever on the right side controls the right platform frame.

The lever on the left side controls the left platform section. Hydraulic pump motor start and stop buttons (c) are located in the same area as the control levers. (Refer to Fig. 27)

- HOW TO KNOW WHICH SIDE TO LOWER FIRST: In storage, the wing tip from one side of the ride rests on top of the wing top from the other side. Lower the large platform section with the wing tip stored on top first. (Fig. 29)

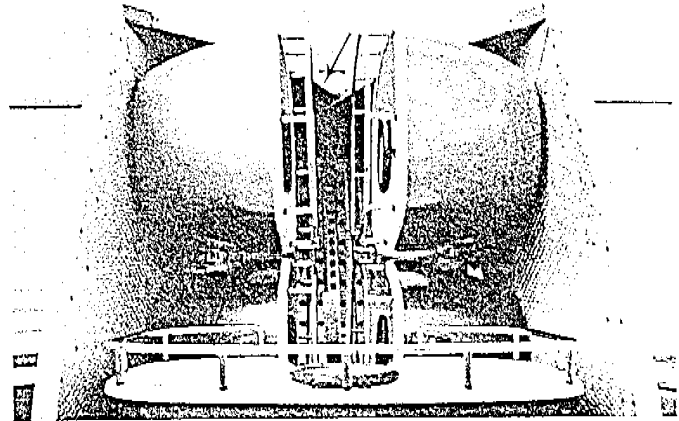


Fig. 29

- Remove the snap key and the platform retaining pin from the locking link that secures the platform in storage position. CAUTION: Do not remove the pin that secures the hydraulic cylinder to the large rotating platform section. Removal of the pin at this time could cause serious damage to the ride. (Fig. 30)

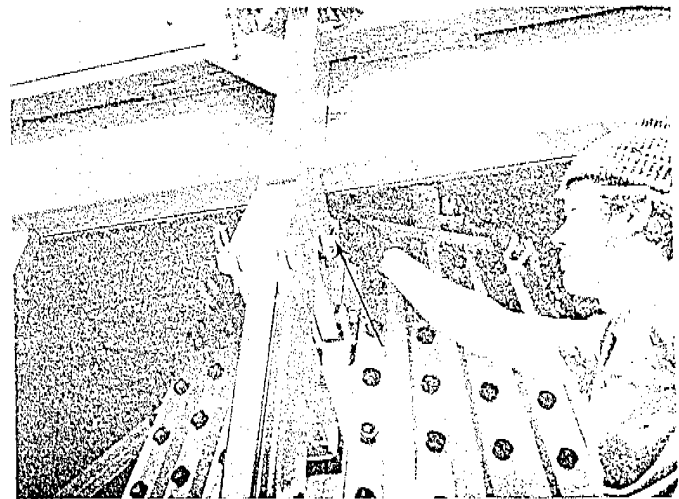


Fig. 30

- Start the hydraulic pump for one side. Push the hydraulic control lever down to lower the platform section. Turn off the hydraulic motor once the platform section is down.
- Replace the retaining pin between the double ears on the inside edge of the rotating platform. Snap Key in Place. (Refer to Fig. 71)
- Repeat on the other side.

18. LOWER THE ROTATING PLATFORM WING TIPS TO OPERATION POSITION

- Remove the pin from the center hinge lock on a

wing tip. (Fig. 31)

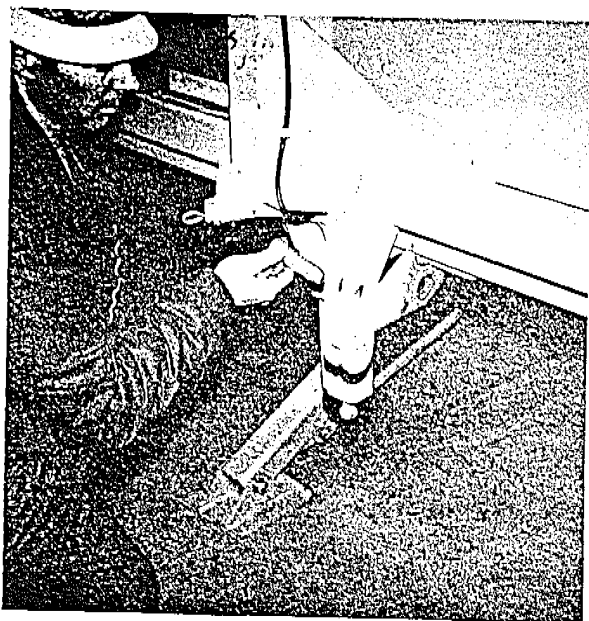


Fig. 31

- b. Lower the wing tip by hand. CAUTION: Lowering the wing tip takes at least two men or more to safely handle the weight. (Fig. 32)

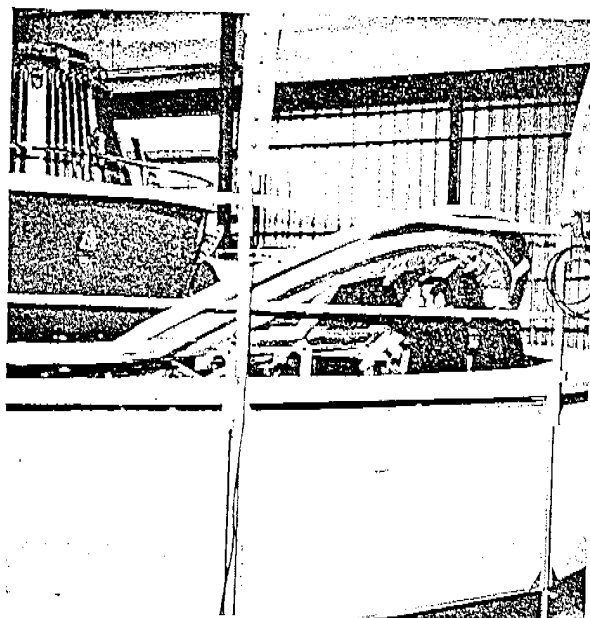


Fig. 32

- c. Once the wing tip is lowered, replace the locking pin in the same ears on the center hinge lock. *Snap Key in Place.* (Fig. 33)
d. Repeat on the other side.

19. SECURE THE WING TIP HINGE CLAMPS TO THE LARGE ROTATING PLATFORM SECTIONS

- a. There are five hinge clamps on each wing tip. (Fig. 34)
b. Working under the rotating platform, swing a hinge clamp up to meet the fastener on the platform. Run a snap key through the hole in the platform fastener (a). Tighten the hinge clamp bolt firmly against the platform fastener (b). (Fig. 35)

- c. CAUTION: Be sure to tighten the hinge clamps securely. (Approximately 40 foot pounds torque.) Care should be taken not to over-tighten the locks.
d. Repeat on the other side.

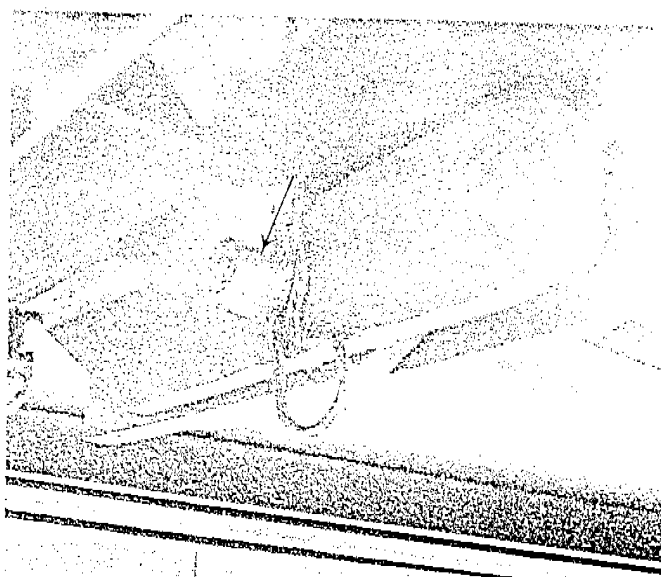


Fig. 33

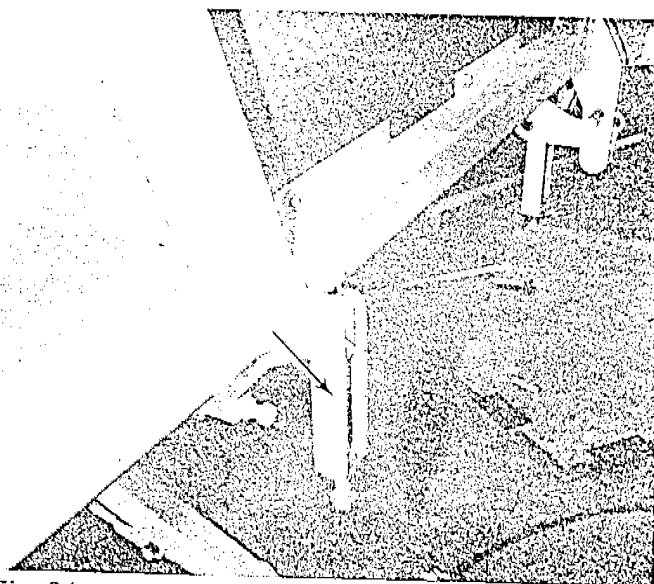


Fig. 34

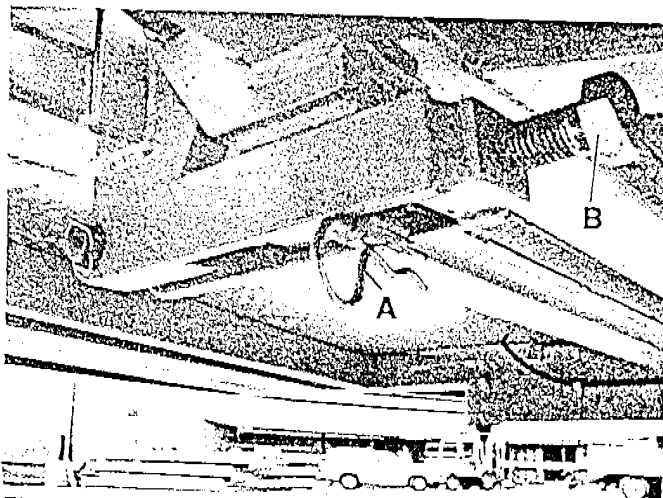
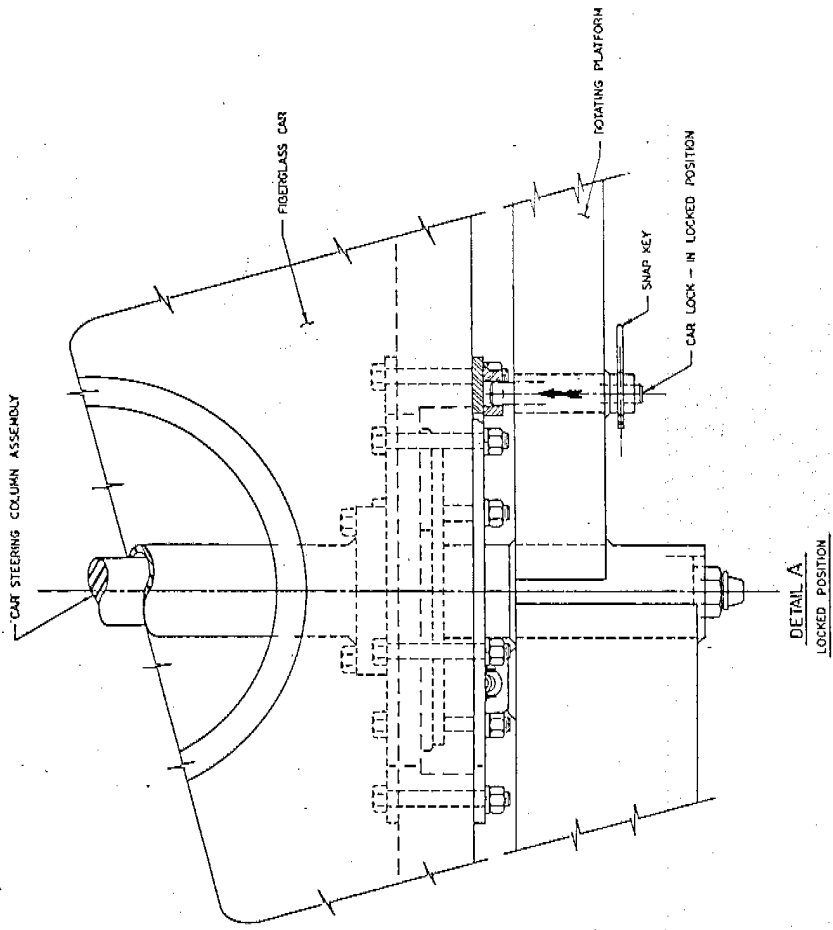
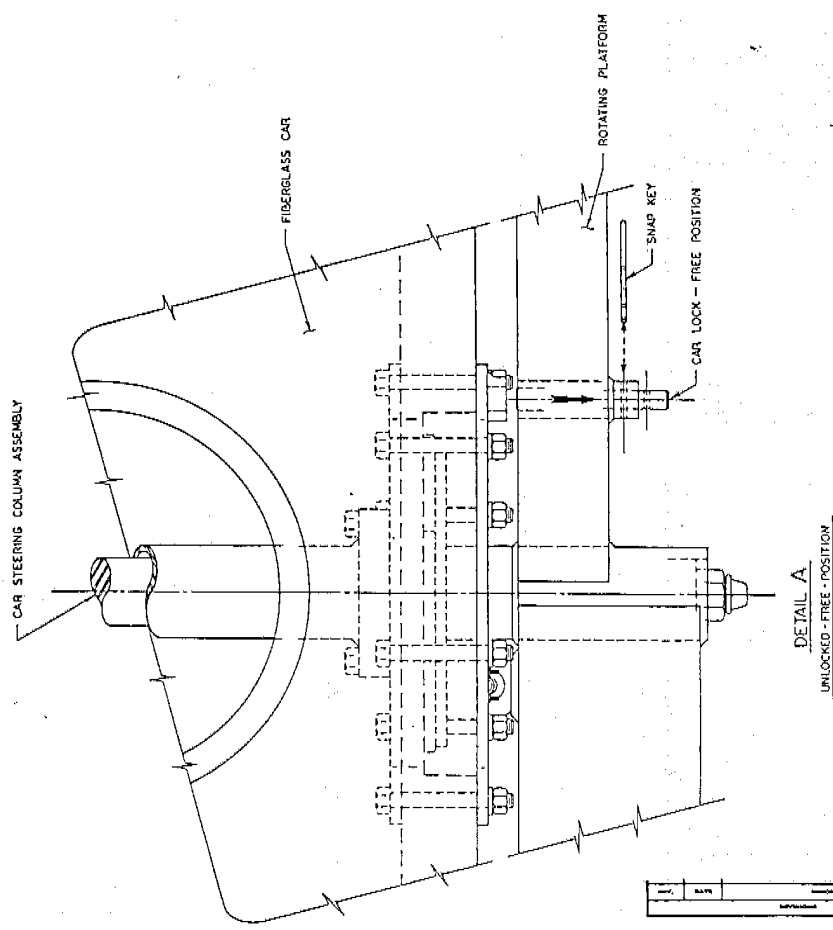


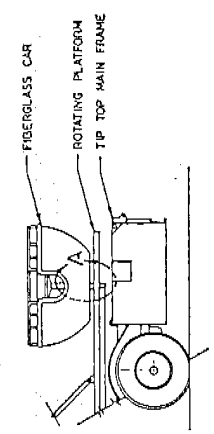
Fig. 35



DETAIL A
LOCKED POSITION



DETAIL A
UNLOCKED - FREE POSITION



KILINSKI MFG. COMPANY		C/O JIM KILINSKI 2101 W. 11TH ST.	
DESIGNED BY: UNCLE MATE	DESIGNED BY: PETE T.		
DATE: 2-27-81	DATE: 2-27-81		
TRANSPORT CAR LOCK DIAGRAM			
2T-539		E	

20. INSTALL THE TWO REMOVABLE CARS IN OPERATION POSITION

- a. Working under the platform, remove the lock washers and nuts on the spindles of the removable cars. (Fig. 36) **NOTE:** Be sure to unlock the permanently fixed cars that are next to the removable cars before moving the cars to operation position. Remove the snap key from the locking pin on the permanently fixed car. Allow the pin to drop down out of locking position. Return the snap key to the hole at the end of the pin. (Refer to Drawing 539)

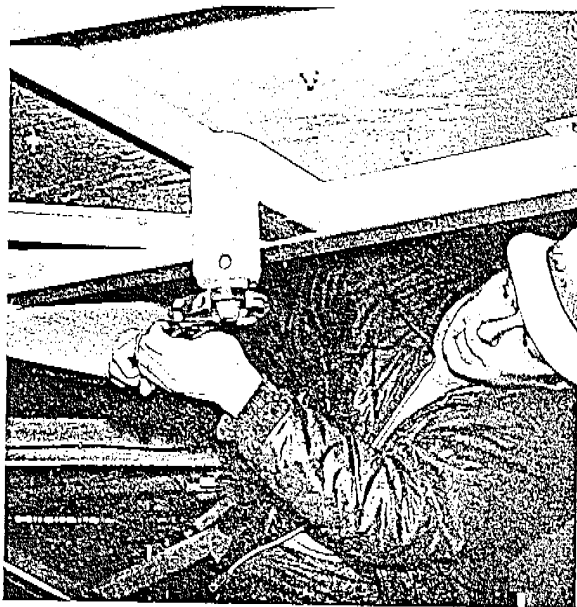


Fig. 36

- b. Lift the removable cars from their storage sockets and install them in their operation sockets on the wing tips. (Figs. 37 & 38)

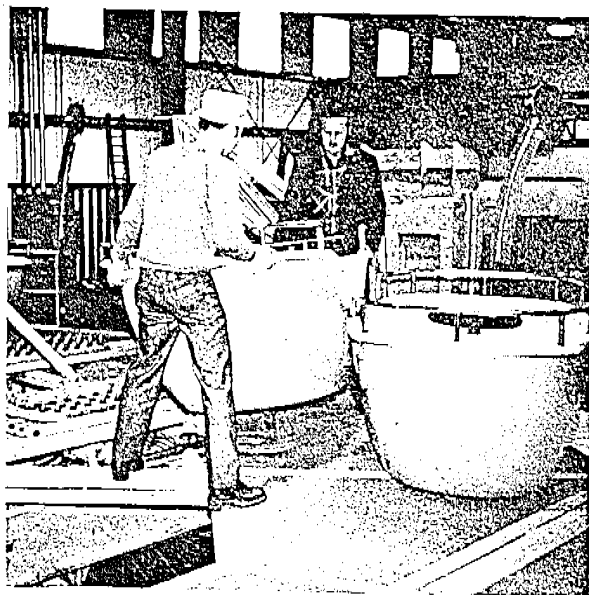


Fig. 37

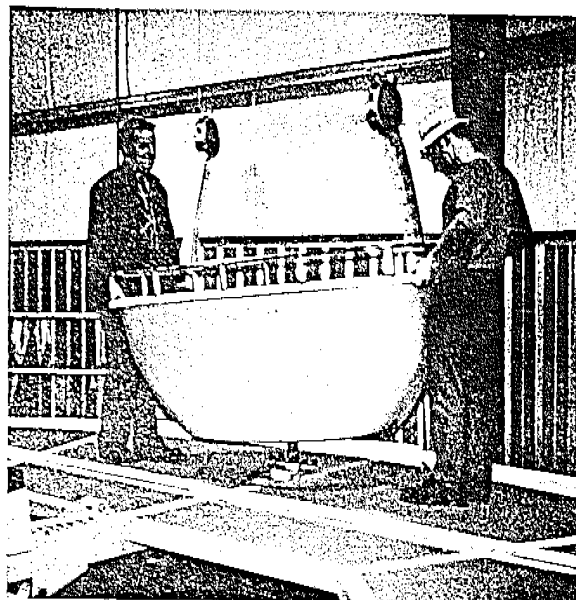


Fig. 38

- c. **NOTE:** It may be necessary to turn the steering wheel until the pin in the socket aligns with the slot in the spindle. When the pin is aligned, the car will drop in place.
- d. **CAUTION:** Be sure to install the lock washers and nuts on the spindles under the platform and snap key them in place. (Refer to Fig. 36)

21. INSTALL THE ELECTRIC TIP TOP SIGN LETTERS ON THE BACK WALKWAY HANDRAIL SECTIONS

- a. Remove the Tip Top sign letters from the storage brackets on the rotating platform. The letters for "Tip" are stored on the right side of the center cone. The letters for "Top" are stored on the left side of the center cone. (Refer to Figs. 69 & 70)
- b. Slide the legs of the letter support stands in the outside sockets at the tops of the vertical bars of the walkway support frame sections. (Fig. 39)

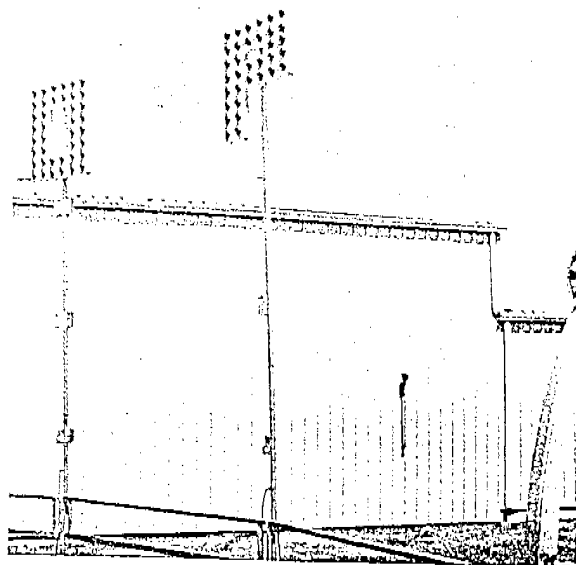


Fig. 39

- c. NOTE: A blank support stand is installed at center back, between the "P" of "Tip" and the "T" of "Top".
- d. Run the electrical cords for each letter under the ride and plug in the sockets at the back end of the trailer.

22. LINK EVERY TIP TOP LETTER SUPPORT STAND WITH A BRACE SECTION

- a. The brace sections (b) are flat metal strips stored on the storage rack for the ballys and the decorative panels. (Refer to Fig. 67) One brace section runs between every support stand. *All Support Stands Must Be Linked Together with the Series of Braces.*
- b. Fit the holes at the ends of a brace section over the pins on the support stands near the top panel brackets. An adjoining brace section will fit over the same pin. *Snap Key the Two Brace Ends in Place.* Continue in this manner until all support stands are linked with the brace sections. (Fig. 40)

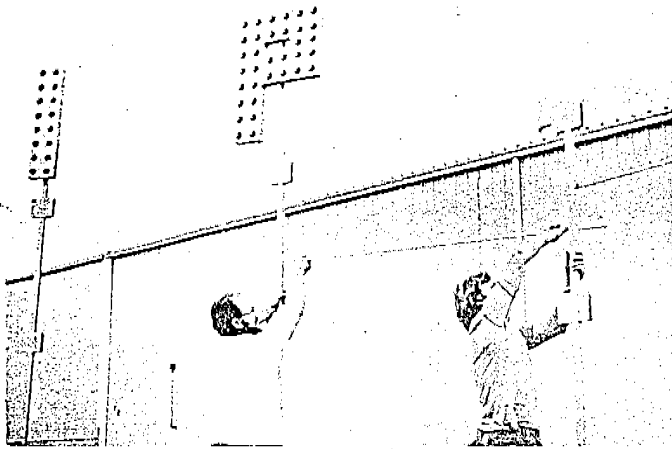


Fig. 40

23. INSTALL THE BALLYS AND THE DECORATIVE PANELS

- a. The ballys for around the base of the ride and the panels for the Tip Top sign are stored on the rotating platform deck, behind the center cone. (Refer to Fig. 66)
- b. Install the ballys around the base of the ride.
 - (1) Place the painted ballys around the front and the sides of the ride. Place the unpainted ballys toward the back.
 - (2) Slide the edges of the ballys into the brackets on the walkway support frame legs. (Fig. 41)
- c. Install the gooseneck ramp ballys.
 - (1) Fit the holes in the top of a bally over the pins that extend from the side of the gooseneck frame. Snap Key in Place. (Fig. 42)
 - (2) Repeat on the other side.
- d. Install the decorative panels on the Tip Top letter support stands.

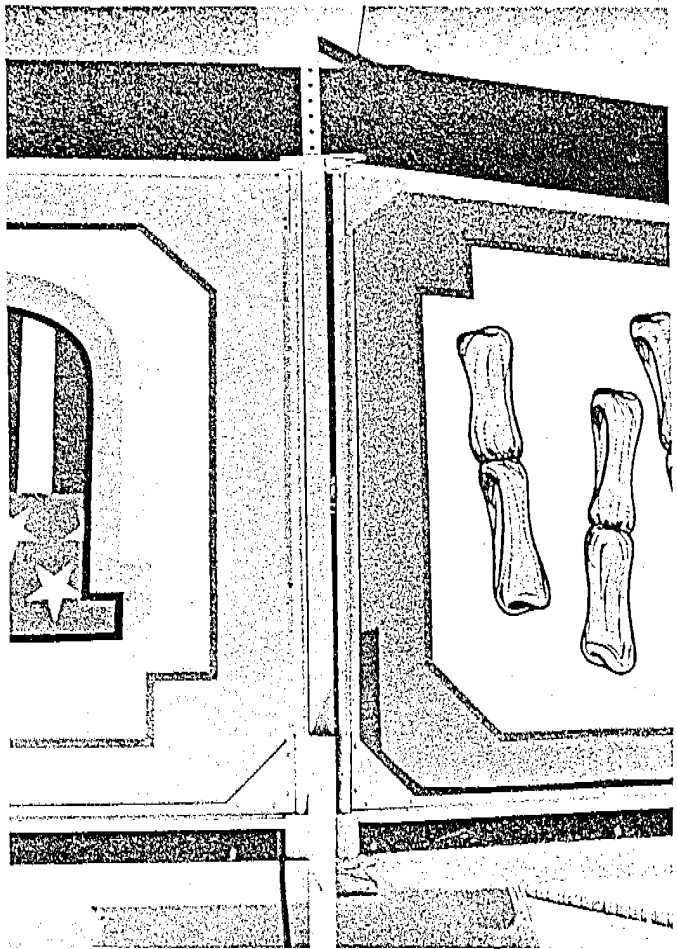


Fig. 41

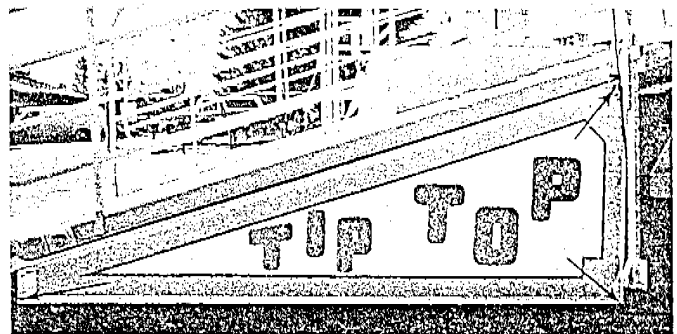


Fig. 42

- (1) NOTE: Center the four panels that make up the "Around The World With Tip Top Fun" theme. Be sure to match the lower "London" panel with the top "London" panel, etc. (Fig. 43)
- (2) Slide the edges of a panel into the brackets on the Tip Top letter support stands. Install the lower panel first. (Fig. 44)
- e. Remove the bally storage rack and store under the ride.

24. INSTALL THE TOP DOME LIGHTS AROUND THE TOP OF THE CENTER CONE

- a. The dome lights are stored just behind the center cone. (Refer to Fig. 63)
- b. NOTE: An extender bar is provided for the worker who cannot easily reach the top of the

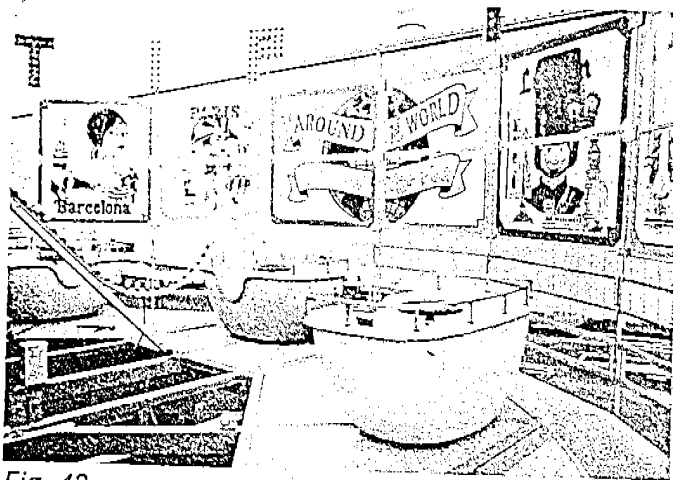


Fig. 43



Fig. 44

center cone to install the dome lights. It is usually stored with the miscellaneous items on the gooseneck.

- c. To use the extender bar, slip the clasp on the end of the bar between the two bottom lights on the light strip. (Fig. 45)

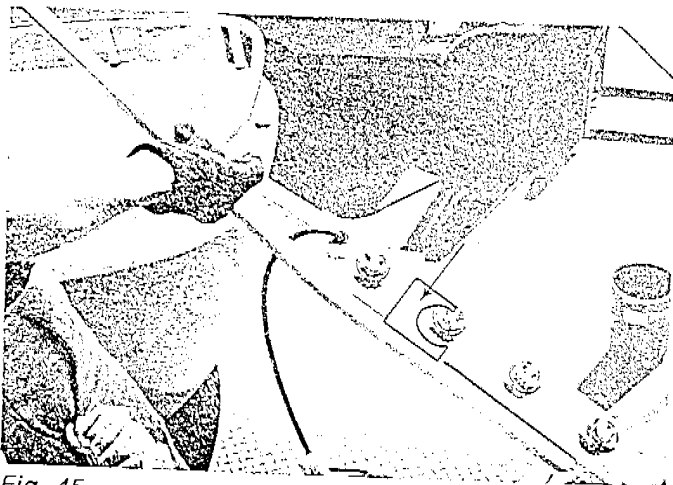


Fig. 45

- d. Install the leg at the base of a dome light in a socket at the top of the cone. Secure in place by tightening the set screws. (Fig. 46)

- e. Plug the dome lights in the electrical sockets around the top of the cone.

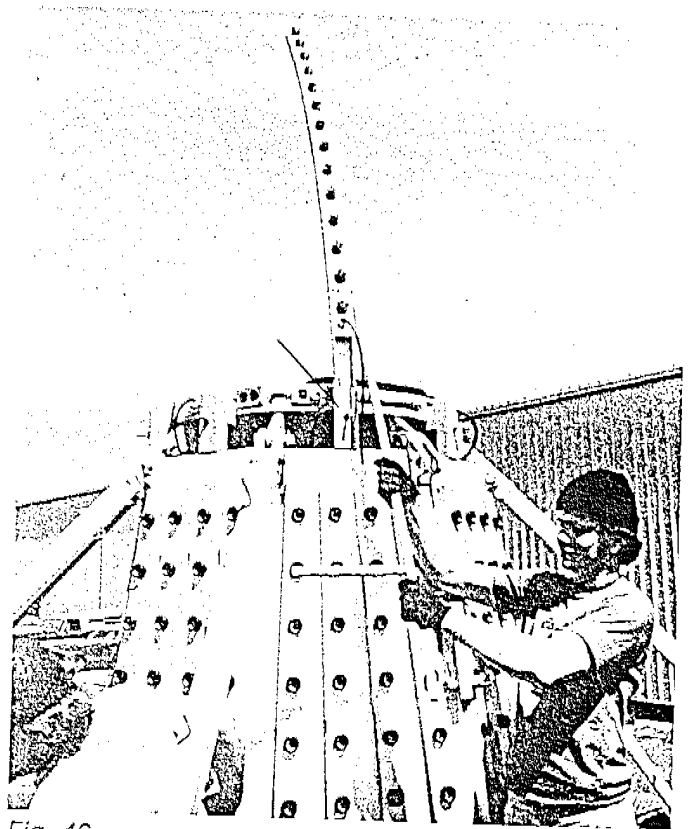


Fig. 46

25. INSTALL THE SIX REMOVALBE PLATFORM SUPPORT BRACES BETWEEN THE CENTER CONE AND THE ROTATING PLATFORM

- a. Three platform support braces are stored on both sides of the rotating platform, behind the center cone. Remove the storage fasteners. (Figs. 47 & 48)
- b. The braces run from the center cone out to the inside edge of the rotating platform. Install the three on one side of the center cone in the following order:
 - (1) Forward-side (a)

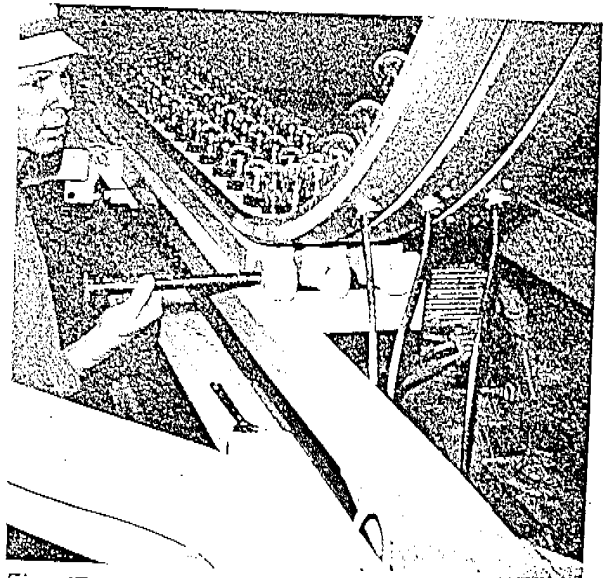


Fig. 47



Fig. 48

- (2) Rear-side (b)
- (3) Center-side (c) (Fig. 49)

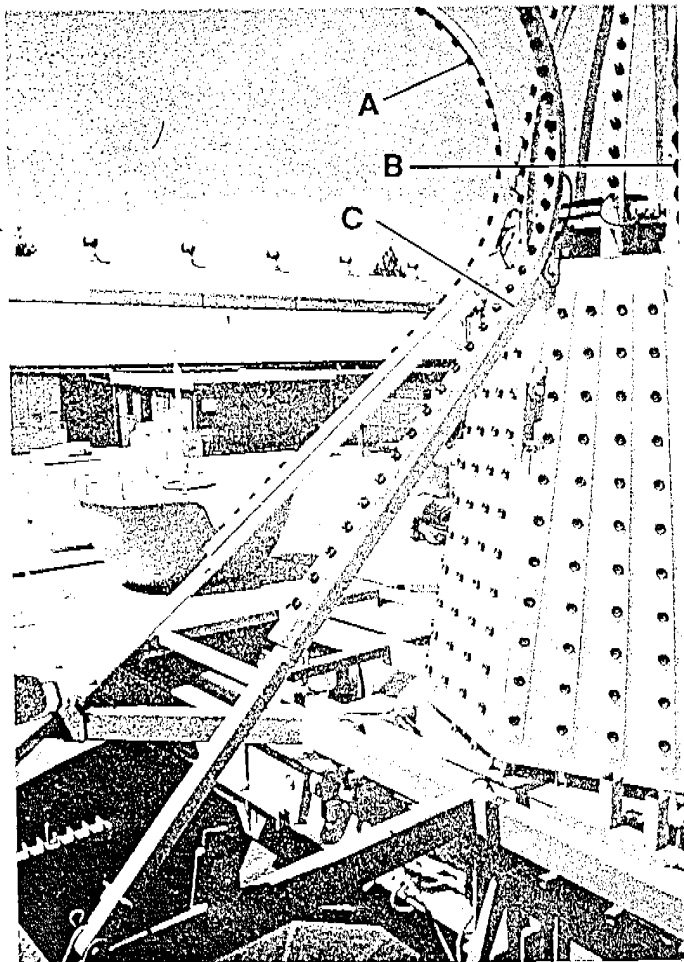


Fig. 49

c. Position the braces so the curved sections are toward the top of the cone.

- (1) Fit the top end of a brace between a set of double ears at the top of the center cone. Align the holes in the brace with those in the ears. Run a pin through all holes. *Snap Key In Place.* (Fig. 50)

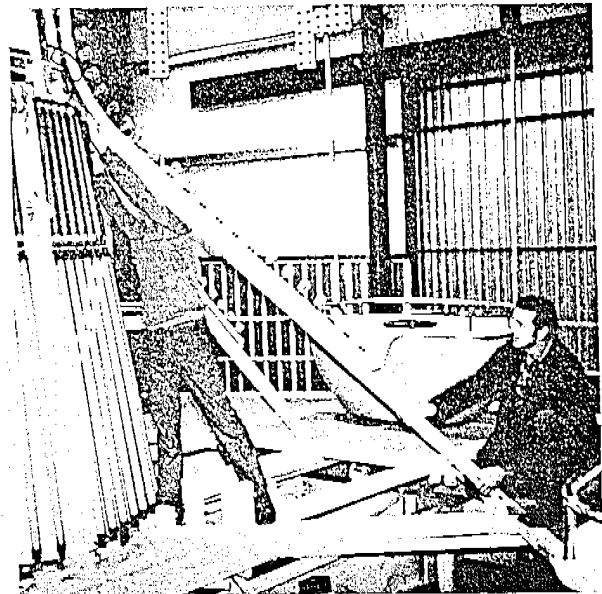


Fig. 50

- (2) Fit the lower end of a brace between the double ears at the inside edge of the rotating platform. (Fig. 51)
- d. NOTE: In order to align the pin holes at the bottom of the braces, it may be necessary to use the platform hydraulic cylinder to adjust the level of the rotating platform section.
- e. Plug the lights that are on the braces into the proper connections at the top of the center cone.
- f. Repeat on the other side.

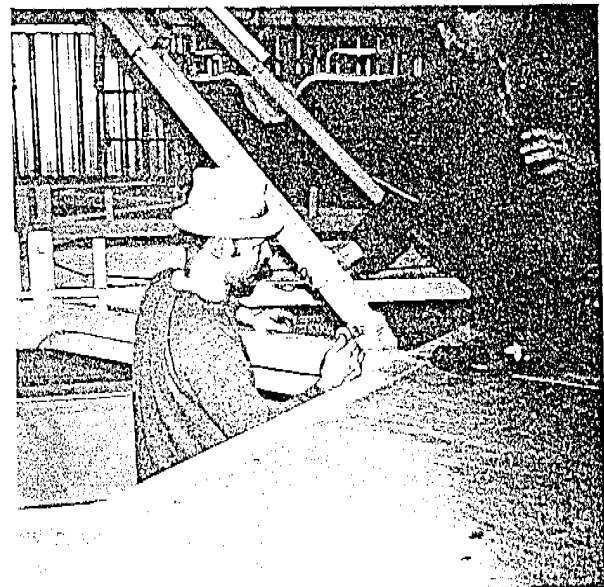


Fig. 51

26. DISCONNECT AND LOWER THE TWO PLATFORM HYDRAULIC CYLINDERS

- a. Remove the pins that secure the hydraulic cylinders to the platforms. (Fig. 52)
- b. Lower the cylinders to ground level. Place small boards or some other protection on the ground under the cylinder clevis.
- c. Replace the pins in the brackets on the platforms and key them.



Fig. 52

27. UNLOCK THE PERMANENTLY FIXED CARS FROM STORAGE POSITION

- Working under the rotating platform, remove the snap key from locking pin on the spindle of the car. Allow the pin to drop down out of locking position. Return the snap key to the hole at the end of the pin. (Refer to Drawing 539)
- NOTE:** It is necessary to rotate the platform about one quarter turn to reach the locks on the front and back cars.

28. SECURE THE TWELVE HINGE CLAMPS ON THE TWO LARGE ROTATING PLATFORM SECTIONS TO THE MAIN FRAME OF THE ROTATING PLATFORM

- There are six hinge clamps on each large rotating platform section.
- NOTE:** Four clamps for both sides (8 total) are stored in the tool box. Working under the platform, install the eight hinge clamps to the fastening ears on the large rotating platform sections. (Fig. 53)

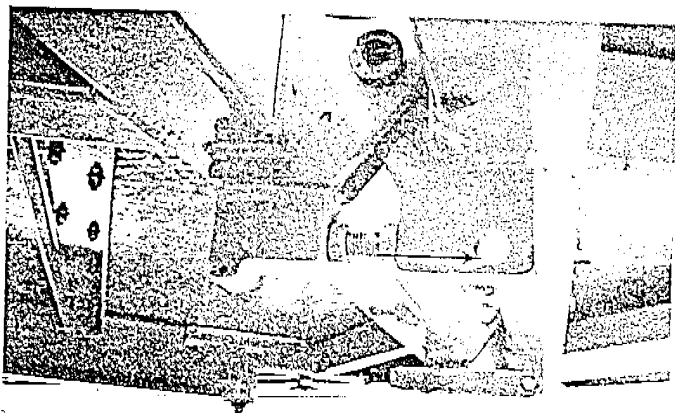


Fig. 53

- Fit the fastening ear between the double ears on the end of the hinge clamp. Run a pin through all holes. *Snap Key in Place.* (a). Swing a hinge clamp up to meet a fastener on the

platform. Run a snap key through the hole in the platform fastener (b). Tighten the hinge clamp bolt (c) firmly against the platform fastener. (Fig. 54)

- CAUTION:** Be sure to tighten the clamp securely. (Approximately 40 foot pounds torque.) Care should be taken not to over tighten the lock.

- Repeat on all twelve hinge clamps.

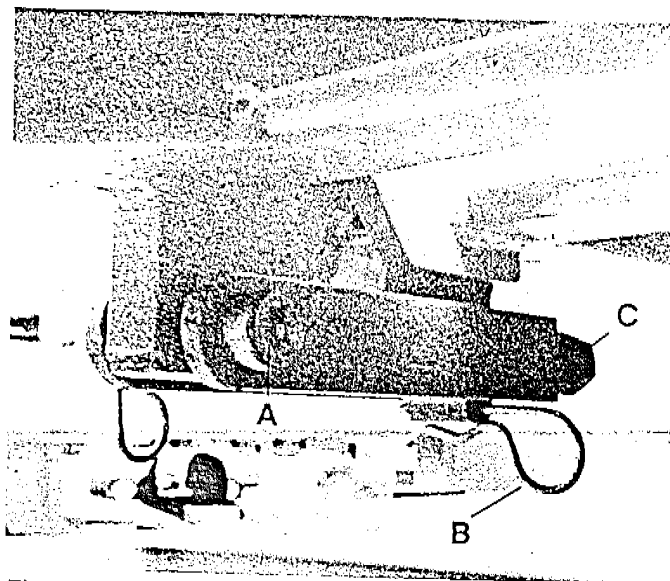


Fig. 54

29. INSTALL THE FENCE SECTIONS AROUND THE INSIDE EDGE OF THE ROTATING PLATFORM

- The fence sections are stored on the rotating platform deck, behind the center cone. Remove the locking bar (d) that runs across the tops of the stored fence sections. (Refer to Fig. 60)
- The fence sections are secured to the platform support braces. Position the fence sections with the narrow side up and the wide side along the edge of the rotating platform deck. Slip the pins at the sides of the fence frame into the ears on the braces. *Snap Key in Place.* (Fig. 55)
- Install the fence sections all around the inside edge of the rotating platform deck.

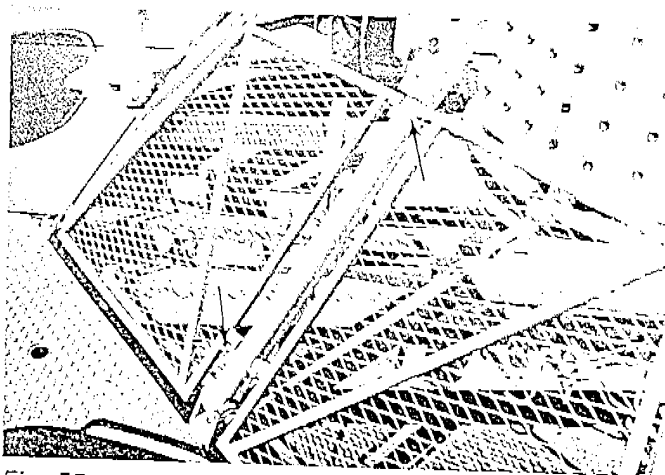


Fig. 55

30. POSITION THE FENCE STORAGE RACK FOR RIDE OPERATION

- a. Remove the lower section of the rack and store under the ride. (Refer to Fig. 61)
- b. Replace the locking bar (d) between the two vertical legs of the standing rack section. (Refer to Fig. 60)
- c. Fold the standing rack down between the rotating platform frame bars.
- d. Insert the pin at the top of the right vertical bar (c) into the ear on the side of the rotating platform frame bar (e). Snap key in place from under the ear. (Refer to Fig. 60)

31. SWING THE LIGHT STRIPS ON THE PERMANENTLY FIXED FRONT AND BACK PLATFORM SUPPORT BRACES INTO OPERATION POSITION

- a. The light strips are stored on the front and back support braces, with the curve at the base of the brace.
- b. Remove the clamp that secures the light strip in place. (Fig. 56)

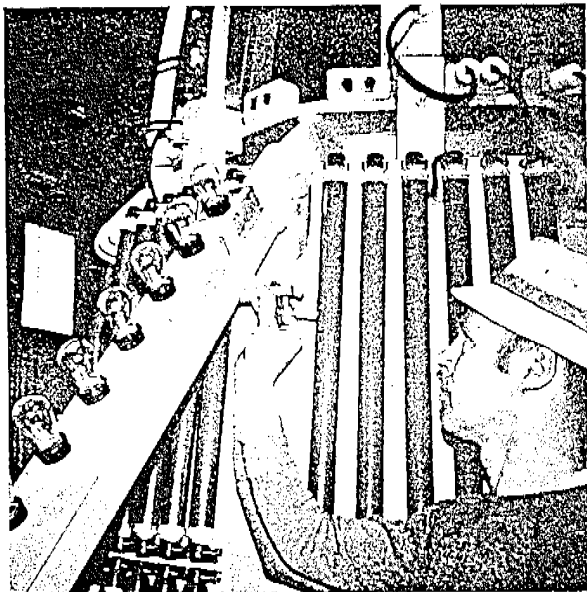


Fig. 56

- c. Swing the light strip around 180 degrees so the curve is toward the top of the center cone. (Fig. 57)
- d. Replace the clamp to the same area on the brace. *Pin and Snap Key in Place.* Tighten the top set screw until it meets the aluminum light strip. **CAUTION:** Do not tighten too much, causing damage to the aluminum strip. (Fig. 58)
- e. Plug the lights in the proper connections at the top of the center cone.

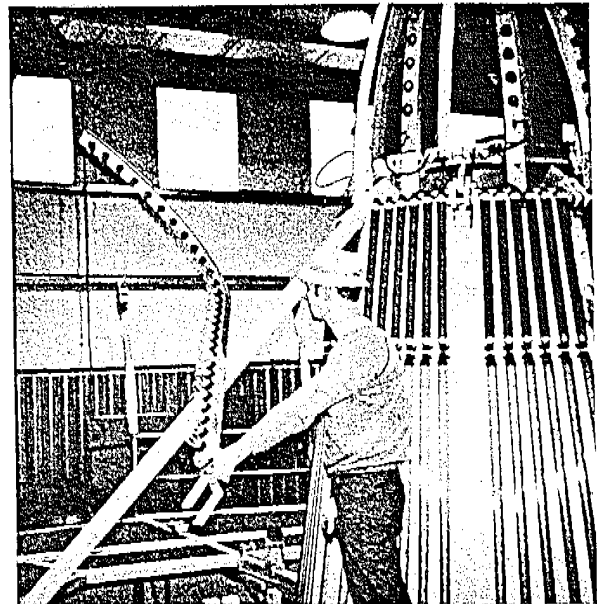


Fig. 57

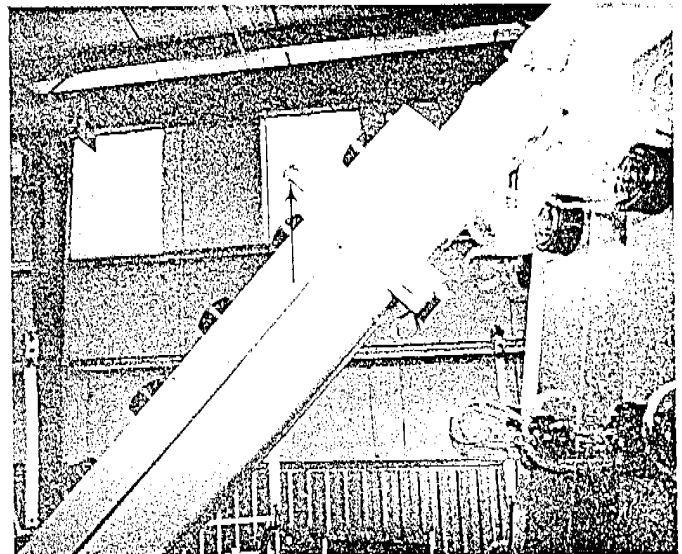


Fig. 58

OPERATION INSTRUCTIONS

DAILY OPERATION CHECKS

1. Before operating the ride: Two trico oilers are located on top of the two main tower cylinders at the rear of the center cone, on the right hand side. (Refer to Drawing 2T-538) Make certain that these oilers are filled. **IMPORTANT:** The trico oilers must be refilled at least two to three times a day to prevent damage to the cylinders.
2. Turn on the trico oilers by flipping the small levers at the tops of the oilers to a horizontal position before starting the ride. **NOTE:** Be sure that the arrow on the check valve points with the oil flow. (Refer to Drawing 2T-538)
3. **CAUTION:** The lower exhaust pipe plug which is $\frac{3}{4}$ " must not be removed or changed in size. This size exhaust port governs the proper speed of fall of the platform.

RISE OPERATION

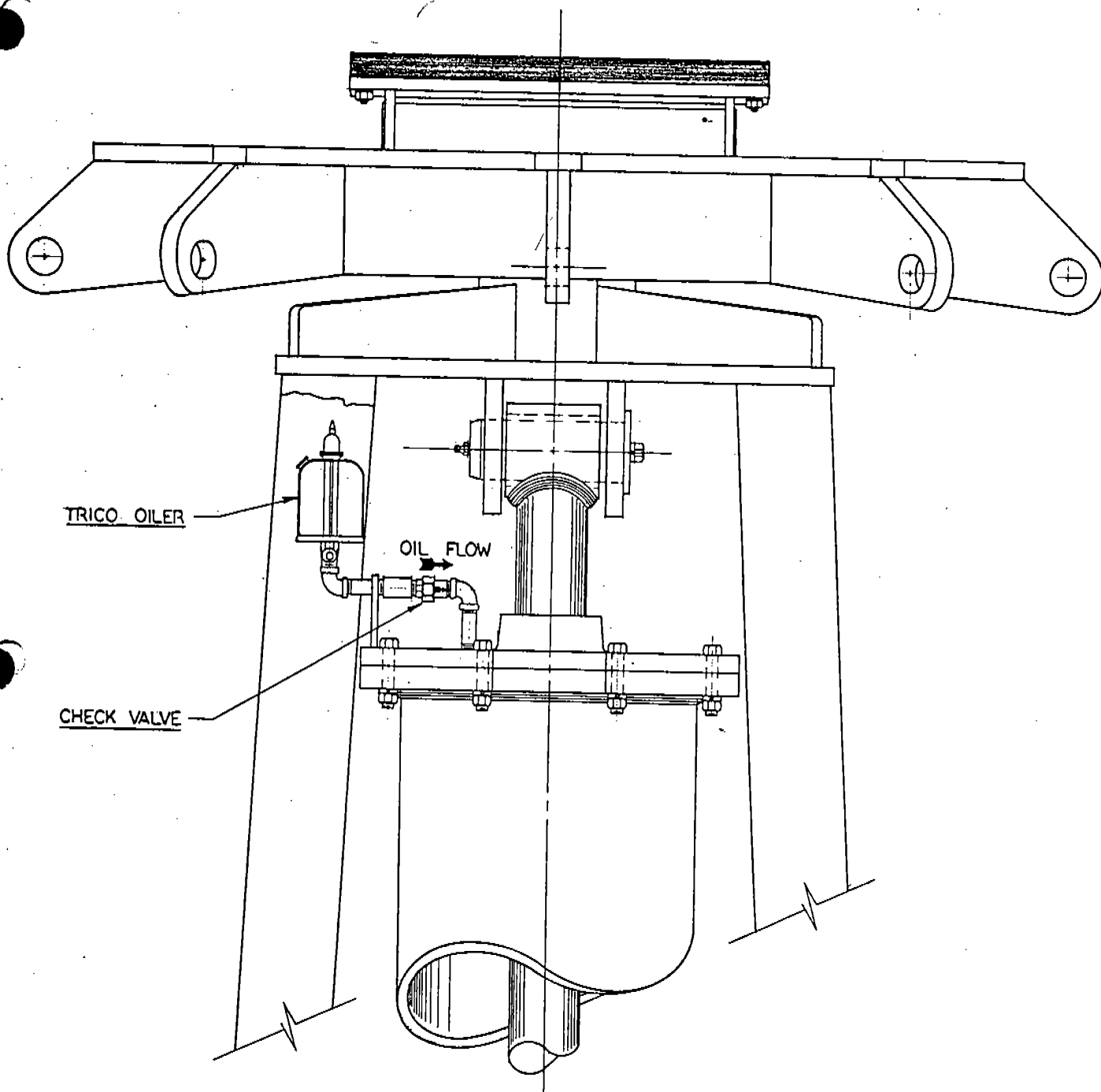
1. The manufacturer strongly recommends that the operator of the Tip Top have knowledge of the use and function of the operation controls, the air system that "bounces" the ride and the safety systems. The operator should also be aware of the owner's and the manufacturer's operation safety recommendations.
 2. Although one operator can perform the duties necessary for proper performance of the Tip Top, we suggest that an extra man work the platform for control of the passengers during the loading-unloading phase of operation. Control of the ride is accomplished at the control console located on the gooseneck of the ride.
 3. Turn on the compressor by pushing the right start button (#11) on the control console. Let the air build up to 175 p.s.i. on the high pressure gauge (#14) and between 85 to 90 p.s.i. on the low pressure gauge (#16). (Refer to Drawing #2T-523) **CAUTION:** The recommended pressures are ample to operate under full load and should not be exceeded. **DO NOT** change the regulator valve setting. **DO NOT** operate the ride with air pressure under 80 p.s.i. When the ride is operated with pressure that is too low the platform will fall too rapidly.
 4. Put the seat brake control (#18) in the "on" position to prevent twisting of the seats while passengers are stepping into the cars. (Refer to Drawing #2T-523)
- Allow the passengers to advance around the platform and be seated. If the ride is only partially filled, direct the last half of the passengers to those seats which will help to balance the loading. After all are seated, release the seat brakes.

6. Start the platform rotating by pushing the left start button on the control console. As the platform approaches maximum speed (10 RPM), lift the bounce control air valve lever (#13) to raise the platform. To achieve the proper bounce, it is necessary to raise the platform to maximum height. Two or three preliminary bounces, each higher than the preceding one, will allow the platform to be raised to maximum height in stages with a minimum loss of compressed air. With experience, the operator will learn to give the main cylinder a "shot" of air just as the platform starts up from a bounce. (Refer to Drawing 2T-523)
7. Maximum height is achieved when a distinct air exhaust at the top of the main cylinder travel is heard. It is important to push the bounce lever to the full down position prior to the exhausting of the main cylinder. Failure to push the lever down quick enough will result in wasteful exhaust of pressurized air from the tanks. Pushing lever down too soon will keep the platform from reaching maximum height and improper bounce will result. Pushing the lever all the way down allows the platform to lower and trap compressed air in the lower "bounce" area of the main cylinder. This air will bounce the platform. Experience will show that the bounce valve need only be opened during about one-half of the elevating cycle.
8. Repeat the elevating cycle three or four times during the ride cycle. Proper operation is achieved with experience. The experienced operator will space the bounces so that every passenger will experience a maximum lift and accomplish this with minimum use of air.
CAUTION: The ride should not be allowed to stay in the raised position for even a moment. This wastes air and detracts from the thrill of the Tip Top ride.
9. At the completion of the ride cycle, switch off the drive motor by pushing the left stop button on the control console. Energize the car brakes (#18) and pull the bleed-off valve (#15) up to lower the platform to rest. (Refer to Drawing 2T-523)
10. Apply pressure to the platform brake controller (#17). Vary the brake pressure to minimize brake heating and tire wear. (Refer to Drawing 2T-523) **NOTE:** The platform brake controller will not function until the car brakes have been energized.
11. When the platform rotation has been stopped, reset the bleed-off valve and unload the ride.
12. Repeat the loading and operation sequence.

OPERATION SAFETY RECOMMENDATIONS

THE FOLLOWING SAFETY RECOMMENDATIONS ARE INTENDED TO BE ONLY A GUIDELINE FOR THE OWNER-OPERATOR'S OWN OPERATION SAFETY RULES. OWNER-OPERATORS MUST USE THEIR OWN JUDGEMENT IN INTERPRETING AND ENFORCING THE MANUFACTURER'S SAFETY RECOMMENDATIONS.

1. All riders must wear shoes.
2. Children under the age of 6 must be accompanied by an adult.
3. Infants that must be carried must not be allowed to ride.
4. Overweight people who cannot easily fit into the car must not be allowed to ride.
5. Individuals who appear to be intoxicated or who can in any way be judged not in complete control of their actions must not be allowed to ride.
6. Do not allow riders to board the ride with carry-on equipment (cameras, pop bottles, etc.) that may fly out of their hands during the operation of the ride.
7. Each car should hold no more than 4 adults or 6 children.
8. All riders must sit on the seat in the car with arms and legs inside the area of the car. No sitting on the back of the car. No standing.
9. Before starting the ride:
 - a. Be sure all riders are sitting properly in the cars.
 - b. No riders walking around on the platform.
 - c. No loose objects on the platform.
 - d. No individuals near the exterior of the ride who could come in contact with the rotating platform.
10. Keep your eyes on the ride at all times. *Be alert.*
11. If the behavior of any rider is erratic, or a rider moves himself out of the recommended riding position, stop the ride.
12. All riders must remain in their cars until the ride comes to a full stop.
13. **IMPORTANT:** Keep riders away from the control console. Allow only authorized persons to touch the controls on the console.
14. The ride should be shut down when the park or carnival lot is directly threatened by a lightening or high wind storm, a period of tornado or severe storm warning, fire or violence, such as a riot or civil disturbance. Operation should not resume until the situation has returned to a normal safe operation condition.



TOWER VIEW

— AS SEEN FROM —
— CONTROL CONSOLE —

KILINSKI MFG. COMPANY			P.O. BOX 12788 SALEM, OR. 97308	
TOLERANCES: UNLESS NOTED			DRAWN BY. PETE T.	
DECIMALS	FRACTIONS	ANGLES	DATE 2-25-81	
.X ± .015			SCALE.	
.XX ± .010				
.XXX ± .005				
TOWER OILER VIEW				
REV.		DATE	DESCRIPTION	NEXT ASSEMBLY
			REVISIONS	REVISION
				DRAWING NO.
				2T-538

REV.	DATE	DESCRIPTION
		REVISIONS

TIP TOP LOADING AND ASSEMBLY PARTS STORAGE

The following instructions detail the fastest and safest procedure to load and store all assembly parts. Proper loading and storage will help to prevent damage to the Tip Top during transit. REMEMBER: Proper assembly procedure depends on proper loading and storage procedure.

TIP TOP LOADING AND ASSEMBLY PARTS STORAGE

1. POSITION THE ROTATING PLATFORM FOR LOADING

- The rotating platform center frame bars must be parallel with the length of the trailer frame.
- The storage sockets for the two removable cars must be positioned in the area between the gooseneck and the center cone.

2. POSITION ALL CARS FOR STORAGE AND LOCK THEM IN PLACE

- Storage positions for the cars:
 - Store the two removable cars in the sockets next to the two forward permanently fixed cars. Position the entrance area of each removable car to face the entrance area of the permanently fixed car next to it (a).
 - The entrance areas of the center front and center back cars face the center cone (b).
 - The entrance areas of the two cars at the rear of the ride face in toward each other (c). (Fig. 59)

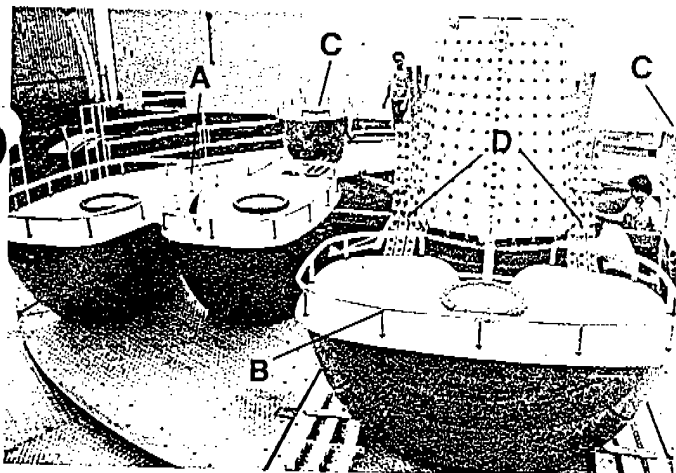


Fig. 59

- Working under the rotating platform, secure the cars in storage position.

- Install the lock washer and nut on the spindle of each removable car. *Tighten and Snap Key in Place.* (Refer to Fig. 36)
- To lock the permanently fixed cars in storage position, remove the snap key from the end of the locking pin. Push the pin all the way up against the bottom of the car. Align the holes on the locking pin housing with the hole at the end of the pin. *Run a Snap Key Through All Holes.* (Refer to Drawing 539)
- NOTE: It is necessary to rotate the platform about $\frac{1}{4}$ turn to reach the front and back cars. Return the platform to storage position once these cars are locked in place.

3. SET UP THE INSIDE FENCE STORAGE RACK AND STORE THE INSIDE FENCE SECTIONS

- The inside fence storage rack is set up just behind the center cone, to the right of center. Remove the inside fence sections behind the cone in order to set up the storage rack.
- The inside fence storage rack is made up of two separate sections: a rack that is permanently fixed to the rotating platform frame bars with hinges (a) and a removable lower rack (b). (Fig. 60)
 - During operation, the permanently fixed rack is folded down between the rotating platform frame bars.
 - Remove the key that secures the permanently fixed rack between the rotating platform frame bars. Raise the rack to a standing position. Replace the key in the same pin on the top of the right vertical leg of the rack (c). Remove the locking bar (d) from the vertical legs of the standing rack section. (Refer to Fig. 60)

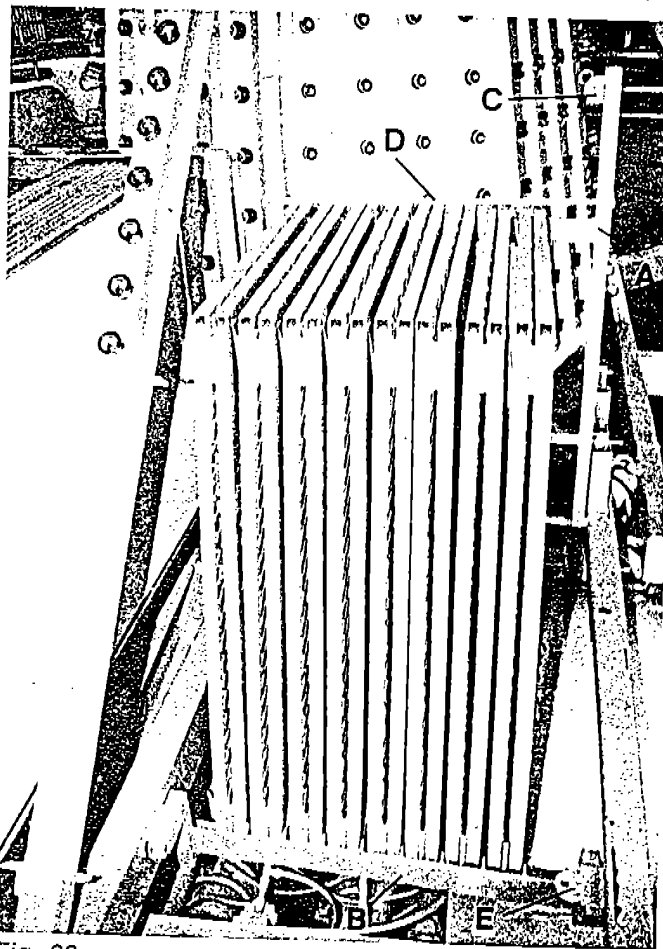


Fig. 60

- Install the lower rack section in the square sockets on the rotating platform frame bars. The rack section hangs below the frame bars, with racking slots facing the center cone. (Fig. 61)

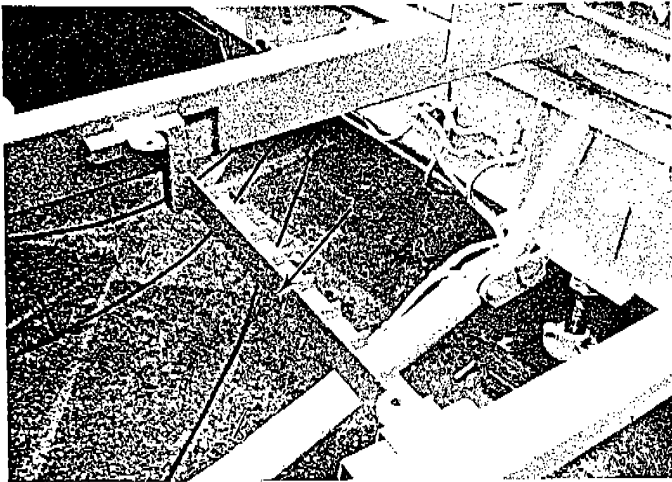


Fig. 61

- c. Store the fence sections between the two racks. Position each fence section with the narrow side up and a straight side against the standing rack. The lower pins on the fence sections hook over the lower cross bar on the standing rack.
 - d. Once all the fence sections are stored, run the locking bar (d) through the hole in one vertical leg in the standing rack, across the tops of the fence sections and on through the hole in the other vertical leg. *Snap Key in Place.* (Refer to Fig. 60)
- 4. ROTATE THE LIGHT STRIPS ON THE FRONT AND BACK PLATFORM SUPPORT BRACES INTO STORAGE POSITION**
- a. Remove the fastening clamp and rotate the light strip 180 degrees. Position the curve of the light strip toward the platform floor. (Refer to Fig. 57)
 - b. Replace the clamp to the same area on the brace. *Pin and Snap Key in Place.* Tighten the top set screw until it meets the aluminum light strip. **CAUTION:** Do not tighten too much, causing damage to the aluminum strip. (Refer to Fig. 58)
- 5. SECURE THE TWO ROTATING PLATFORM HYDRAULIC CYLINDERS TO THE ROTATING PLATFORM SECTIONS**
- a. Remove the pin stored in the double ears under the rotating platform.
 - b. Lift the hydraulic cylinder up and fit the end of the cylinder rod between the same double ears under the platform. Run a pin through the ears and the cylinder boss. *Snap Key in Place.* (Refer to Fig. 52)
- 6. STORE THE SIX REMOVAL BE PLATFORM SUPPORT BRACES**
- a. The removable platform support braces (d) are stored on the rotating platform, with three on either side of the center front car. (Refer to Fig. 59)
 - b. Position the braces with the curves arching toward the center cone.

- c. A set of ears is located on a rotating platform frame bar near the center cone. Rest the braces between the ears. Run a pin through the holes in the ears and braces. *Snap Key in Place.* (Refer to Fig. 47)
- d. The lower ends of the braces rest on the rotating platform deck. Place a lock bar over the ends of the three braces. Drop the pin on the locking bar down through the hole in the deck. (Refer to Fig. 48) Working under the platform, fasten the pin in place with lock washer and nut. (Fig. 62)
- e. Store the other three braces in the same manner.



Fig. 62

7. STORE THE EIGHT TOP DOME LIGHTS JUST BEHIND THE CENTER CONE

- a. Four dome light storage sockets are located on a rotating platform frame bar on each side of the center cone, toward the rear of the ride.
- b. The dome lights stored in the first two sockets near the cone are positioned to arch toward the front of the ride (a). The dome lights stored in the two sockets toward the rear of the ride are positioned to arch in toward the dome lights on the other side of the cone (b). Slip the legs of the dome lights in the sockets and tighten in place with the set screws (c). (Fig. 63)

8. SET UP THE STORAGE RACK AND STORE THE BALLYS AND DECORATIVE PANELS

- a. The storage rack for the ballys and decorative panels is set up behind the center cone, to the left of the inside fence rack.
- b. The rack is made up of two sections:
 - (1) One rack section has horizontal bars welded to the vertical legs. Install this section in the sockets on the rotating platform frame bars, close to the platform



Fig. 63

tread plate edge. Position the horizontal bars to point away from the center cone. (Fig. 64)

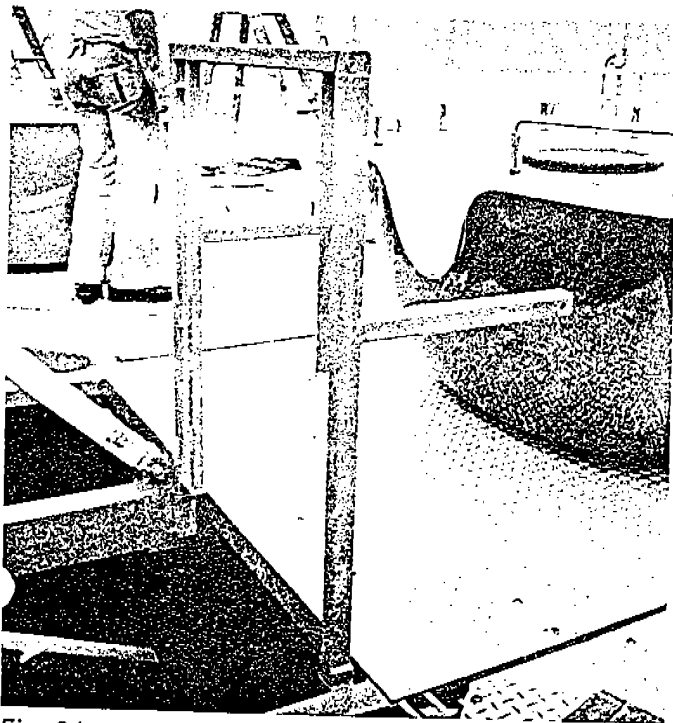


Fig. 64

- (2) Install the other rack section in the sockets on the rotating platform frame bars, near the center cone. Position the rack section so the racking slots face away from the center cone. (Fig. 65)

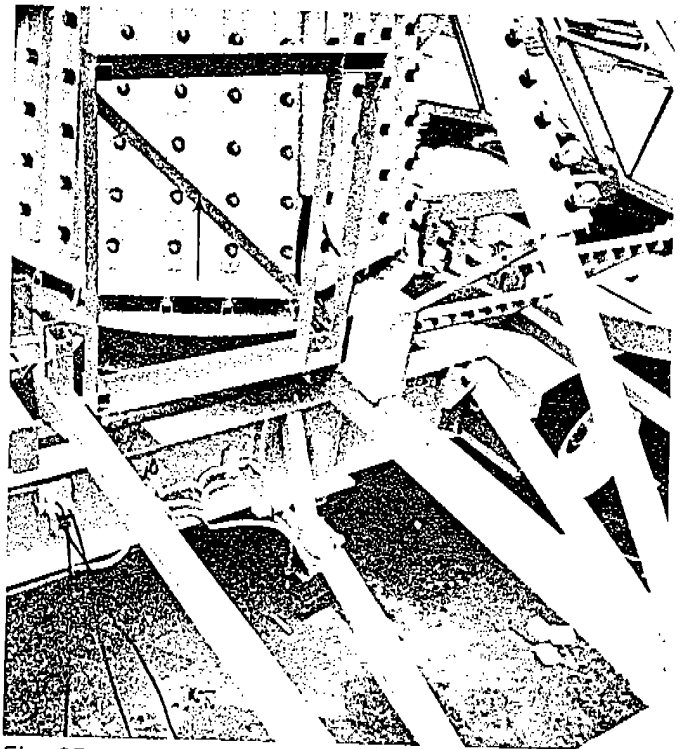


Fig. 65

- c. Store the ballys and the decorative panels in the following order:
 - (1) Store the decorative panels for the Tip Top sign to the right, near the inside fence rack.
 - (2) Store the ballys.
 - (3) Store the entrance ramp panels to the left, at the outside of the stack.
- d. Once all ballys and decorative panels are in place, run a locking rod between the two horizontal bars on the rear rack section. *Snap Key in Place.* (Fig. 66)

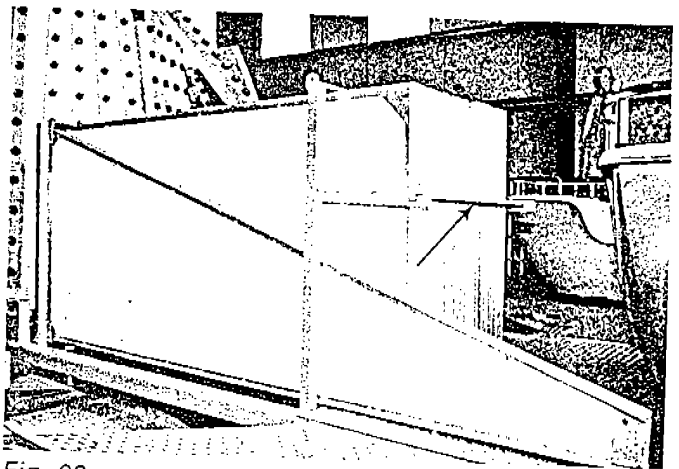


Fig. 66

9. STORE THE TIP TOP SIGN BRACES ON THE RIGHT SIDE OF THE BALLY STORAGE RACK
 - a. Square slots are located at the top of the front

rest on the rotating platform deck. (Refer to Fig. 70)

- (4) The support leg for "P" (c) rests in the #5 storage slots. Place the letter "P" on the rotating platform toward the front of the ride. (Refer to Fig. 70) -
- (5) The blank support leg rests along the inside edge of the rotating platform deck (d). Fit the hole in the center of the leg over the pin (a) that is located on the deck. (Fig. 71)
- (6) Place a locking bar (e) over the pin on a rack and over the support legs stored in the rack. The locking bar also fits over the blank support leg on the rotating platform deck. Secure in place with flat washer and wing nut. Repeat on the other rack. (Refer to Fig. 70)

11. RAISE THE ROTATING PLATFORM WING TIPS TO STORAGE POSITION

- a. Working under the rotating platform, release the tension on the five hinge clamps that lock each wing tip in operation position. Unscrew the tightening bolts (b) just enough to release the tension. Remove the snap keys (a) that hold the hinge clamps in locked position. (Refer to Fig. 35)
- b. Allow the clamps to hang down from the platform. (Refer to Fig. 34) Replace the snap keys in the fastening sockets under the platform.
- c. Remove the pin and snap key that hold the center hinge lock in locked position. (Refer to Fig. 33)
- d. Raise the wing tip to storage position by hand. (Refer to Fig. 32) **CAUTION:** This operation takes at least two or more men to safely handle the weight.
- e. Replace the pin in the center hinge lock to secure the wing tip in storage position. *Snap Key in Place.* (Refer to Fig. 31)
- f. Repeat on the other wing tip.

12. RAISE THE LARGE ROTATING PLATFORM SECTIONS TO STORAGE POSITION

- a. Six hinge clamps lock each large rotating platform section in operation position. Four of these hinge clamps are removable.
 - (1) Remove the four removable hinge clamps and store in the tool box.
 - (2) Release the tension on the permanently fixed hinge clamps by unscrewing the tightening bolts (b). Remove the snap keys (a) that hold the hinge clamps in locked position. (Refer to Fig. 35) Allow the clamps to hang down from the platform. Replace the snap keys in the fastening sockets under the platform.
- b. A set of double ears (b) is located on the support arm that extends from the center of the rotating

platform frame out to the rotating platform deck. Remove the snap key and pin from the ears. (Refer to Fig. 71)

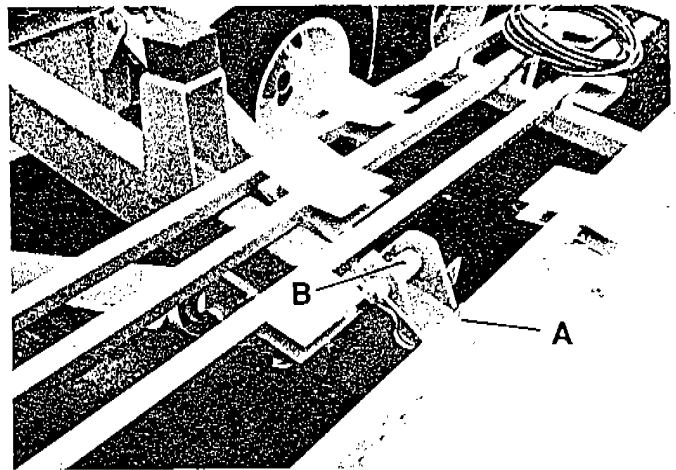


Fig. 71

- c. Start the hydraulic pump motor for one side. Pull the hydraulic control lever (b) up to raise the rotating platform section to full storage position. (Refer to Fig. 27)
- d. A hinged locking link is located on each side of the center cone. Lift a hinged locking link up to meet the double ears on the rotating platform. Fit the locking link between the double ears. Run the pin through the ears and the locking link. *Snap Key in Place.* (Refer to Fig. 30)
- e. Turn off the hydraulic pump motor.
- f. Repeat on the other side.

13. STORE THE BANJO LIGHTS IN THE SOCKETS ON THE LOWER FRAME BAR OF EACH LARGE ROTATING PLATFORM SECTION

- a. Six banjo lights are stored on each side of the ride.
- b. Position the banjo lights to arch toward the back of the ride. (Fig. 72)

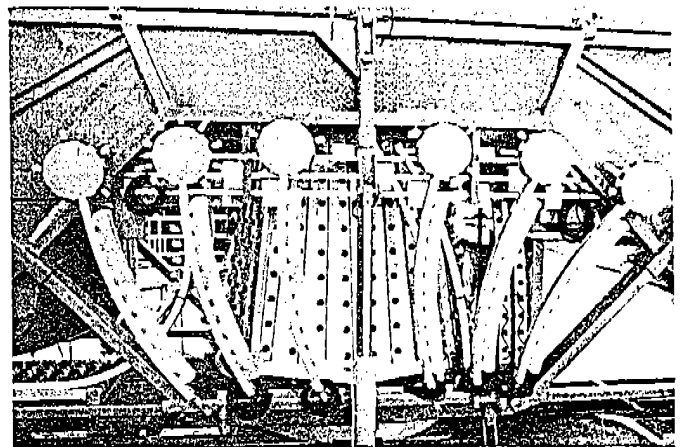


Fig. 72

- c. Wrap the electric cord in a coil as each banjo light is taken down. Loop the coil over the banjo light leg and slip the leg into storage locket.
- #### 14. RAISE THE STEPS AT THE END OF THE GOOSENECK RAMP TO STORAGE POSITION
- a. Hook the retaining hooks at the sides of the

steps over the pins on the gooseneck ramp handrails. (Fig. 73)

- b. Store the jack stands in the sockets under the step. *Snap Key in Place.* (Fig. 74)

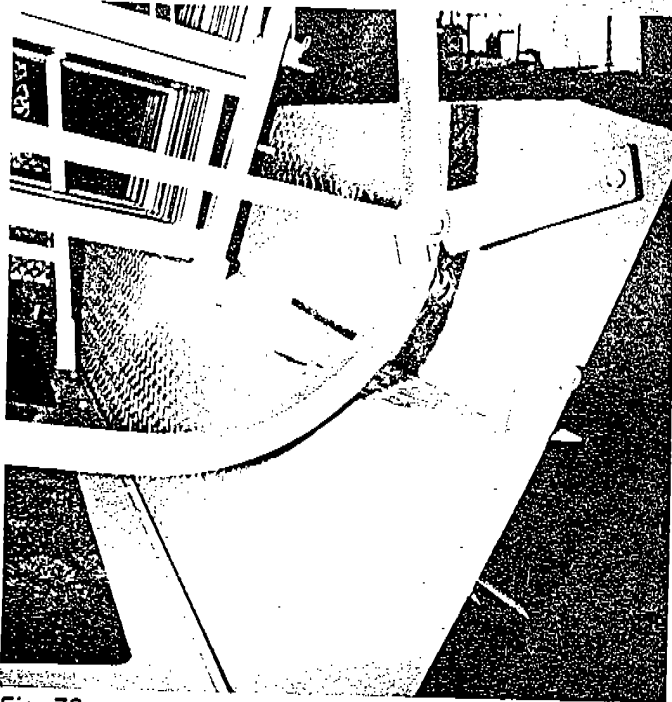


Fig. 73

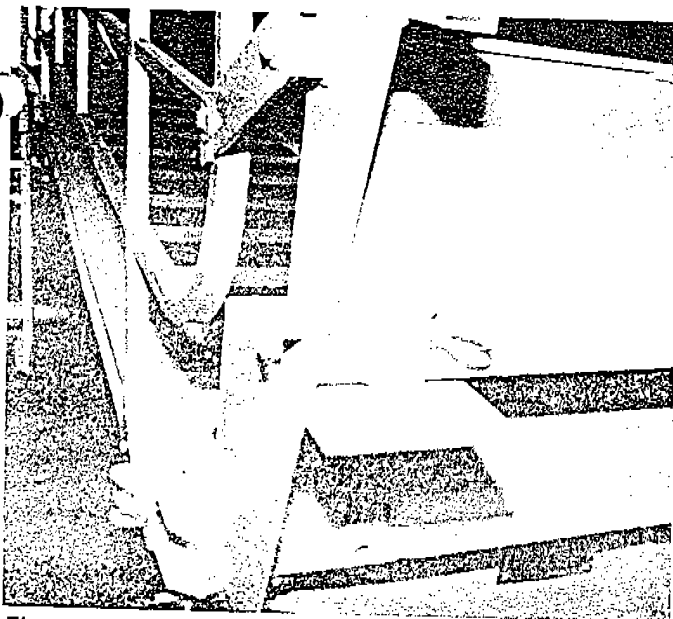


Fig. 74

15. SET UP THE LOADING RACKS ON THE UPTURNED STEP AT THE END OF THE GOOSENECK RAMP

- a. Six square holes are located in the step riser. Three loading rack sections are installed in these holes.
- b. Two racking bars with ten square socket pipes welded to each of them are used to store the walkway platform floor sections. Install the two racking bars on either side of the center handrail on the gooseneck. (Fig. 75)
 - (1) Slip the legs in the holes that are at the top

of the step riser (a). (Refer to Fig. 75)

- (2) The sockets on the bar face toward the center cone.

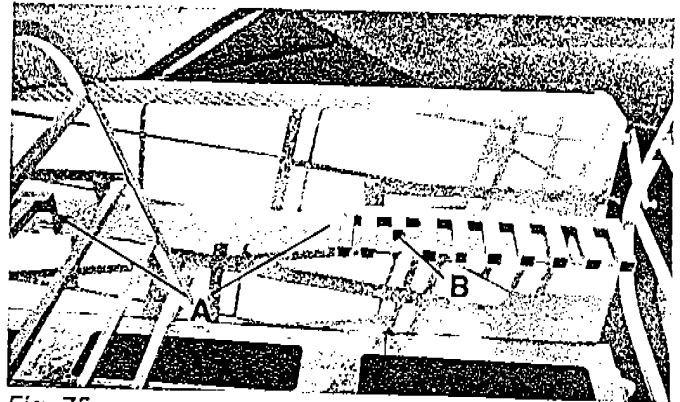


Fig. 75

- (3) NOTE: One racking bar is designed for installation on the left side of the step and the other is designed for the right side. Position the end of the racking bar with the short socket near the center handrail (b). (Refer to Fig. 75)

- c. One "H" shaped racking frame is used to store the walkway handrail sections. Two cross racks will be fastened to the frame during loading. Install the "H" racking frame in the two center holes on the step riser. (Fig. 76)

- (1) The pins on the two vertical legs of the "H" racking frame must face away from the center of the ride.
- (2) Position the permanently fixed cross bar of the "H" frame down close to the step riser.

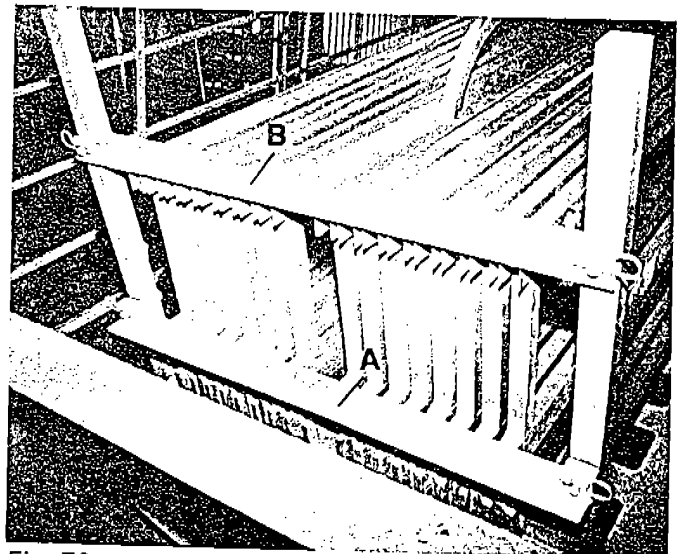


Fig. 76

16. STORE THE WALKWAY HANDRAIL SECTIONS BETWEEN THE "H" RACKING FRAME AND THE TWO ROWS OF RACKS UNDER THE CONTROL CONSOLE SEAT

- a. The walkway handrail sections are stored in two layers on both sides of the center handrail on the gooseneck ramp. The top walkway handrail sections are stored on the bottom layer. The

lower walkway handrail sections are stored on the top layer. (Fig. 77)



Fig. 77

b. Store the top walkway handrail sections.

- (1) A hook is located at both ends of the top cross bar of the handrail section. A series of pins is located on the center storage rack under the console seat. Fit the hook on one end of the handrail section between the pins on the rack (a). (Refer to Fig. 77)
- (2) Fit the hollow of the lower cross bar of the handrail section over a pin on the lower rack under the console seat (b). (Refer to Fig. 77)
- (3) The hook at the other end of the handrail section fits over the permanently fixed cross bar on the "H" frame (c). (Refer to Fig. 77)
- (4) Store all top walkway handrail sections in the same manner.

c. Once all the top walkway handrail sections are stored, install a cross rack between the vertical legs of the "H" frame (a). (Refer to Fig. 76)

- (1) Position the angle iron of the cross rack so the angle faces away from the ride, with the lip edge at the bottom.
- (2) Fit the holes in the ends of the cross rack over the lower set of pins on the "H" frame. *Snap Key in Place.*

d. Store the lower walkway handrail sections on top of the first layer of handrail sections.

- (1) Fit the slot in the lower cross bar of a handrail section over a pin on the cross rack on the "H" frame (d). (Refer to Fig. 77)
- (2) Raise the other end of the handrail section up and lower it so the slot in the top cross bar fits over a pin on the top rack behind the console seat (e). (Refer to Fig. 77)

e. Once all the lower walkway handrail sections are stored, install the top cross rack between the vertical legs of the "H" frame (b). (Refer to Fig. 76)

- (1) Position the angle iron of the cross rack with the flat side toward the outside of the ride. The lip edge is at the top, pointing in

toward the ride.

- (2) Fit the holes in the ends of the cross rack over the top set of pins on the "H" frame. *Snap Key in Place.*

17. STORE THE WALKWAY FLOOR SECTIONS ON BOTH SIDES OF THE CENTER HANDRAIL ON THE GOOSENECK

- a. Load all the floor sections from one side of the ride before loading the floor sections from the other side of the ride. The sections from the right side of the ride are stored on the right side of the gooseneck ramp. The floor sections from the left side of the ride are stored on the left side of the gooseneck ramp.
- b. Load the back floor section first. Store it next to the outside gooseneck handrail (a). (Fig. 78)

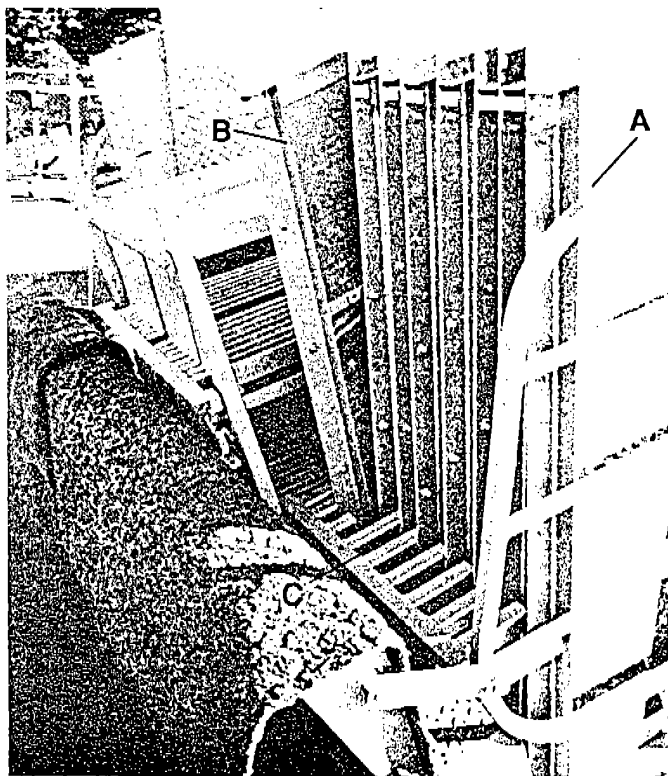


Fig. 78

- (1) Load the walkway floor sections in sequence, working from the back of the ride around to the front.
- (2) Store each section in the loading rack slots, starting from the outside of the ramp, working in toward the center of the ramp. The last section is stored next to the stack of walkway handrail sections (b). (Refer to Fig. 78)
- (3) Position each floor section with the kick ledge resting on the ramp. The tread plate faces in toward the center handrail of the gooseneck. Fit the edges of the floor sections between the spaces in the racking bar on the step (c). (Refer to Fig. 78)

c. Store the walkway floor sections from the other side of the ride in the same manner.

18. INSTALL THE HOLDING RACK FOR THE WALKWAY FLOOR SECTIONS

- The walkway floor holding rack is a long bar with square sockets welded to both ends.
- Rest the blank center area of the holding rack on the console seat (a). (Fig. 79)

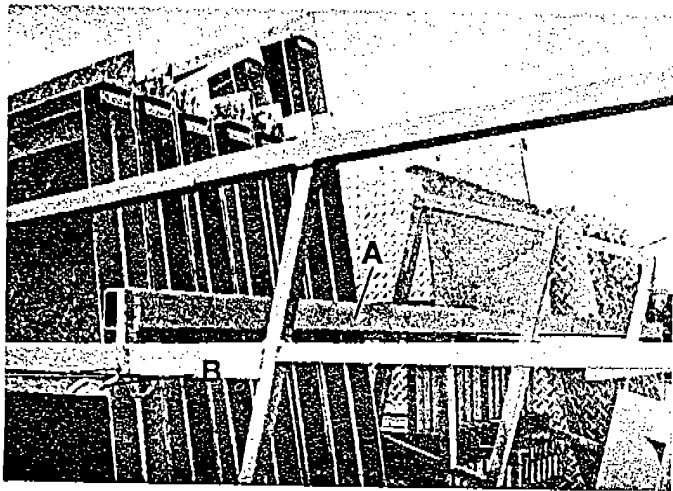


Fig. 79

- Position the holding rack so the edges of the floor sections fit between the sockets on the rack.
- Slip the legs at the ends of the holding rack in the holes in the two outside handrails on the gooseneck ramp. *Snap Key in Place* (b). (Refer to Fig. 79)

19. FOLD THE HINGED PLATE TO STORAGE POSITION. STORE THE SIDE EXTENSIONS TO THE BRIDGE. LOWER THE BRIDGE TO STORAGE POSITION

- Fold the hinged plate forward so that it rests on the gooseneck ramp.
- Store the side extensions to the bridge in the sockets on either side of the control console. (Fig. 80)

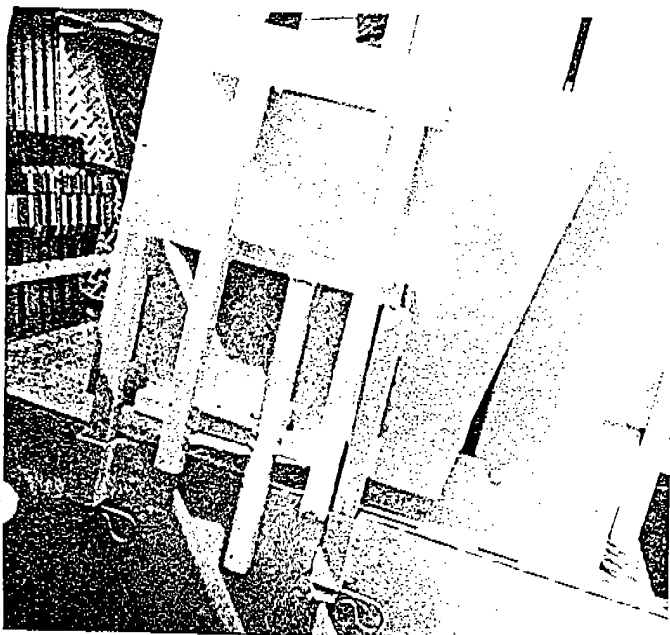


Fig. 80

- The right extension is stored on the right side and the left extension is stored on the left side of the control console.
- Position the tread plate to face in toward the control console.
- Slide the legs of the extensions into the sockets and *Snap Key in Place*.

c. CAUTION: Lower the bridge as far as possible. The ride must not be transported with the bridge at the same level as the rotating platform.

- Loosen the four nuts under the bridge support. Run the nuts all the way down the four support bolts. (Refer to Fig. 24)
- Run the top four nuts down to meet the bridge support. Tighten the four nuts in place.

20. RAISE THE GOOSENECK RAMP TO STORAGE POSITION

- Remove the snap keys and the large pins from the two large triangular hinges under the end of the gooseneck ramp (a). (Refer to Fig. 11)
- Start the hydraulic pump motor for the ramp (c). Push the hydraulic control lever down to raise the ramp (b). (Refer to Fig. 1)
- Once the ramp is in storage position, insert the pins in the lower rear holes in the two triangular hinges (a). *Snap Key in Place From Under the Gooseneck*. (Refer to Fig. 1)
- Turn off the hydraulic pump motor.
- Remove the gooseneck legs. Store the legs by slipping them down in the narrow space along the length of the trailer frame. (Fig. 81)

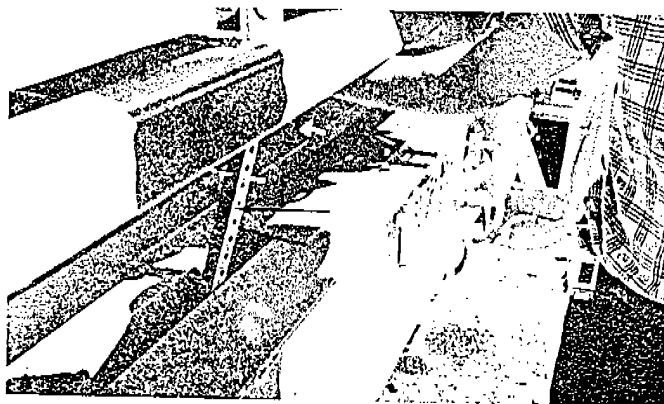


Fig. 81

21. STORE THE CENTER BACK WALKWAY SUPPORT FRAME ON THE UNDERSIDE OF THE RIGHT ROTATING PLATFORM SECTION

- Slide the two short legs of the center back walkway support frame in the sockets on the upturned rotating platform section. *Snap Key in Place*. (Fig. 82)
- Adjust the position of the two walkway frame attachment bars on the back end of the trailer frame. Lift the bars out of the sockets and replace them in the same sockets with the arms flat against the back of the trailer. *Snap Key in Place*. (Fig. 83)

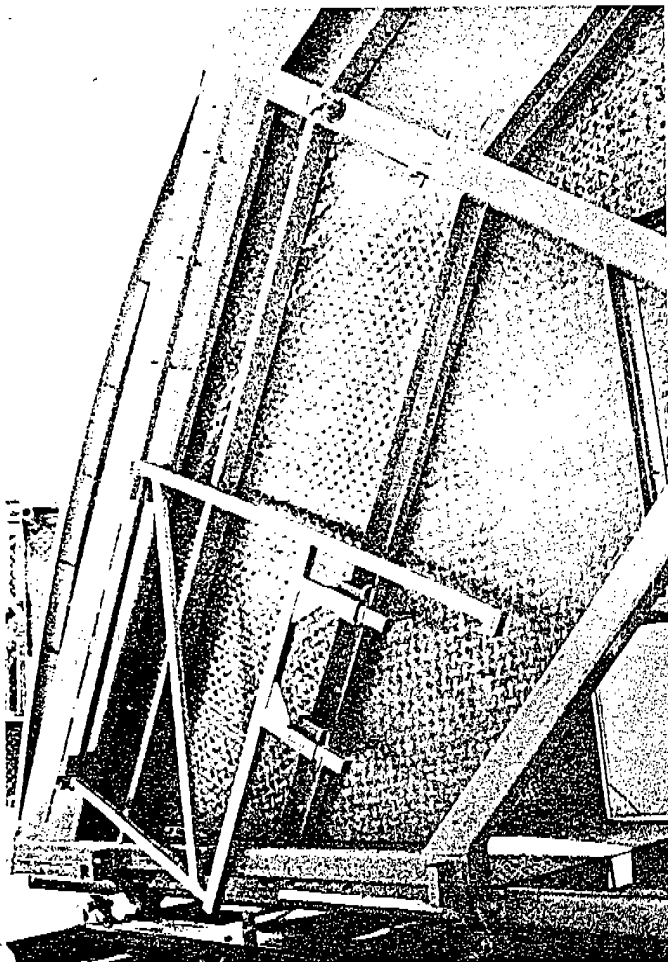


Fig. 82

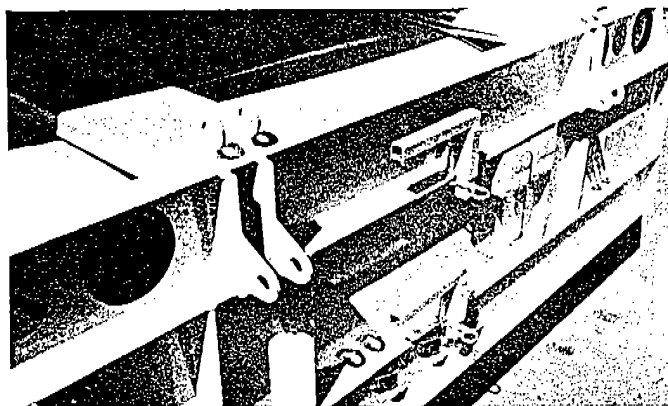


Fig. 83

22. SET UP THE STORAGE RACK FOR THE WALKWAY SUPPORT FRAME SECTIONS AT THE END OF THE GOOSENECK RAMP

- a. The walkway support frame rack is installed in two holes at the end of the gooseneck ramp. (Fig. 84)
 - (1) Fit the legs of the rack in the holes. Secure in place by tightening the set screws at the end of the gooseneck ramp (a). (Refer to Fig. 84)
 - (2) Position the rack so the long ends of the racking bars point away from the center cone (b). (Refer Fig. 84)

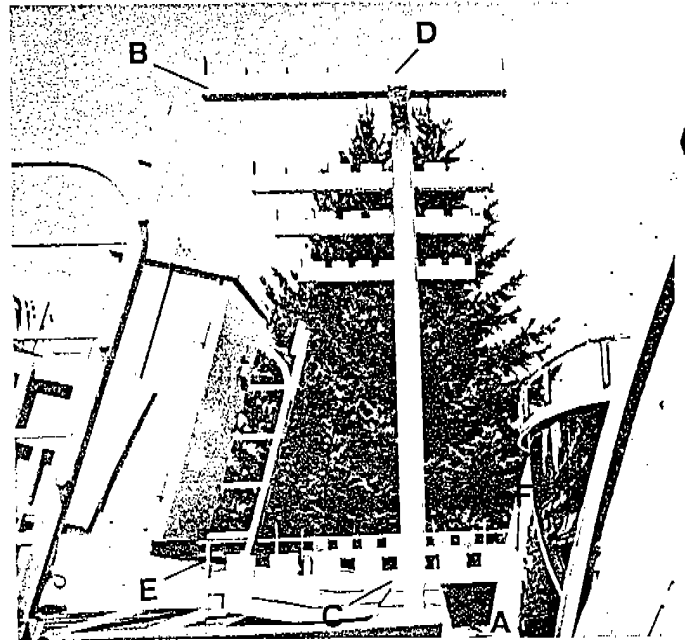


Fig. 84

23. STORE THE WALKWAY SUPPORT FRAME SECTIONS ON THE RACK

- a. Load all the walkway support frame sections on one side of the ride before loading the other side. The frame sections on the right side of the ride are loaded from the right side of the gooseneck. The frame sections on the left side of the ride are loaded from the left side of the gooseneck.
- b. Load the back walkway support frame section first. Store it on the rack in the slots that are closest to the control console (a). (Fig. 85)
 - (1) Position the support frame section with the long bar resting in the lower rack slots (c). (Refer to Fig. 84)

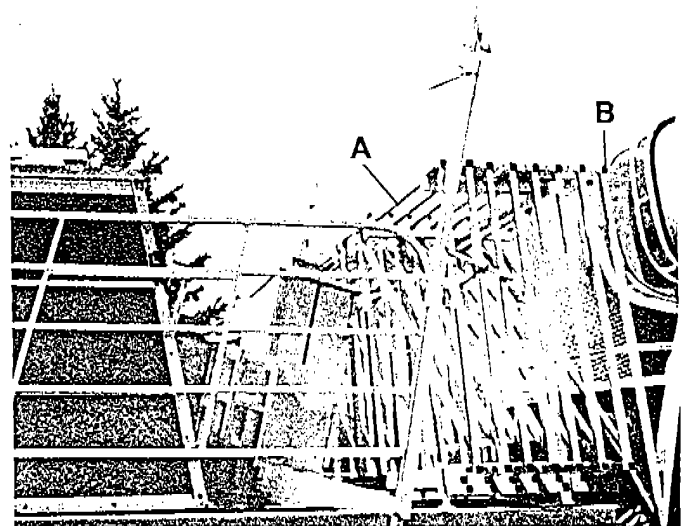


Fig. 85

- (2) Slide the long bar across to the rack slot on the other side of the ramp.
- (3) The top of the walkway support frame rests in the upper rack slots (d). (Refer to Fig. 84)

- c. Continue to load the walkway support frames in sequence, working from the back of the ride to the front. Store each frame section in the slots on the rack, working from the control console in toward the center of the ride.
- d. **NOTE:** When you come to the walkway steps, disassemble them and set aside for later storage.
- e. **IMPORTANT:** Do not load the large walkway support frame that is located next to the gooseneck ramp. The large walkway support frame sections at either side of the gooseneck ramp are loaded last, after all the other walkway support frames from both sides of the ramp have been stored on the rack.
- f. Load the walkway support frame sections from the other side of the ride. Work from the back of the ride around to the front. The first frame section from the back is loaded on the rack in the slots that are closest to the control console (a). (Refer to Fig. 85)
- g. **IMPORTANT:** The walkway support frame sections that are loaded from the second side are positioned upside down, in relation to those first loaded.
 - (1) The long walkway frame bars rest on the upper rack, on top of the first frame sections loaded.
 - (2) Slide the long walkway frame bars across to the other side of the ramp. Allow the lower walkway frame bars to rest on the first frame sections stored in the lower rack slots.
- h. After all the walkway support frame sections are loaded on the rack, load the two large walkway support frame sections (b). (Refer to Fig. 85)
 - (1) Start from the same side that was loaded first. Slide the long bar of the large walkway support frame section across to the other side of the gooseneck ramp. Allow the long bar to rest in the lower rack slots.
 - (2) **NOTE:** A pin (a) is welded to one of the bars of each of the large walkway support frame sections. Be sure to position the frame sections on the rack so the pins point toward the back of the ride. (Fig. 86)

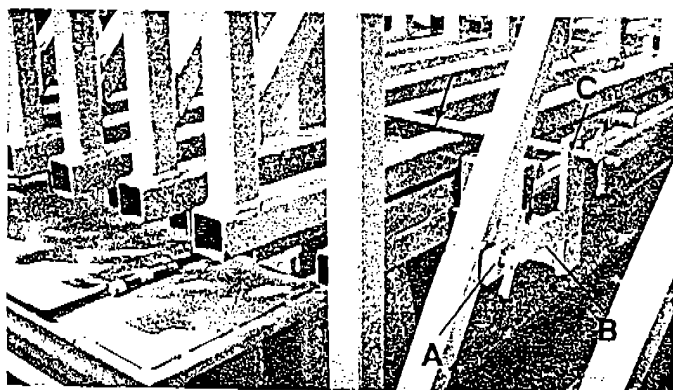


Fig. 86

- (3) Load the second large walkway support frame section from the other side of the ride. Allow the long bar to rest on the lower rack, on top of the other large frame section.
- (4) **NOTE:** The large walkway support frame sections will hang down between the end of the gooseneck ramp and the rotating platform.
- i. Secure all the walkway support frame sections in place with a locking rod on each side of the rack.
 - (1) There is a fastening ear at either end of the lower racking bar (e & f). (Refer to Fig. 84) The ear located toward the center cone is "T" shaped. It has two fastening holes in it (b). (Refer to Fig. 86)
 - (2) Run a locking rod through the forward ear (e). (Refer to Fig. 84) Pass the rod over the walkway support frames. Run it through the top hole in the "T" shaped ear (c). *Snap Key in Place.* Fit the other hole in the "T" shaped ear over the small pin on the large walkway support frame (a). *Snap Key in Place.* (Refer to Fig. 86)
 - (3) Install a locking rod on the other side of the rack in the same manner.

24. STORE THE TWO WALKWAY STARTING BARS

- a. To store each walkway starting bar, lift the hooks on the bar out of the sockets on the gooseneck handrail and ramp (a). Raise the starting bar up so the lower end is at the level of the gooseneck ramp. (Refer to Fig. 12)
- b. The starting bar is made up of two bars welded together, side by side. There is a pin at the base of the top bar (a). Slide the pin into the top socket on the handrail. *Snap Key in Place.* The hook at the bottom of the starter bar (b) slips into the square slot on the gooseneck ramp. (Fig. 87)

25. SET UP THE STORAGE RACK FOR THE WALKWAY PLATFORM STEPS, HANDRAILS AND STEP JACK SUPPORT FRAMES

- a. The rack is secured to the two sets of double ears at the back end of the trailer frame (a). Position the rack so the double ears (b) on the rack legs are on top. Slide the rack legs between the double ears on the trailer frame. *Pin and Snap Key in Place.* (Fig. 88)
- b. Allow the top of the rack to rest on the ground while loading one set of handrails, steps and step jack support frame.
- c. The rack is made up of upper racking bars (c) and lower racking bars (d) that will support the assembly parts for the platform steps in storage. (Refer to Fig. 88)

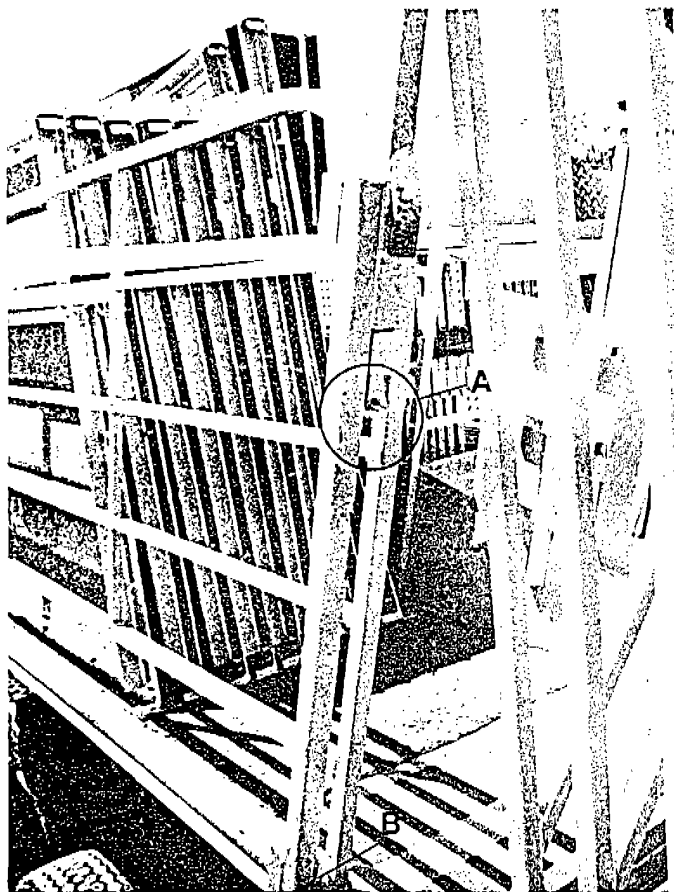


Fig. 87

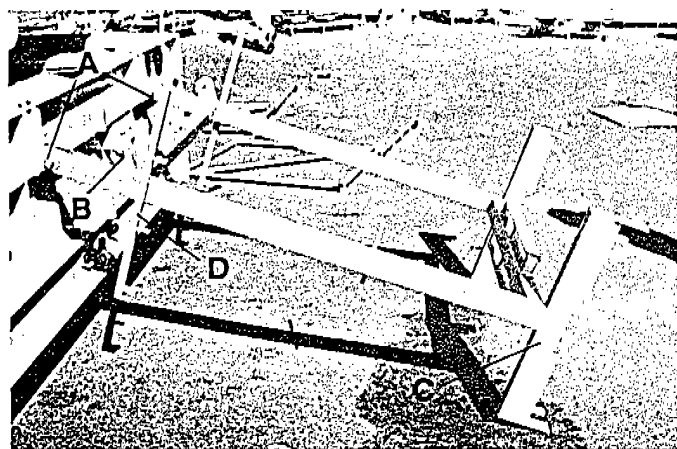


Fig. 88

26. STORE THE HANDRAILS, STEPS AND STEP JACK SUPPORT FRAMES ON THE STORAGE RACK

- a. Stack two handrails over the top racking bar. Position the handrails in the storage slots on the rack. (Fig. 89)
- b. Stack the one set of steps on top of the handrails. Hang one side of the step frame on the top racking bar with the tread plate facing up. Rest the other side of the steps frame on the lower racking bar. (Fig. 90)
- c. Stack a step jack support frame on top of the steps.
 - (1) Hang the cross bar of the step jack support frame over the top racking bar. Position the

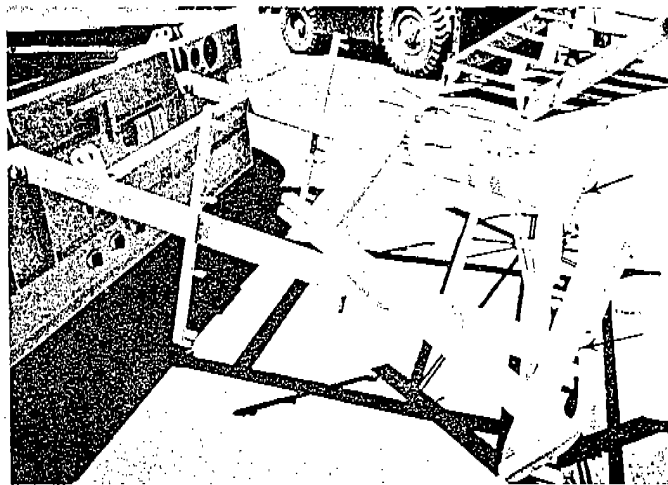


Fig. 89

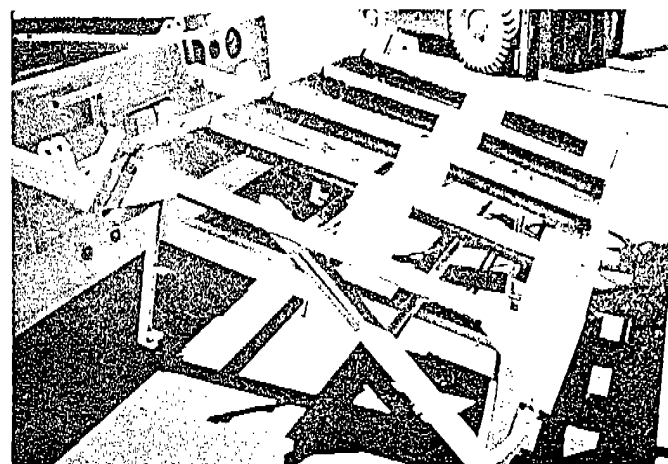


Fig. 90

- knobs (a) on the cross bar to face up. (Refer to Fig. 93)
- (2) Slip the holes in the ends of the cross bar over the pins at both ends of the steps frame (b). (Refer to Fig. 93)
- d. Raise the rack to an upright position above the trailer deck. (Fig. 91) As the rack reaches the upright position, the double ears on the legs of the rack will fit between the two sets of double ears on the back of the trailer frame. *Pin and Snap Key in Place.* (Fig. 92)
- e. Load the remaining handrails, steps and step jack support frame on the other half of the rack.
 - (1) Load the handrails first.
 - (2) Position the steps with the tread plate facing in toward the ride.
 - (3) Position the step jack support frame with the knobs on the cross bar facing away from the ride. Be sure to fit the holes at the ends of the cross bar over the pins at both ends of the steps frame. (Refer to Fig. 91)
- f. Fastening ears are located at both ends of the two top racking bars (c). Run a locking rod (d) through an inside fastening ear and through the hole in the cross bar of the step jack support frame. Pass the locking rod over the top of the stack. Run the rod through the hole in the cross

bar of the outside step jack support frame and continue through the hole in the outside fastening ear. *Snap Key in Place.* Repeat on the other side of the rack. (Fig. 93)

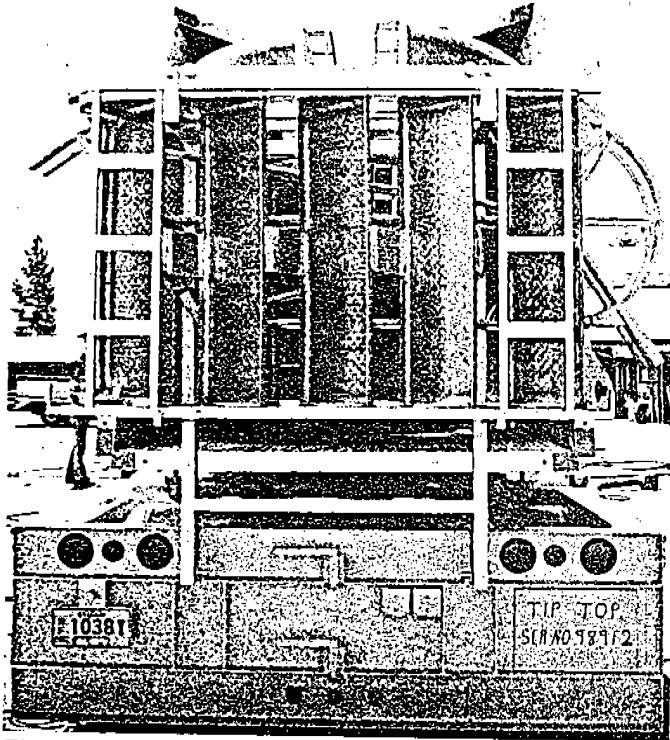


Fig. 91

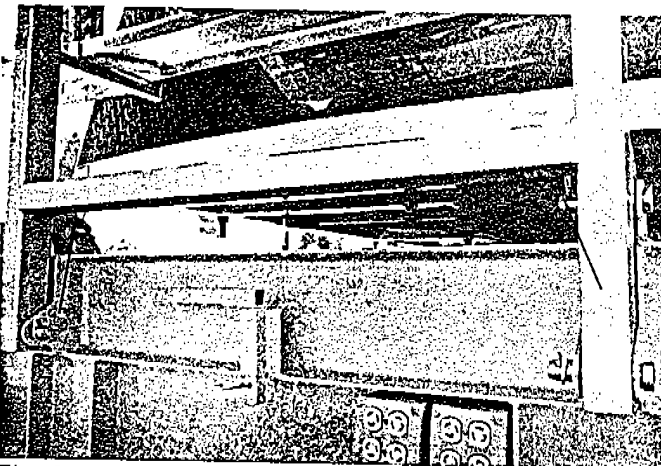


Fig. 92

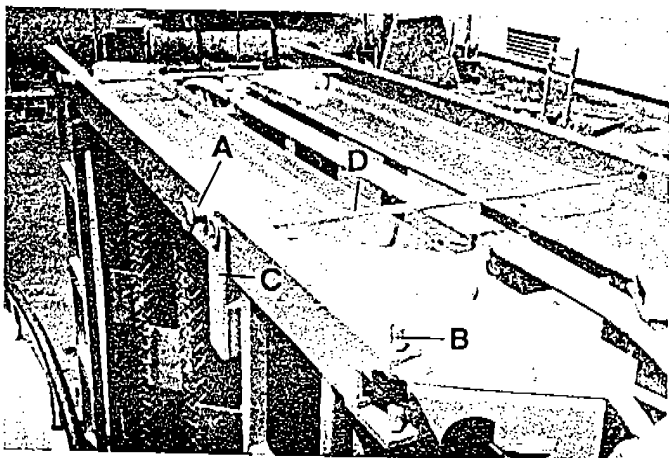


Fig. 93

27. STORE THE JACK STANDS FOR THE WALKWAY SUPPORT FRAME SECTIONS AND THE WALKWAY STEPS ALONG BOTH SIDES OF THE TRAILER FRAME

Slip the legs of the jack stands down in the narrow space along the length of the trailer frame. (Refer to Fig. 81)

28. INSTALL THE TWO ROTATING PLATFORM JACKS ON EITHER SIDE OF THE TRAILER FRAME

- The fastening pipes for the rotating platform jacks are located on either side of the trailer frame, behind the rear tires. Install a jack bolt in a fastening pipe. (Refer to Fig. 28)
- NOTE: It is necessary to turn the rotating platform slightly to install the rotating platform jacks. Return the platform to storage position once the jacks are installed.
- Rotate the circular plate on the jack until the support head on the jack contacts the rotating platform frame bar.
 - The vertical edge of the support head fits up against the inside of the rotating platform frame bar (b). (Refer to Fig. 28)
 - Once the support head contacts the rotating platform frame bar, continue to rotate the circular plate two to four more times to tighten the rotating platform in storage position.
- Align the holes in the circular plates on the jack and the fastening pipe. Secure the plates together by locking the snap hook at the end of the safety chain through the aligned holes in the two plates.
- Repeat on the other side.
- CAUTION: The rotating platform must be tightly secured in storage position with the two rotating platform jacks to prevent damage to the ride during transport.

29. STORE THE TWO OUTRIGGERS ALONG THE SIDES OF THE TRAILER FRAME

- Secure the turnbuckle against the outrigger with a pin and snap key (a). Position the outrigger along the side of the trailer frame with the turnbuckle to the outside. The bottom of the sand shoe rests flat against the side of the trailer frame. Slide the edge of the sand shoe behind the vertical holding bar on the trailer frame (b). (Fig. 94)

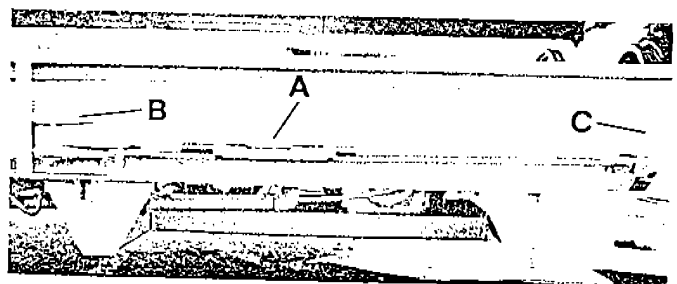


Fig. 94

- b. Rest the top of the outrigger on top of the support ear on the trailer frame. Align the holes in the end of the outrigger with the hole in the support ear. Drop a pin through the outrigger and the ear (c). *Snap Key in Place.* (Refer to Fig. 94)

30. RAISE THE TWO SIDE SCREW JACKS TO STORAGE POSITION

- a. Rotate the plate at the end of the screw jack until it meets the jack housing fixture.
- b. Loop the safety chain through one of the pipes on the plate. Hook the chain lock into the chain link. (Fig. 95)
- c. Repeat on the other side.

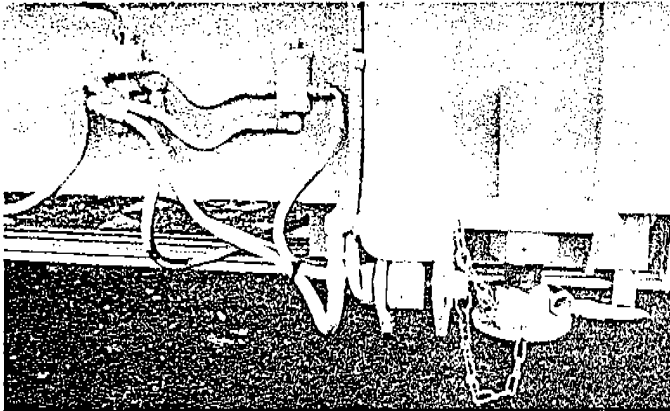


Fig. 95

1. RAISE THE REAR LANDING GEARS TO STORAGE POSITION

- a. The crank handles for the rear landing gears are stored on either side of the trailer, in the area between the stored outrigger and the side of the trailer frame. (Refer to Fig. 2)
- b. Install a crank handle to the crank holder on the rear landing gear. Pin in place.
- c. Raise the landing gear just enough for the sand shoe to be off the ground.
- d. Remove the sand shoe from the landing gear. Store the sand shoe pipe (a) between the sand shoe ears. Store the sand shoe in the brackets on the fender, in front of the rear tires (b). Position the bottom plate flat against the fender. Install a set screw (c) in the hole at the outside end of the lower bracket. Tighten the set screw until it meets the fender. (Fig. 96)
- e. Continue to raise the landing gear until the fastening plate meets the housing fixture. (Fig. 97)
- f. Repeat on the other side.
- g. Store the crank handles on either side of the trailer frame. (Refer to Fig. 2)

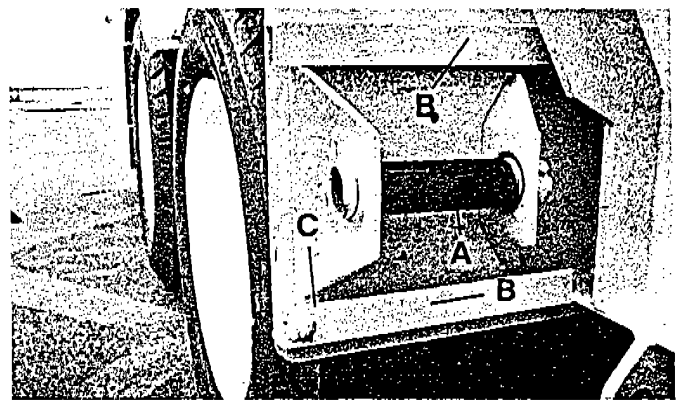


Fig. 96

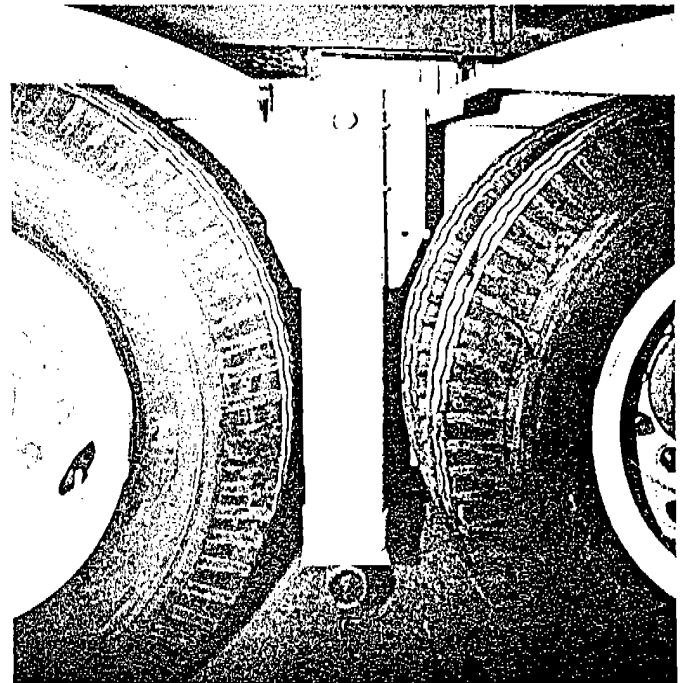


Fig. 97

The miscellaneous items include the dome light extender bar, tool box, power cables, etc.

32. HOOK THE TRACTOR TO THE TRAILER AND RAISE THE FRONT LANDING GEARS TO STORAGE POSITION

33. STORE MISCELLANEOUS ITEMS ON THE GOOSENECK, NEXT TO THE CONTROL CONSOLE

TIP TOP RIDE

Lubrication Instructions

The Tip Top ride has been designed to operate with a minimum of lubrication and other maintenance requirements. There are, however, some parts of the ride that do require periodic attention.

Hydraulic System:

The oil tank for the hydraulic system is located on the left side of the trailer frame, just behind the compressor. Check the oil level weekly. The manufacturer recommends using Chevron EP 32 oil.

Air Cylinder Oiling:

Lubrication of the two main air cylinders is through two drip oilers at the top of the cylinders. Fill both oilers with S.A.E. 20 motor oil each day before starting up the ride. Adjust the oilers by turning the knurled rings at their tops to unlock them. Oil flow is increased by turning the adjustment up, counter clockwise, and decreased by turning the adjustment down, clockwise. Flip the turn-off levers at the top of the oilers when the ride is not in use.

Frame Bearing Hinge Lubrication: Weekly.

There are 4 grease fittings on the frame bearing hinges, located at the front of the inner and outer main frames under the gooseneck walkway. Lubricate these 4 fittings liberally once each week with a medium consistency chassis lubricant.

Air Cylinder Pivot Pins: Weekly

The 4 air cylinder pivot pins are the actual mountings of the two operating air cylinders. Two grease blocks are mounted on the right side of the frame. These 4 fittings must be greased once each month, using a medium consistency chassis lubricant, with hand or power-operated pressure grease gun.

Air Cylinder Pivot Pins: Weekly.

The 4 air cylinder pivot pins are the actual mountings of the two operating air cylinders. Two are in the piston rod eyes at the upper ends of the cylinders and two are in the pivotal mountings at the lower ends of the cylinders. These 4 fittings must be greased once each month, using a medium consistency chassis lubricant, with hand or power-operated pressure grease gun.

Platform Drive Unit Countershaft Housing: Weekly.

The countershaft housing is part of the platform main drive unit located between the inner frame I-beam members at the front of the ride. The ride is supplied with two fittings on the countershaft housing which must be greased once each week.

Landing Gear: Monthly.

Four grease fittings are located on the front landing gear. Lubricate once a month.

Main Support Screw Jacks: Monthly.

The Screw Jacks are built into the main support frame cross member at the center of the ride. Two grease fittings at the top of the screw jack housings should be lubricated once a month.

Trailer Brake Cross Shaft: Monthly.

There are 4 grease fittings on the trailer brake cross shafts and two grease fittings on the spring hangers. These should be lubricated once each month or each five thousand miles of road travel.

Seat Support Shaft Housing: Monthly.

There are two grease fittings in each seat support shaft housing. One just under the steering wheel and the other just above the floor mounting flange. Lubricate both fittings in each of the 8 seat units once a month.

Main Roller Assemblies

The roller assemblies are equipped with a 90° fitting on each roller. Lubricate these rollers every week.

Roller Track Ring: Weekly

The roller track ring is lubricated by brushing on an open gear lubricant once a week. Apply thinly but evenly and repeat as necessary to eliminate noise and wear between the rollers and the ring surfaces.

Oil Can Lubrication: Occasionally.

Lubricate hinges, pins, links, etc., occasionally with an oil can to permit easier assembly and prevent rusting.

recommended.

4. *Worn piston rings.* Recondition the cylinders, pistons, and install new rings.

I. Compressor overheating.

1. *Outside of the compressor dirty.* Keep accumulations of dirt and oil washed off. Keep fans and shrouds clean. Also keep cooling fins clean.
2. *Running the compressor backwards.* If this happens, correct the situation immediately. If compressor has been run backwards, check the service manual for other areas of damage. Check arrow on flywheel for correct rotation.
3. *Valves not seating properly.* Remove and service the valves as necessary. See service manual.

J. Ride will not rise when bounce control valve actuated.

1. Check for broken or disconnected air lines.
2. No air pressure in tanks—check compressor.
3. Check actuating cylinder on ball valves for malfunction. Repair or replace.
4. Bounce control valve malfunction. Replace valve.
5. Restricted air line. Clean and blow out all control air lines.

HYDRAULIC SYSTEM AND ELECTRIC DRIVE ASSEMBLY

CAUTION: TURN OFF THE MAIN POWER SOURCE BEFORE WORKING THE ELECTRICAL SYSTEM.

A. Platform will not raise.

1. Incorrect pump rotation. Check arrow on electric motor and pump for correct rotation. (Refer to Fig. 10)
2. Cylinders not installed to platform.
3. Hydraulic control valve inoperative—replace valve.
4. Clamps on hinges not released.
5. Oil level low in tank.
6. Electric switch malfunction.
7. Motor control switch in main switch box (d). Check for burned out coil. (Fig. 99)

B. Platform will not lower.

1. Platform locking link pin not removed.
2. Dump relief valve malfunction—replace relief valve.
3. Low oil level in tank.
4. Cylinder malfunction—disassemble and repair.

C. Excessive drive tire noise.

1. Too much tire pressure—tire must have 28 p.s.i. air pressure.
2. Insufficient tire-to-track pressure—adjust tire to permit full tread width contact against track.
3. Drive belts loose—adjust belts.

D. Platform will not rotate.

1. Platform rotation lock still in place. (Refer to Fig. 28)
2. Electric motor burned out. Check and replace.
3. Check the main switch box. (Refer to Fig. 99)
 - a. Loose wires (a).
 - b. Burned out fuses (b).
 - c. Burned out heaters (c).
 - d. Burned out coil on motor control switch (d).
4. Drive tire not in contact with track.

E. Platform starts or stops too slow.

1. Wrong level of oil in hydrosheave.
2. Drive belts slipping—adjust or replace the belts.
3. Adjustment of tire to track insufficient.
4. Too much air in the drive tire.