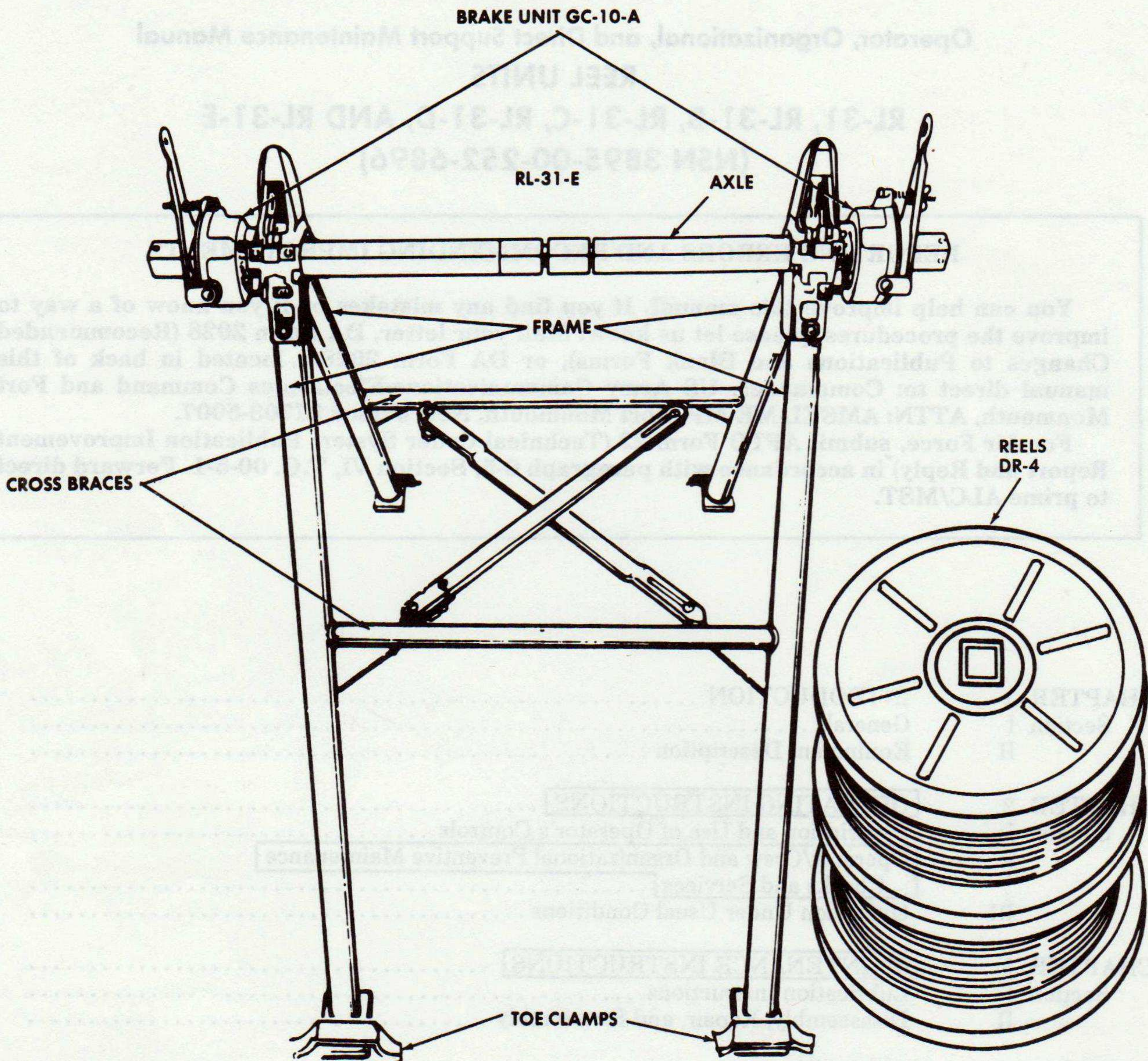


DEPARTMENT OF THE ARMY
AND THE AIR FORCE
Washington, DC, 12 January 1968

TECHNICAL MANUAL
NO. 11-3895-202-13
TECHNICAL ORDER
NO. TO 36C13-3-1

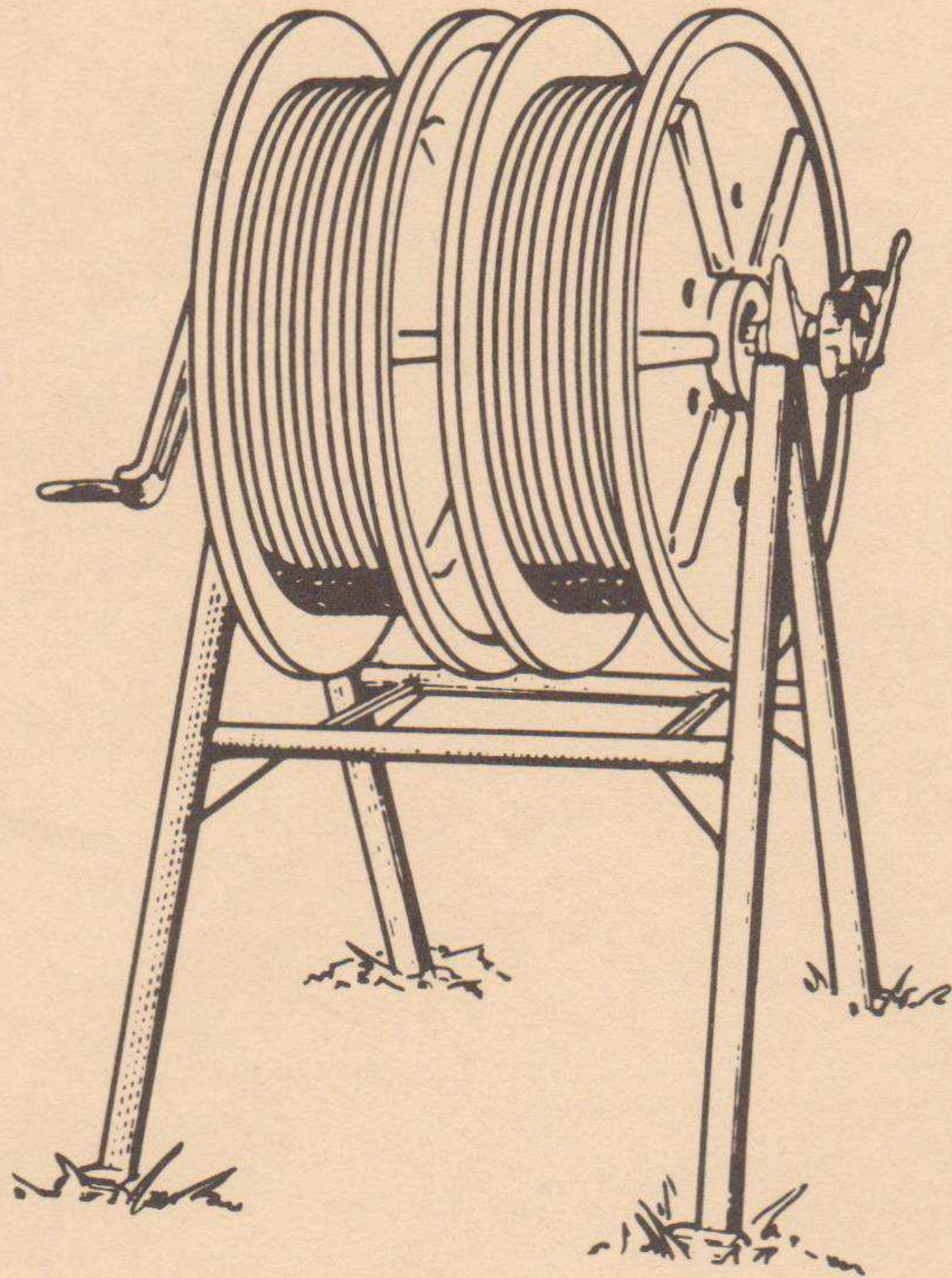


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ARMY TM 11-3895-202-13 AIR FORCE TO 36C13-3-3-1

W1-27

Operator, Organizational, and
Direct Support Maintenance Manual



OPERATING
INSTRUCTIONS
PAGE 2-1

PMCS
PAGE 2-2

MAINTENANCE
INSTRUCTIONS
PAGE 3-1

REEL UNITS RL-31, RL-31-B, RL-31-C, RL-31-D, AND RL-31-E (NSN 3895-00-252-6896)

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DEPARTMENTS OF THE ARMY AND THE AIR FORCE
15 JANUARY 1986

WARNING

READ AND OBSERVE ALL WARNINGS AT BEGINNING OF THIS MANUAL

A REVIEW OF TB 385-4, SAFETY PRECAUTIONS FOR MAINTENANCE OF ELECTRICAL/ELECTRONIC EQUIPMENT, IS RECOMMENDED



5

SAFETY STEPS TO FOLLOW IF SOMEONE IS THE VICTIM OF ELECTRICAL SHOCK

1

DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL

2

IF POSSIBLE, TURN OFF THE ELECTRICAL POWER

3

IF YOU CANNOT TURN OFF THE ELECTRICAL POWER, PULL, PUSH OR LIFT THE PERSON TO SAFETY USING A WOODEN POLE OR A ROPE OR SOME OTHER INSULATING MATERIAL

4

SEND FOR HELP AS SOON AS POSSIBLE

5

AFTER THE INJURED PERSON IS FREE OF CONTACT WITH THE SOURCE OF ELECTRICAL SHOCK, MOVE THE PERSON A SHORT DISTANCE AWAY AND IMMEDIATELY START ARTIFICIAL RESUSCITATION

WARNING

- Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with the skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.
- Compressed air shall not be used for cleaning purposes except where reduced to less than 29 pounds per square inch (psi) and then only with effective chip guarding and personnel protective equipment. Do not use compressed air to dry parts when TRICHLOROTRIFLUOROETHANE has been used. Compressed air is dangerous and can cause serious bodily harm if protective means or methods are not observed to prevent chip or particle (of whatever size) from being blown into the eyes or unbroken skin of the operator or other personnel.
- To avoid injury to personnel or damage to equipment, only personnel directly engaged in the loading or unloading of the assemblage should be permitted near the truck, lifting equipment, or assemblage. To eliminate confusion, all instructions should come from the loading crew supervisor.
- Cleaning compound is flammable and its fumes are toxic. Provide adequate ventilation. Do not use near a flame.

CAUTION

When tightening bolts, be careful not to use too much force or stripping of threads may result.

TECHNICAL MANUAL }
NO. TM 11-3895-202-13 }
TECHNICAL ORDER }
NO. TO 36C13-3-3-1 }

DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
Washington, DC, 15 January 1986

Operator, Organizational, and Direct Support Maintenance Manual
REEL UNITS
RL-31, RL-31-B, RL-31-C, RL-31-D, AND RL-31-E
(NSN 3895-00-252-6896)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-ME-MP, Fort Monmouth, New Jersey 07703-5007.

For Air Force, submit AFTO Form 22 (Technical Order System Publication Improvement Report and Reply) in accordance with paragraph 6-5, Section VI, T.O. 00-5-1. Forward direct to prime ALC/MST.

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*This manual supersedes TM 11-362, dated 25 June 1956, including all changes.

CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. SCOPE

- This manual contains information on the description, installation, operation, maintenance, and repair of Reel Unit RL-31-(*).
- Basic nomenclature followed by an (*) is used to cover all models of the equipment herein. Thus, Reel Unit RL-31-(*) refers to Reel Units RL-31, RL-31-B, RL-31-C, RL-31-D, and RL-31-E.

1-2. MAINTENANCE FORMS AND RECORDS

- *Reports of Maintenance and Unsatisfactory Equipment.* Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750 as contained in Maintenance Management Update. Air Force personnel will use AFR 66-1 for maintenance reporting and TO-00-35D54 for unsatisfactory equipment reporting. Navy personnel will report maintenance performed utilizing the Maintenance Data Collection Subsystem (MDCS) IAW OPNAVINST 4790.2, Vol 3 and unsatisfactory material/conditions (UR submissions) IAW OPNAVINST 4790.2, Vol 2, chapter 17.
- *Report of Packaging and Handling Deficiencies.* Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55/NAVMATINST 4355.73B/AFR 440-54/MCO 4430.3H.
- *Discrepancy in Shipment Report (DISREP) (SF 361).* Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361) as prescribed in AR 55-38/NAVSUPINST 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 4500.15.

1-3. CONSOLIDATED INDEX OF ARMY PUBLICATIONS AND BLANK FORMS

Refer to the latest issue of DA Pam 310-1 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

1-4. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your reel unit needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-PA-MA-D, Fort Monmouth, New Jersey 07703-5023. We'll send you a reply.

Air Force personnel are encouraged to submit EIR's in accordance with AFR 900-4.

1-5. ADMINISTRATIVE STORAGE

Administrative Storage of equipment issued to and used by Army activities will have preventive maintenance performed in accordance with the PMCS charts before storing. When removing the equipment from administrative storage, the PMCS should be performed to assure operational readiness. Disassembly and repacking of equipment for shipment or limited storage are covered in chapter 6 of TM 740-90-1.

1-6. DESTRUCTION OF ARMY ELECTRONICS MATERIEL

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

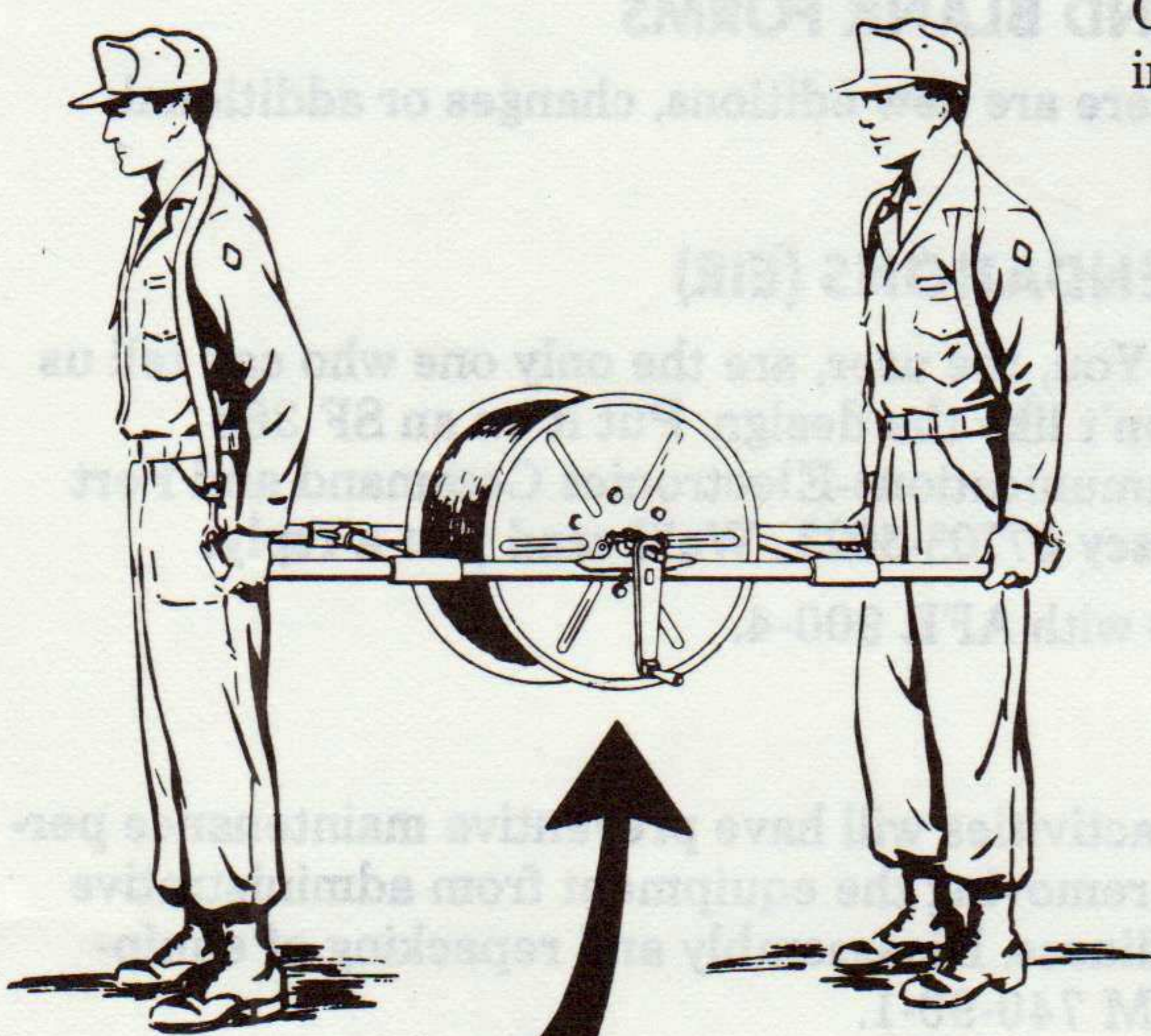
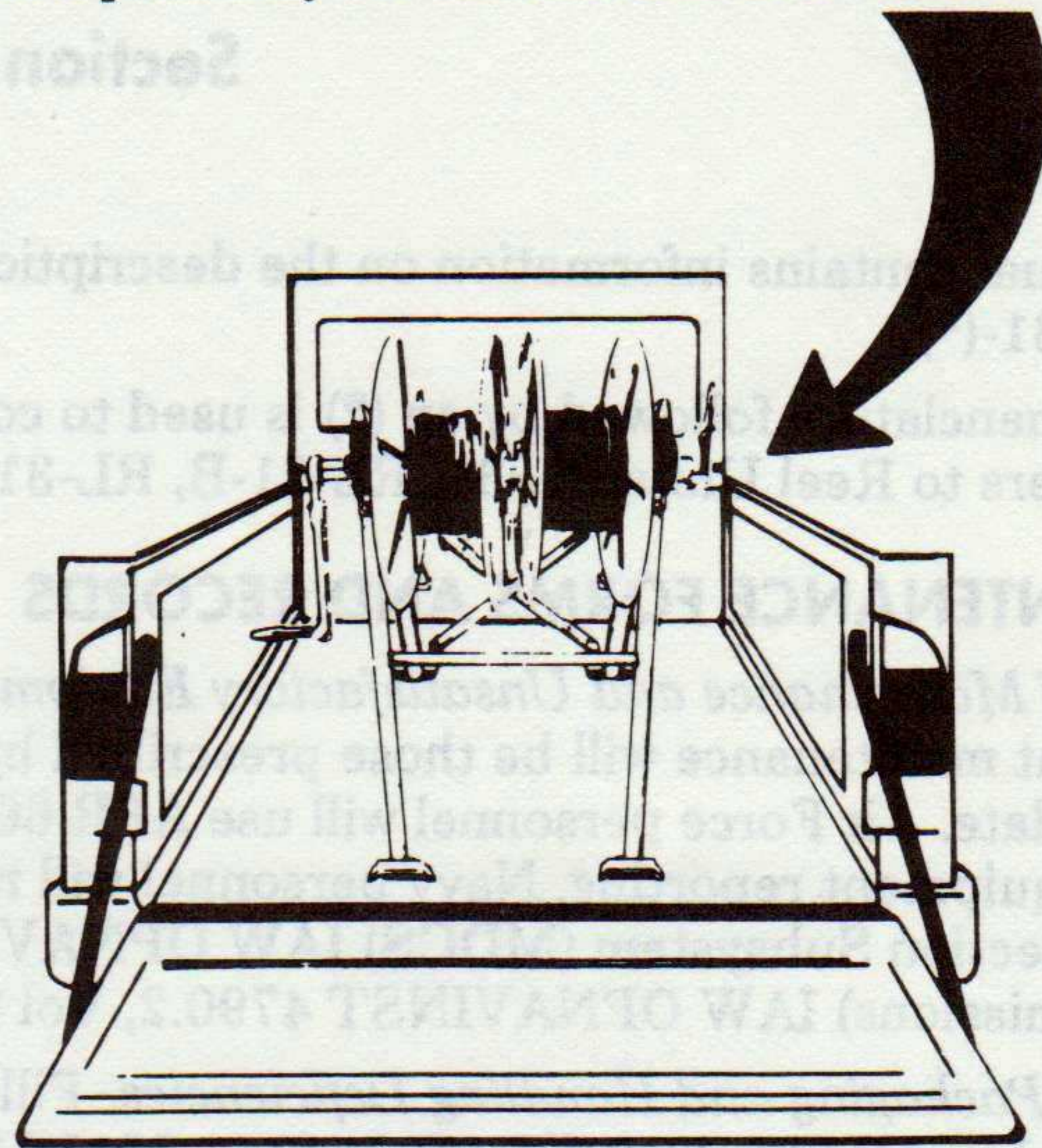
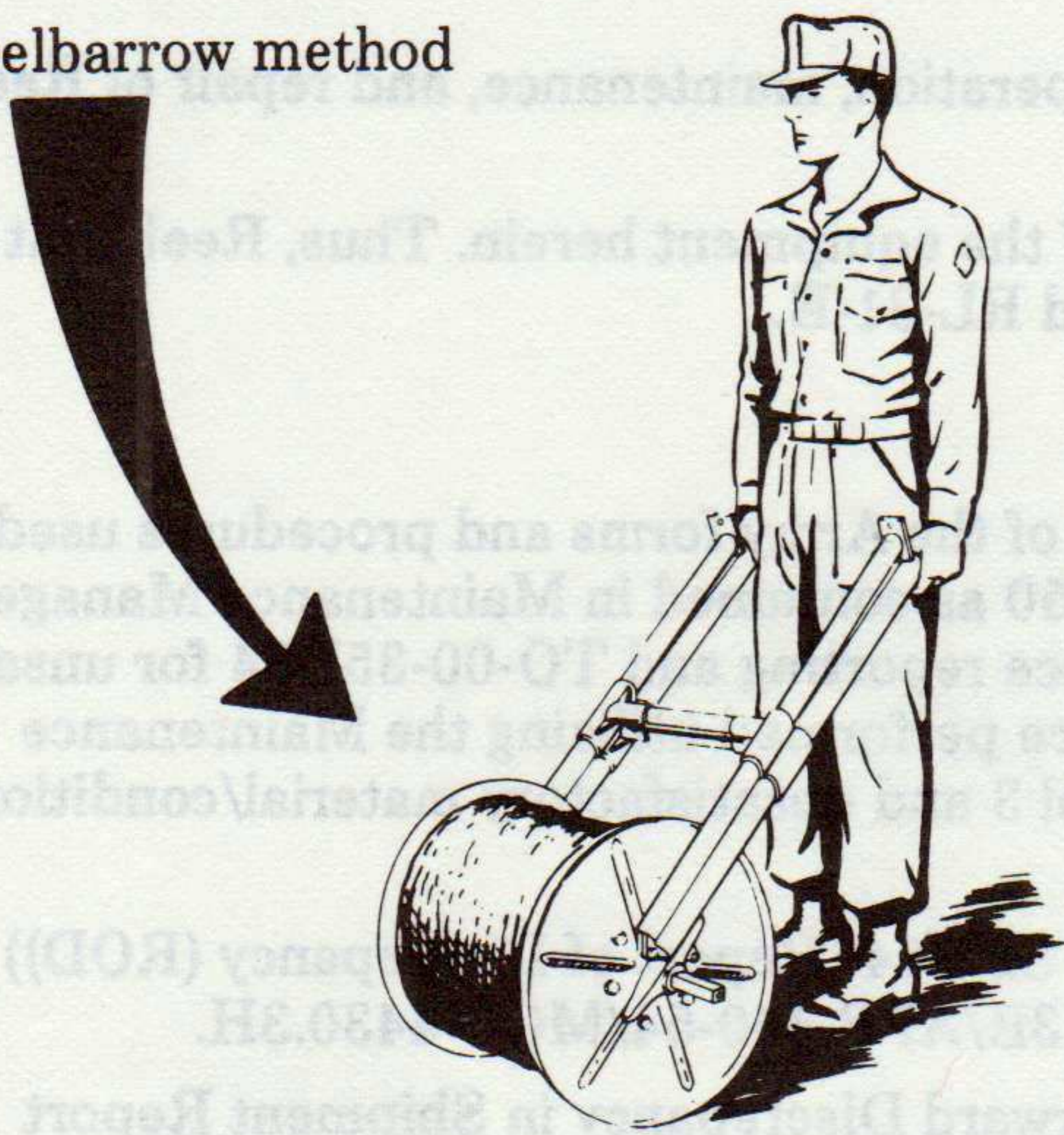
Section II. EQUIPMENT DESCRIPTION

1-7. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

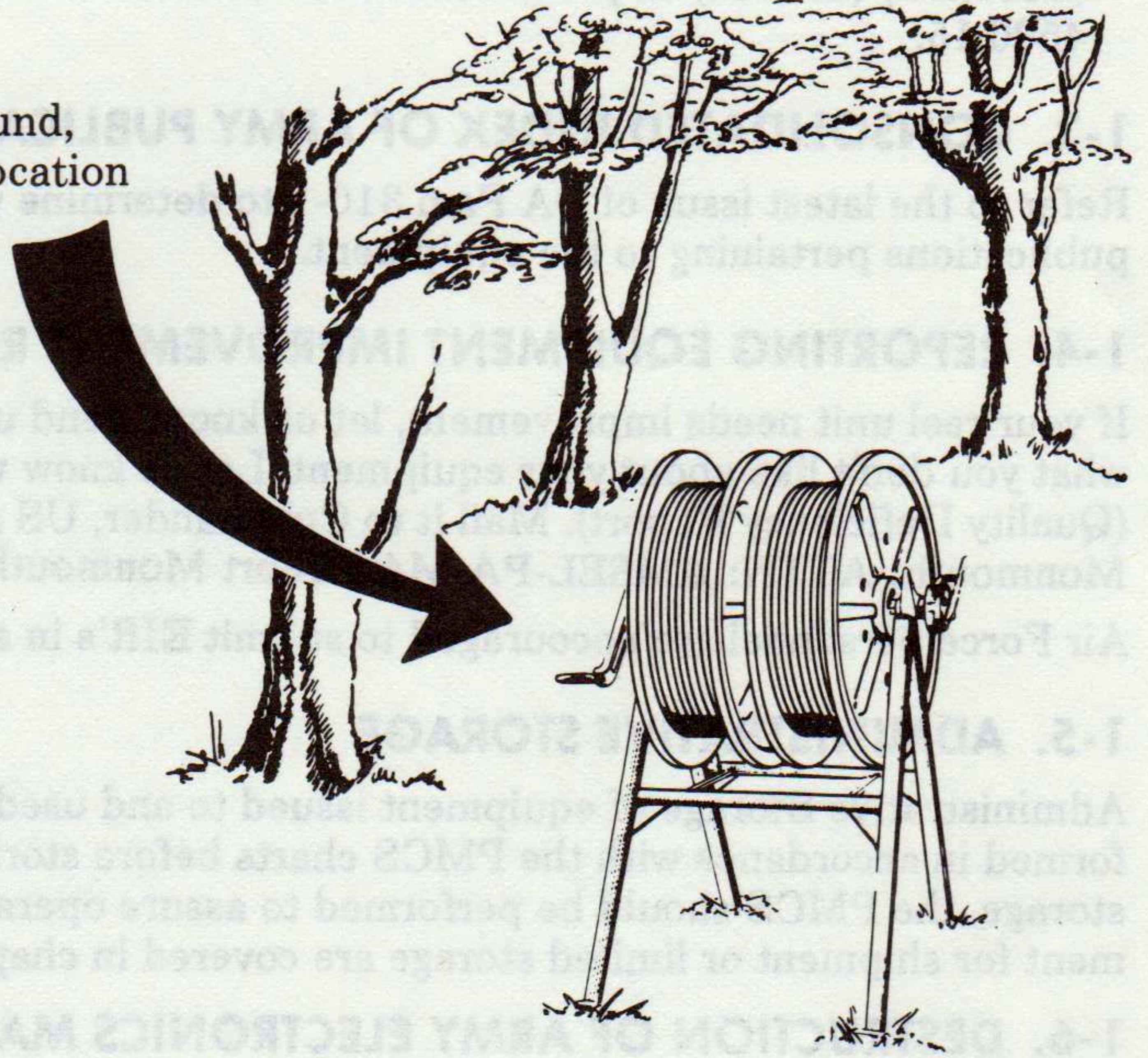
Reel Unit RL-31-(*) is a lightweight unit designed for paying out and recovering field wire on Reels DR-4, DR-5, DR-7, DR-15-B, and RL-159/U. Reel Unit RL-31-(*) is intended primarily for installation in a vehicle.

It may also be used:

Wheelbarrow method



On the ground,
in a fixed location



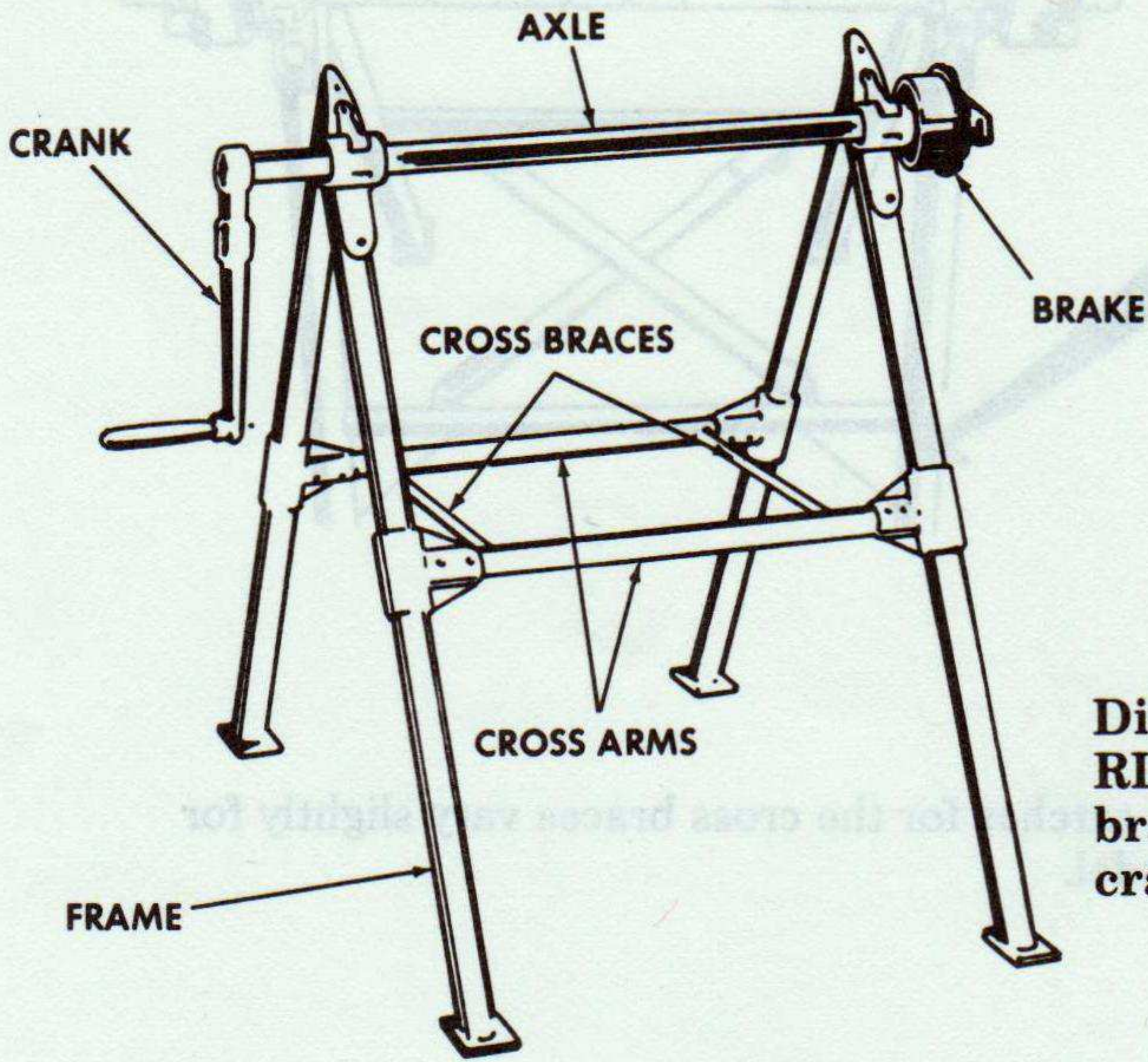
Litter carry

The unit will accommodate any of the following:

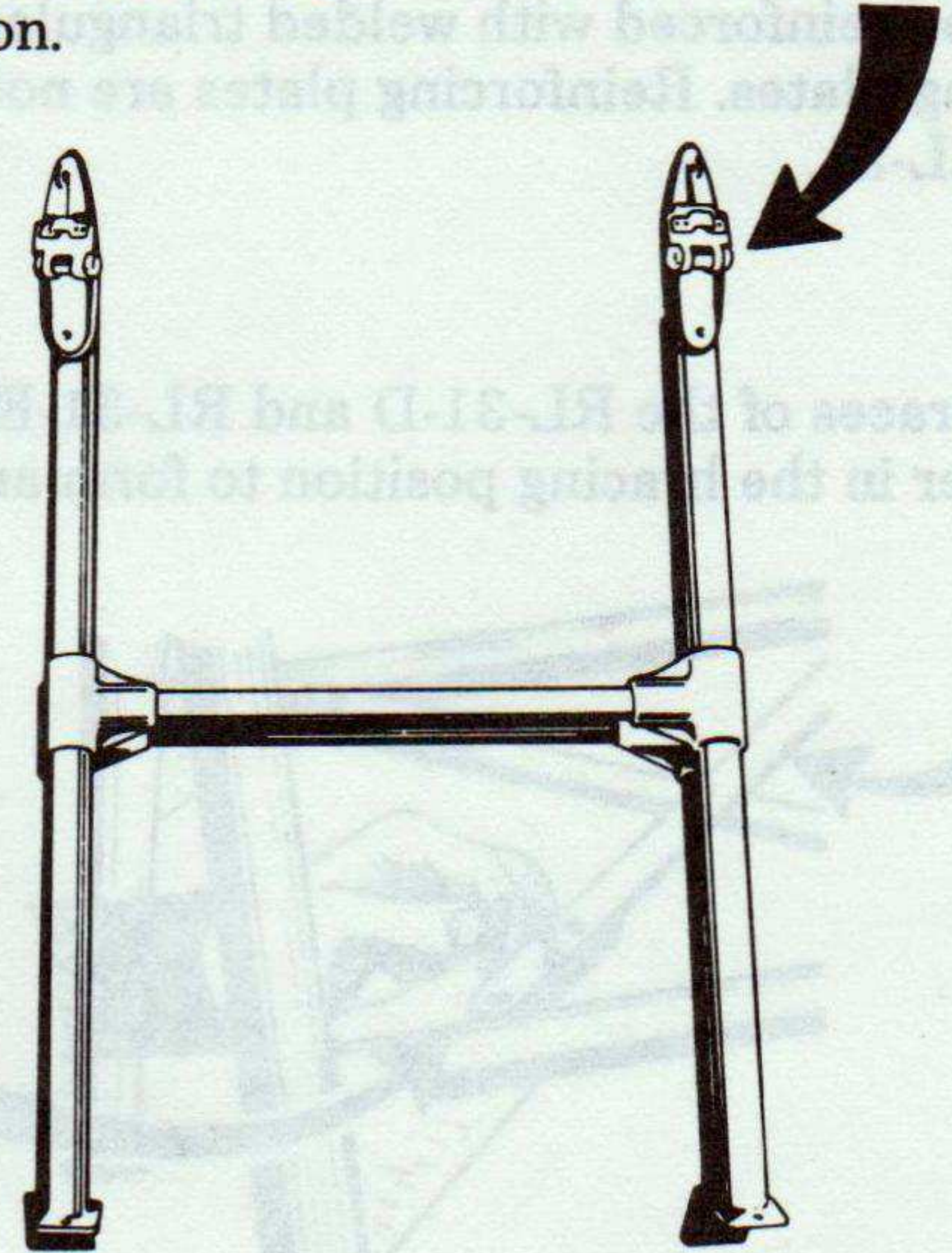
- Two Reels DR-4, each containing 1½ miles of wire WD-1/TT.
- One Reel DR-5, containing 2½ miles of Wire WD-1/TT.
- One Reel DR-7, containing 1,000 feet Cable Assembly CC-355; ½-mile Cable Assembly CC-345; or 6 miles of Wire WD-1/TT.
- One Reel DR-15-B, containing ¼ mile of Cable Assembly CX-1065/G or 1,000 feet of Cable Assembly CX-162/G.
- Two Reels RL-159/U, containing 1 mile of Wire WD-1/TT.

1-8. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

RL-31



- The frame of Reel Unit RL-31-(*) consists of two H-shaped sections of pipe hinged together at one end. Directly above the hinged joint of each section is a bearing block with a hinged bearing cap. A pivoted cross brace is pinned to the cross arm of each section.



NOTE

Divided axle model RL-31-E uses two brakes and two cranks.

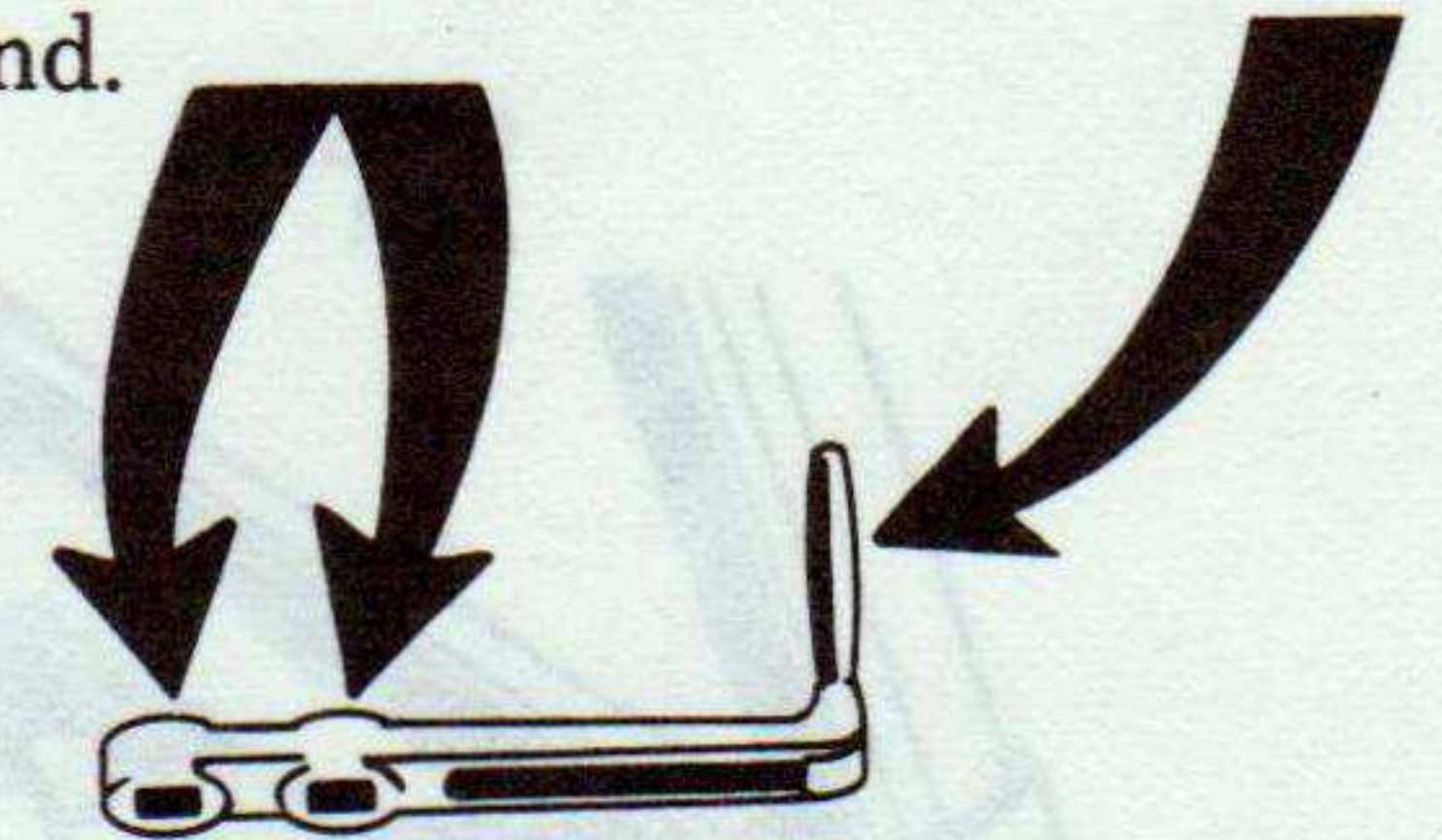
- The axles are 1-inch square lengths of steel with a round bearing surface near each end. (RL-31, RL-31-B, RL-31-C, RL-31-D)



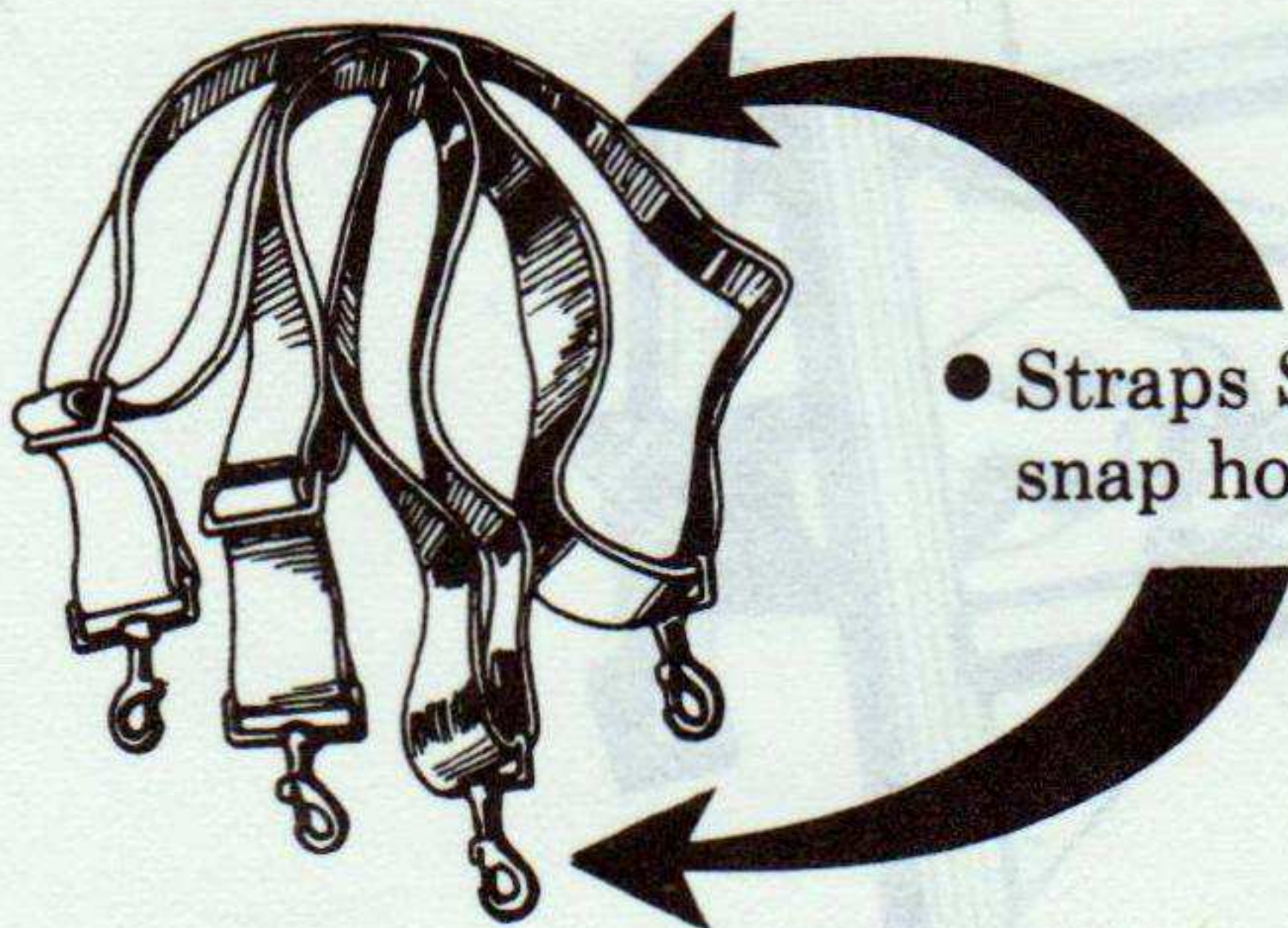
Divided Axle (RL-31-E)



- Crank GC-4-A is L-shaped with two 1-inch square mounting holes at one end and a 4-inch folding handle at the other end.



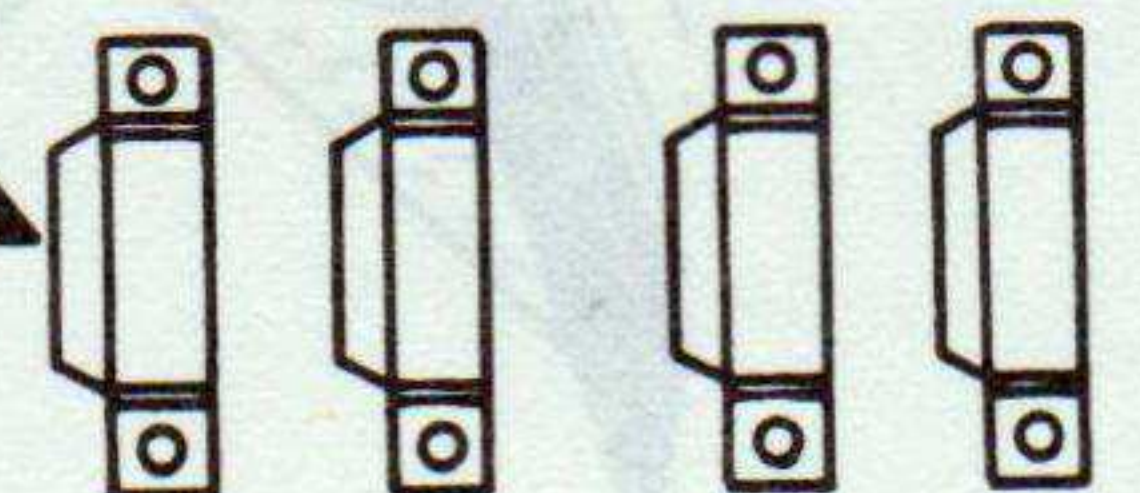
- The brake unit consists of a braking mechanism housed in a round cast metal case with a square 1-inch hole in the center.



- Straps ST-19-A and ST-42 are web straps with a snap hook at each end and a bar buckle.

● TOE CLAMPS

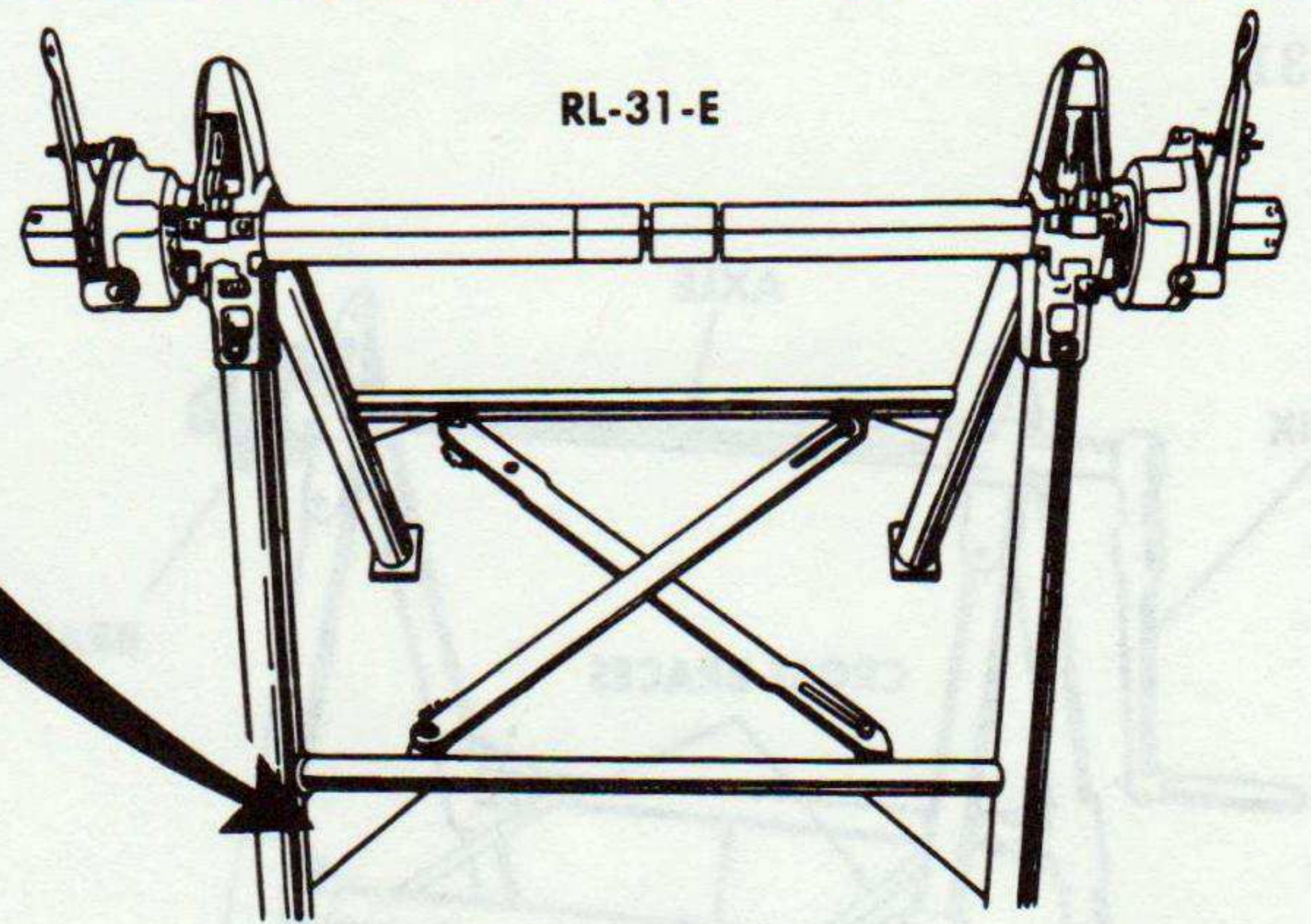
Four toe clamps are furnished with all models except orders No. 27533-Phil-53 and 27534-Phil-53.



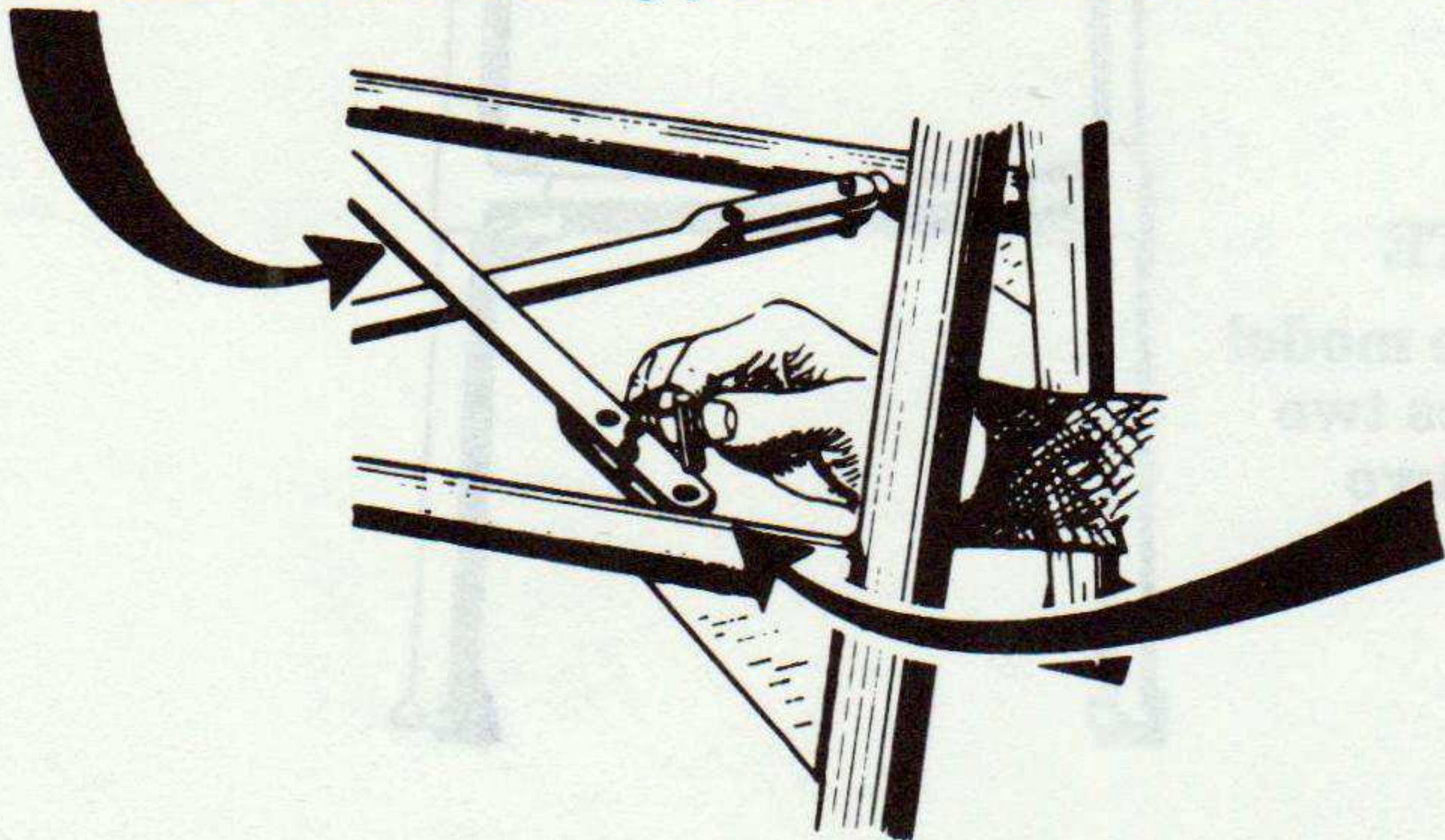
1-9. DIFFERENCES BETWEEN MODELS

Reel units RL-31, RL-31-B, RL-31-C, RL-31-D, and RL-31-E are identical in most respects. However, some differences do exist.

- **FRAMES** of Reel Units RL-31-B, RL-31-C, RL-31-D, and RL-31-E are constructed of sections of pipe reinforced with welded triangular steel reinforcing plates. Reinforcing plates are not used on the RL-31.

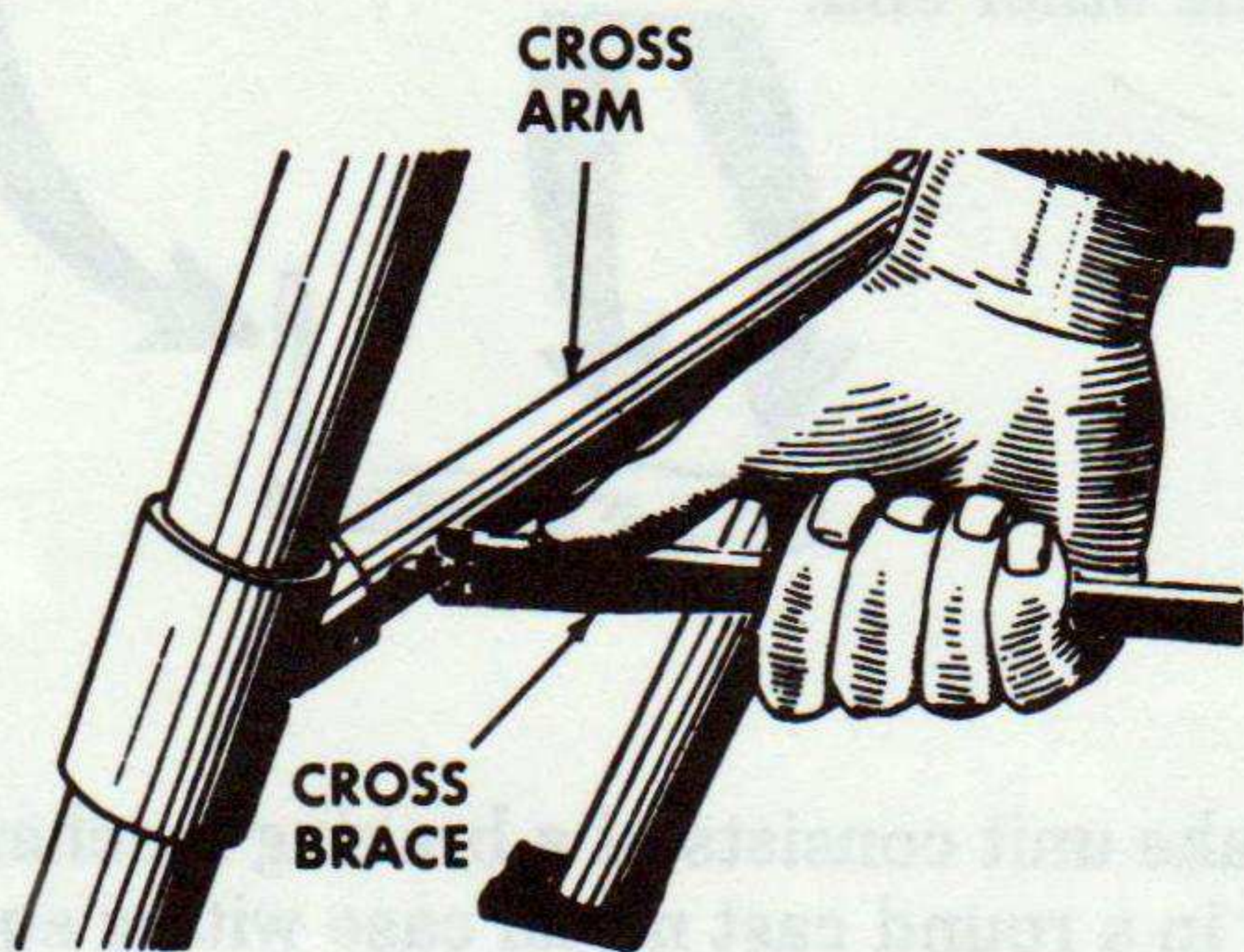


Cross braces of the RL-31-D and RL-31-E crossover the other in the bracing position to form an X.

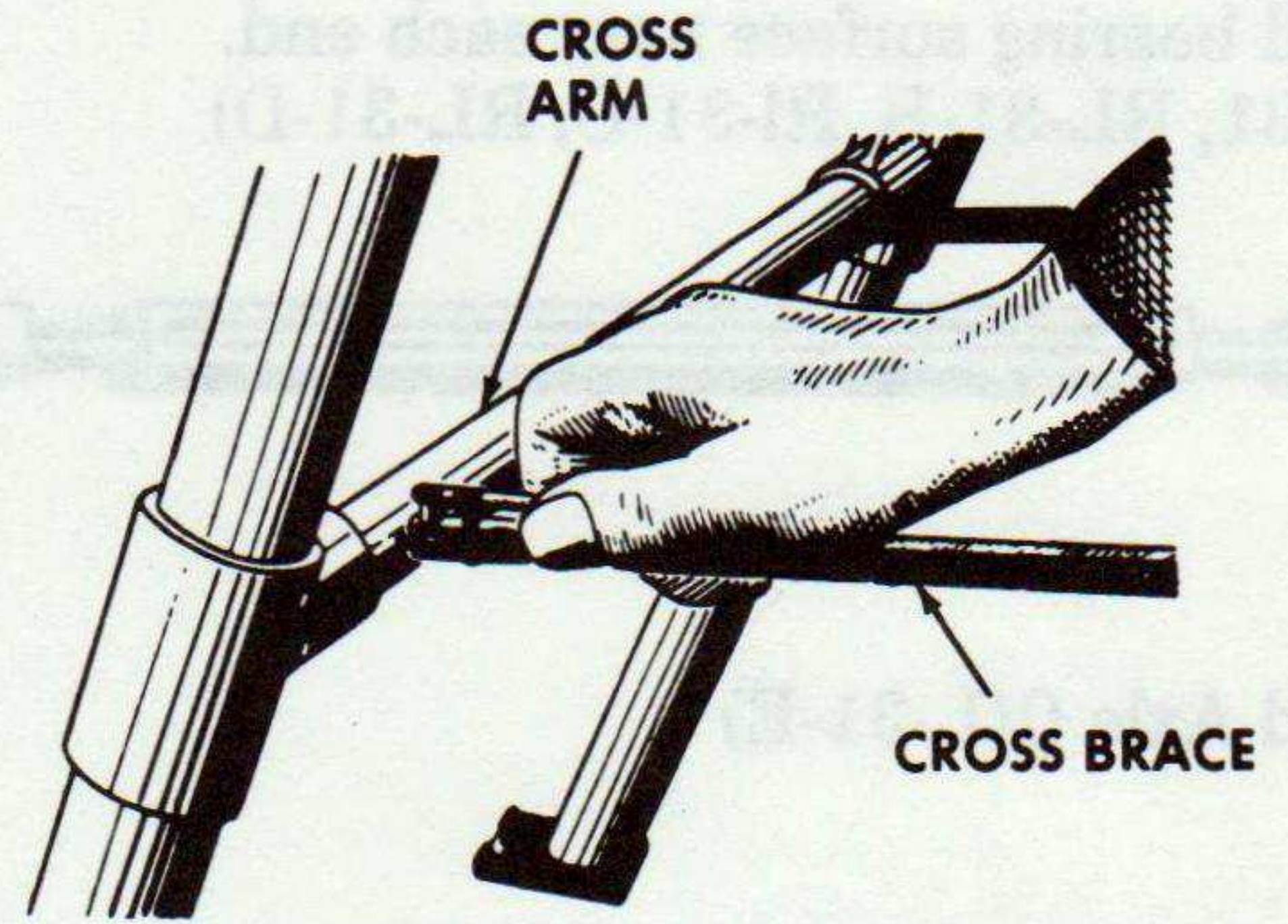


The pin catches for the cross braces vary slightly for each model.

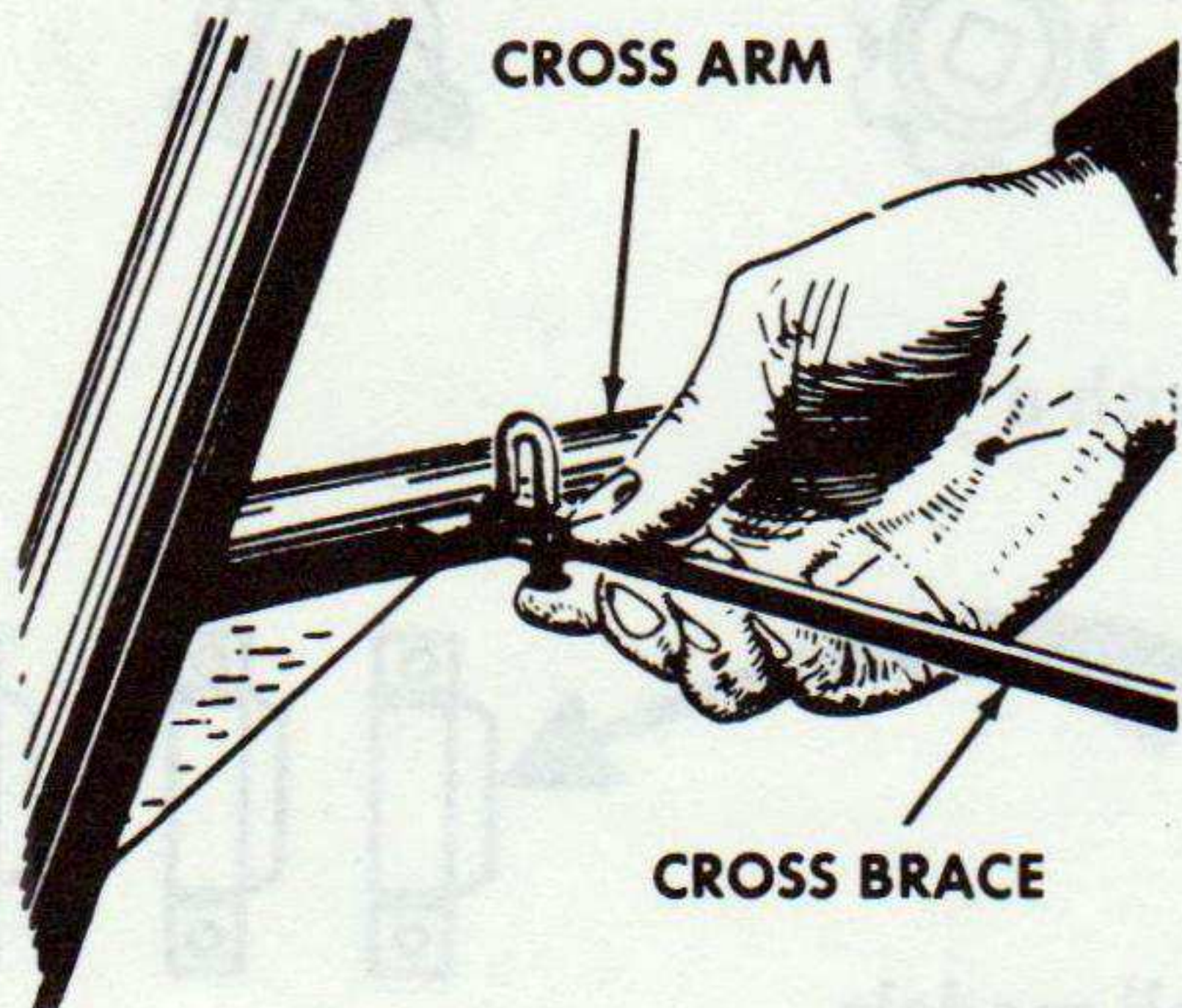
- **Differences in pin catches.**



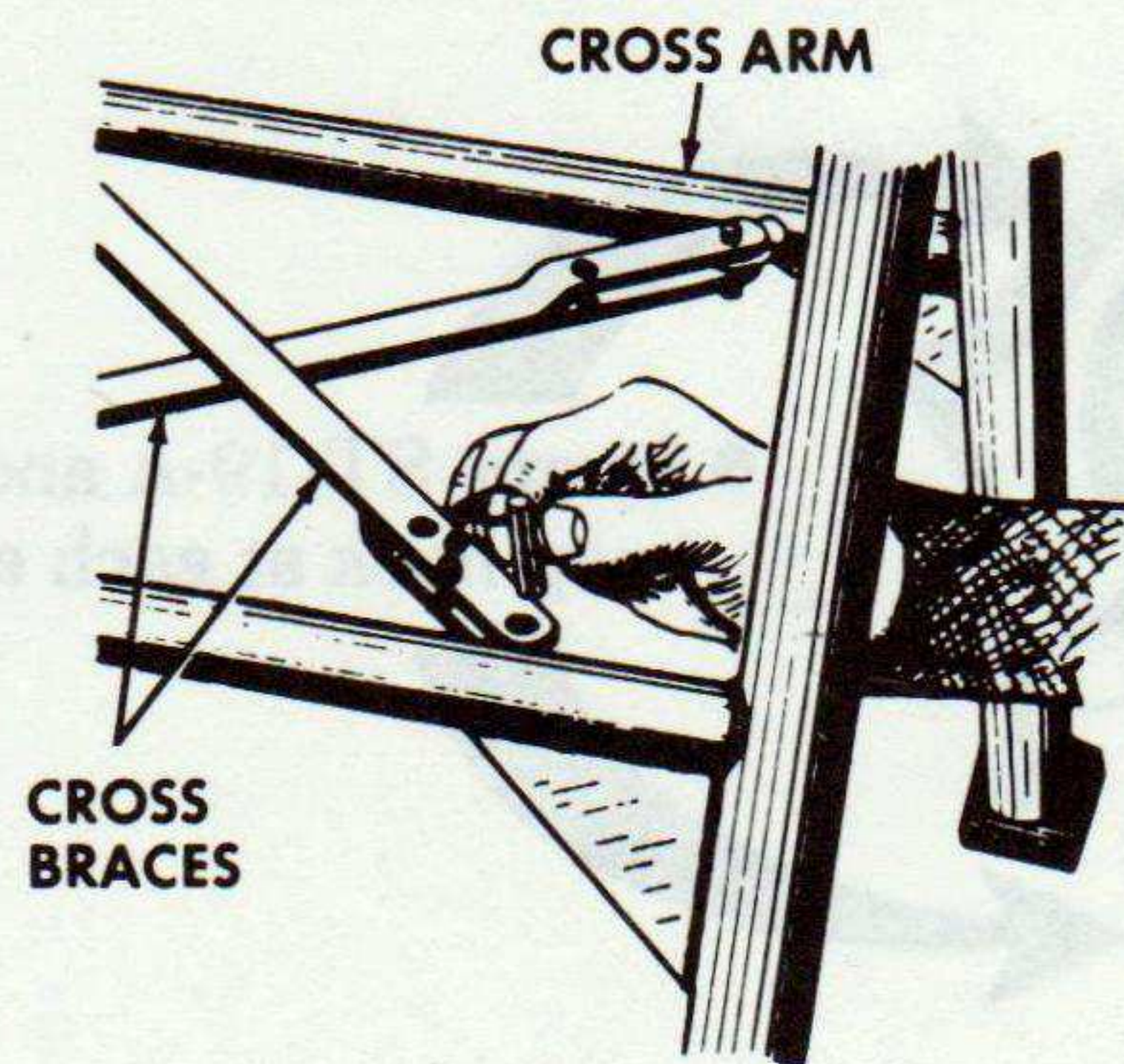
OLDER MODELS OF REEL UNIT RL-31



NEWER MODELS OF REEL UNIT RL-31



REEL UNIT RL-31-B AND RL-31-C

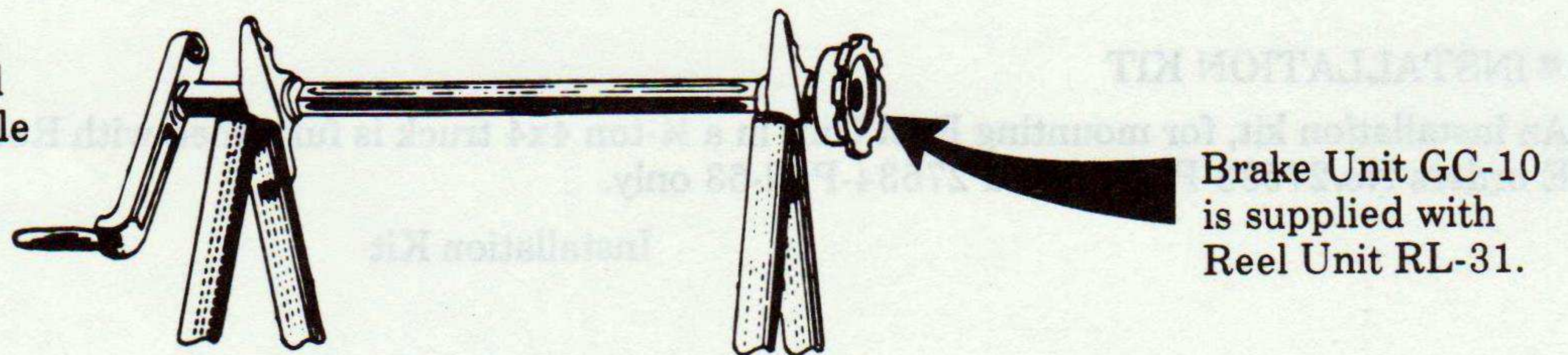


REEL UNIT RL-31-D AND RL-31-E

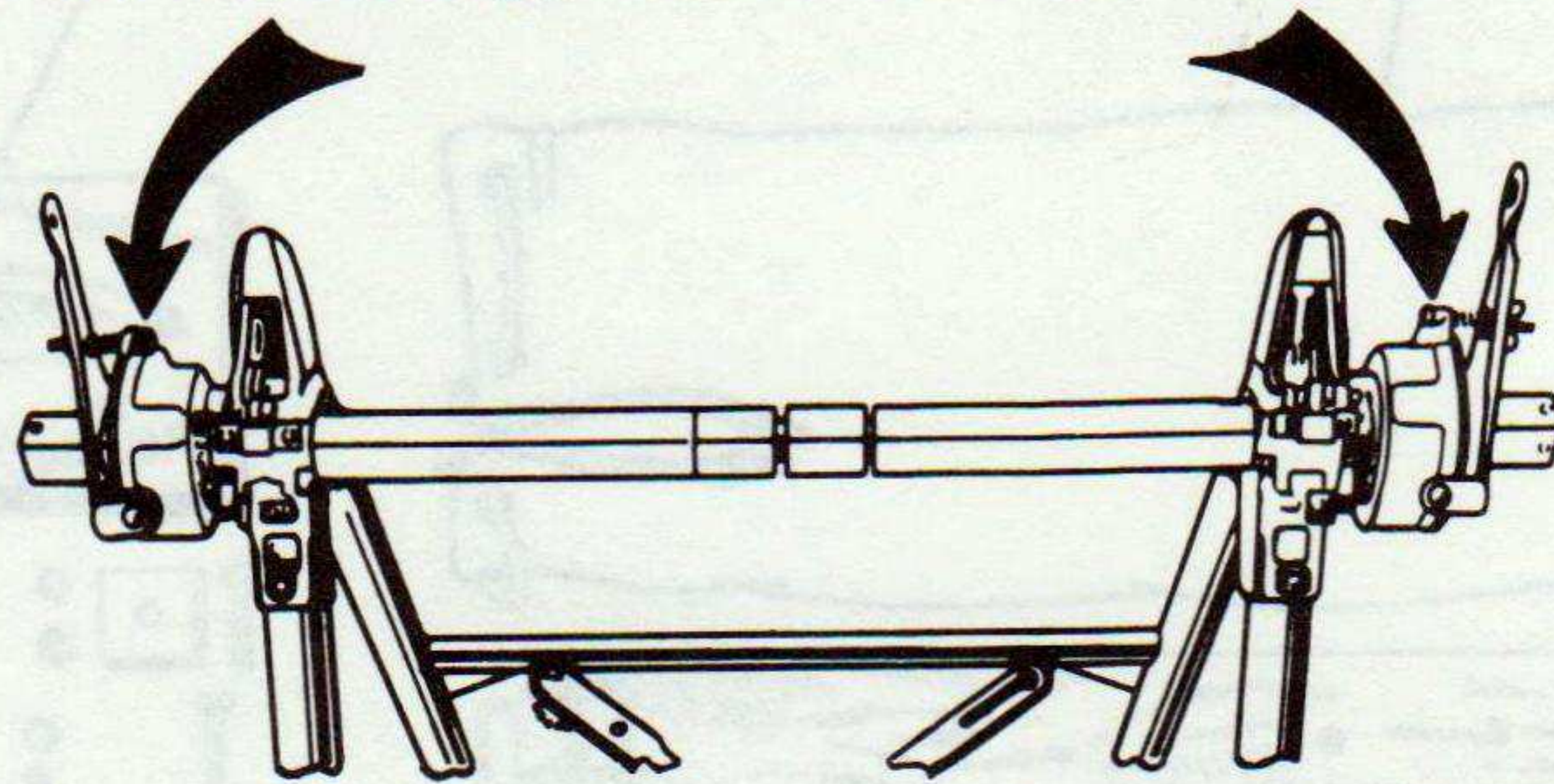
1-9. DIFFERENCES BETWEEN MODELS – Continued

● BRAKE UNITS

Two brake units are provided with the RL-31-E, divided axle model.



Brake Unit GC-10-A is supplied with all other models of the Reel Unit.

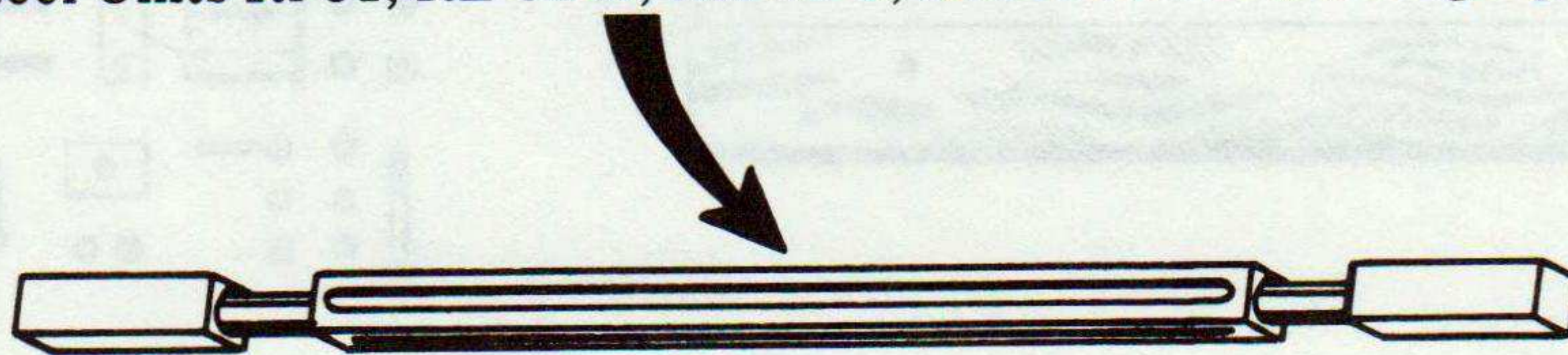


NOTE

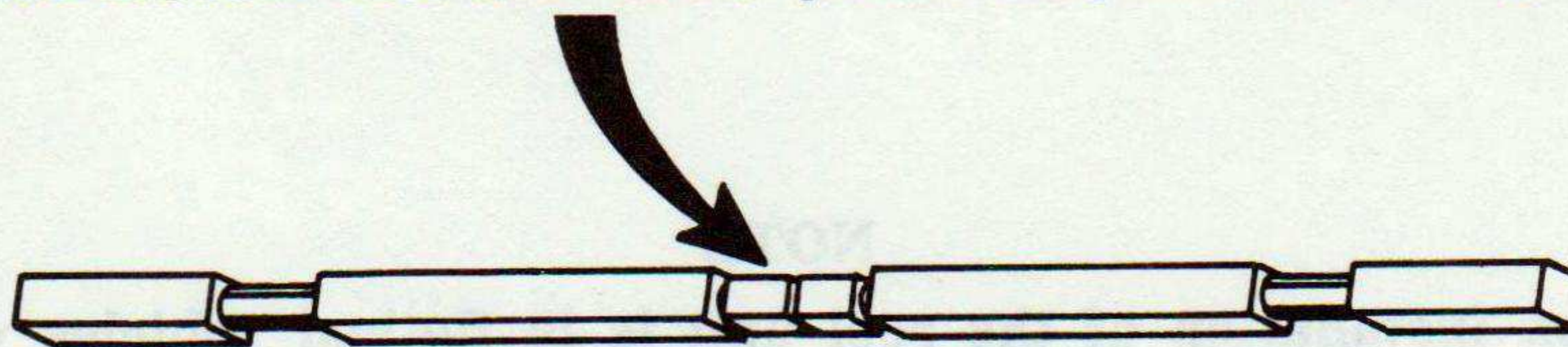
Brake units GC-10 and GC-10-A are interchangeable.

● AXLES

The axle of Reel Units RL-31, RL-31-B, RL-31-C, and RL-31-D is a single piece of steel.

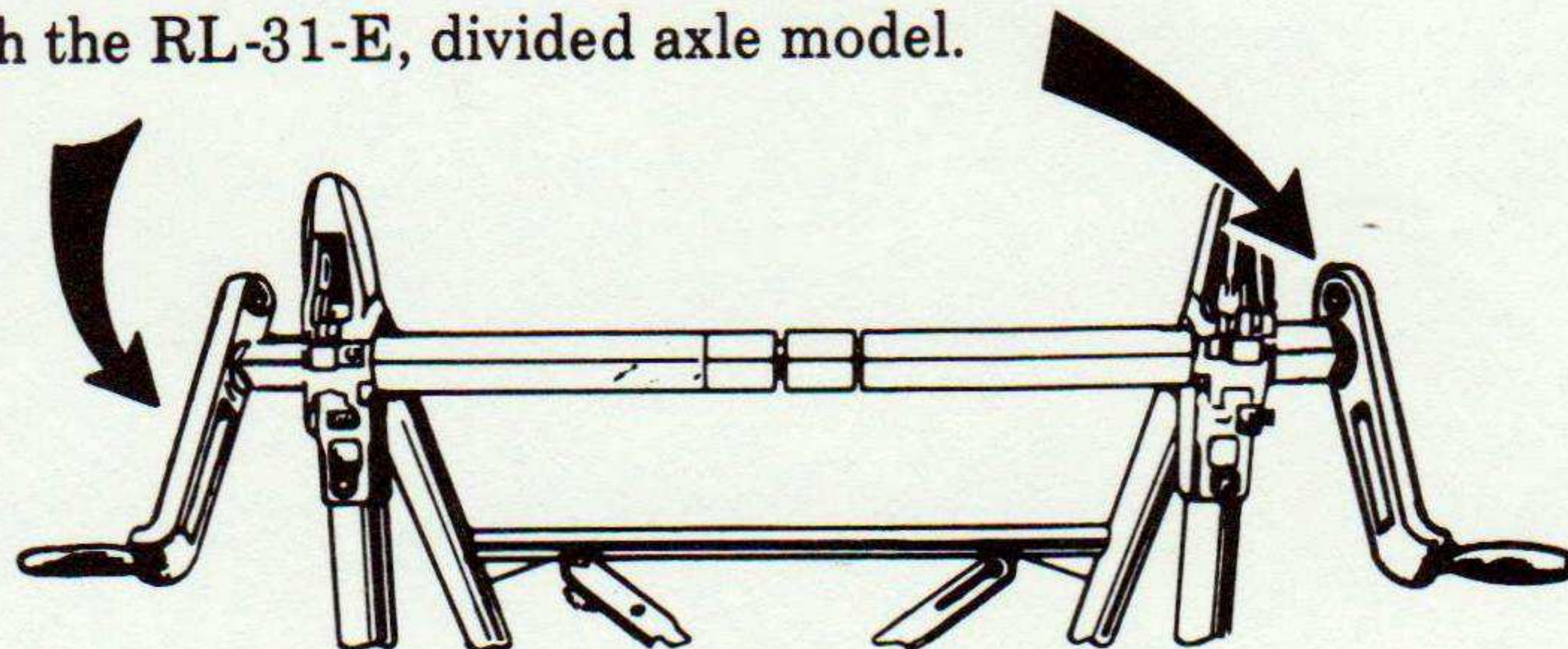


The axle of Reel Unit RL-31-E is divided to permit independent handling of two reels.



● CRANKS

Two cranks are provided with the RL-31-E, divided axle model.

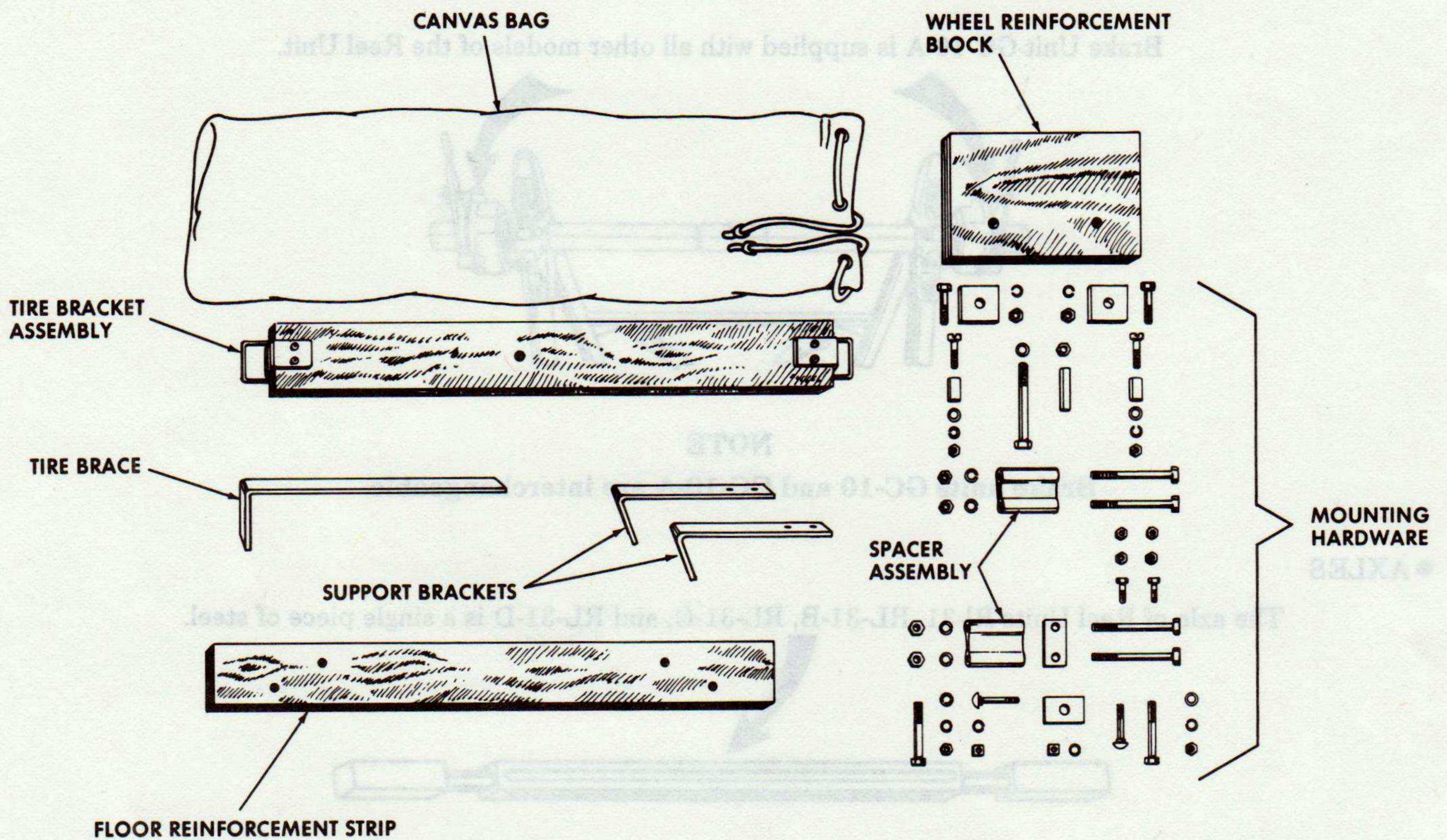


1-9. DIFFERENCES BETWEEN MODELS – Continued

● INSTALLATION KIT

An installation kit, for mounting Reel Unit in a ¼-ton 4x4 truck is furnished with Reel Units RL-31-C and RL-31-E orders No.27533-Phil-53 and 27534-Phil-53 only.

Installation Kit



NOTE

The most common installation of the reel unit is in flatbed vehicles which would not require this installation kit.

CHAPTER 2 OPERATING INSTRUCTIONS

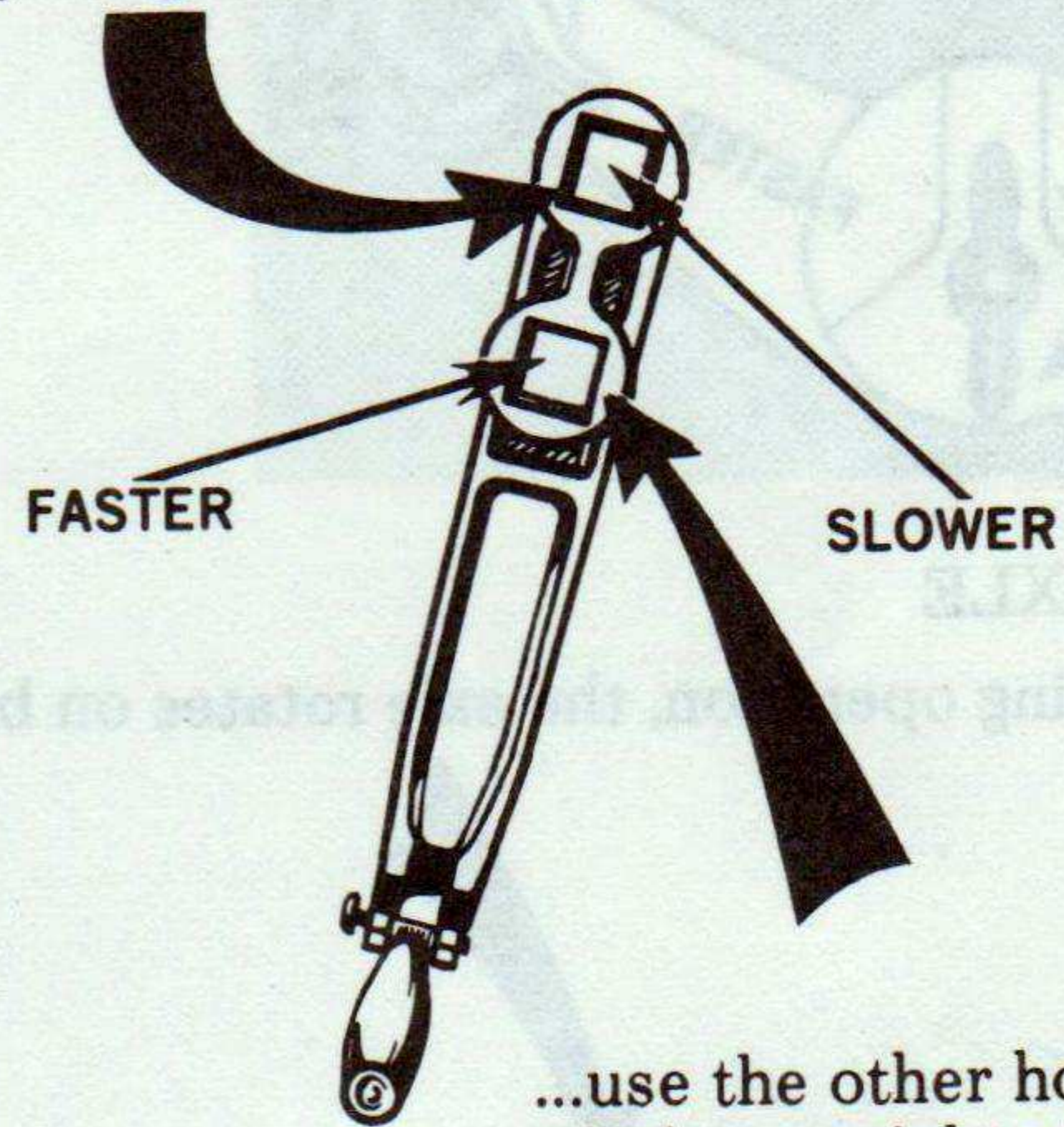
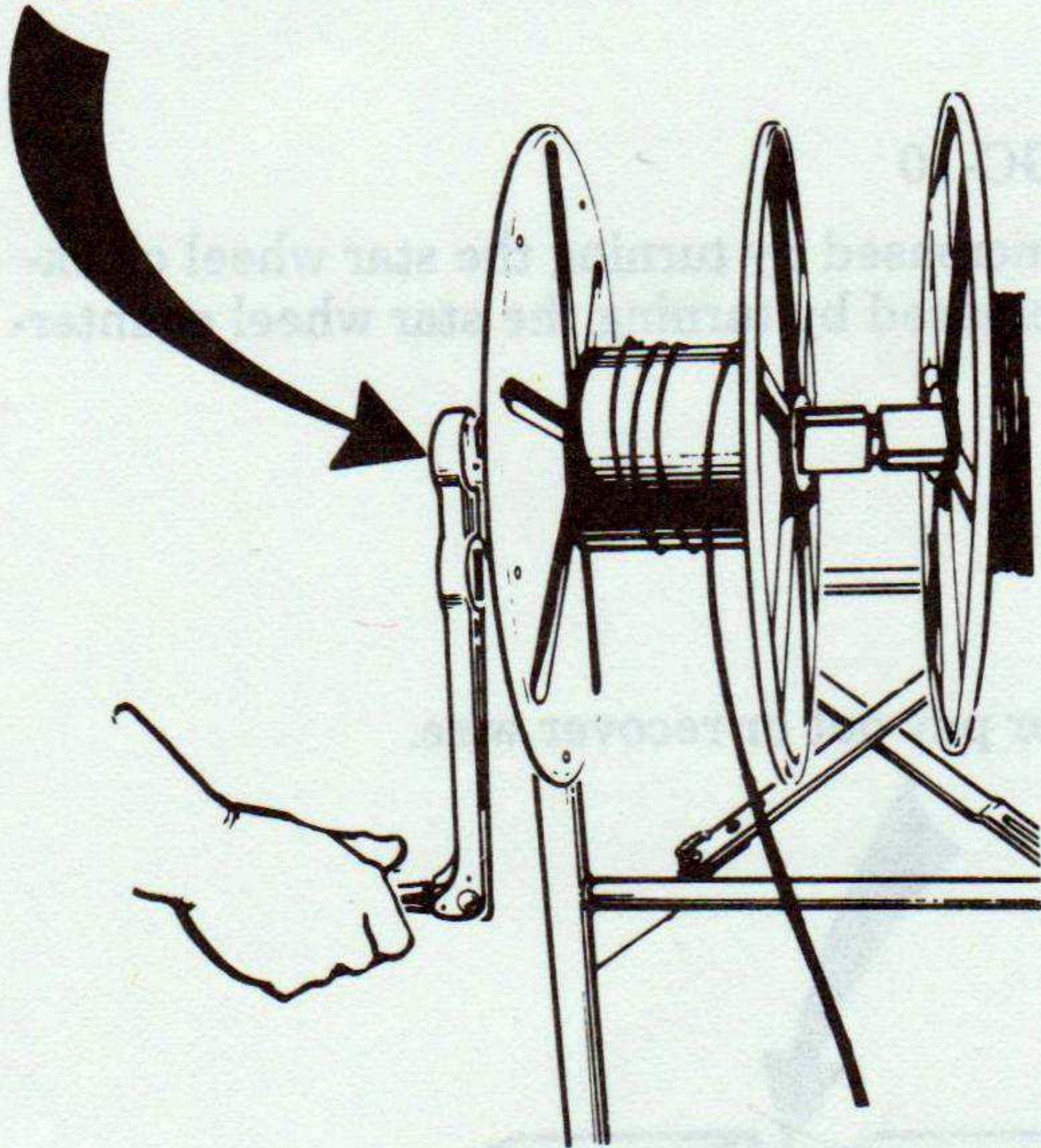
Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS

2-1. CONTROLS

Two controls (crank and brake unit) are used in the operation of the Reel Unit RL-31-E. All other models (single axle) use only one brake and crank.

- CRANK GC-4-A is used to manually turn the axle of all models when wire is being recovered.

Use the hole nearer the end of the crank if you have a heavy weight of wire to pull in...



...use the other hole if you have a lighter weight of wire to pull in and you want to reel it in faster.

WARNING

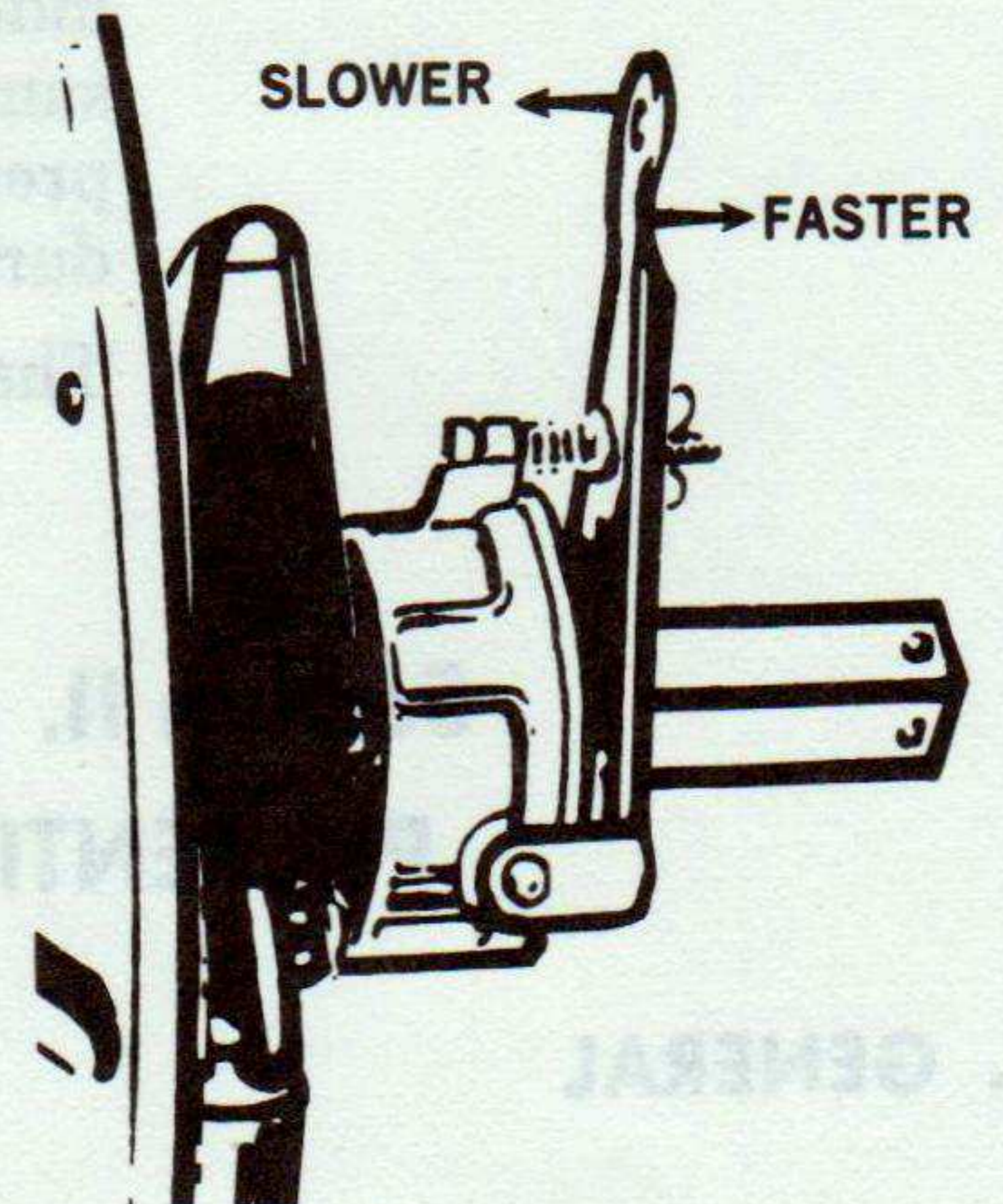
It is important that you keep your face away from the crank. The crank may slip off and injure you.

- BRAKE UNIT

The purpose of the brake unit is to provide the operator with sensitive control of reel rotation during pay out of wire. This control is necessary to prevent the reel from paying out wire faster than is needed. Braking effect is produced by adjustable pressure between steel disks that are held stationary, and composition disks that revolve with the axle.

Brake Lever
Brake Unit GC-10-A

To operate the brake unit, push in or release the handle enough to allow the wire to come off the reel at the correct speed.



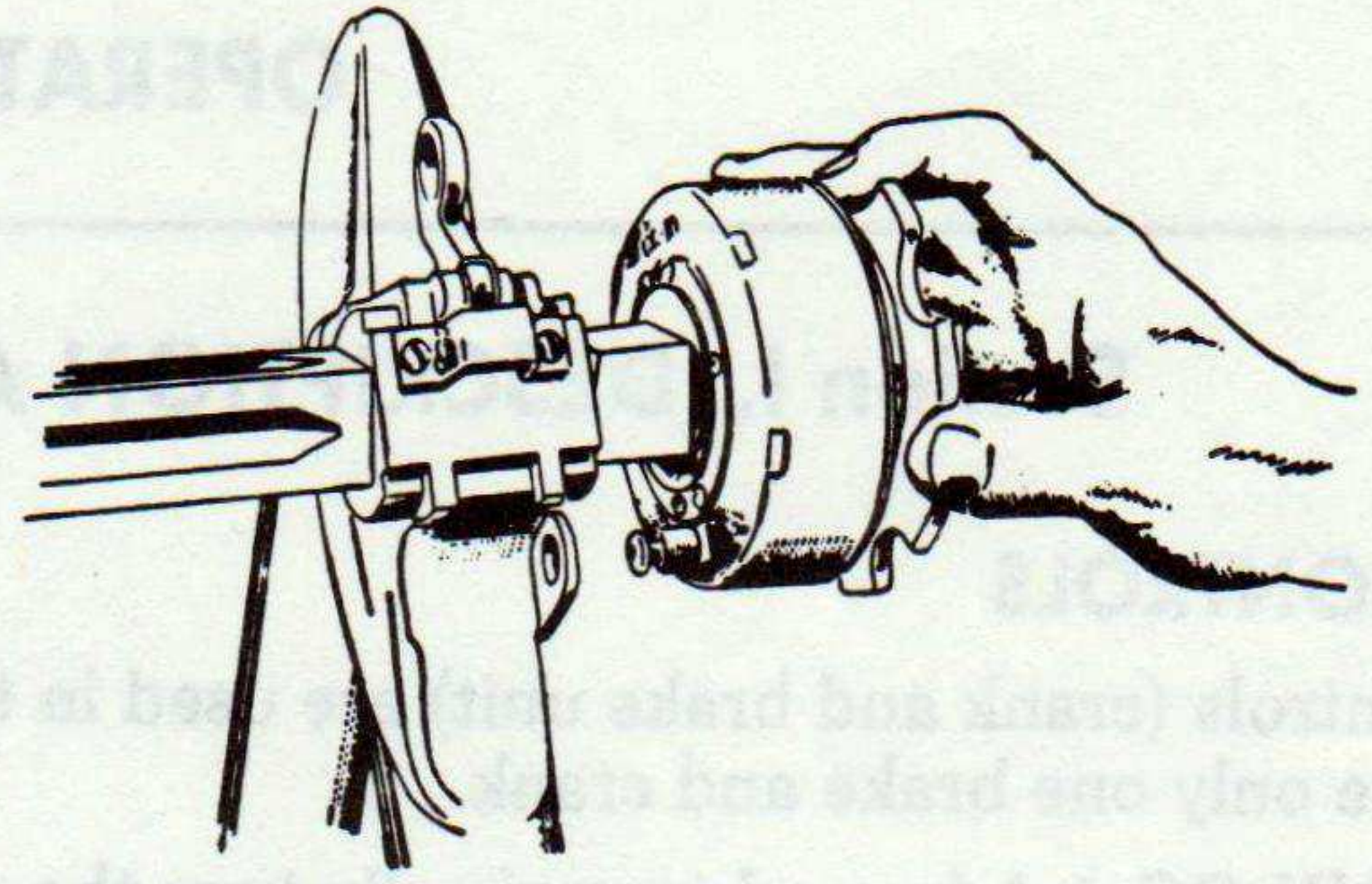
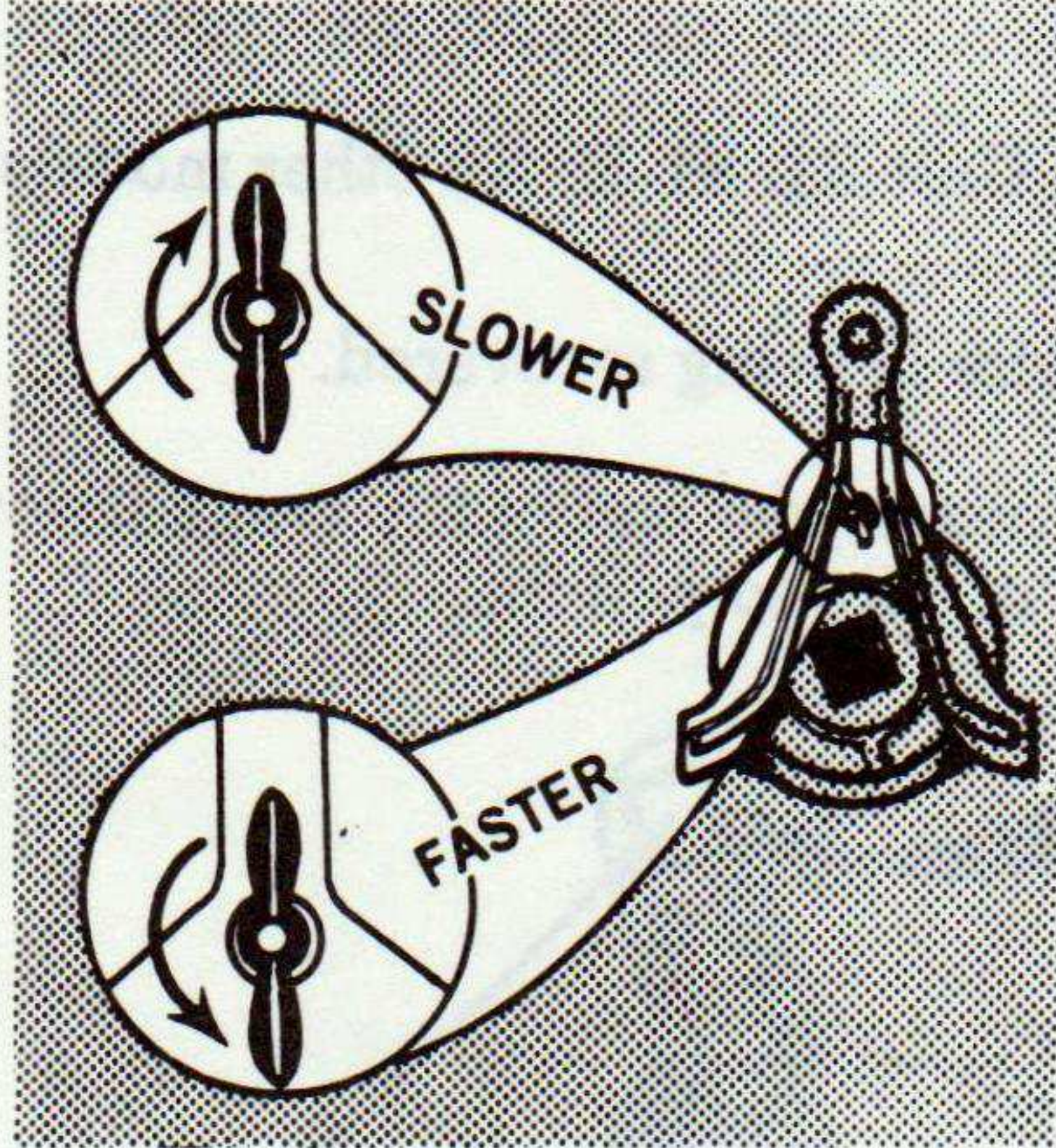
WARNING

Always wear gloves when paying out or recovering field wire.

2-1. CONTROLS – Continued

The pressure on the brake can be made to stay the same without having to hold the brake handle in.

To adjust the pressure, screw the wing nut on the brake in or out until you have the reel turning at the desired speed.

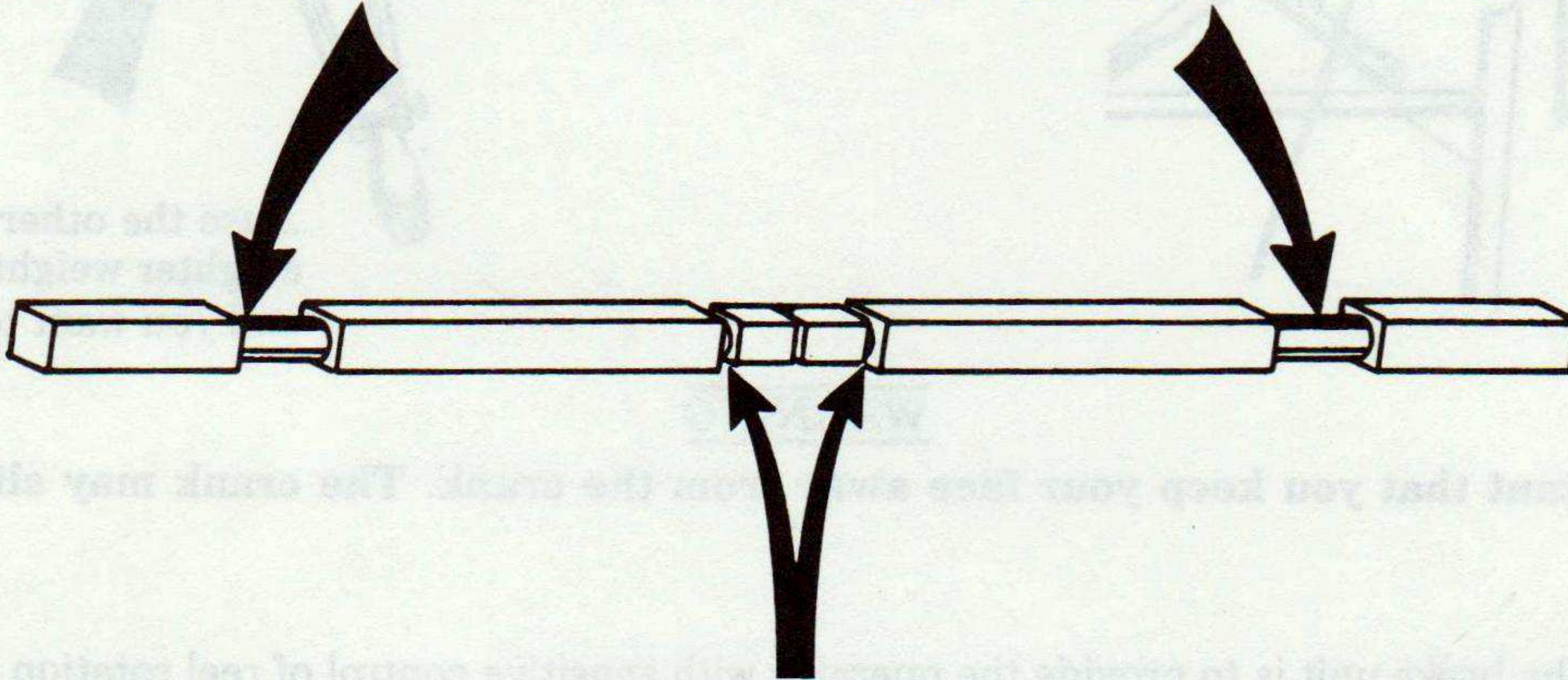


Star Wheel
Brake Unit GC-10

Pressure is increased by turning the star wheel clockwise and decreased by turning the star wheel counter-clockwise.

● AXLE

During operation, the axle rotates on bronze bearings to either pay out or recover wire.



Two stops are fitted near the center of the divided axle supplied with the Reel Unit RL-31-E, to permit independent handling of two small-size reels at the same time. The stops, when turned one-fourth turn, prevent the reels from rubbing against each other during operation.

The axles of all units are interchangeable.

Section II. OPERATOR/CREW AND ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES

2-2. GENERAL

NOTE

Refer to TM 750-244-2 for proper procedures for destruction of this equipment to prevent enemy use.

A Operator/crew preventive maintenance is the systematic care, servicing and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to maintain equipment in serviceable condition. To be sure that your reel unit is always ready for your mission, you must do scheduled preventive maintenance checks and services (PMCS).

- BEFORE OPERATION, perform your B PMCS to be sure that your equipment is ready to go.
- WEEKLY PMCS are important checks to keep serious problems from suddenly happening. Perform W as well as BEFORE OPERATION PMCS if:

You are the assigned operator and have not operated the item since the last WEEKLY.

You are operating the item for the first time.

- When an item of equipment is reinstalled after removal, for any reason, perform the necessary B PMCS to be sure the item meets the readiness reporting criteria.
- Use the Item No. column in the PMCS table to get the number to be used in the TM Item No. column on DA Form 2404 (Equipment Inspection and Maintenance Worksheet) when you fill out the form.

B Organizational preventive maintenance procedures are designed to help maintain equipment in serviceable condition. They include items to be checked and how to check them. These checks and services, described in paragraph 2-5., outline inspections that are to be made at specific monthly (M) intervals.

C Routine checks like cleaning, preservation, dusting, washing, stowing items not in use, checking for loose nuts and bolts and checking for completeness are not listed as PMCS checks. They are things that you should do any time you see they must be done. If you find a routine check like one of those listed in your PMCS, it is because other operators reported problems with this item.

NOTE

When you are doing any PMCS or routine checks, keep in mind the warnings and cautions.

WARNING

- Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.
- Compressed air shall not be used for cleaning except where reduced to less than 29 pounds per square inch (psi) and then only with effective chip guarding and personnel protective equipment. Do not use compressed air to dry parts when trichlorotrifluoroethane has been used. Compressed air is dangerous and can cause serious bodily harm if protective means or methods are not observed to prevent chip or particle (of whatever size) from being blown into the eyes or unbroken skin of the operator or other personnel.

NOTE

- The Procedures column in your PMCS charts instruct how to perform the required checks and services. Carefully follow these instructions and, if tools are needed or the chart so instructs, get organizational maintenance to do the necessary work.
- If your equipment must be in operation all the time, check those items that can be checked without disturbing operation. Make the complete checks and services when the equipment can be shut down.

D Deficiencies that cannot be corrected must be reported to higher category maintenance personnel. Records and reports of preventive maintenance must be made in accordance with procedures given in DA Pam 738-750.

2-3. OPERATOR/CREW PREVENTIVE MAINTENANCE CHECKS AND SERVICES

Perform WEEKLY as well as BEFORE OPERATION PMCS if:

- You are the assigned operator and have not operated the item since the last WEEKLY.
- You are operating the item for the first time.

NOTE

The checks in the interval column are to be performed in the order listed.

B – Before

W – Weekly

Item No.	Interval		Item to be Inspected	Procedures Check for and have repaired or adjusted as necessary	Equipment is Not Ready/ Available If:
	B	W			
1	●		Mission Essential Equipment	Check for completeness and satisfactory condition of equipment. Report missing items.	Available equipment is insufficient to support the combat mission.
2		●	Lubrication	Lubricate axle, frame hinges, pin catches, bearing cap hinges and crank handle catch as described in paragraphs 3-1 and 3-2.	

2-4. ORGANIZATIONAL TOOLS AND MATERIALS

The following tools and materials are required for organizational maintenance of Reel Unit RL-31-(*):

TOOLS.

- Socket wrench, 11/16 inch.
- Socket wrench, 9/16 inch (thin wall).
- Handle, wrench, hinge type, 8 inches long.
- Wrench, open end, 9/16 x 11/16 inch.

MAINTENANCE MATERIALS.

- Grease, Automotive and Artillery (GAA).
- Oil, Lubricating, Preservative, Special (PL Special).
- Trichlorotrifluoroethane (NSN 6850-00-105-3084).
- Cloth, cleaning.
- Sandpaper, No. 000.

WARNING

Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.

2-5. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES

M – Monthly

Item No.	Interval	Item to be Inspected	Procedures Check for and have repaired or adjusted as necessary
	M		
1	●	Brake Unit	Check operation of brake unit and adjust braking action as described in paragraph 2-7, if required.

Section III. OPERATION UNDER USUAL CONDITIONS

2-6. ASSEMBLY AND PREPARATION FOR USE

● UNPACKING

A Packaging data. The components of each reel unit are packed in a nailed, wooden box. The approximate size, weight, and volume of each packaged and packed unit are as follows: height, 41 inches; width 27½ inches; depth, 11 inches; volume, 7 cubic feet; and weight, 133 pounds.

B Removing contents.

CAUTION

Be careful when uncrating the equipment. Avoid thrusting tools into the container because they may damage the equipment.

- Place the wooden crate as close to the desired operating location as possible.
- Cut the metal straps at a point just below the box cover.
- Remove the nails from the box cover with a nail puller.
- Remove the box cover, and carefully remove the packaged equipment.
- Cut through and along the upper three edges of the outer carton. The remaining edge will act as a hinge.
- Remove the cushioned equipment.

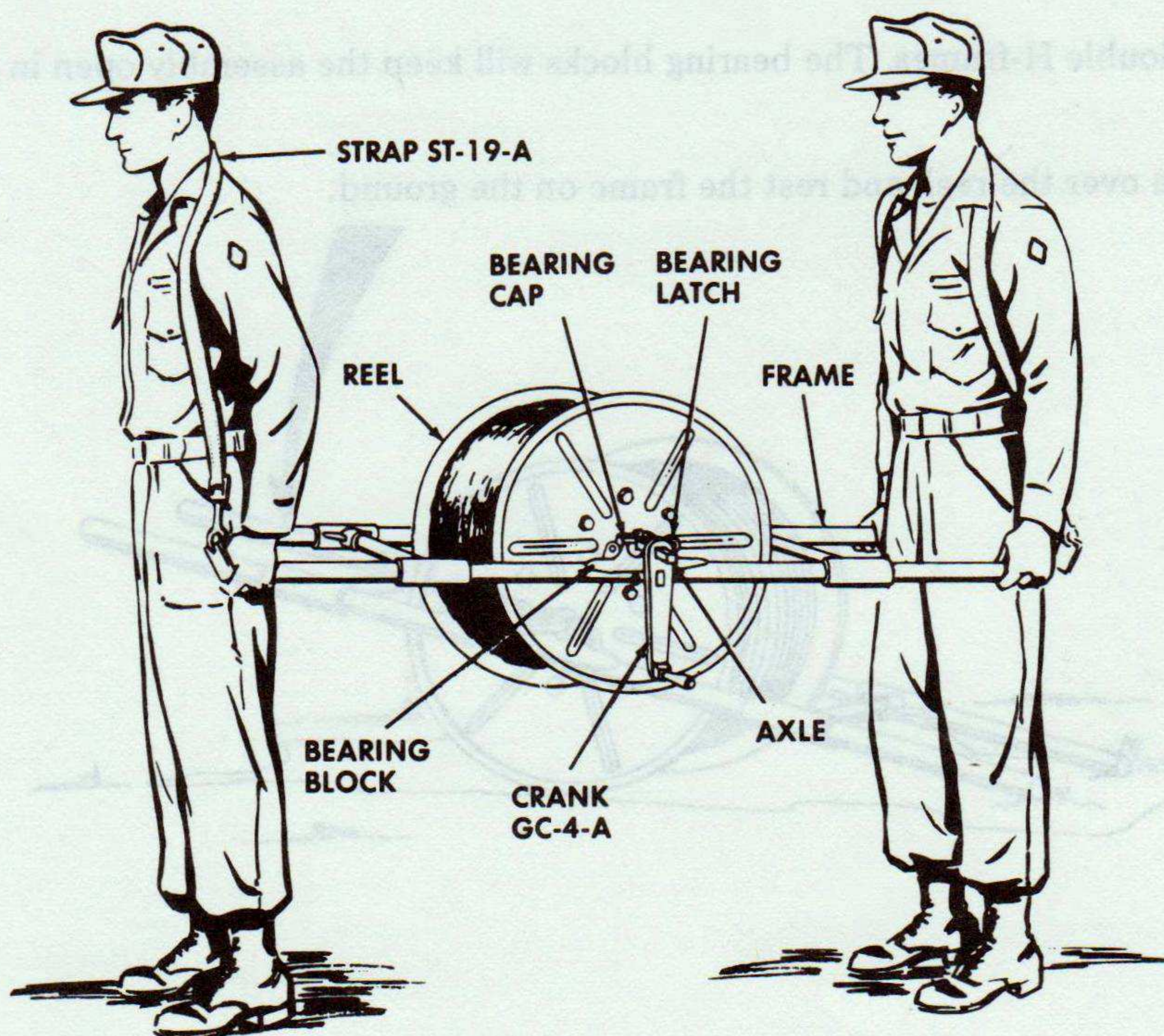
NOTE

- Check the contents with the packing slip.
- Examine the equipment carefully and report damaged equipment in accordance with instructions in paragraph 1-2.

● TRANSPORTATION TO INSTALLATION SITE

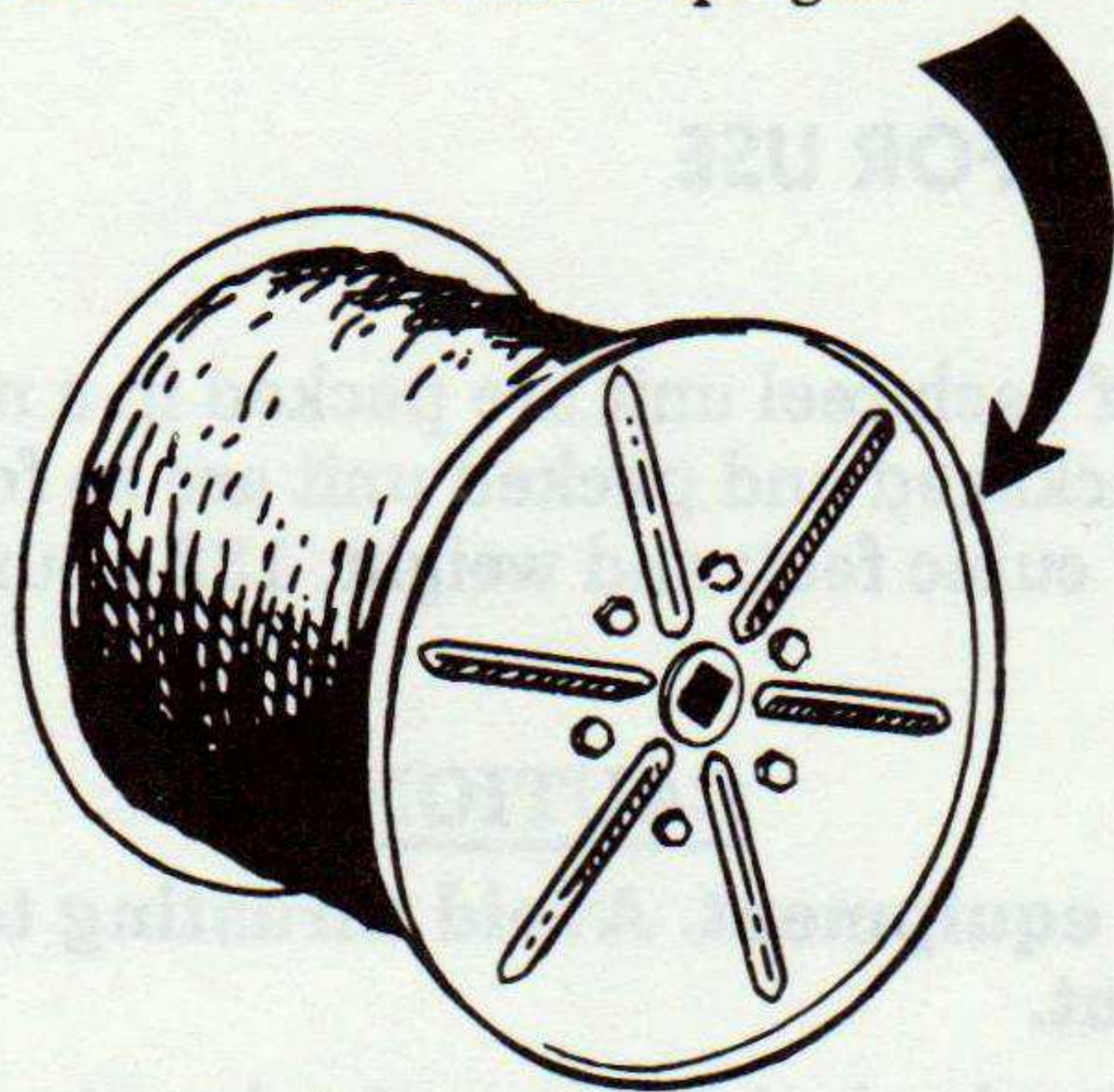
Reel Unit RL-31-(*), when loaded, is light enough to be carried by hand or moved from one place to another by one or two persons. The methods used to transport the loaded reel unit are in paragraph c.

● LITTER CARRY

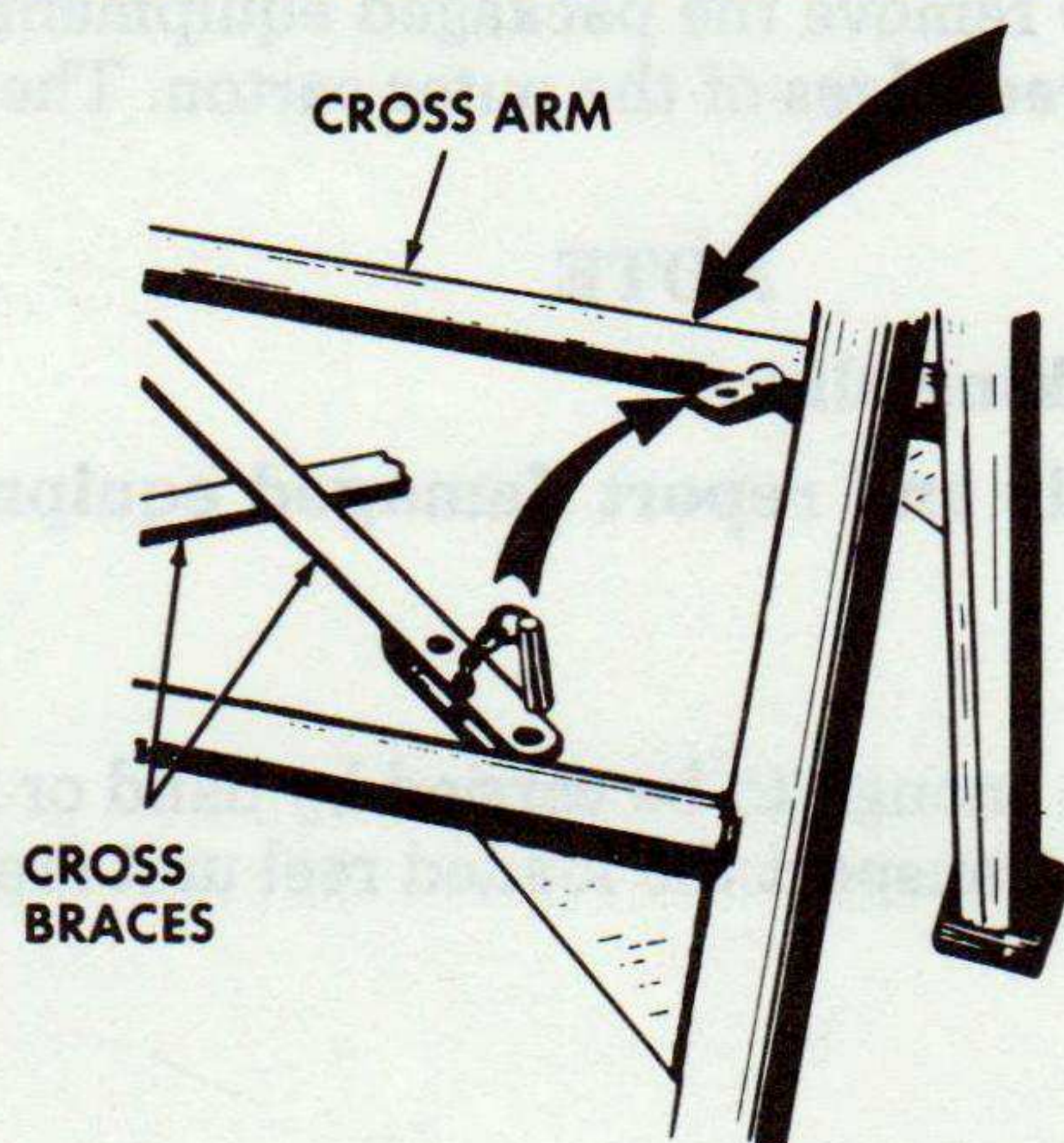


2-6. ASSEMBLY AND PREPARATION FOR USE – Continued

A Place the loaded reel on the ground with the sides upright.

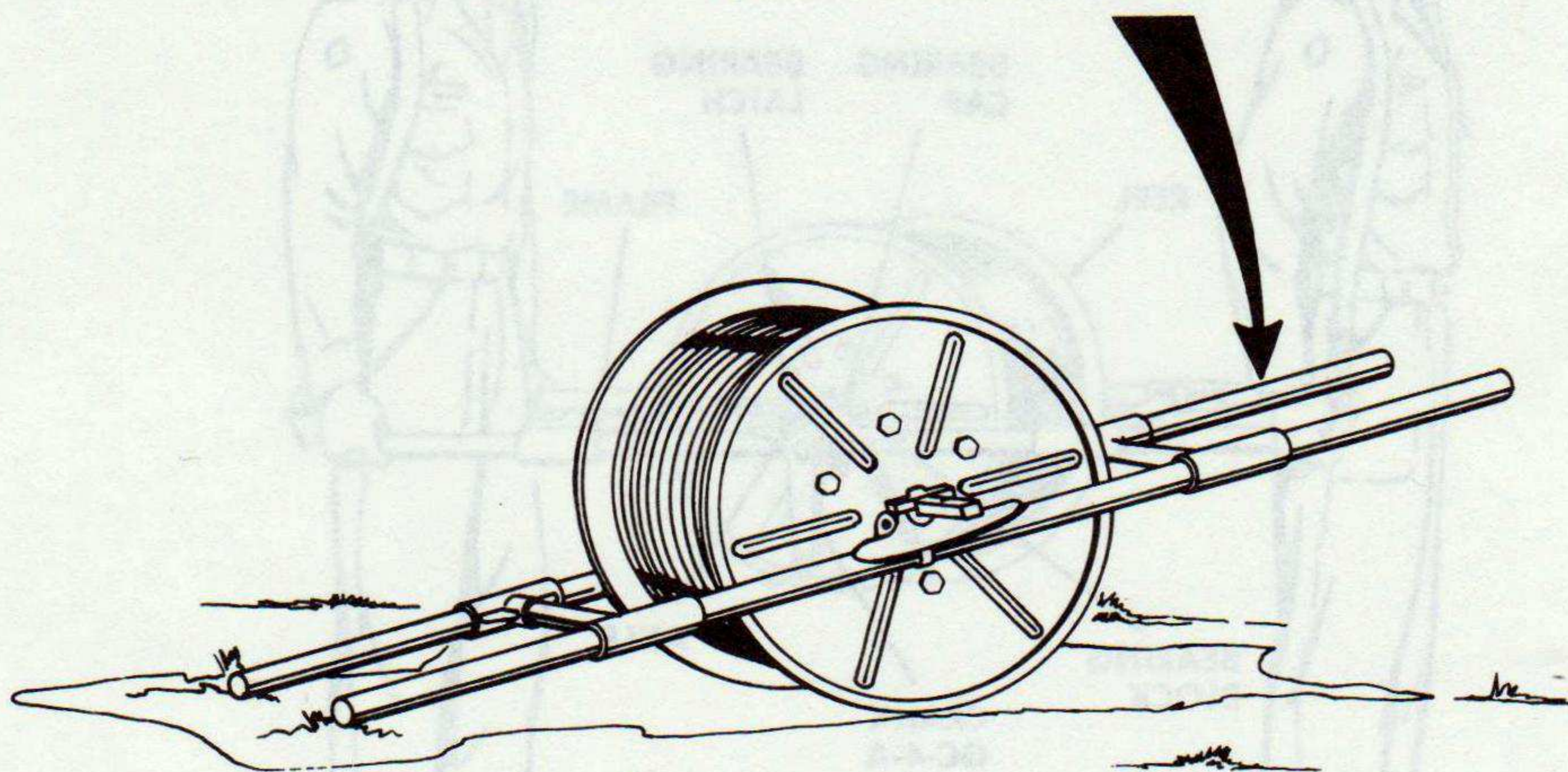


B Release the pin catches and fold the cross braces of Reel Unit RL-31-(*) flat against the cross arms.



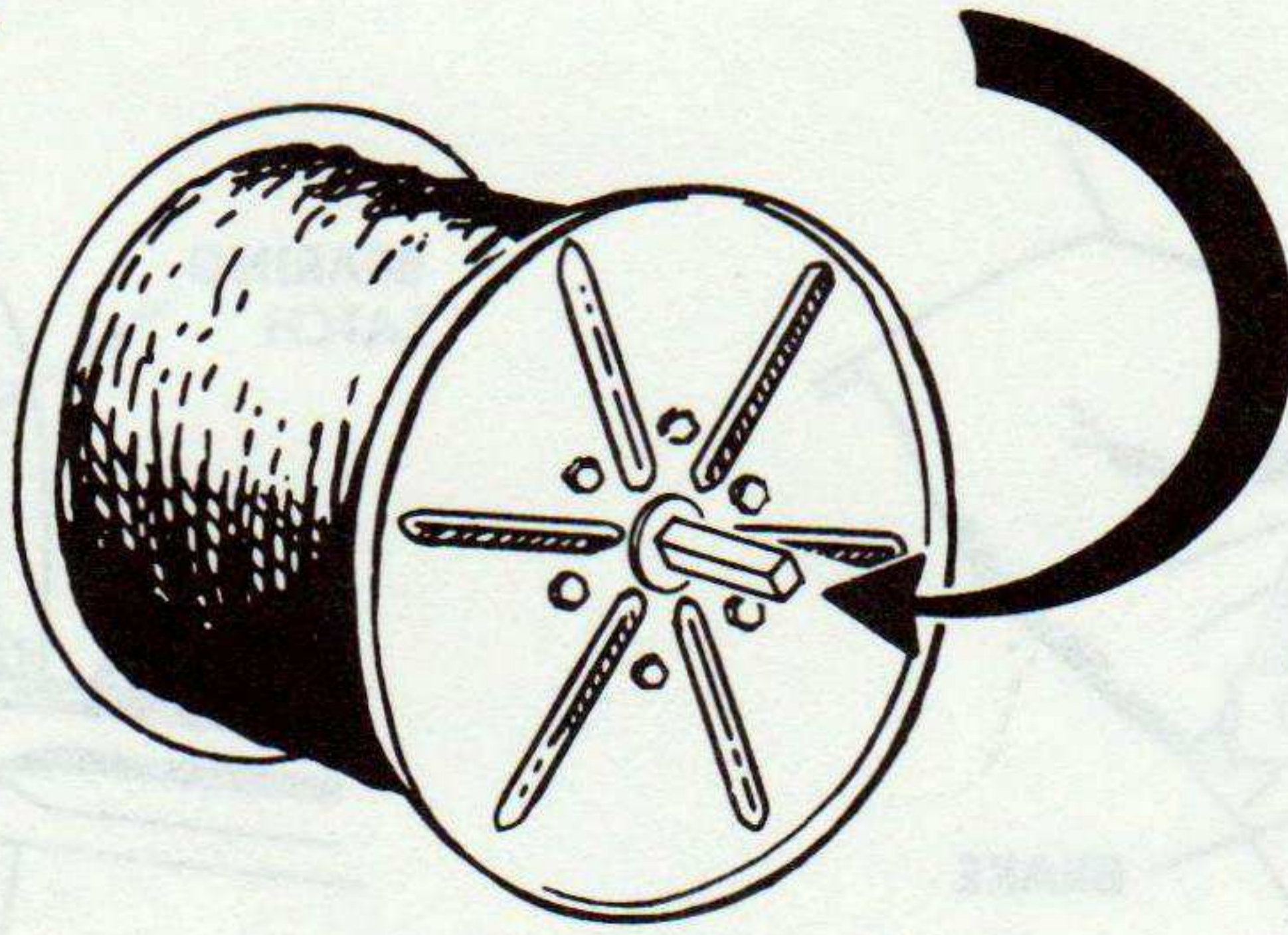
Open up the double H-frames. The bearing blocks will keep the assembly open in a straight line.

C Move the frame over the reel, and rest the frame on the ground.

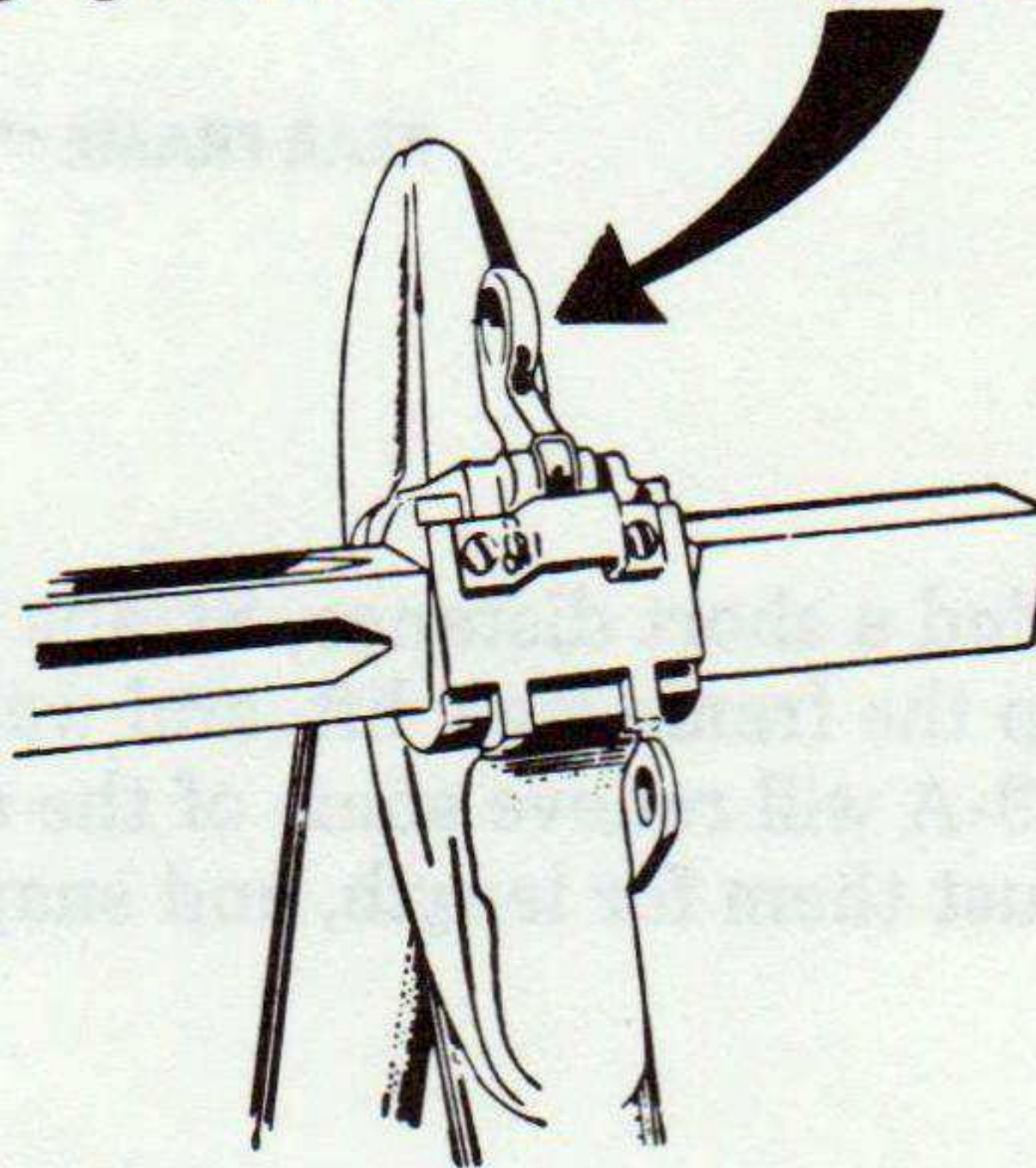


2-6. ASSEMBLY AND PREPARATION FOR USE — Continued

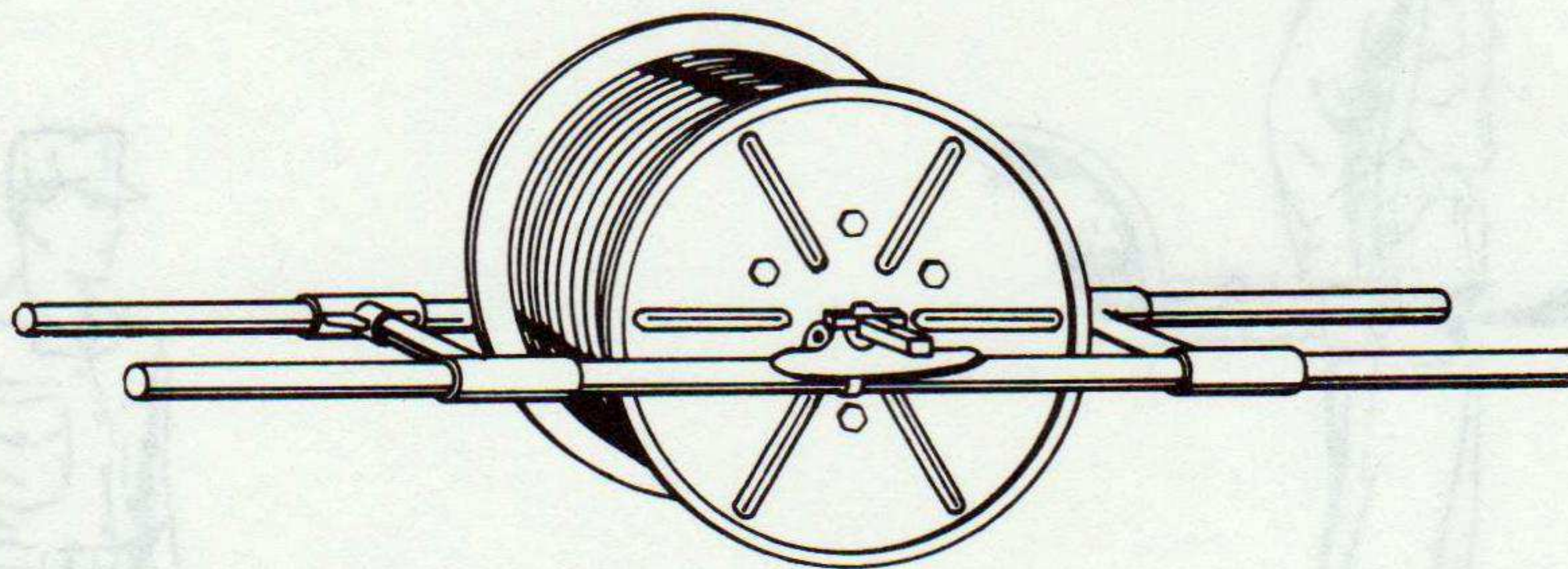
D Slip the axle through the reel.



E Open the bearing caps by pulling upward on the bearing latches.

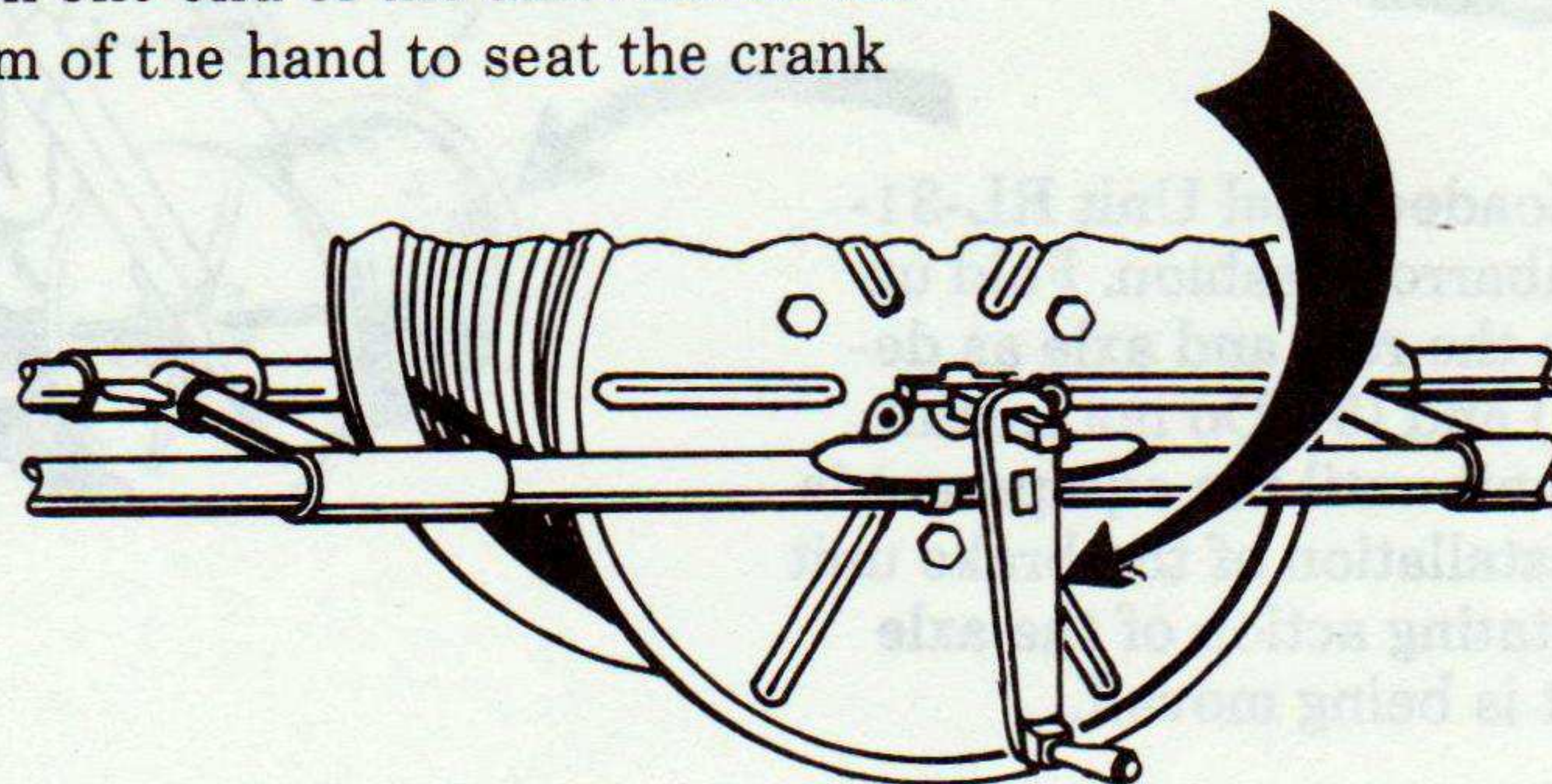


F Raise the frame so that the bearings engage the round bearing surfaces of the axle.



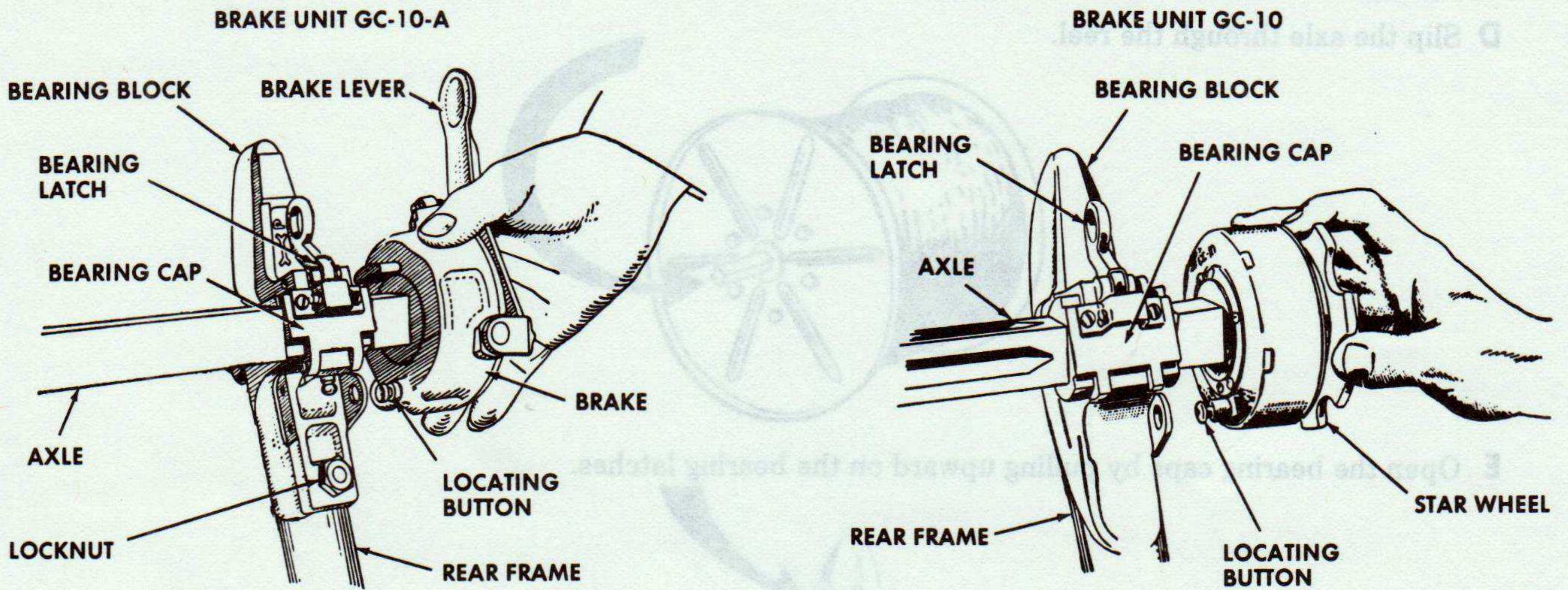
G Close the bearing caps and latch the bearing latches.

H Mount the crank on one end of the axle. Strike the crank with the palm of the hand to seat the crank firmly on the axle.

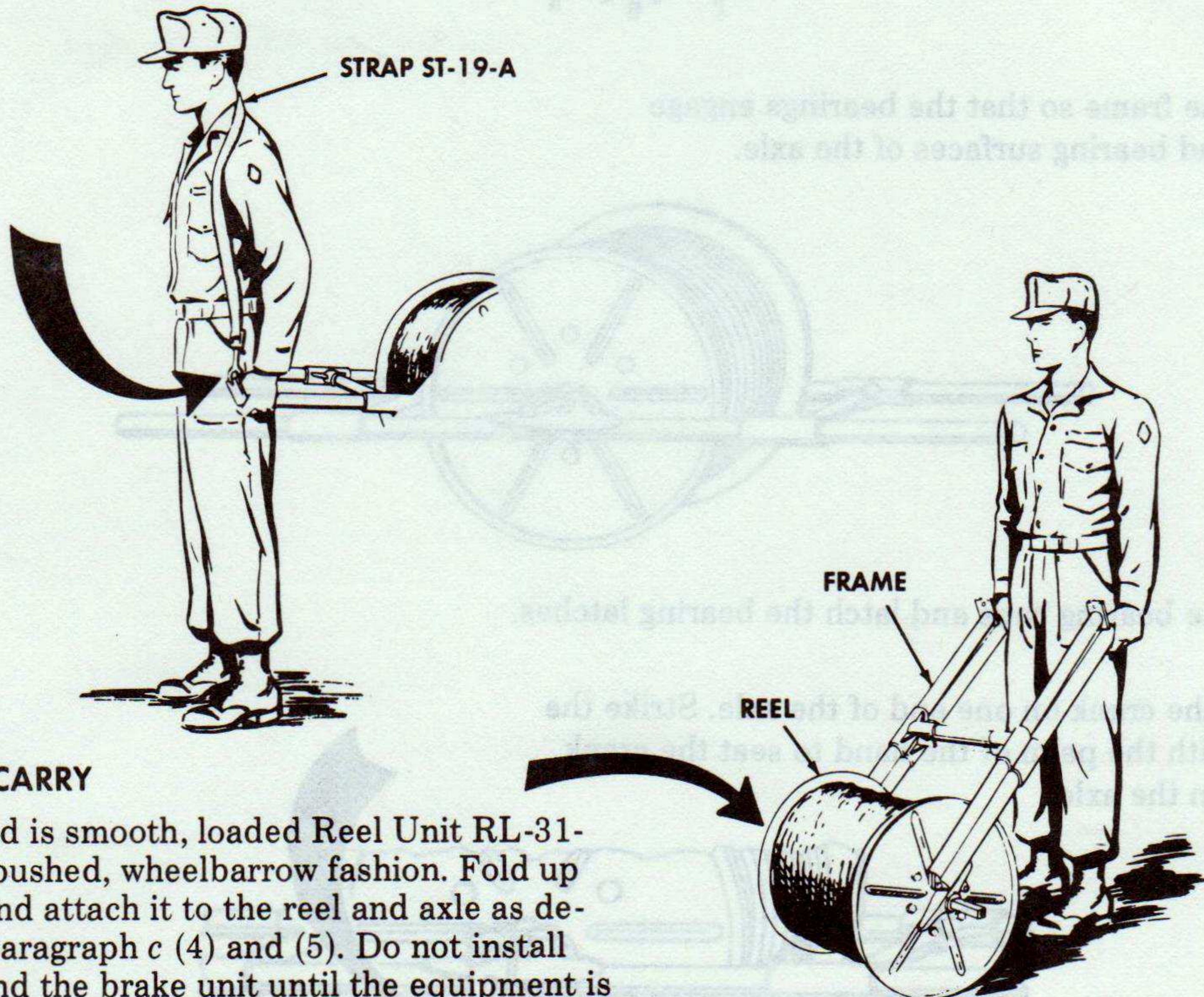


2-6. ASSEMBLY AND PREPARATION FOR USE – Continued

I Mount the brake unit on the other end of the axle.



J If the reel unit and reel are to be carried a short distance, Straps ST-19-A are not required. Two men walk into the open ends of the frame, grasp the frame legs, lift, and walk forward carefully. If the distance to be covered is considerable, Straps ST-19-A will relieve some of the strain on the arm and shoulder muscles. Loop the straps behind the neck, adjust them for length, and snap them into the holes in the legs of the frame.



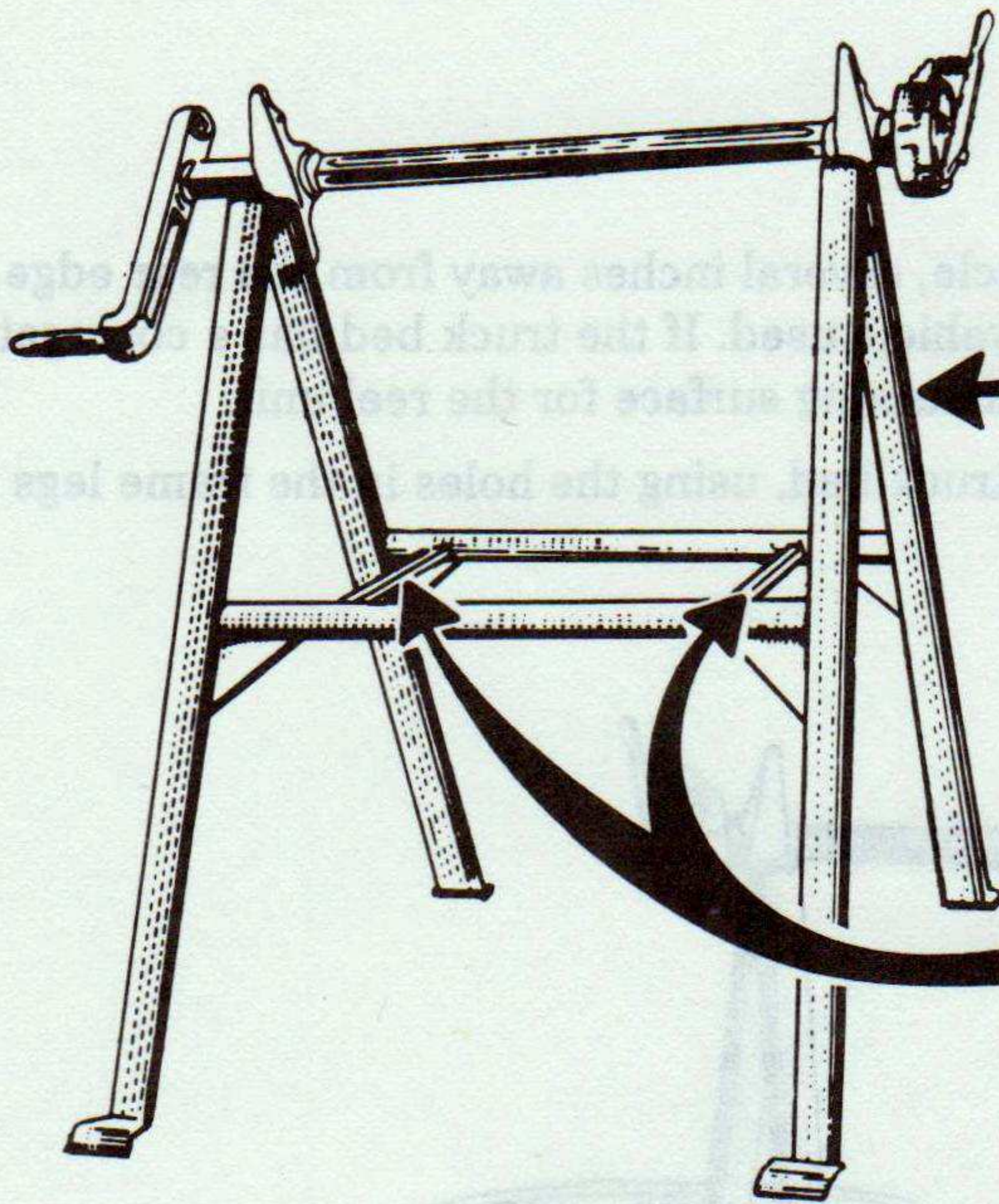
● ONE-MAN CARRY

If the ground is smooth, loaded Reel Unit RL-31- (*) may be pushed, wheelbarrow fashion. Fold up the frame and attach it to the reel and axle as described in paragraph c (4) and (5). Do not install the crank and the brake unit until the equipment is at the installation site. Installation of the brake unit will add friction to the rotating action of the axle while the loaded reel unit is being moved.

2-6. ASSEMBLY AND PREPARATION FOR USE – Continued

● PREPARATION OF FRAME

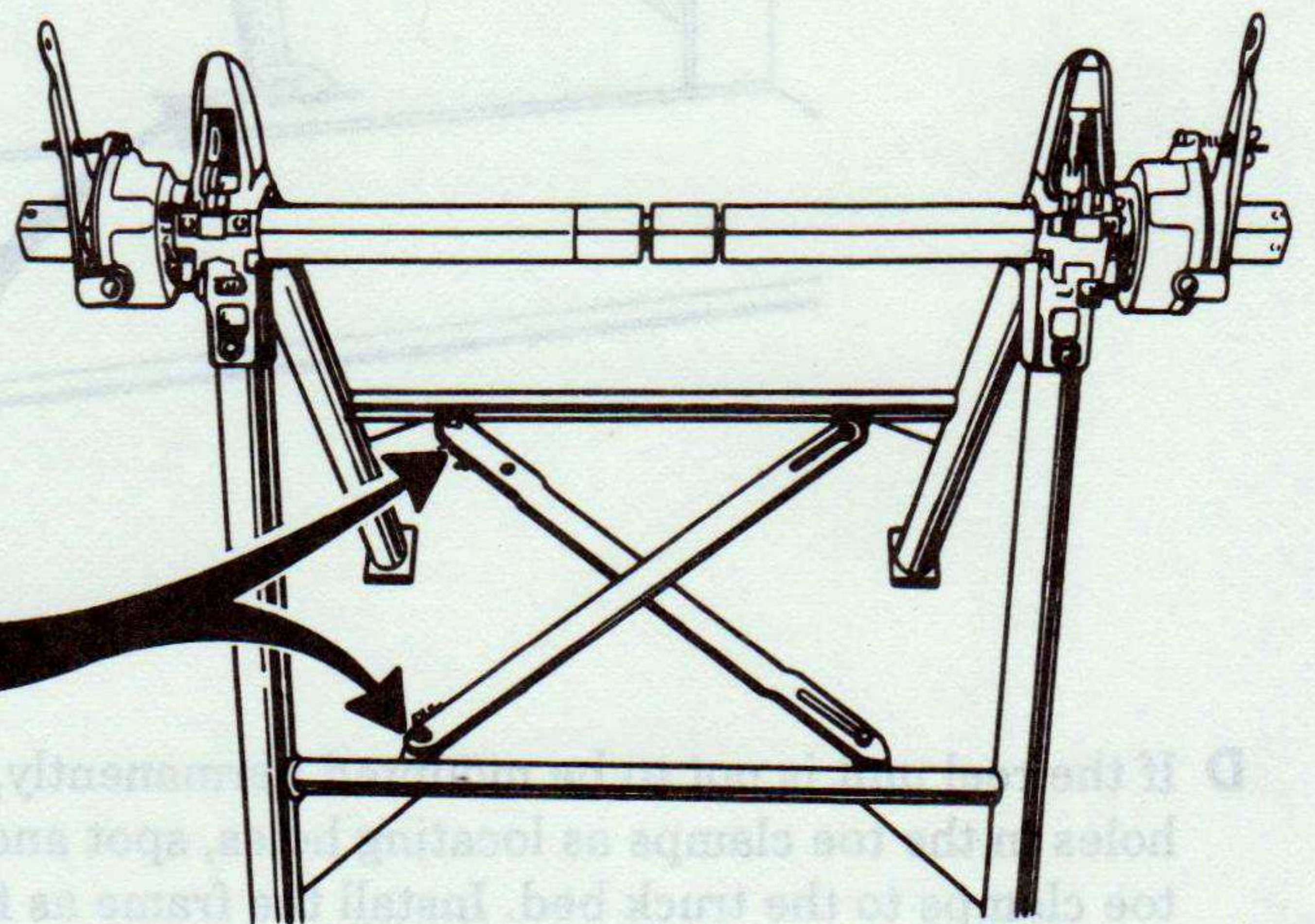
Prepare the frame as follows:



Spread the legs of the frame to form a double A.

Open the pin catches on Reel Units RL-31, RL-31-B, and RL-31-C. Swing the cross braces out at right angles to the cross arms and snap the cross braces into place on the lips of the cross arms.

Remove the pins chained to the cross braces of the RL-31-D and RL-31-E. Adjust the spread of the frame to align the holes in the cross braces with the diagonally opposite hole in the cross arm. Push the pins into the alined holes.



2-6. ASSEMBLY AND PREPARATION FOR USE – Continued

● GROUND INSTALLATION

Select a level site to set up the equipment. When setting up the reel unit, be sure the unit is not tilted and that each leg rests firmly on solid ground. If the area in which the equipment must be used is sandy or marshy, it may be necessary to place boards under the legs of the reel unit to prevent the legs from sinking or the reel unit from tipping over.

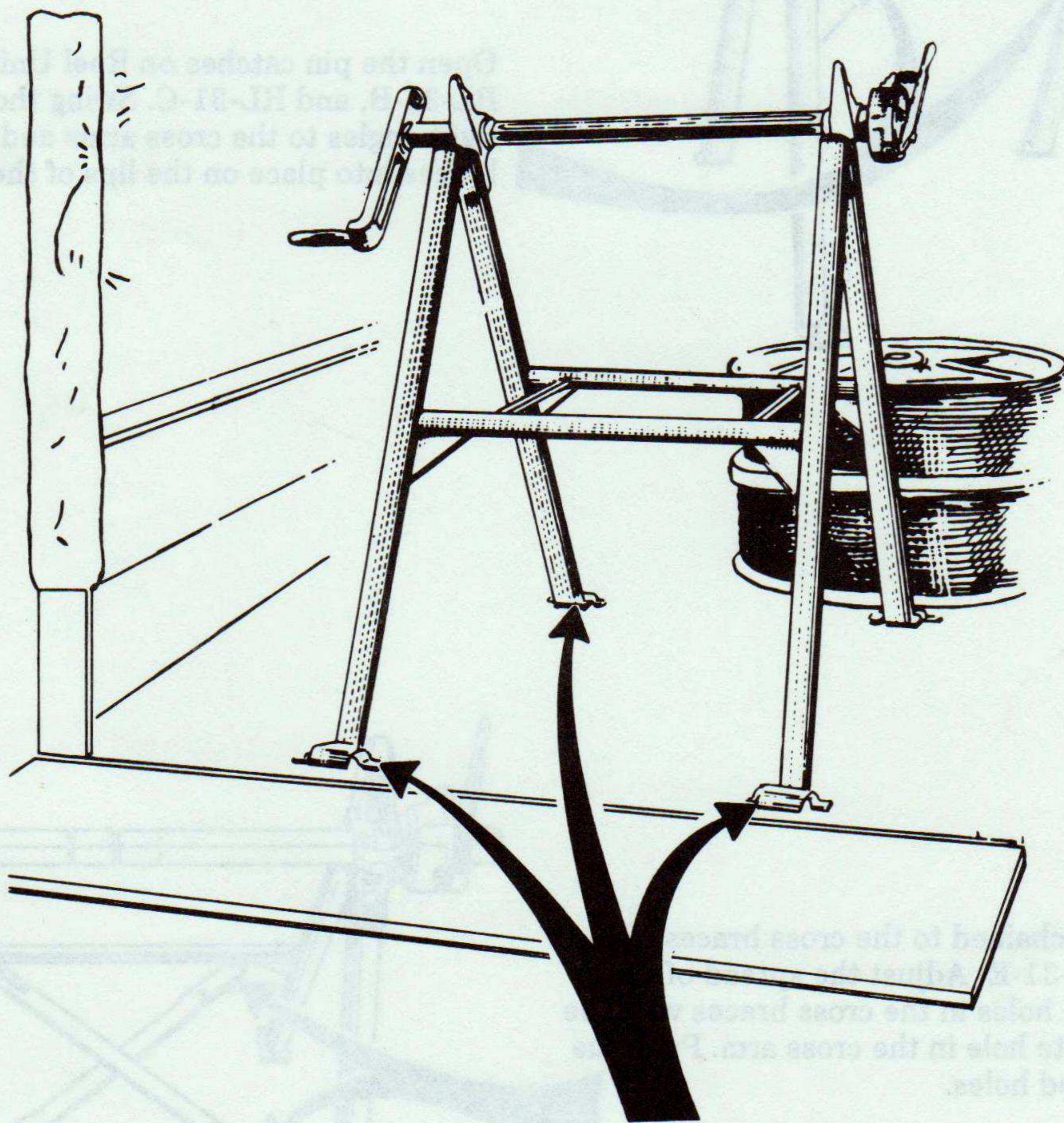
● INSTALLATION IN SMALL FLATBED VEHICLES

Install the reel unit in small flatbed vehicles as follows.

A Prepare the frame (para. 3-10).

B Place the frame in an upright position on the floor of the vehicle, several inches away from the rear edge of the truck bed. The exact location will depend on the type of vehicle used. If the truck bed has a corrugated floor, bolt wooden crosspieces to the floor to provide a level mounting surface for the reel unit.

C If the frame is to be mounted permanently, drill holes in the truck bed, using the holes in the frame legs as pilot holes. Bolt the frame to the floor of the truck.



D If the reel unit is not to be mounted permanently, set a toe clamp over the foot of each frame leg. Using the holes in the toe clamps as locating holes, spot and drill two holes for each clamp in the truck bed. Bolt the toe clamps to the truck bed. Install the frame as follows:

- Release the pin catches of the cross braces. Swing the cross braces against the cross arms.
- Insert the feet of the front frame legs under the front toe clamps.
- Spread the frame and insert the feet of the rear frame legs under the rear toe clamps.
- Move the cross braces to the bracing position and fasten them in place with the pin catches.

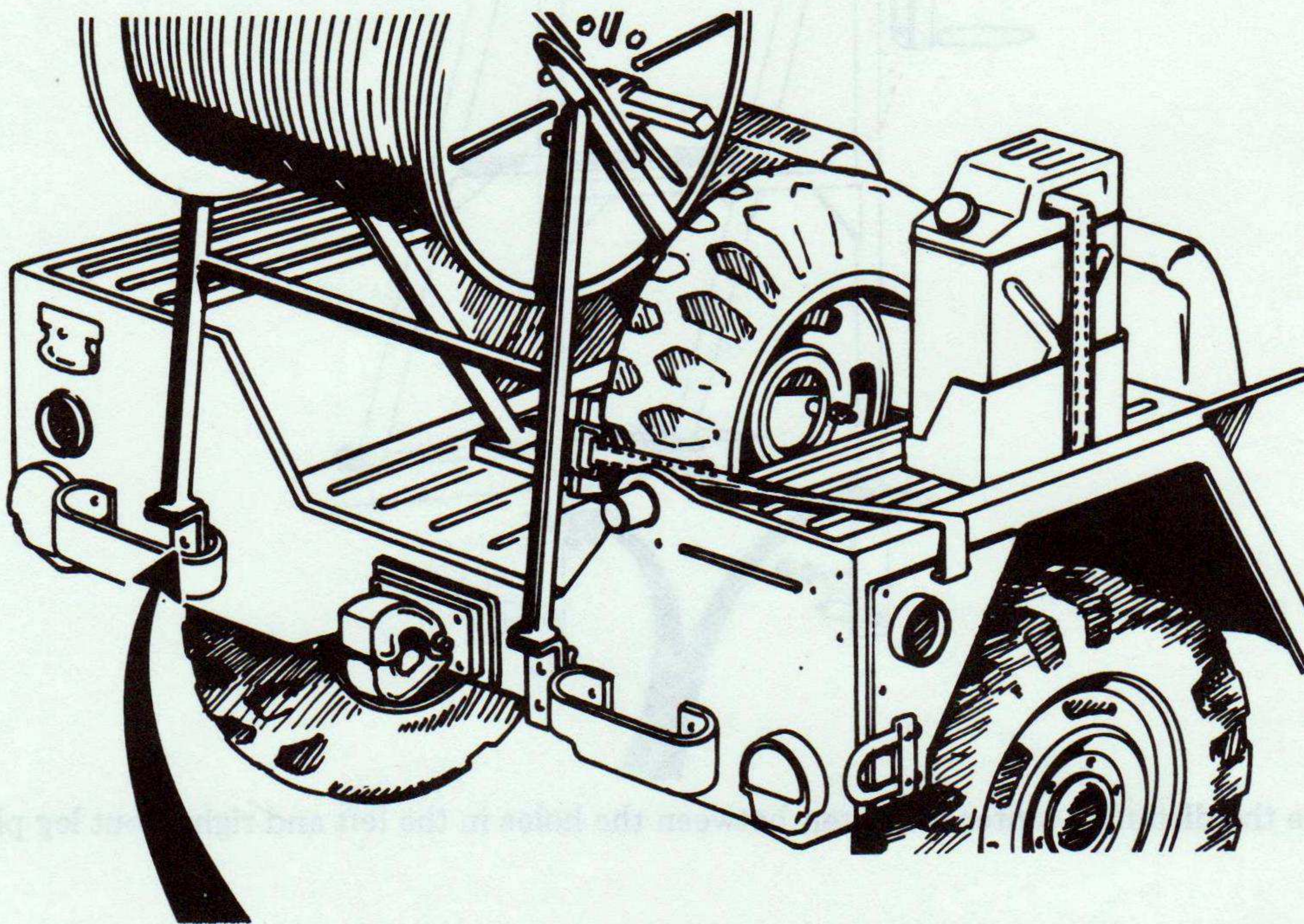
2-6. ASSEMBLY AND PREPARATION FOR USE – Continued

● INSTALLATION IN ¼-TON 4 x 4 UTILITY TRUCK

Installation of the RL-31-(*) in a ¼-ton 4 x 4 utility truck requires relocation of the liquid can and spare tire and wheel. An installation kit (NSN 3895-00-537-7947) is required for this type of installation. Install the reel unit as follows:

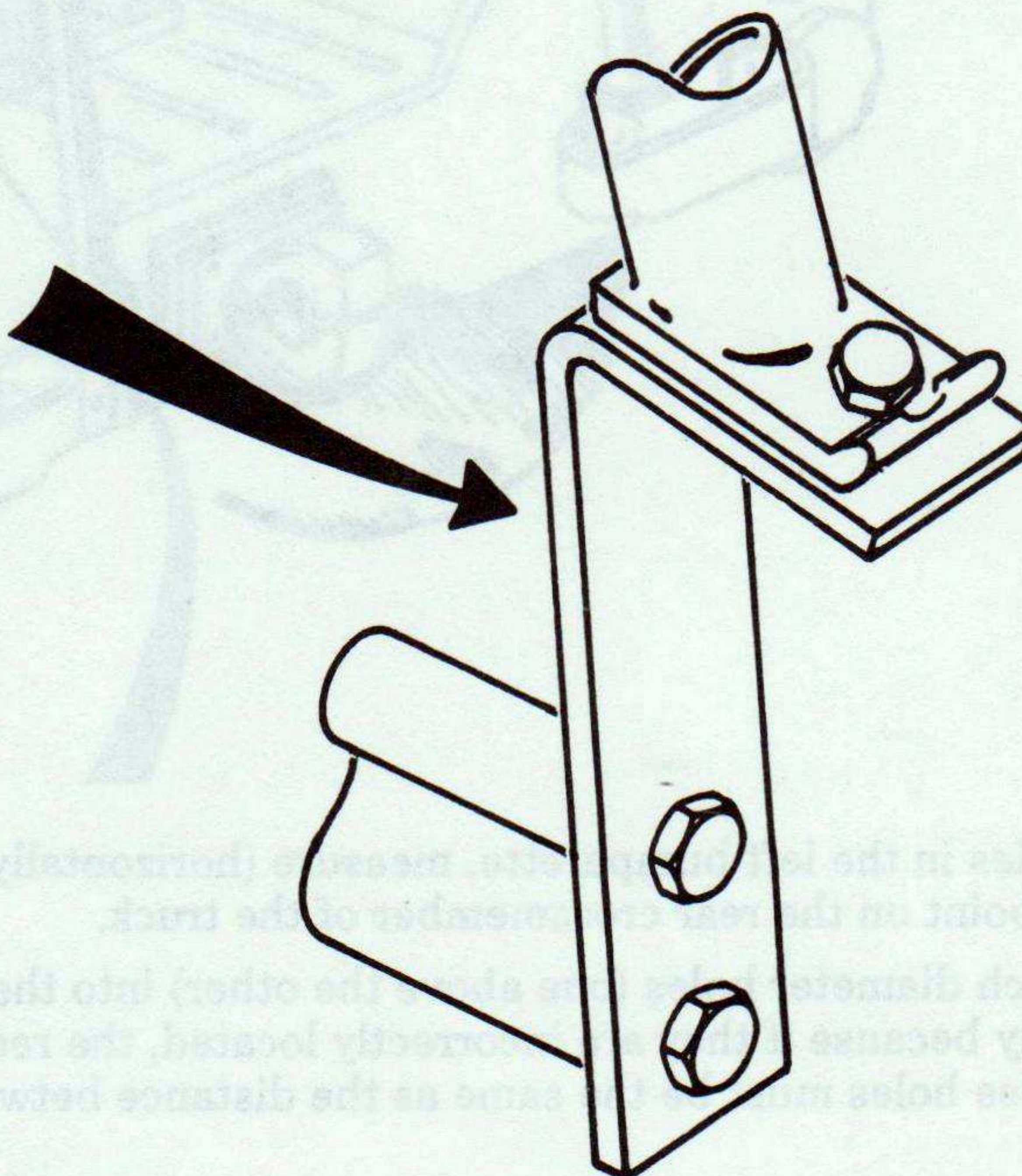
A Installation of Reel Unit.

- Remove the spare tire and wheel. Remove the bolts that hold the spare wheel bracket and the can bracket. Remove both brackets. Remove the bolts that hold the rear seat, and take out the seat.

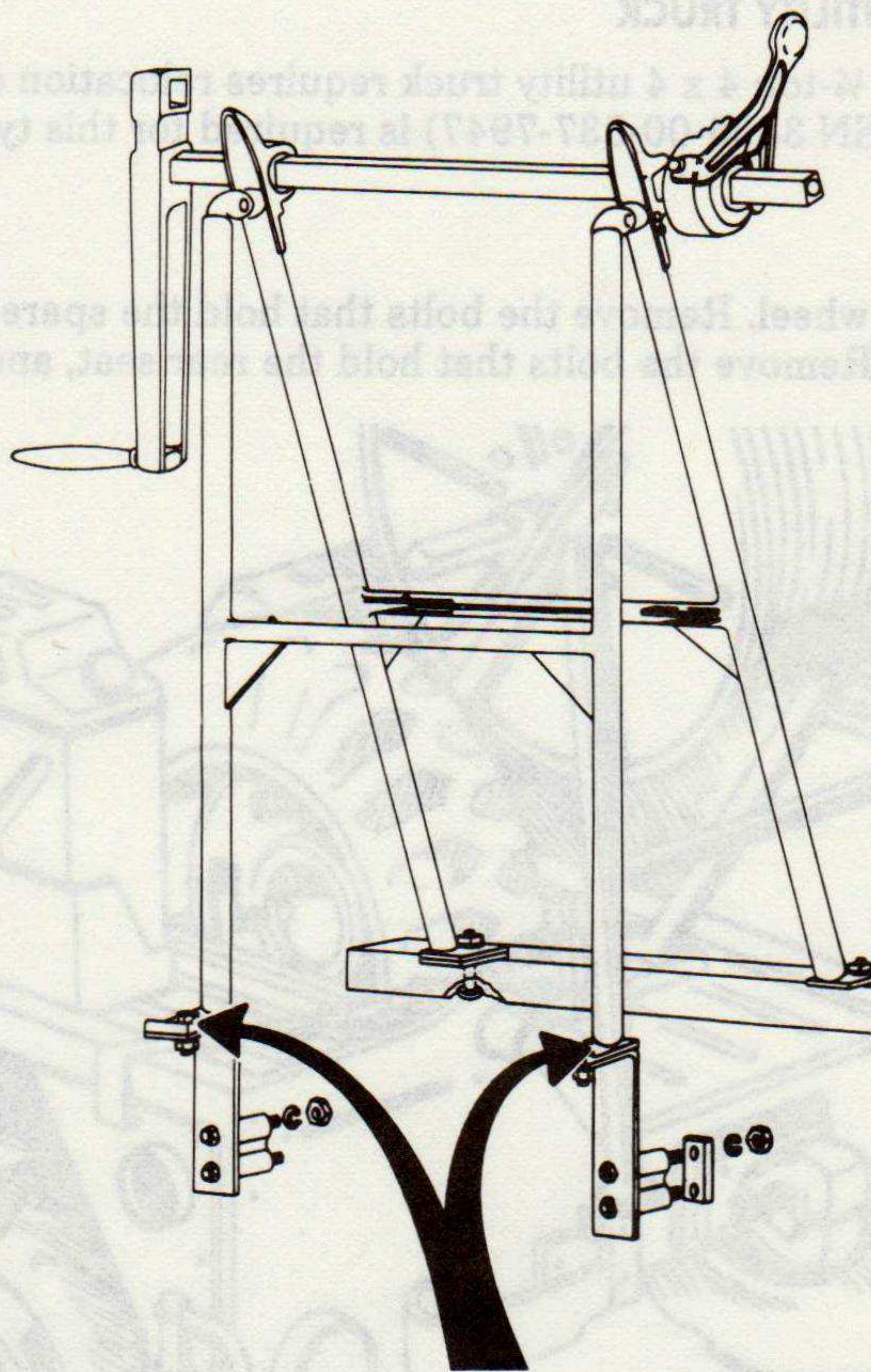


- Remove the two right-hand attaching bolts from the left bumperette on the rear of the truck.

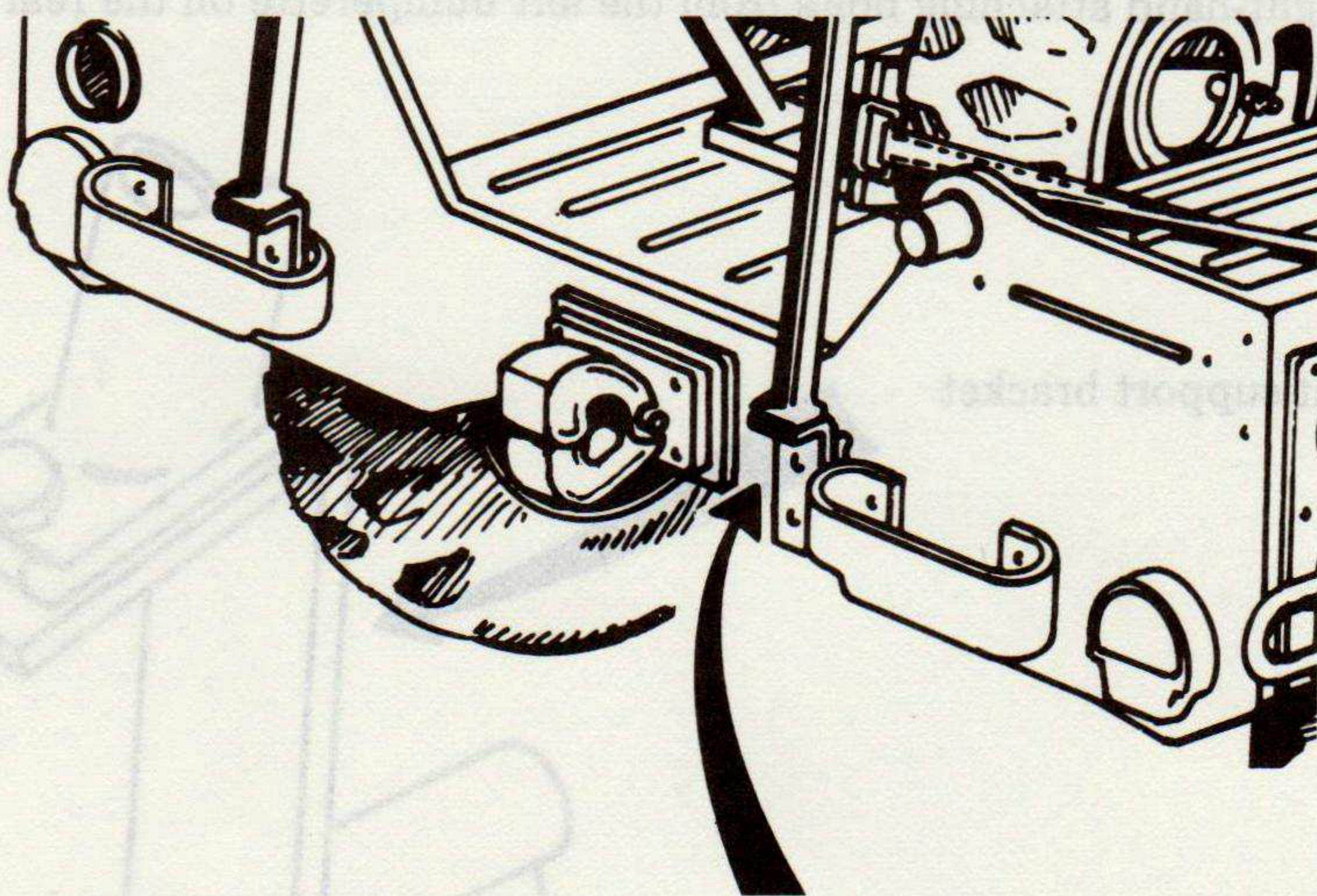
- To mount the right support bracket



2-6. ASSEMBLY AND PREPARATION FOR USE – Continued



Carefully measure the distance, center to center, between the holes in the left and right front leg plates of the reel unit.

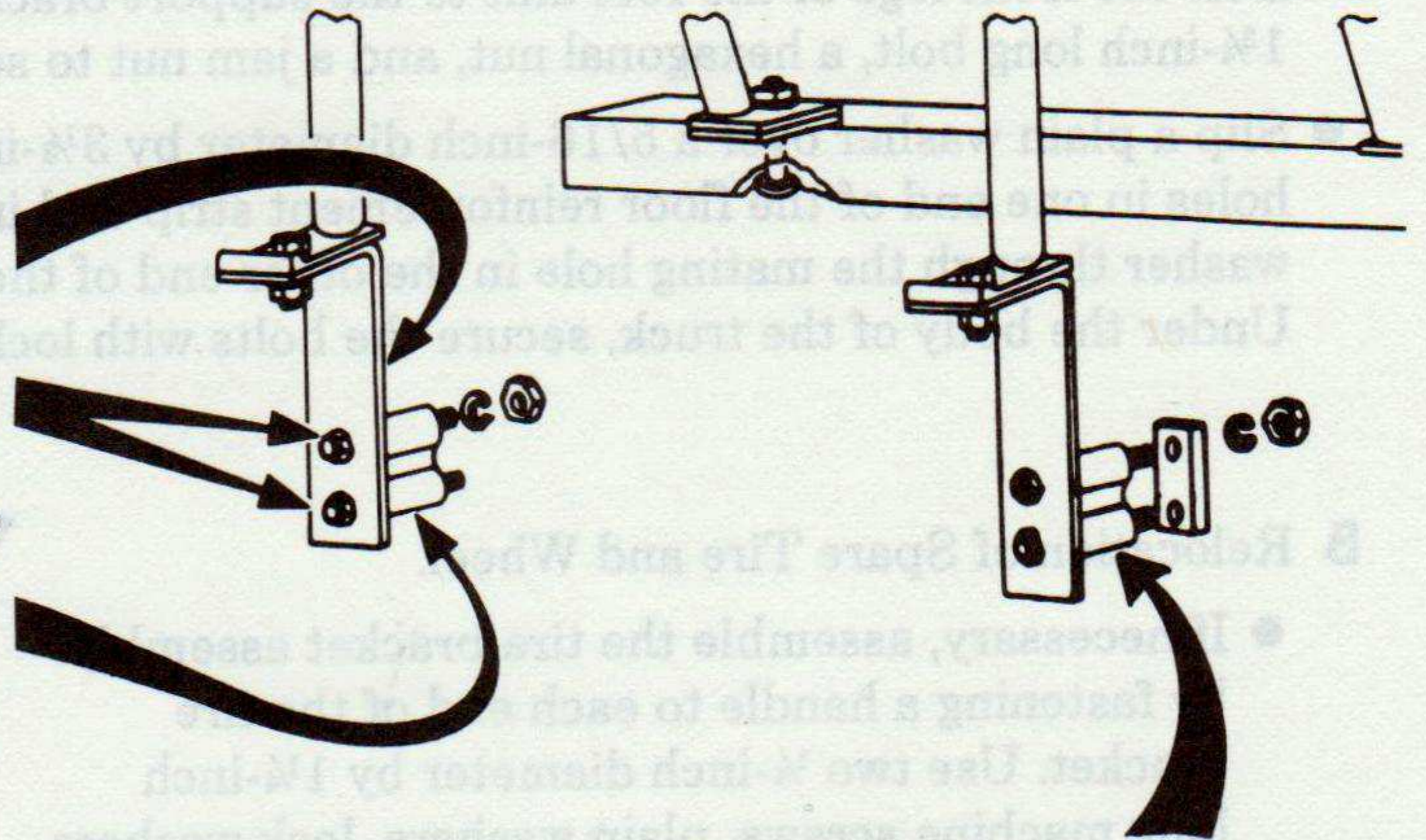


From the open holes in the left bumperette, measure (horizontally to the right) the same distance obtained in above. Mark this point on the rear crossmember of the truck.

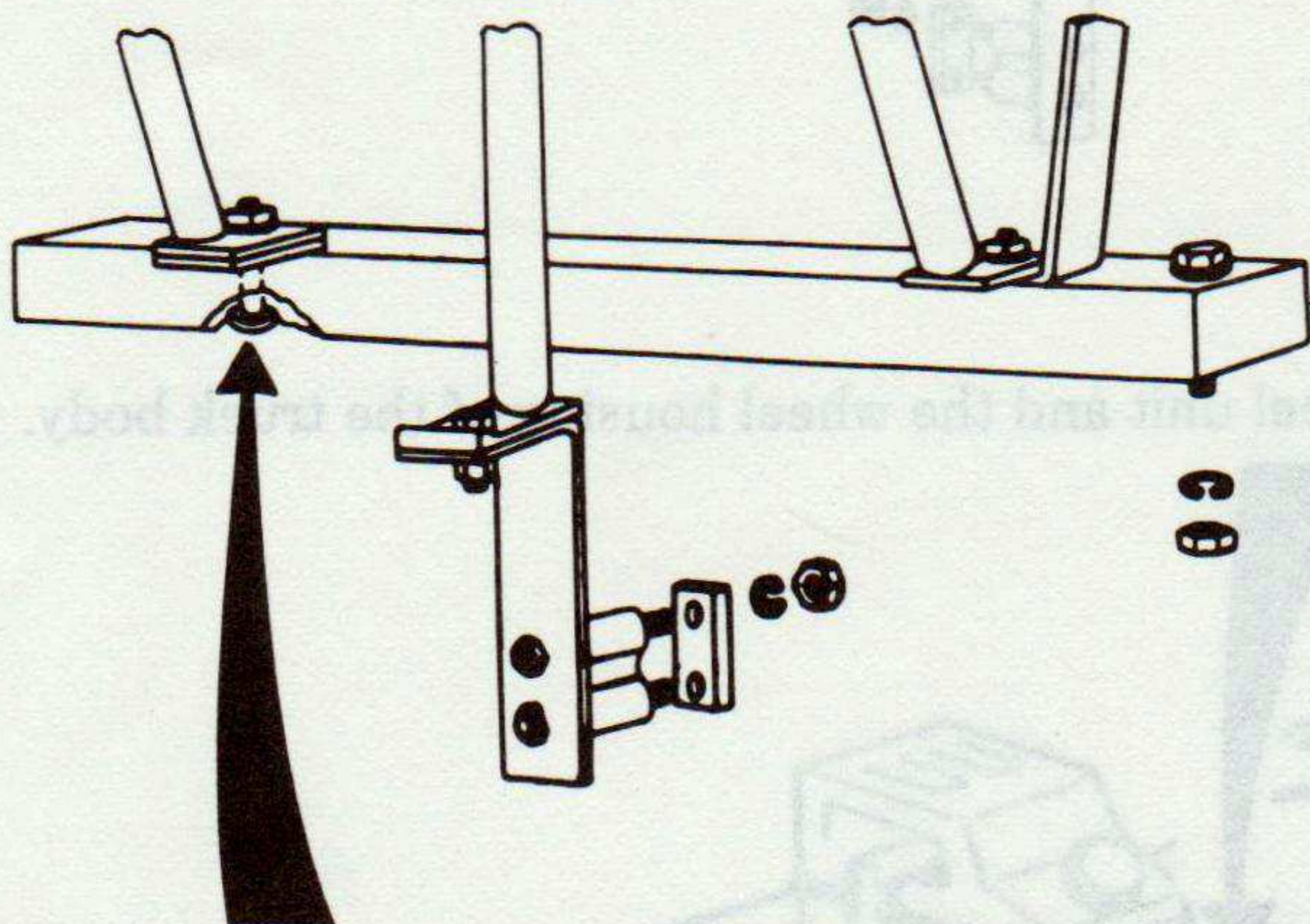
Drill two 19/32-inch diameter holes (one above the other) into the rear crossmember of the truck. Spot these holes very carefully because if they are incorrectly located, the reel unit cannot be installed properly. The distance between these holes must be the same as the distance between the holes in the support bracket.

2-6. ASSEMBLY AND PREPARATION FOR USE – Continued

- Using the open holes in the left bumperette, bolt one support bracket to left side of rear crossmember of the truck. Use two ½-inch diameter by 4½-inch long bolts and insert them through the support bracket, spacer assembly, left bumperette, and rear crossmember of the truck. Secure bolts with lock washers and nuts.

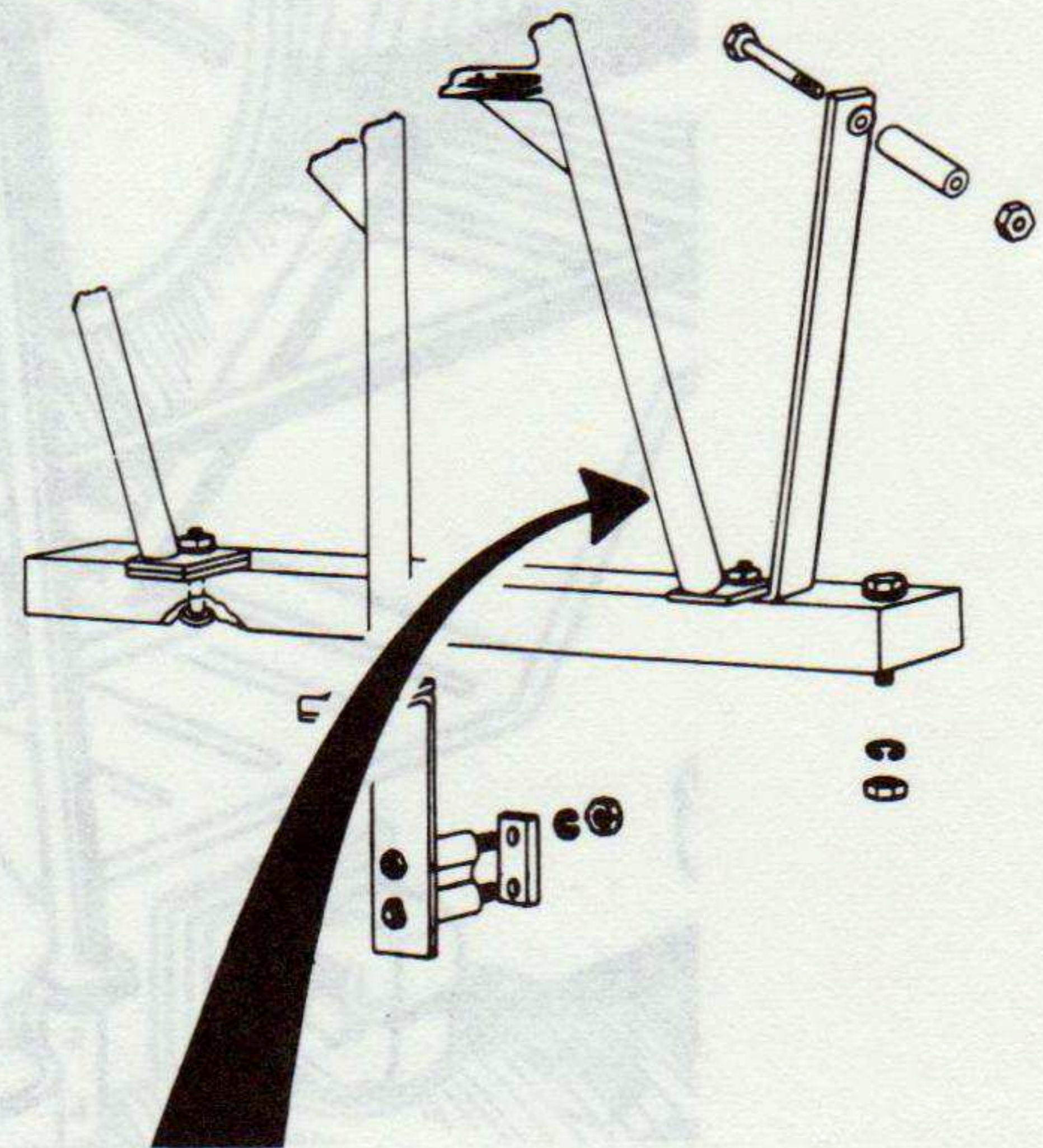


- Using the holes drilled in the rear crossmember of the truck, bolt the other support bracket to the frame. Insert two bolts through the support bracket, a spacer assembly, a spacer and the truck crossmember. Secure the bolts with lock washers and nuts.



- Attach floor reinforcement strip to the rear leg plates of the reel unit (the bearing assembly is mounted on rear legs). Position the floor reinforcement strip so that the holes that are nearest the edge of strip are outside, or away from the reel unit, and the countersunk ends of the holes nearest the center are down.

- Insert a carriage bolt from the bottom of the floor reinforcement strip through the countersunk hole, through a reinforcing cleat, and through the left rear leg of the reel unit. Secure the bolt with a lock washer and a square nut.



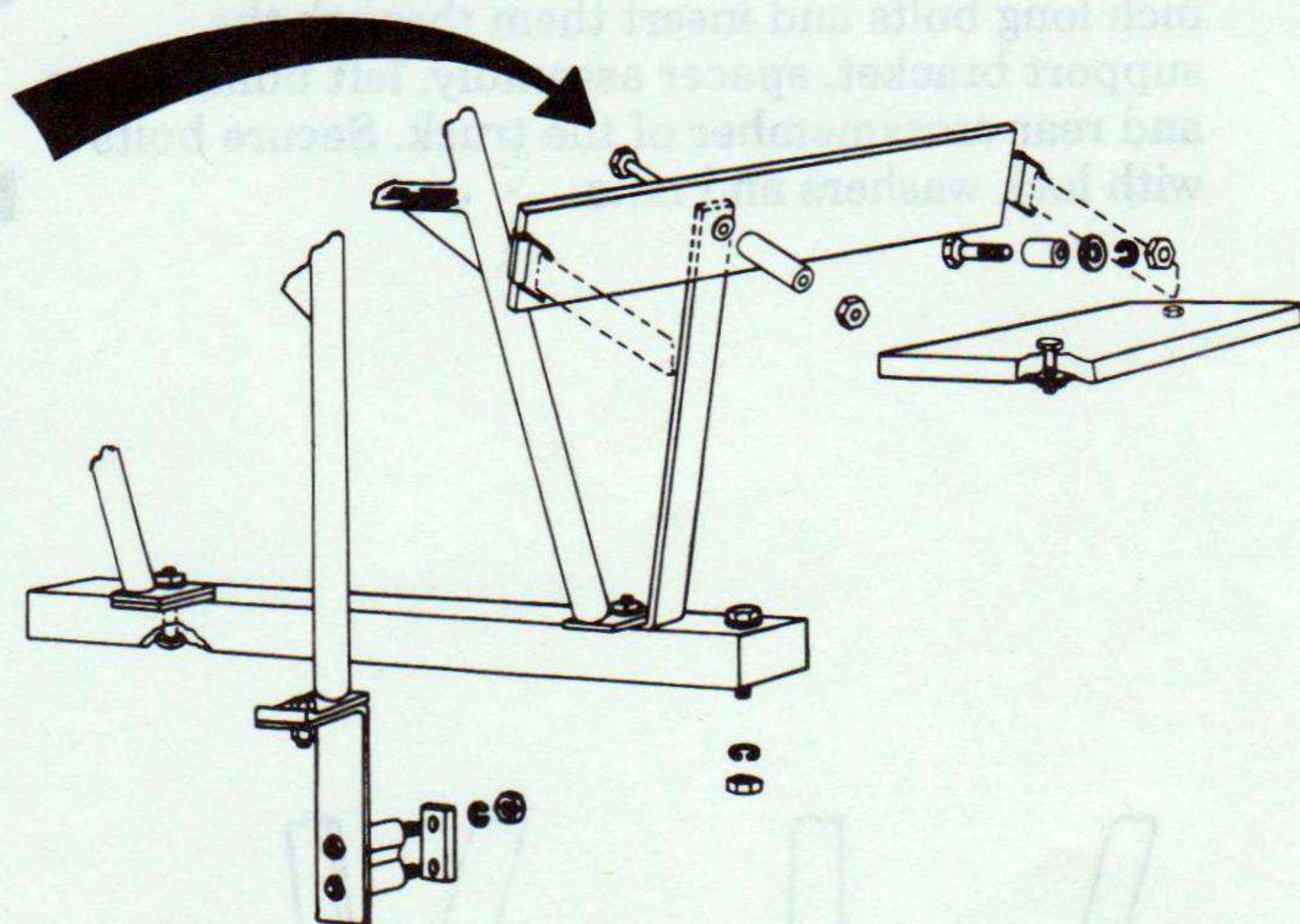
- Insert another carriage bolt through the other countersunk hole in the floor reinforcement strip, through the hole in the short leg of the tire brace with the long leg outside the reel unit frame, and through the hole in the right rear leg of the reel unit. Secure the carriage bolt with a lock washer and a square nut.
- Take out the two body hold-down bolts near the rear (center) of the truck.
- Lift the reel unit into the truck and position it so that the front legs rest on the support brackets and the open holes in the floor reinforcement strip mate with the holes from which the body hold-down bolts were removed.

2-6. ASSEMBLY AND PREPARATION FOR USE – Continued

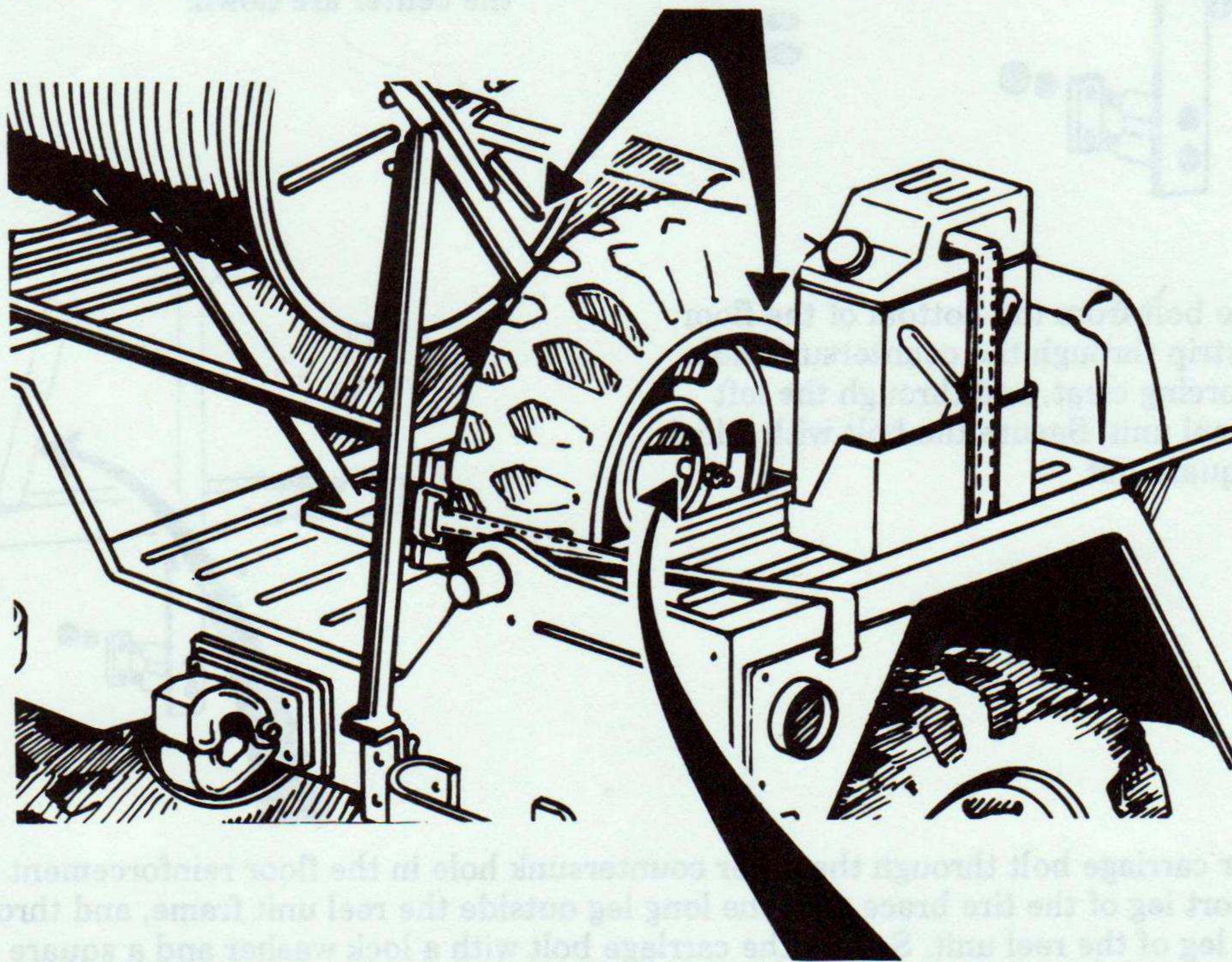
- Bolt the front legs of the reel unit to the support brackets. Use a $\frac{3}{8}$ -inch diameter by $1\frac{1}{4}$ -inch long bolt, a hexagonal nut, and a jam nut to secure each leg.
- Slip a plain washer over a $\frac{5}{16}$ -inch diameter by $3\frac{1}{3}$ -inch long bolt and insert the bolt through the mating holes in one end of the floor reinforcement strip and into the body floor. Install a second bolt with a plain washer through the mating hole in the other end of the floor reinforcement strip, and into the body floor. Under the body of the truck, secure the bolts with lock washers and nuts.

B Relocation of Spare Tire and Wheel.

- If necessary, assemble the tire bracket assembly by fastening a handle to each end of the tire bracket. Use two $\frac{1}{4}$ -inch diameter by $1\frac{1}{4}$ -inch long machine screws, plain washers, lock washers, and nuts to attach each handle. Some installation kits are supplied with the handles already attached to the tire bracket.



- Place the spare tire and wheel between the frame of the reel unit and the wheel housing of the truck body.

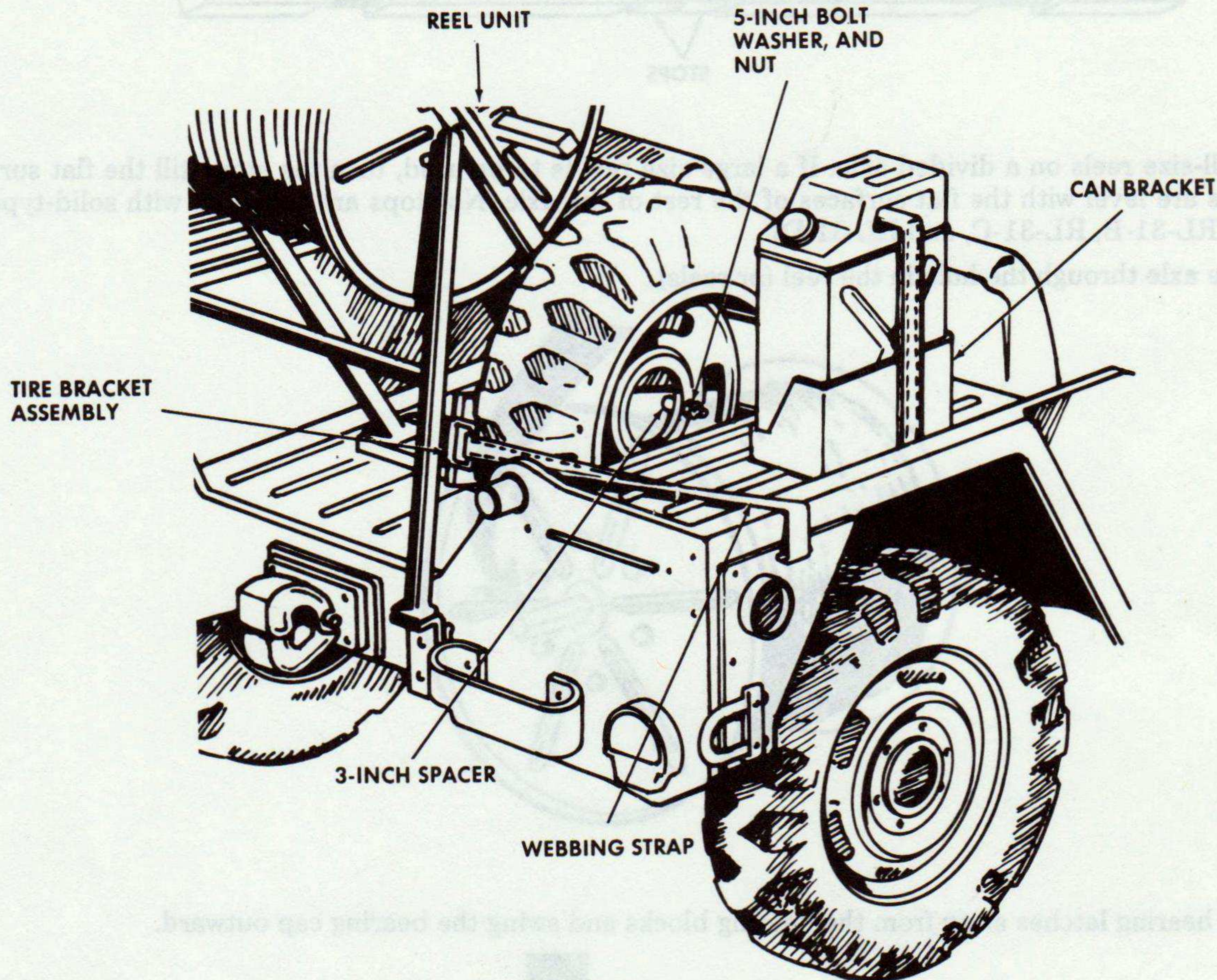


- Insert a $\frac{1}{2}$ -inch diameter by 5-inch long bolt through the hole in the upper end of the tire brace, the hole in the tire bracket, a plain washer, through the 3-inch pipe spacer, and through one of the mounting holes in the spare wheel. Secure the bolt with a hexagonal nut.

2-6. ASSEMBLY AND PREPARATION FOR USE – Continued

C Relocation of Can.

- Place the can bracket on the wheel housing, with the wheel well reinforcement block between the liquid can bracket and the wheel housing. Line up the holes in the bottom of the can bracket with those in the wheel well reinforcement block.
- Spot through the two lower holes in the back of the can bracket and drill two 7/13-inch holes in the side panel of the truck.

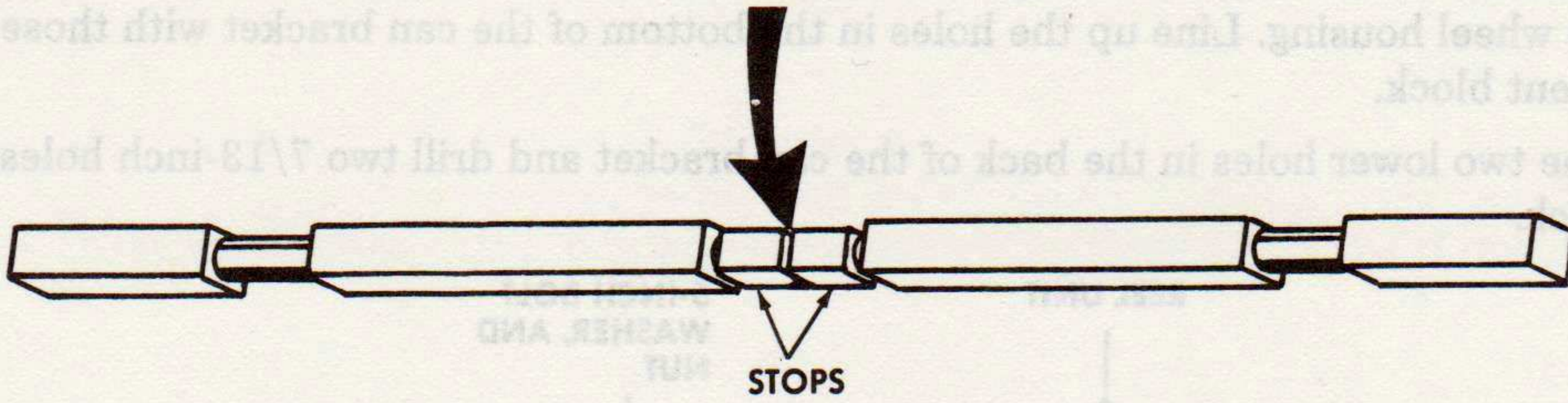


- Insert two pipe spacers between the can bracket and the side of the truck and bolt the can bracket to the side panel of the truck.
- Insert two 3/8-inch diameter by 1½-inch long bolts from the inside of the truck through the can bracket and the spacers, and secure them on the outside of the truck with plain washers, lock washers, and nuts.
- Align the mating holes in the bottom of the can bracket and the wheel well reinforcement block and drill two 7/16-inch diameter holes in the wheel housing. Bolt the can bracket to the wheel housing with two 3/8-inch diameter by 2-inch long bolts. Secure the bolts under the wheel housing with reinforcing cleats, lock washers, and nuts.
- Securely attach one end of a webbing strap to one handle of the tire bracket assembly and attach one end of a second webbing strap to the other handle. Insert the loose ends of the straps through the hold-down fitting or handles on the side panel of the truck. Pull the straps taut and fasten them. If webbing straps are not available, Strap ST-19-A, wire, or rope may be used.

2-7. OPERATING PROCEDURE

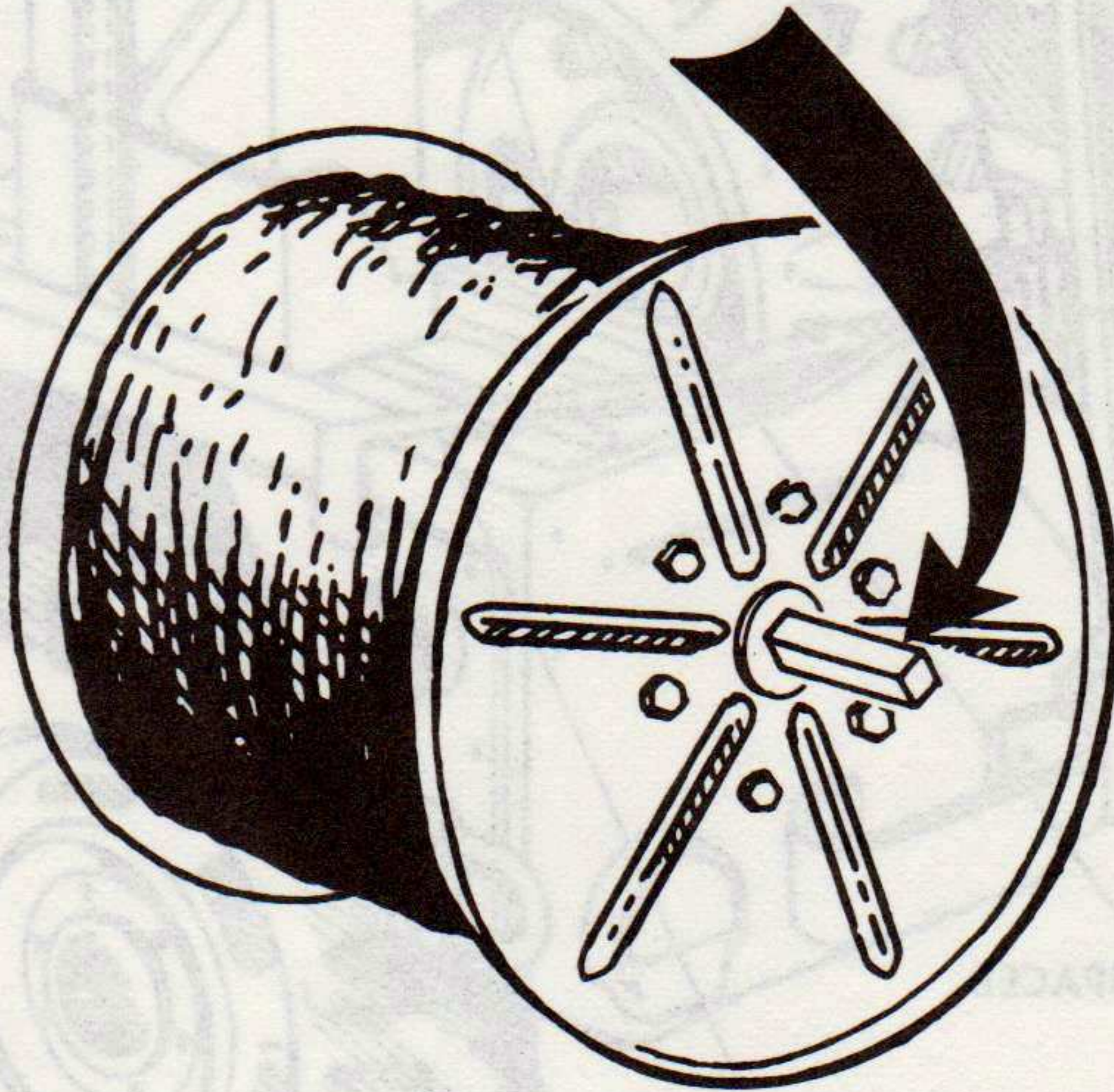
● LOADING REEL UNIT

A On Reel Unit RL-31-E, turn the stops one-fourth turn to the position shown to accommodate

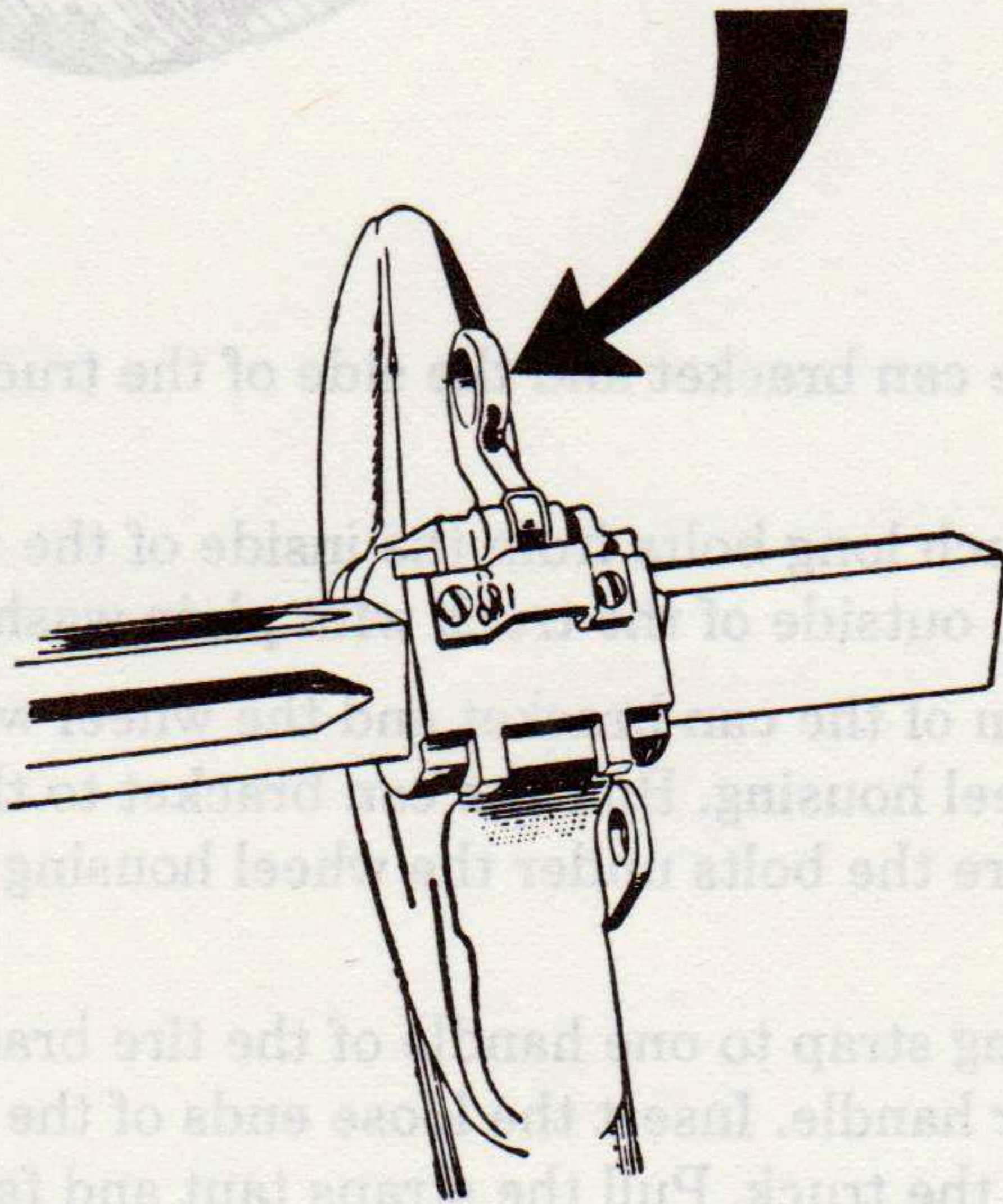


two small-size reels on a divided axle. If a large-size reel is to be used, turn the stops till the flat surface of the stops are level with the flat surfaces of the rest of the axle. No stops are provided with solid-type axles (RL-31, RL-31-B, RL-31-C, and RL-31-D).

B Place the axle through the hole in the reel (or reels).



C Pull the bearing latches away from the bearing blocks and swing the bearing cap outward.



2-7. OPERATING PROCEDURE – Continued

- D With an operator stationed at each end of the axle, lift the reel with gloved hands, and place it in the bearing blocks of the reel unit.
- E Close the bearing caps and latch the bearing latches.

● PAYING OUT WIRE

A Mounting Brake Unit.

Mount the brake unit by sliding it on the end of the axle as shown in 2-6. Engage the locating button in the locating hole just below the axle. If wire is payed out from two reels at the same time and a divided axle is used, install a second brake unit if available, on the other end of the axle.

WARNING

Always use gloves when handling wire during pay out.

B Pay Out from Ground Installation.

- Grasp the free end (or ends, if two reels are used) and walk away from the reel unit. If a vehicle is to be used to draw the wire, attach the end (or ends) of the wire to the vehicle and drive the vehicle away from the reel unit very slowly.
- Increase friction of the brake unit (or units) slowly by turning the star wheel of the GC-10 to the right, or by pushing the brake lever of the GC-10-A inward until enough friction is obtained to prevent overrunning during pay out.

C Pay Out from Vehicle.

- Attach the free end (or ends) of the wire to a stationary object such as a pole or tree.
- Drive the vehicle at a slow rate of speed. Adjust the friction of the brake units as described in (2) (b) above.

● RECOVERING WIRE

A Load the reel unit with an empty reel.

NOTE

If a brake unit is mounted on the axle, remove it by grasping the unit and pulling outward.

- B Attach one end of the wire to the reel. If two reels are to be used to recover two wires at the same time, attach one end of the second wire to the second reel.
- C Select the proper hole in the crank for the desired recovery speed. Use the hole closer to the end of the crank for greater leverage. Use the second hole from the end if the pull on the wire is not heavy and a faster recovery speed is desired.
- D Mount the crank on one end of the axle. Strike the crank with the palm of the hand until the plunger inside the hole in the crank engages one of the holes near the end of the axle. Pull out and downward on the crank handle till it is at right angles to the crank. Mount a second crank on the other end of the axle if two small-size reels are to be used on a divided axle.
- E Turn the crank (or cranks) to recover the wire. Turn the crank in a direction to cause the wire to be drawn over the top of the reel. A second member of the recovery team should clean the wire with a rag to remove dirt and moisture. Gloves should be worn to prevent injury to hands. The second member also must guide the wire to cause it to be wound in level layers on the reel. If the reel unit is installed on the ground, free the distant end of the wire, and drag the wire along the ground during recovery. If the reel unit is installed in a vehicle, and the distant end of the wire is not free, drive the vehicle in the direction from which the wire is being recovered at a speed slow enough to prevent overrunning the wire.

● UNLOADING REEL UNIT

- A Remove the crank by pulling it outward from the end of the axle.
- B Pull the bearing latches away from the bearing blocks and swing the bearing caps outward.
- C Station an operator at each end of the axle. Lift the loaded axle from the frame with gloved hands, and set it down carefully.
- D Pull the axle from the loaded reel. If two small-size reels are mounted on a divided axle, turn the stops one-fourth turn before removing the axle.

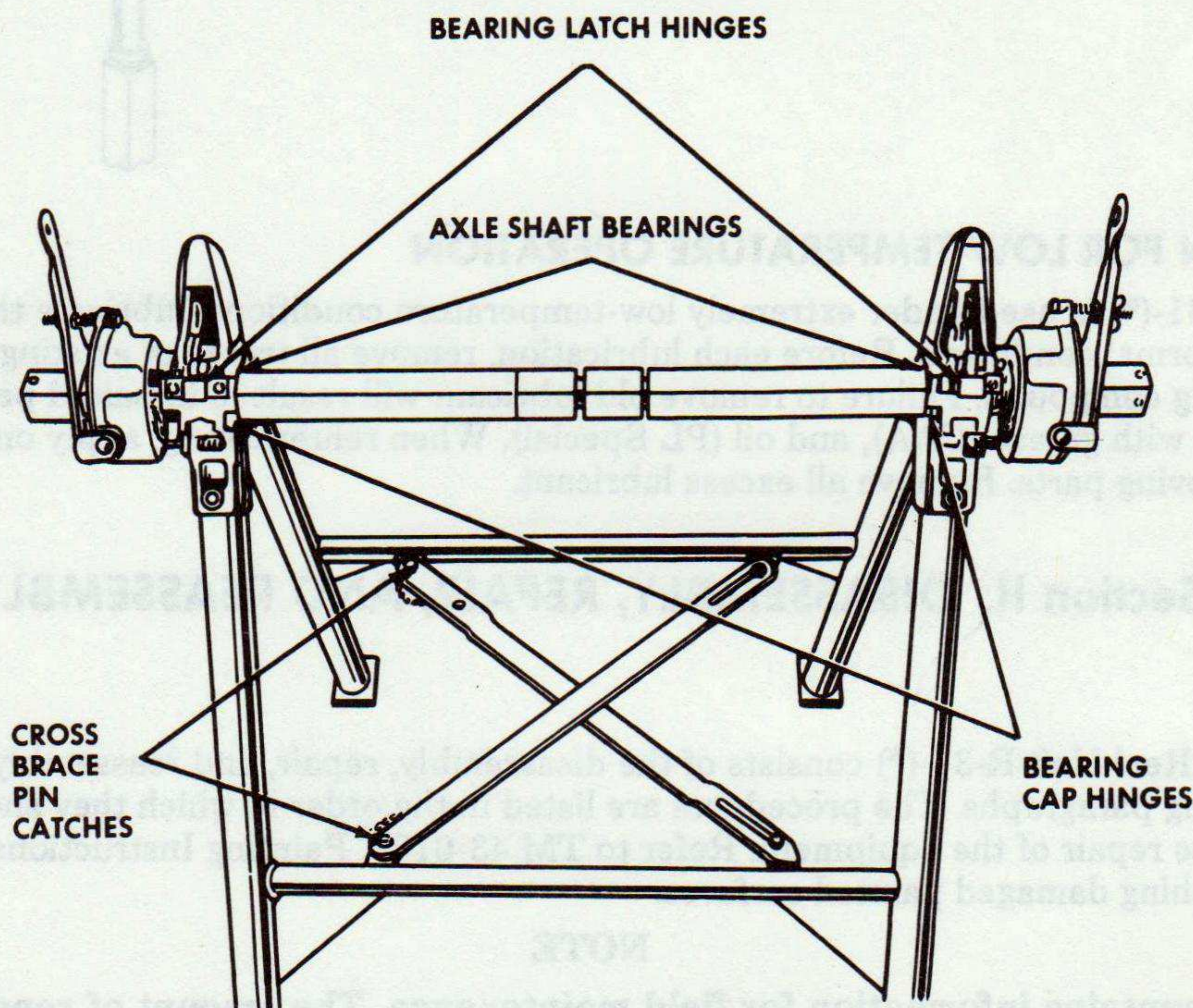
CHAPTER 3

MAINTENANCE INSTRUCTIONS

Section I. LUBRICATION INSTRUCTIONS

3-1. LUBRICATION FOR NORMAL OPERATION

- A** All intervals for lubrication are given in operating hours. For abnormal conditions or activities, intervals should be adjusted to compensate.
- B** When lubricating the equipment, take care to prevent oil or grease from getting into the brake mechanism. Wipe off all excess grease around the axle shaft bearing. The excess grease might work into the brake during operation. If oil or grease should get in the brake mechanism, remove the screws that hold the brake unit together, disassemble the unit, wash all parts thoroughly with cleaning compound, wipe with a dry cloth, and reassemble.
- C** Lubricate the axle shaft bearings of the frame as follows:
- After every 8 hours, open the bearing caps and generously apply grease (GAA). Close the bearing caps and remove excess grease.

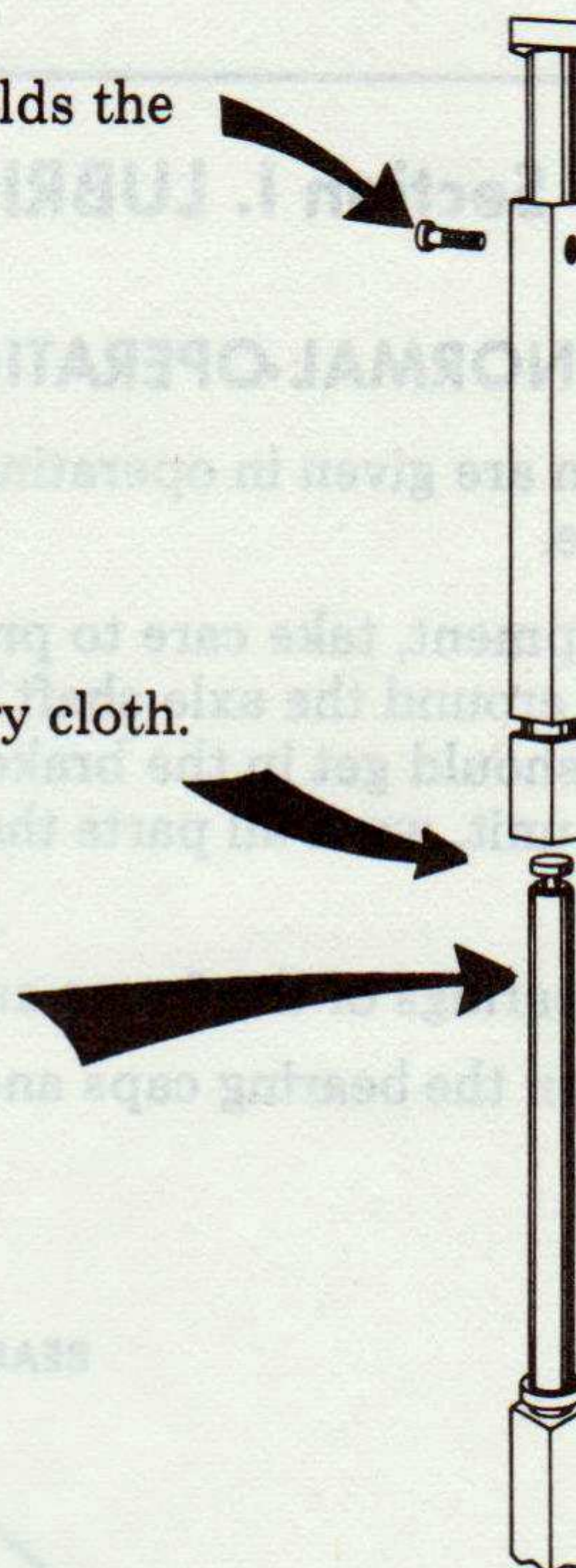


- After every 40 hours, remove the axle, wash the axle shaft bearings with cleaning compound, dry thoroughly with a rag, and apply grease (GAA) generously.
- D** After every 40 hours, apply 1 or 2 drops of oil (PL Special) to the frame hinges, pin catches in the cross braces, bearing latch hinge, bearing cap hinges, and the crank handle catch.

3-1. LUBRICATION FOR NORMAL OPERATION – Continued

E Lubricate the divided axle furnished with Reel Unit RL-31-E as follows:

- After 40 hours, remove the screw that holds the two sections of the axle together.
- Slide the axle apart. Wipe all parts with cleaning compound; wipe with a clean, dry cloth.
- Lubricate the internal bearing surface generously with grease (GAA).
- Reassemble and wipe off excess grease.



3-2. LUBRICATION FOR LOW-TEMPERATURE OPERATION

When Reel Unit RL-31-(*) is used under extremely low-temperature conditions, lubricate the reel unit more frequently than under normal conditions. Before each lubrication, remove all traces of existing lubricant by washing the parts with cleaning compound. Failure to remove old lubricant will result in impaired performance at low temperature. Relubricate with grease (GAA), and oil (PL Special). When relubricating, apply only sufficient lubricant to prevent wear of moving parts. Remove all excess lubricant.

Section II. DISASSEMBLY, REPAIR, AND REASSEMBLY

3-3. GENERAL

Field maintenance of Reel Unit R-31-(*) consists of the disassembly, repair, and reassembly procedures described in the following paragraphs. The procedures are listed in the order in which they should be performed to accomplish a complete repair of the equipment. Refer to TM 43-0139, Painting Instructions for Field Use, for information on refinishing damaged painted surfaces.

NOTE

This section contains information for field maintenance. The amount of repair that can be performed by units having field maintenance responsibility is limited only by the tools and test equipment available, and by the skill of the repairman.

3-4. TOOLS AND MATERIALS FOR FIELD MAINTENANCE

Tools and materials necessary for field maintenance, include all items required for organizational maintenance (para. 2-4), and the following tools:

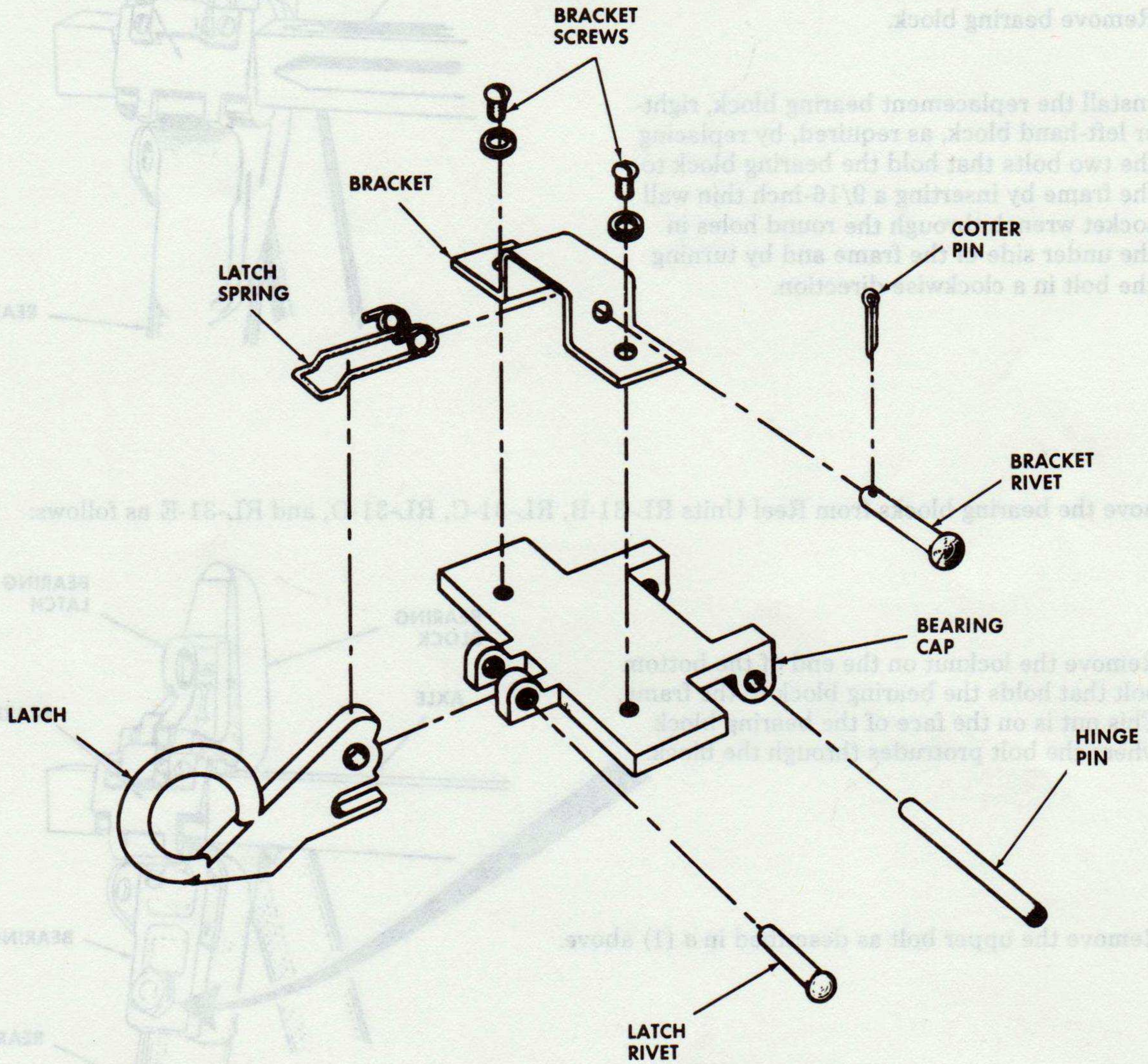
- Ball peen hammer.
- Electric drill, ¼-inch capacity.
- Cold chisel, ½-inch.
- Pin punch.
- Drill set.

3-5. REPLACEMENT OF CROSS BRACES

When a damaged cross brace requires replacement, remove and replace the damaged cross brace as follows:

- Cut off the retaining rivet with a cold chisel and hammer. Use a pin punch to drive the rivet out if it does not fall out freely.
- Install a new cross brace and rivet it in place with the ball peen hammer. When riveting, be careful to place a solid support under the rivet. When installed, place a drop of oil (PL Special) on the catch and the riveted joint.

3-6. REPAIR OF BEARING CAP AND LATCH ASSEMBLY



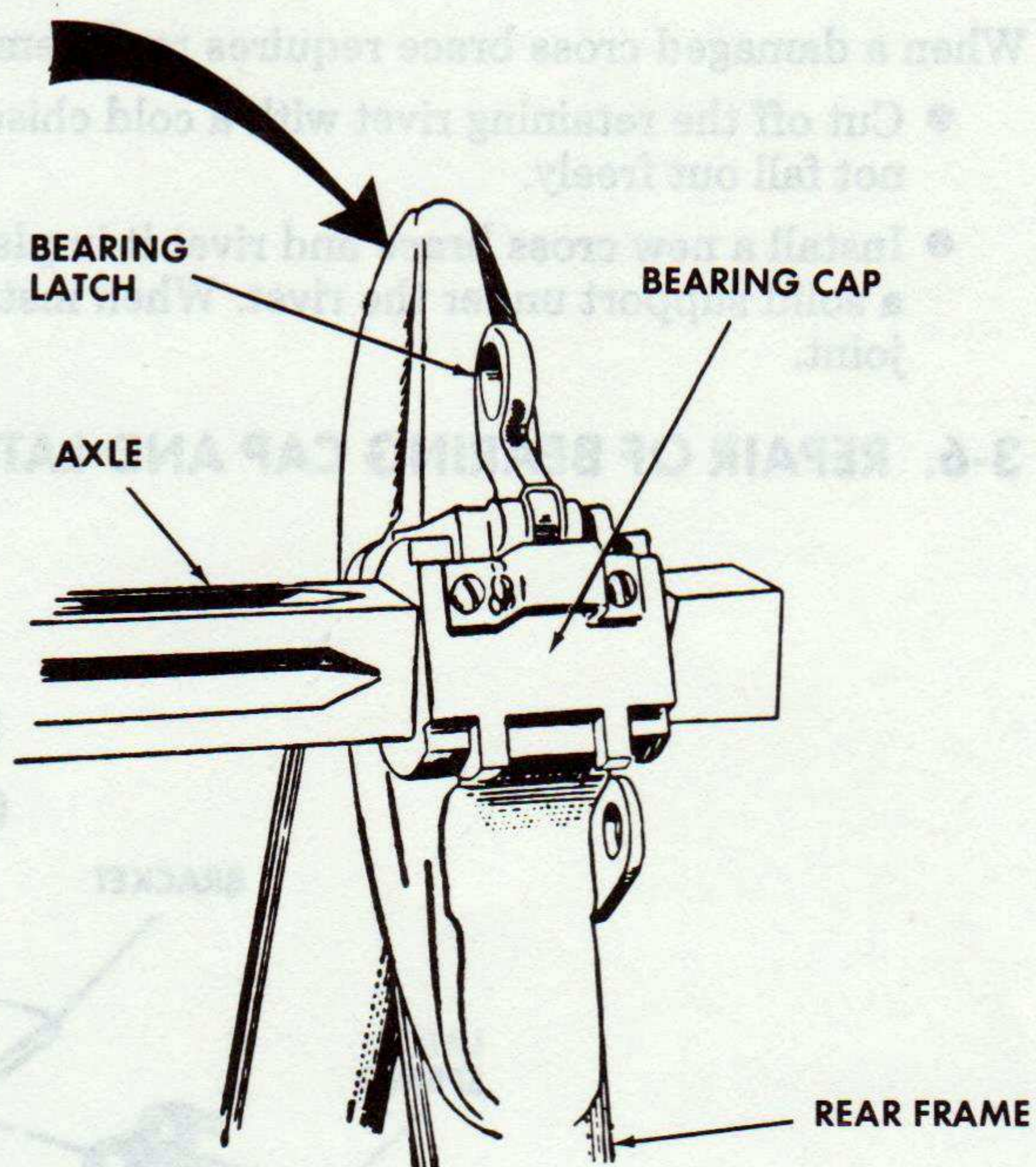
Normal use rarely results in the need for replacement of any parts of this assembly other than the latch spring. Replace the latch spring as follows:

- Remove the two bracket screws that hold the bracket to the bearing cap. Remove the bracket.
- Straighten and remove the cotter pin from the bracket rivet.
- Pull the bracket rivet from the bracket.
- Remove the latch spring.
- Install a new latch spring, placing the crown of the spring over the top of the latch.
- Reassemble the bearing cap and latch assembly by reversing the procedure outlined in a through c above.

3-7. REMOVAL AND REPLACEMENT OF BEARING BLOCKS

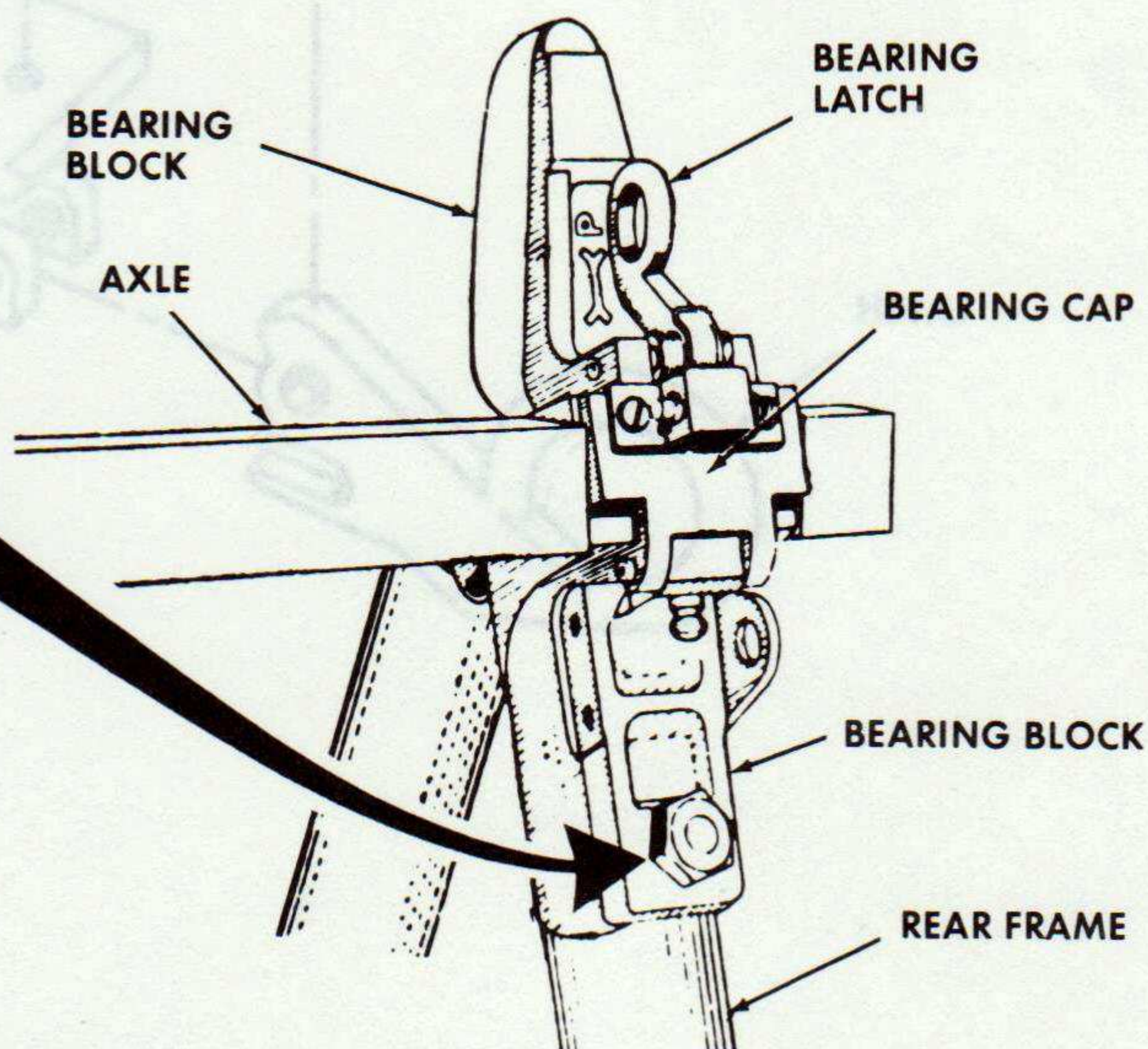
A Remove bearing blocks on Reel Unit RL-31 as follows:

- Remove the two bolts that hold the bearing block to the frame by inserting a 9/16-inch thin wall socket wrench through the round holes in the under side of frame and by turning the bolts in a counterclockwise direction.
- Remove bearing block.
- Install the replacement bearing block, right- or left-hand block, as required, by replacing the two bolts that hold the bearing block to the frame by inserting a 9/16-inch thin wall socket wrench through the round holes in the under side of the frame and by turning the bolt in a clockwise direction.



B Remove the bearing blocks from Reel Units RL-31-B, RL-31-C, RL-31-D, and RL-31-E as follows:

- Remove the locknut on the end of the bottom bolt that holds the bearing block to the frame. This nut is on the face of the bearing block where the bolt protrudes through the block.
- Remove the upper bolt as described in a (1) above.
- Install the replacement block as follows:



Replace the upper bolt that holds the bearing block to the frame by inserting a 9/16-inch thin wall socket wrench through the round holes in the under side of frame and by turning the bolt in a clockwise direction.

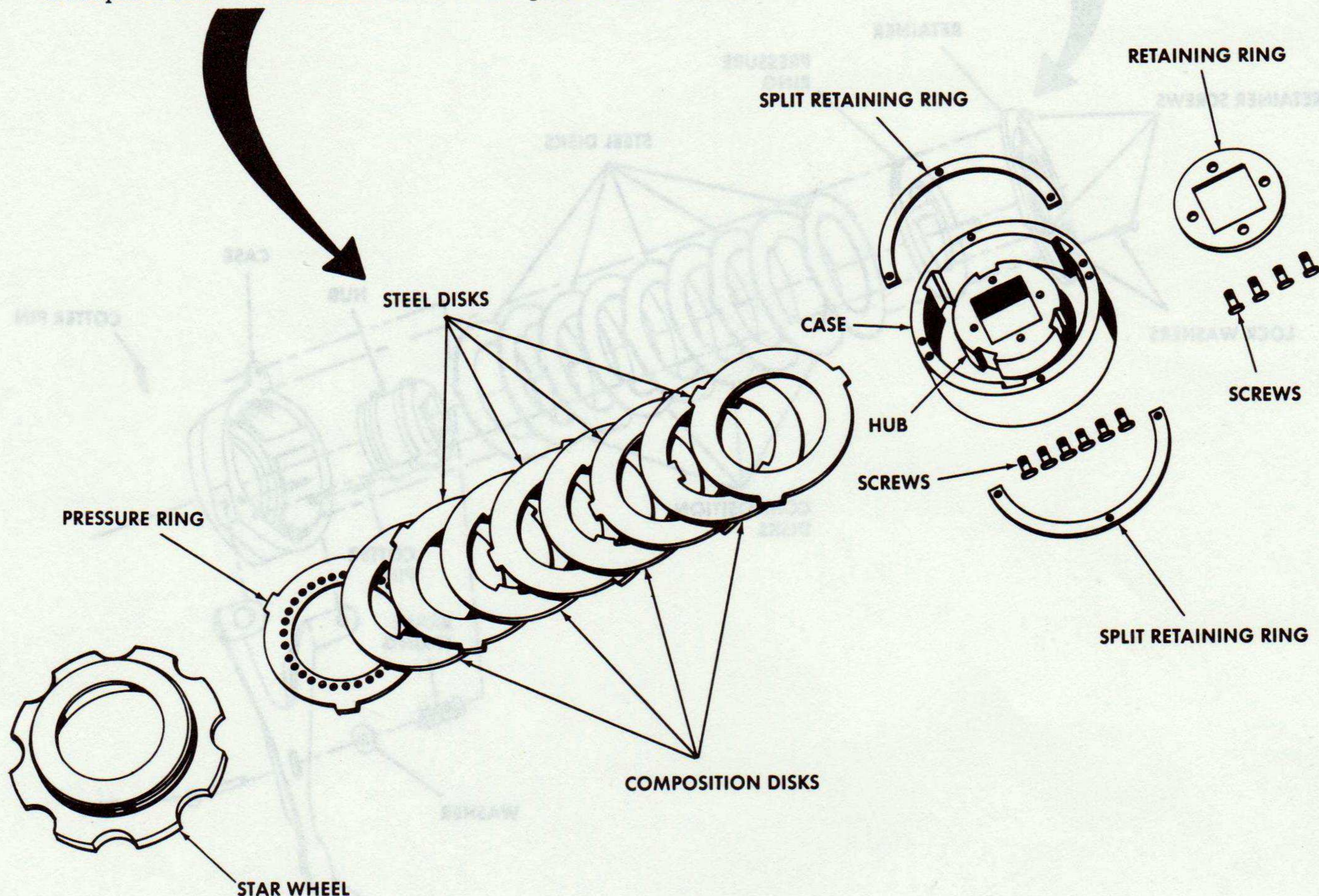
Replace the locknut on the end of the bottom bolt that holds the bearing block to the frame.

3-8. REPAIR OF BRAKE UNITS

If a brake unit completely free of lubricant does not hold satisfactorily, some of the disks are worn and must be replaced. No compensating adjustments for wear on the brake are provided.

A BRAKE UNIT GC-10

To replace the disks in Brake Unit GC-10 proceed as follows:



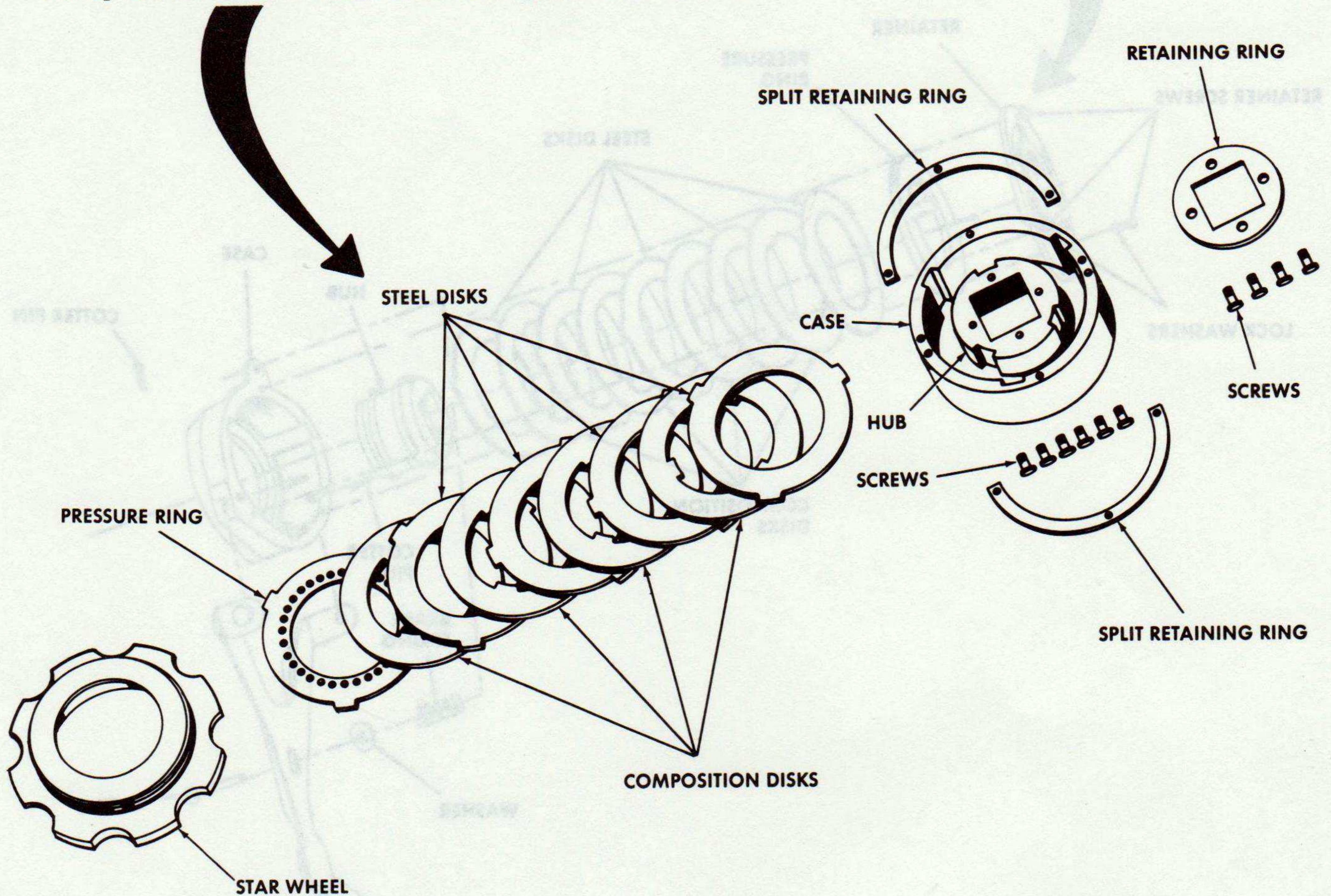
- Place the brake unit on a flat surface with the star wheel up.
- Remove the four screws that hold the retaining ring to the hub in the center of the star wheel.
- Turn the star wheel until the six screws that hold the split retaining ring to the case are visible through the openings in the star wheel.
- Remove the six screws and the split retaining ring.
- Turn the star wheel to the left until it comes free of the case.
- Remove the pressure ring, the composition disks, and the steel disks.
- Replace all broken and worn disks.
- Reassemble by placing a steel disk in the case first, then a composition disk and continue to alternate the disks until all disks and the perforated pressure ring are in the case.
- Reverse the procedures in (1) through (5) above to complete the reassembly of the GC-10.

3-8. REPAIR OF BRAKE UNITS

If a brake unit completely free of lubricant does not hold satisfactorily, some of the disks are worn and must be replaced. No compensating adjustments for wear on the brake are provided.

A BRAKE UNIT GC-10

To replace the disks in Brake Unit GC-10 proceed as follows:



- Place the brake unit on a flat surface with the star wheel up.
- Remove the four screws that hold the retaining ring to the hub in the center of the star wheel.
- Turn the star wheel until the six screws that hold the split retaining ring to the case are visible through the openings in the star wheel.
- Remove the six screws and the split retaining ring.
- Turn the star wheel to the left until it comes free of the case.
- Remove the pressure ring, the composition disks, and the steel disks.
- Replace all broken and worn disks.
- Reassemble by placing a steel disk in the case first, then a composition disk and continue to alternate the disks until all disks and the perforated pressure ring are in the case.
- Reverse the procedures in (1) through (5) above to complete the reassembly of the GC-10.

3-9. REPAIR OF CRANK LOCKING PLUNGER ASSEMBLY

- A INSPECTION.** Press both crank locking plungers fully into the plunger holes. Both plungers should move freely into their holes. Release the plungers. Both plungers should return to their normal position, approximately 1/16-inch out of the plunger holes.
- B REPAIR.** If either plunger does not move freely, apply a small amount of oil (PL Special). If the plunger cannot be freed with lubrication, or if a loose plunger is not returned to its normal position due to a weak or broken spring, replace the plunger assembly as follows:
- Drill out the plunger assembly staking pin with a 1/16-inch drill.
 - Drive the defective plunger through the hole in the end of the arm, using a pin punch and hammer.
 - Insert the new plunger assembly into the crank. If the assembly binds, lubricate it with oil (PL Special).
 - Stake the plunger in place with a 11/16-inch long 1/16-inch brass pin and peen the pin with a ball peen hammer.

NOTE

Paint finish shall be in accordance with MIL-T-704 and consist of pretreatment per TT-C-490, type 1, MIL-T-53022 primer, and MIL-C-46168, forest green final paint.

APPENDIX A REFERENCES

A-1. SCOPE

Following is a list of references available to the operator and repairmen of RL-31-(*).

A-2. PAMPHLETS

Consolidated Index of Army Publications and Blank Forms..... DA Pam 310-1
The Army Maintenance Management System (TAMMS)..... DA Pam 738-750

A-3. TECHNICAL MANUALS

Organizational, Direct Support and General Support Maintenance Repair Parts
and Special Tools Lists (Including Depot Maintenance Repair Parts and
Special Tools): Reel Units RL-31, RL-31-B, RL-31-C, RL-31-D and
RL-31-E (NSN 3895-00-252-6896)..... TM 11-3895-202-24P
Painting Instructions for Field Use TM 43-0139
Administrative Storage of Equipment TM 740-90-1
Procedures for Destruction of Electronics Materiel to Prevent Enemy Use..... TM 750-244-2

APPENDIX B

BASIC ISSUE ITEMS LIST

Section I. INTRODUCTION

B-1. SCOPE

This appendix lists Basic Issue Items (BII) for the reel units to help you inventory items required for safe and efficient operation.

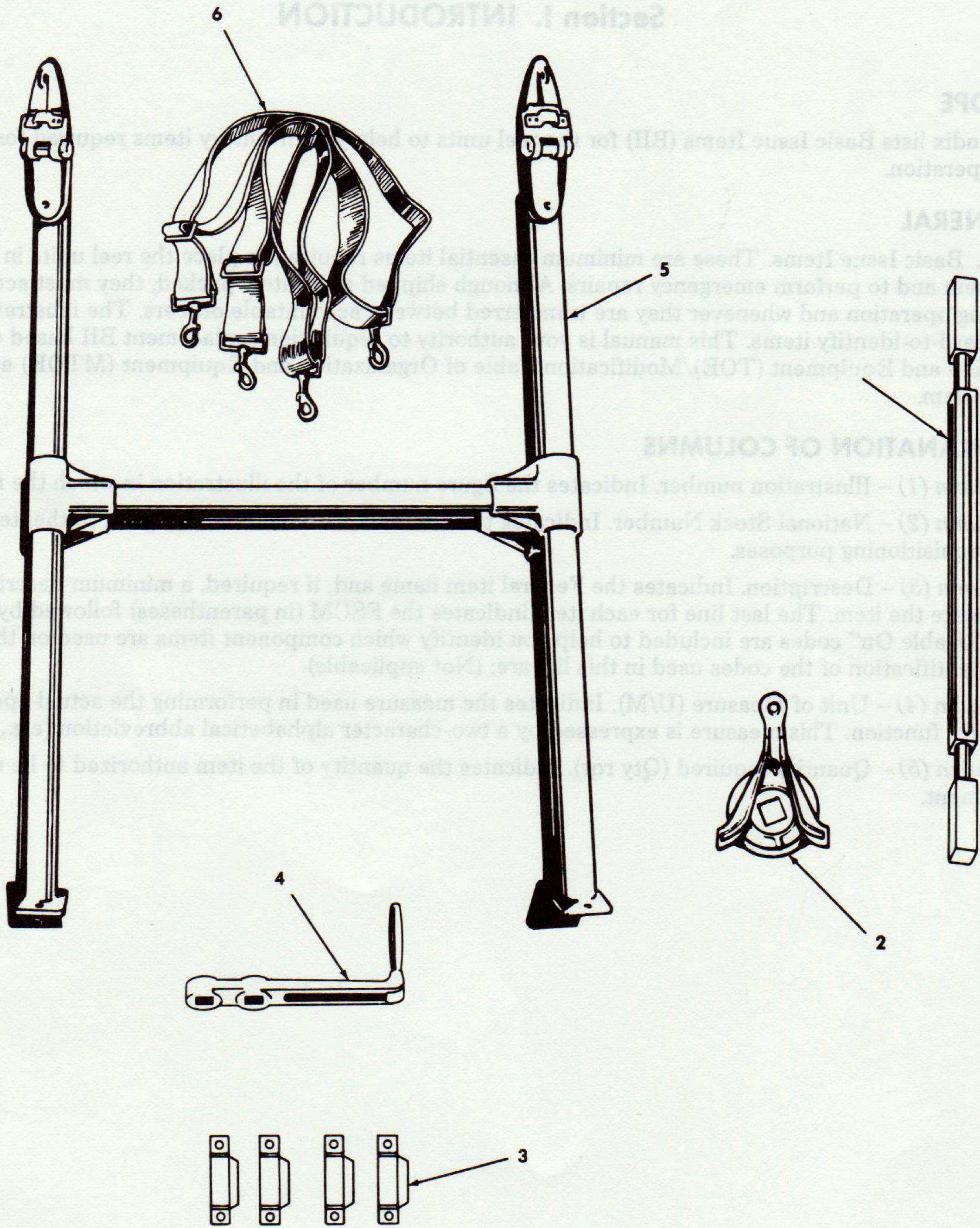
B-2. GENERAL

Section II. Basic Issue Items. These are minimum essential items required to place the reel units in operation, to operate them and to perform emergency repairs. Although shipped separately packed, they must accompany reel units during operation and whenever they are transferred between accountable officers. The illustration will assist you with hard-to-identify items. This manual is your authority to requisition replacement BII based on Table(s) of Organization and Equipment (TOE)/Modification Table of Organization and Equipment (MTOE) authorization of the end item.

B-3. EXPLANATION OF COLUMNS

- a. *Column (1)* – Illustration number. Indicates the figure number of the illustration in which the item is shown.
- b. *Column (2)* – National Stock Number. Indicates the National stock number assigned to the item and will be used for requisitioning purposes.
- c. *Column (3)* – Description. Indicates the Federal item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the FSCM (in parentheses) followed by the part number. “Usable On” codes are included to help you identify which component items are used on the different models. Identification of the codes used in this list are: (Not applicable).
- d. *Column (4)* – Unit of Measure (U/M). Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr).
- e. *Column (5)* – Quantity required (Qty rqr). Indicates the quantity of the item authorized to be used with/on the equipment.

APPENDIX B
BASIC ISSUE ITEMS LIST



Section II. BASIC ISSUE ITEMS LIST

(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	Usable On Code	(4) U/M	(5) Qty rqr
1	3895-00-301-5885	AXLE SC-D-11418 (SOLID) AXLE SM-B-599276 (DIVIDED) (80063)	5C5, 4PP 5C3, 5C4 4T5	EA	1
2	3895-00-629-9487	BRAKE UNIT GC-10A, SC-D-11578 (80063)	4T5	EA	2
	3950-00-162-1172	BRAKE UNIT GC-10, SC-D-11578-C	4PP, 5C3 5C4, 5C5	EA	1
3	5340-00-128-9610	TOE CLAMPS SC-A-1853 (80063)		EA	4
4	5340-00-127-0969	CRANK GC-4-A, SM-B-599230 (one crank for reel units utilizing solid axles) (80063)	All	EA	2
5	3895-00-127-1040	FRAME SC-B-730016 (80063)	All	EA	1
6	8465-00-498-1713	STRAP, ST-19-A, MIL-S-1698, Type II (80063)	All	EA	2
		TECHNICAL MANUAL TM 11-3895-202-13		EA	1

APPENDIX C

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

C-1. GENERAL

- a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance levels.
- b. The Maintenance Allocation Chart (MAC) in Section II designates overall responsibility for the performance of maintenance functions on the identified end item of component. The implementation of the maintenance functions upon the end item or component will be consistent with the assigned maintenance functions.
- c. Section III lists the special tools and test equipment required for each maintenance function as referenced from Section II.
- d. Section IV contains supplemental instructions or explanatory notes for a particular maintenance function.

C-2. MAINTENANCE FUNCTIONS

- a. *Inspect.* To determine the serviceability of an item by comparing its physical, mechanical and/or electrical characteristics with established standards through examination.
- b. *Test.* To verify serviceability and detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.
- c. *Service.* Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.
- d. *Adjust.* To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.
- e. *Install.* The act of emplacing, seating, or fixing into position an item, part, or module (component or assembly) in a manner to allow the proper functioning of an equipment system.
- f. *Repair.* The application of maintenance services (inspect, test, service, adjust, aline, calibrate, or replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.
- g. *Overhaul.* That maintenance effort (service/actions) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (ie., DMWR) in appropriate technical publications. Overhaul does not normally return an item to like new condition.

C-3. COLUMN ENTRIES

Columns used in the maintenance allocation chart will be limited to those shown. Entries for those columns are explained below.

- a. *Column 1, Group Number.* Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.
- b. *Column 2, Component/Assembly.* Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized.
- c. *Column 3, Maintenance Functions.* Column 3 lists the functions to be performed on the item listed in column 2. (For detailed explanation of these functions, see paragraph C-2).

d. *Column 4, Maintenance Level.* Column 4 specifies, by the listing of a "work time" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3. This figure represents the active time required to perform the maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance levels, appropriate "work time" figure will be shown for each level. The number of man-hours specified by the "work time" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition. The symbol designations for the various maintenance levels are as follows:

- C Operator or Crew
- O Organizational Maintenance
- F Direct Support Maintenance
- H General Support Maintenance
- D Depot Maintenance

e. *Column 5, Tools and Equipment.* Column 5 specifies, by code, those common tool sets (not individual tools) and special tools, test, and support equipment required to perform the designated function.

f. *Column 6, Remarks.* Column 6 contains a letter code in alphabetical order which shall be keyed to the remarks contained in Section IV.

C-4. COLUMN ENTRIES USED IN TOOL AND TEST EQUIPMENT REQUIREMENTS

a. *Column 1, Tool or Test Equipment Reference Code.* The tool and test equipment reference code correlates with a maintenance function on the identified end item or component.

b. *Column 2, Maintenance Level.* The lowest level of maintenance authorized to use the tool or test equipment.

c. *Column 3, Nomenclature.* Name or identification of the tool or test equipment.

d. *Column 4, National/NATO Stock Number.* The National or NATO stock number of the tool or test equipment.

e. *Column 5, Tool Number.* The manufacturer's part number.

C-5. EXPLANATION OF COLUMNS IN SECTION IV

a. *Reference Code.* The code scheme recorded in column 6, Section II.

b. *Remarks.* This column lists information pertinent to the maintenance function being performed as indicated on the MAC, Section II.

SECTION II. MAINTENANCE ALLOCATION CHART
FOR
REEL UNITS

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT.	(6) REMARKS
			C	O	F	H	D		
00	Reel Units RL-31, RL-31-B, RL-31-C, RL-31-D, and RL-31-E	Inspect	0.1						A
		Test	0.1					1	B
		Service	0.1					1	C
		Service		0.2				1	D
		Adjust		0.1					E
		Install	0.2					1	F
		Repair		0.3				1	
		Repair			0.3			1	
	Overhaul					8.0	1		

**SECTION III. TOOL AND TEST EQUIPMENT REQUIREMENTS
FOR
REEL UNITS**

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	C, O, F, D	Tool Set, General Mechanics	5180-00-177-7033	

SECTION IV. REMARKS

REFERENCE CODE	REMARKS
A	Visual.
B	Tightness of nuts, bolts, and screws.
C	Daily and weekly preventive maintenance.
D	Weekly preventive maintenance.
E	Brake unit.
F	Axle, brake unit, Crank Strap ST-19.

