

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN
DEPARTMENT OF THE AIR FORCE TECHNICAL ORDER

TANDEM HITCH, 2540-735-8343
(8-H-1826):
INSTALLATION ON 1/4-TON 4 X 4
TRUCKS MB, GPW, M38, AND M38A1

Departments of the Army and the Air Force, Washington 25, D.C., 2 December 1955

This bulletin is correct to 31 October 1955.

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1. Purpose. This bulletin provides necessary instructions for the proper installation of Tandem Hitch 2540-735-8343 (8-H-1826) on Willys MB, M38, M38A1, and Ford GPW 1/4-ton 4 x 4 trucks.

2. Scope. These instructions provide information as to the specific parts utilized and various procedures required to install the tandem hitch on the above 1/4-ton trucks. The installation of the tandem hitch is to be performed by personnel in shops of organizational or higher level.

3. List of Parts. The tandem hitch consists of the parts listed below:—

Quantity	Part No.	Part Name	Figure
4	7540932.....	BOLT, HEXAGON HEAD, 1/16-18-UNC-2A x 5.	5
2	WO-A-8103-D.....	BOLT, hook, grill bracket, 1/4-inch diameter.	6

Quantity	Part No.	Part Name	Figure
2	7541352	FILLER	2, 3, and 5
1	WO-A-8105-B	GRILL BRACKET ASSEMBLY	1 and 4
4	219430	NUT, PLAIN, HEXAGON: $\frac{1}{4}$ -20-UNC-2B.	6
12	120376	NUT, PLAIN, HEXAGON: $\frac{5}{16}$ -18UNC-2B.	2, 4, and 5
6	120377	NUT, PLAIN, HEXAGON: $\frac{3}{8}$ -16-UNC-2B.	
4	120371	NUT, PLAIN, HEXAGON: $\frac{1}{2}$ -20-UNF-2B.	
4	173771	NUT, STAMPED: No. 6 (0.138)-32NC.	7 and 8
1	WO-A-7811-D	PLATE, caution, tandem operation	3, 4, 7, and 8
2	7541353	PLATE, lower	2, 3, 4, and 5
1	WO-A-7811-C	PLATE, reinforcing, pintle hook	3 and 4
2	7541354	PLATE, upper	2, 3, 4, and 5
4	180078	SCREW, CAP, HEXAGON HEAD: $\frac{5}{16}$ -18UNC-2A x $\frac{3}{8}$.	2, 4, and 5
4	180081	SCREW, CAP, HEXAGON HEAD: $\frac{5}{16}$ -18UNC-2A x $1\frac{1}{4}$.	2, 4, and 5
6	180122	SCREW, CAP, HEXAGON HEAD: $\frac{3}{8}$ -16UNC-2A x 1.	
2	181702	SCREW, CAP, HEXAGON HEAD: $\frac{1}{2}$ -20UNF-2A x $1\frac{3}{4}$.	1 and 5
2	181709	SCREW, CAP, HEXAGON HEAD: $\frac{1}{2}$ -20 UNF-2A x $2\frac{1}{2}$.	5
4	435885	SCREW, MACHINE: No. 6-32-NC-2A x $\frac{5}{16}$.	7 and 8
2	7358342	SPACER, $\frac{13}{32}$ x $\frac{13}{32}$ x 0.164	3
1	WO-A-7927-A	TOW BAR AND FRAME BRACKET ASSEMBLY.	1 and 4
2	120386	WASHER, FLAT: $\frac{5}{16}$ x $\frac{3}{4}$ x 0.065	6
2	446212	WASHER, FLAT: $\frac{1}{16}$ x $\frac{1}{8}$ x 0.083	
4	120396	WASHER, FLAT: $1\frac{1}{32}$ x $1\frac{1}{16}$ x 0.095	5
4	446230	WASHER, FLAT: $\frac{3}{16}$ x $1\frac{1}{4}$ x 0.109	1 and 5
12	120214	WASHER, LOCK $\frac{5}{16}$ -in.	2, 4, and 5
6	120382	WASHER, LOCK: $\frac{3}{8}$ -in.	
4	120384	WASHER, LOCK: $\frac{1}{2}$ -in.	1 and 5

4. Installation Instructions. a. Willys MB and Ford GPW.

(1) Tow bar and frame bracket assembly WO-A-7927-A (figs. 1 and 4).

(a) Tighten the grease fittings (fig. 2) leaving the open end of each fitting pointing toward the outer end of the tow bar.

(b) Mount one filler 7541352 and one plate 7541353 (fig. 3) on the bottom of each frame bracket using two $\frac{5}{16}$ x $1\frac{1}{4}$ hexagon head cap screws 180081, two $\frac{5}{16}$ -inch lockwashers 120214 and two $\frac{5}{16}$ -inch hexagon plain nuts 120376 for each filler and plate (fig. 2). Install the plates with the

frame mounting holes toward the center of the tow bar (fig. 4).

- (c) Mount one plate 7541354 (fig. 3) underneath the top lip of each frame bracket using two $\frac{5}{16}$ x $\frac{7}{8}$ hexagon head cap screws 180078, two $\frac{5}{16}$ -inch lockwashers 120214, and two $\frac{5}{16}$ -inch hexagon plain nuts 120376 for each plate (figs. 2 and 4).
 - (d) Remove the four nuts, washers, and bolts that fasten the vehicle bumper bar to the gussets.
 - (e) Fit the tow bar and frame bracket assembly WO-A 7927-A, with plates attached, over the bumper bar and frame gussets (fig. 1). Fasten in place using four $\frac{5}{16}$ x 5 hexagon head bolts 7540932, four $\frac{5}{16}$ -inch lockwashers 120214, and four $\frac{5}{16}$ -inch hexagon plain nuts 120376 (fig. 5). Tighten all bolts and nuts securely.
- (2) *Grill bracket assembly.* Place the grill bracket assembly WO-A 8105-B (fig. 4) against the grill with the lunette stub (fig. 4) of the tow bar fitted in the bracket assembly (fig. 1). Fasten the bracket assembly to the grill using two $\frac{1}{4}$ -inch hook bolts WO-A 8103-D, two $\frac{5}{16}$ x $\frac{3}{4}$ x 0.065 flat washers 120386, and four $\frac{1}{4}$ -inch hexagon plain nuts 219430 (fig. 6).

Note. Use two nuts to fasten the assembly in place and two nuts as locknuts. The washers are placed on the outside of the assembly directly under the nuts (fig. 6).

(3) *Pintle hook reinforcing plate.*

- (a) Remove the four nuts and lockwashers that fasten the pintle hook to the frame (rear of vehicle).
- (b) Mount the pintle hook reinforcing plate WO-A 7811-C (fig. 3) inside the frame on the bolts that hold the pintle hook. Fasten in place using the original four nuts and four lockwashers.

(4) *Caution plate.*

- (a) Position the caution plate WO-A 7811-D (fig. 3) on the instrument panel to the left of and in line with the other plates (fig. 7).
- (b) Using the plate as a template, drill four $\frac{5}{32}$ -inch diameter holes in the instrument panel.
- (c) Fasten the plate in position using four No. 6 32 x $\frac{5}{16}$ machine screws 435885 and four No. 6 32 stamped nuts 173771 (fig. 7).

b. *Willys M38 and M38A1 with Lifting Hooks.*

- (1) *Tow bar and frame bracket assembly WO-A 7927-A* (figs. 1 and 4).

- (a) Tighten the grease fittings (fig. 2) leaving the open end of each fitting pointing toward the end of the tow bar.

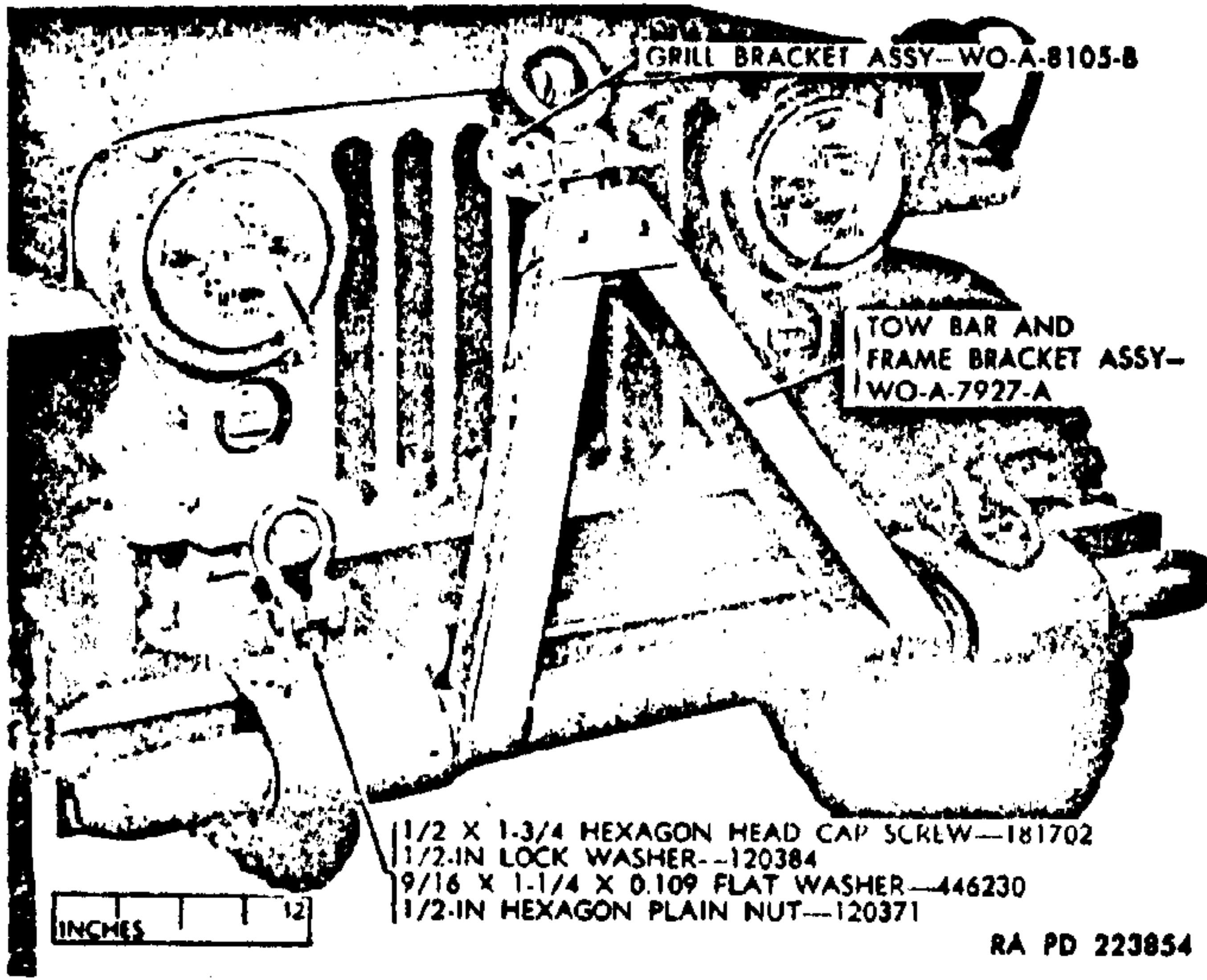


Figure 1. Tow bar and frame bracket assembly and grill bracket assembly installed.

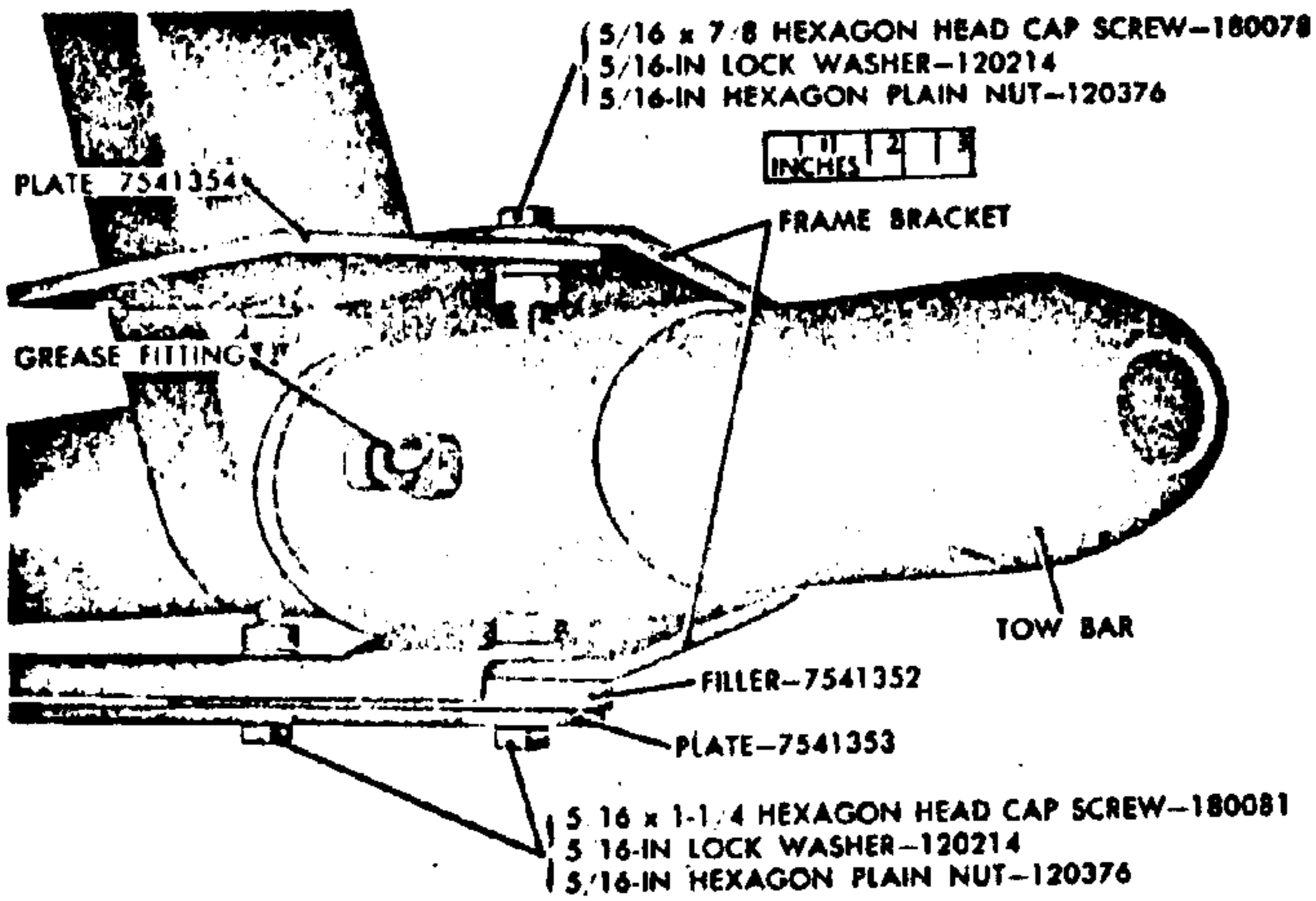


Figure 2. Filler and plates installed on the tow bar and frame bracket assembly.

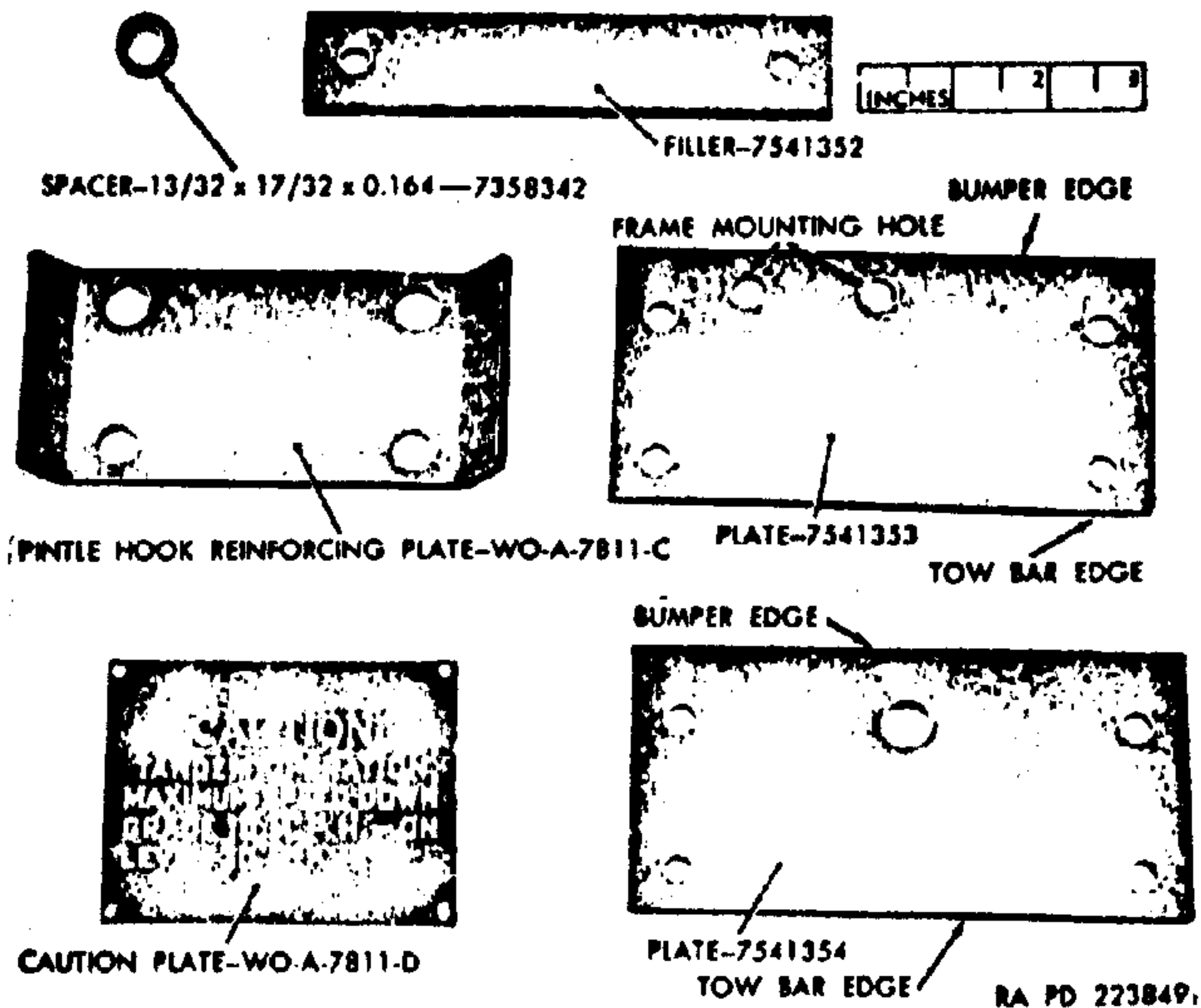
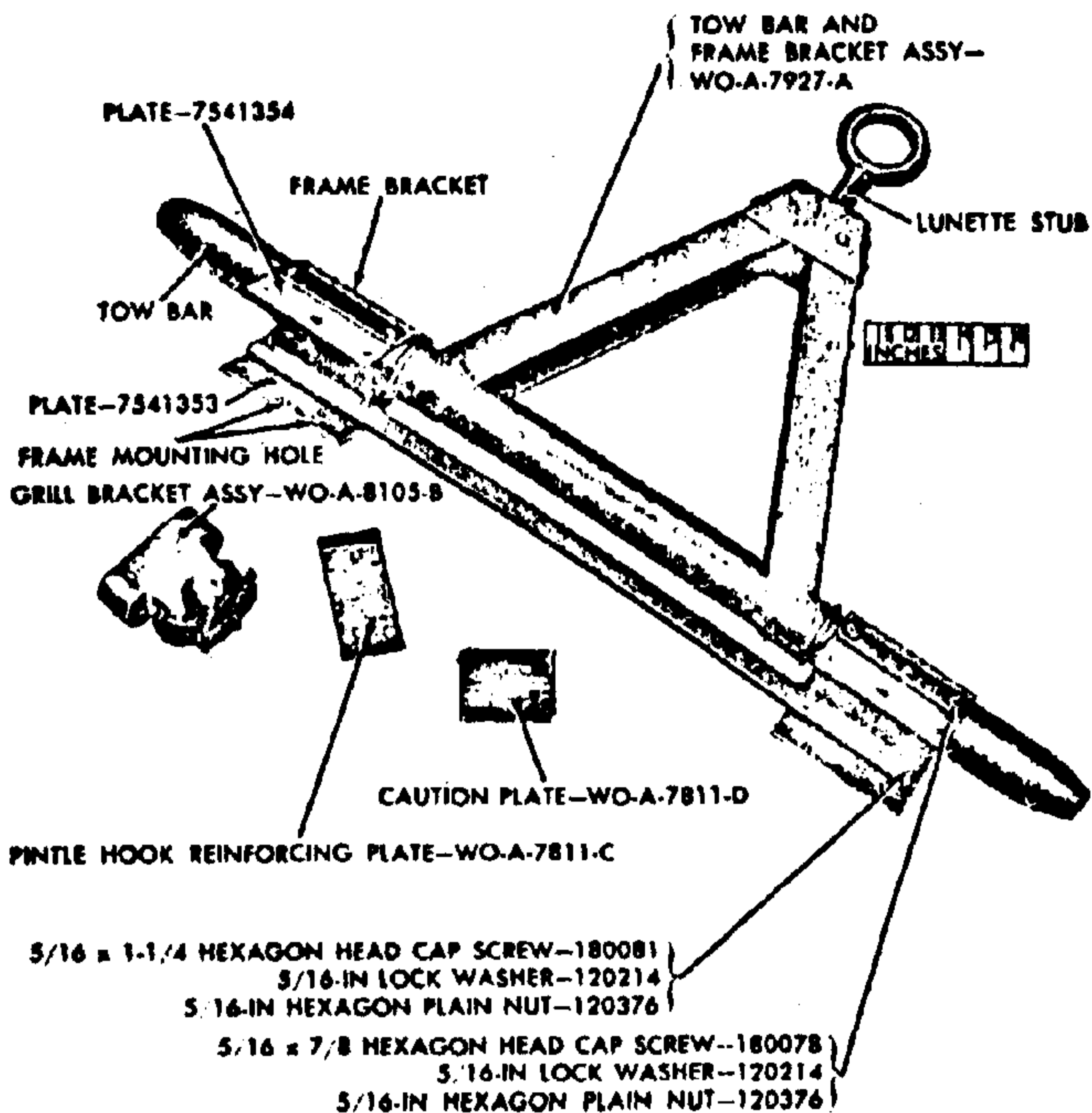


Figure 3. Spacer, filler and plates for tandem hitch 2540-735-8343.

- (b) Remove all bolts, washers, and nuts that hold the vehicle bumper bar and lifting hooks to the frame. Remove the lifting hooks.
- (c) Mount one plate 7541353 (fig. 3) below the bumper bar at the frame on each side of the vehicle using two $\frac{3}{8}$ x 1 hexagon head cap screws 180122, two $\frac{3}{8}$ -inch lockwashers 120382, and two $\frac{3}{8}$ -inch hexagon plain nuts 120377 for each plate. Install the plates with the frame mounting holes toward the center of the vehicle (fig. 4). The cap screws should go through the frame mounting holes.
- (d) Position one plate 7541354 (fig. 3) above the bumper at the frame on each side of the vehicle and place a lifting hook in position, on top of each plate (fig. 5). Bolt the front of each lifting hook to the plate, bumper bar, and frame using one $\frac{1}{2}$ x $1\frac{3}{4}$ hexagon head cap screw 181702, one $\frac{1}{2}$ -inch lockwasher 120384, one $\frac{9}{16}$ x $1\frac{1}{4}$ x 0.109 flat washer 446230, and one $\frac{1}{2}$ -inch hexagon plain nut 120371 for each lifting hook (fig. 1). Place two $\frac{17}{32}$ x $1\frac{1}{8}$ x 0.095 flat washers 120396 under the existing spacer at the rear of each lifting hook (fig. 5). Bolt the rear of each lifting hook in place using one $\frac{1}{2}$ x $2\frac{1}{2}$ hexagon head cap screw 181709, one $\frac{1}{2}$ -inch lockwasher 120384, and one $\frac{9}{16}$ x $1\frac{1}{4}$ x 0.109 flat washer 446230 for each lifting hook (fig. 5).



RA PD 223850

Figure 4. Tandem hitch 2540-735-8343 (attaching bolts, washers, and nuts not shown).

- (e) Position the tow bar frame bracket assembly WO-A-7927-A on the vehicle. Secure the top lip of the frame brackets to the plates 7541354 using two $\frac{5}{16}$ x $\frac{7}{8}$ hexagon head cap screws 180078, two $\frac{5}{16}$ -inch lockwashers 120214, and two $\frac{5}{16}$ -inch hexagon plain nuts 120376 for each side of the assembly. Position the fillers 7541352 (fig. 3) between the bottom lip of the frame brackets and the plates 7541353 (figs. 2 and 5) and fasten the assembly and fillers to the lower plates using two $\frac{5}{16}$ x $1\frac{1}{4}$ hexagon head cap screws 180081, two $\frac{5}{16}$ -inch lockwashers 120214, and two $\frac{5}{16}$ -inch hexagon plain nuts 120376 for each side of the assembly (fig. 5).
- (f) Drill $1\frac{1}{2}$ -inch diameter holes through the bumper bar at the outer holes in each of the plates 7541354 and 7541353 (drill through the wooden bumper filler when present). Bolt the plates to the bumper bar and frame using two $\frac{5}{16}$ x 5 hexagon head bolts 7540932, two $\frac{5}{16}$ -inch lock-

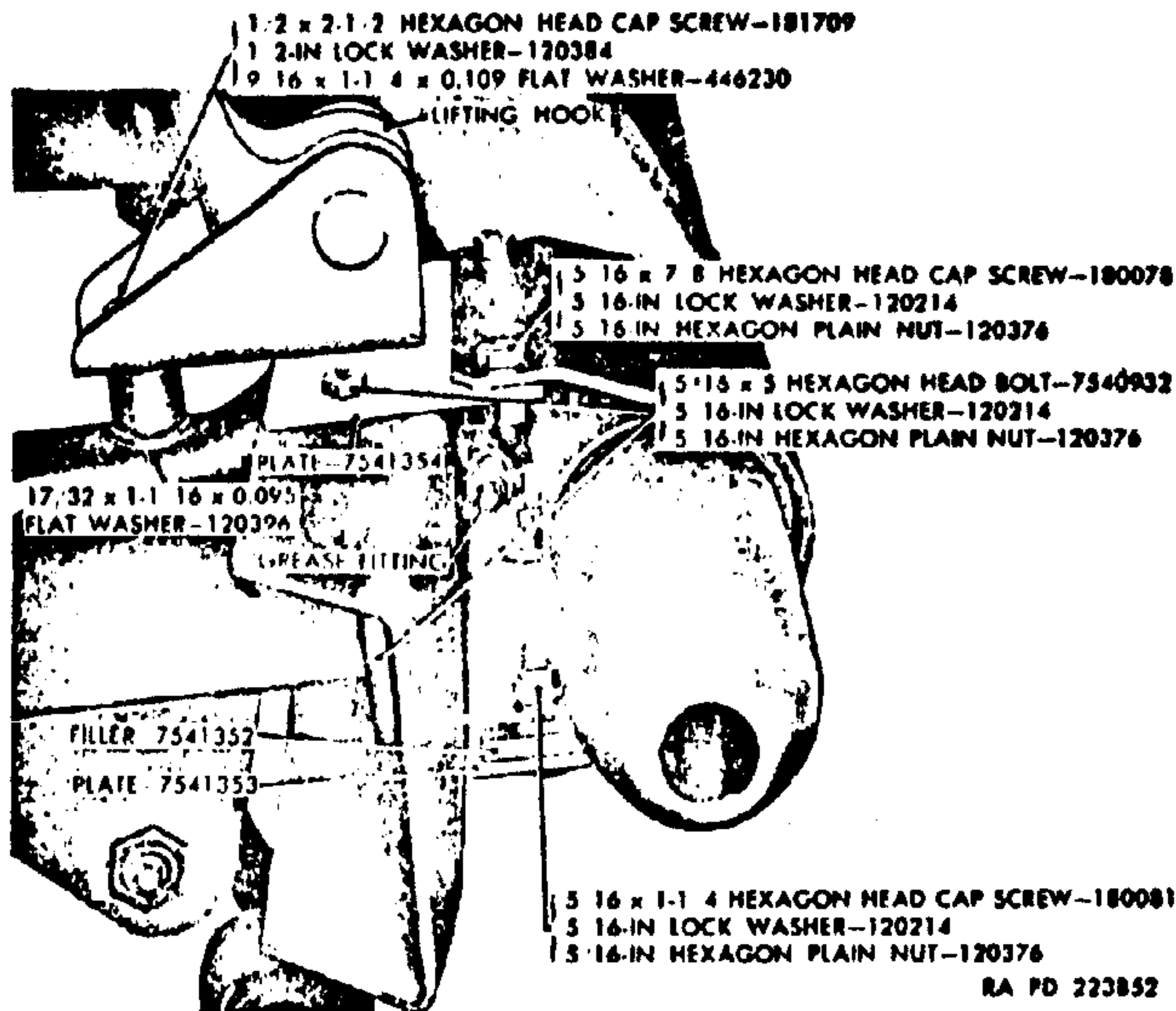


Figure 5. Tow bar and frame bracket assembly WO-7927-A installed.

washers 120214, and two $\frac{5}{16}$ -inch hexagon plain nuts 120376 for each side (fig. 5).

- (2) *Grill bracket assembly.* Install as outlined in a(2) above.
- (3) *Pintle hook reinforcing plate.* The plate is not required.
- (4) *Caution plate.*

(a) *Willys M38.* Mount the caution plate WO-A-7811-D (fig. 3) on the door of the glove compartment (fig. 8).

1. Open the glove compartment door and center the plate on the inside and at the narrow portion of the door.
2. Use the plate as a template and drill four $\frac{5}{32}$ -inch diameter holes.
3. Position the plate on the outside of the door and fasten in place using four No. 6 32 x $\frac{5}{16}$ machine screws 435885 and four No. 6-32 stamped nuts 173771 (fig. 8).

(b) *Willys M38A1.* Mount on instrument panel as prescribed in a(4) above for Willys MB and Ford GPW.

c. *Willys M38 and M38A1 Without Lifting Hooks.*

(1) *Tow bar and frame bracket assembly WO-A-7927-A* (figs. 1 and 4).

(a) Tighten the grease fittings (fig. 2) leaving the open end of each fitting pointing toward the outer end of the tow bar.

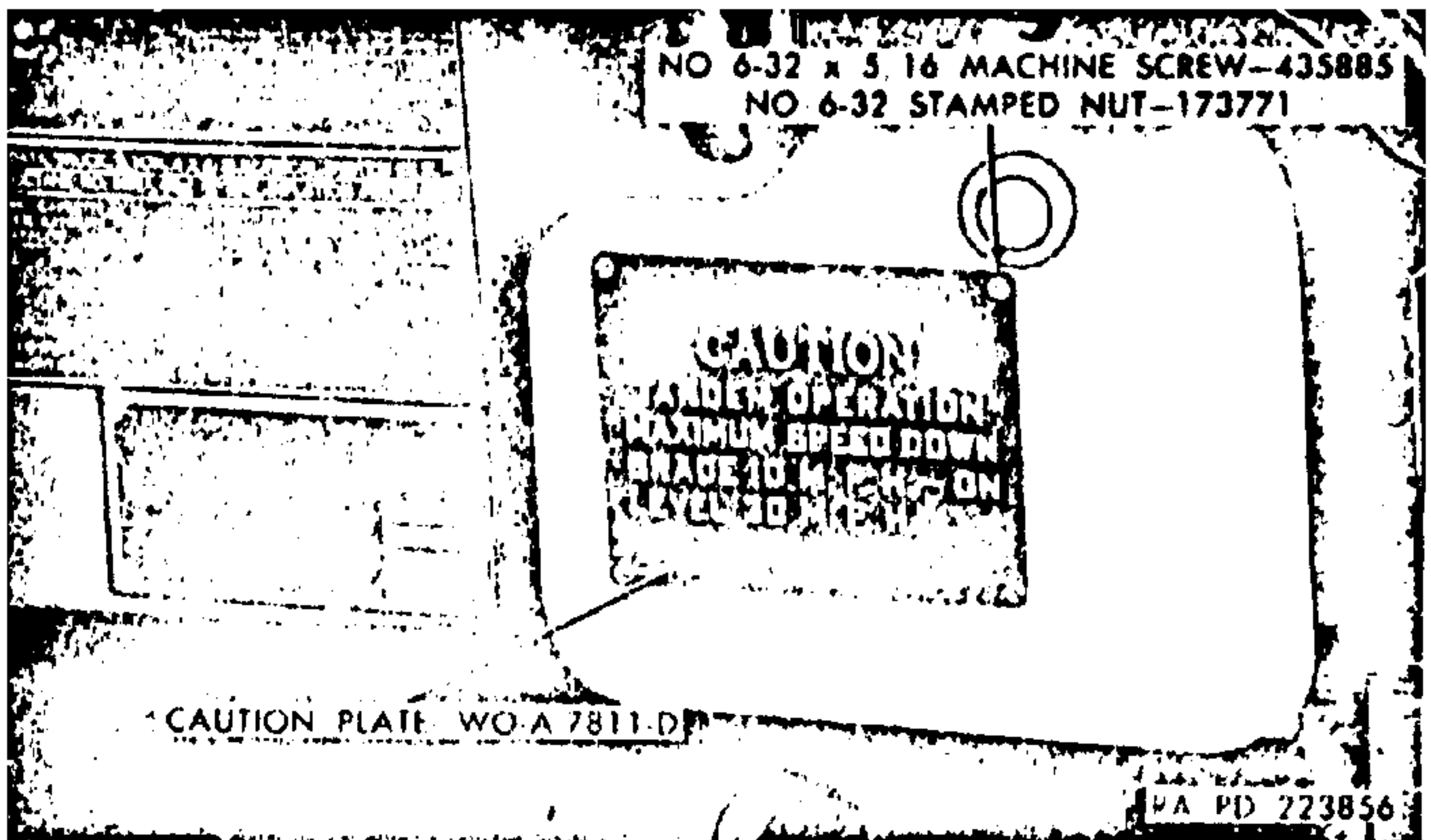


Figure 8. Caution plate mounted on Willys M38.

- (b) Remove and set aside all bolts, washers, and nuts holding the upper and lower flanges of the vehicle bumper bar to the frame.
- (c) Mount the plates 7541353 (fig. 3) as prescribed in b(1)(c) above.
- (d) Mount one plate 7541354 (fig. 3) centered above the bumper bar at the frame on each side of the vehicle using one $\frac{3}{8}$ x 1 hexagon head cap screw 180122, one $\frac{7}{16}$ x $\frac{7}{8}$ x 0.083 flat washer 446212, one $\frac{13}{32}$ x $\frac{17}{32}$ x 0.164 spacer 7358342 (fig. 3), one $\frac{3}{8}$ -inch lockwasher 120382, and one $\frac{3}{8}$ -inch hexagon plain nut 120377 for each plate. The cap screw should go through the hole near the center of the plate.
- (e) Position the assembly on the vehicle as prescribed in b(1)(e) above.
- (f) Drill holes in the bumper bar as prescribed in b(1)(f) above.
- (2) *Grill bracket assembly.* Install as outlined in a(2) above for Willys MB and Ford GPW.
- (3) *Pintle hook reinforcing plate.* The plate is not required.
- (4) *Caution plate.*
 - (a) *Willys M38.* Install as outlined in b(4)(a) above for Willys M38 with lifting hooks.
 - (b) *Willys M38A1.* Install as outlined in a(4) above for Willys MB and Ford GPW.

5. Painting. Paint exposed portions of plates, nuts, bolts, etc, to match the color of the vehicle.

6. Lubrication. Lubricate the tandem hitch at the grease fittings (figs. 2 and 5) with automotive and artillery grease (GAA).

7. Disposition of Excess Items. Dispose of all unused items, nuts, bolts, washers, etc, in accordance with SR 735 30 1, paragraph 17a.

BY ORDER OF THE SECRETARIES OF THE ARMY AND THE AIR
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NG: State AG (6); units-- same as Active Army except allowance is one copy to each unit.

USAR: None.

For explanation of abbreviations used, see SR 320-50-1.

INSTALLATION INSTRUCTIONS

f o r

TOW BAR - FIELD KIT
WILLYS MB & FORD GPW

PART NUMBER A-8500

Issued
Dec. 20.1943

TOW BAR FIELD KIT
PART NO. A-8500

WILLYS MODEL M.B. 1/4 TON 4 x 4
FORD MODEL G.P.W. 1/4 TON 4 x 4

List of Parts Required

<u>No. Req.</u>	<u>Part No.</u>	<u>Part Name</u>
1	A-7927	Tow bar and frame bracket assembly
2	A-6870	Spacer - front bumper gusset
1	A-8105	Tow bar grille bracket assembly
2	A-8103	Tow bar grille bracket hook
2	5121	Plain washer
4	5790	Nut - hex 1/4" - 20 thread
1	A-7811	Towing caution plate
4	53014	Screw - round head #6-32 thread x 5/16"
4	53013	Nut #6-32 thread
1	A-7881	Pintle hook reinforcing plate
1	A-9183	Installation instructions

List of Tools Required

2	1/2" open end wrench
1	7/16" open end wrench
2	5/8" open end wrench
1	punch to enter 5/16" hole
1	hammer
1	pliers
1	screw driver - 6"
1	electric drill
1	5/32" drill

Installation Instructions

This kit provides the parts necessary to equip the 1/4 ton vehicle with a tow bar for tandem operation.

First remove the bumper assembly discarding the bumper bar for salvage. The bolts and nuts used to mount the bumper are used to install the tow bar.

Place the tow bar and frame bracket assembly Part No. A-7927 in position with the tow bar brackets over the frame bumper gussets and with the bracket holes in alignment with the bumper mounting holes. Attach the tow bar loosely at the two end holes using the bolts, spacers and nuts originally used to mount the bumper. Install the other two bolts in the two inner holes using the two new spacers Part No. A-6870 supplied. Tighten all four nuts firmly in position.

Next install the tow bar grille bracket assembly, Part No. A-8105. This bracket is held in place on the grille by the two tow bar grille bracket hooks, Part No. A-8103. Lay the tow bar against the grille to determine the correct position for mounting the bracket. When correctly located attach the bracket to the grille using the two hook bolts with plain washer, Part No. 5121, against the outside face of the bracket. Install the hooks in the notches at the rear edge of the grille bar. Use four nuts, Part No. 5790. Clamp the bracket firmly in place with two of the nuts and use the other two as lock nuts.

Install the pintle hook reinforcing plate Part No. A-7881. This is placed in the channel of the rear frame reinforcement under the nuts which attach the pintle hook. Remove the four nuts and lockwashers and place the reinforcement in position. Replace the nuts and washers drawing them tight. This reinforcement is designed to have 1/16" drawup when assembled.

To complete the installation, mount the towing caution plate Part No. A-7911 on the instrument panel. Locate it in line with the other plates and to the left. Use the plate as a template

and drill the four holes $5/32$ " in diameter. Fasten the plate in position with four round head machine screws No. 6-32 thd. x $5/16$ " Part No. 53014 and four nuts Part No. 53013.

WILLYS-OVERLAND MOTORS, INC.

Toledo, Ohio

Installation Instructions

Part No. A-9183

December 20, 1943

USE GRILLE BRACKET HOOK
PART NO. A-8103, PLAIN
WASHER PART NO. 5121 AND
TWO NUTS PART NO. 5790
ON EACH BRACKET HOOK

TOW BAR GRILLE
BRACKET PART
NO. A-8105

A-7927 TOW BAR AND
BRACKET ASSEM.

USE BOLT, NUT AND
SPACER ORIGINALLY
USED TO MOUNT BUMPER

USE BOLT, NUT AND
SPACER ORIGINALLY
USED TO MOUNT BUMPER

USE BOLT, NUT AND ORIGINALLY
USED TO MOUNT BUMPER AND
NEW SPACER TO PART NO. A- 6870

