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WAR DEPARTMENT, ORDNANCE OFFICE
WASHINGTON, JULY 16, 1942

ORDNANCE FIELD SERVICE TECHNICAL)
BULLETIN NOS. 23-45-1)
23-50-2)
23-55-2)

BROWNING BELT FILLING MACHINE, CAL. .30, SHUTTLE TYPE

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BROWNING BELT FILLING MACHINE, CAL. .30, SHUTTLE TYPE

Section I

Introduction

	Paragraph
Scope	1
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1. SCOPE.

The following information is directed to Ordnance Department field personnel. The ordnance officer may disseminate this information at his discretion to personnel of other arms and services (par. 31, FM 100-10, December 9, 1940). It contains instructions for the identification, use, care and preservation of the shuttle type cal. .30 Browning belt filling machine (figs 1 and 2). This bulletin is effective until this information can be included in FM 23-45, FM 23-50, and FM 23-55.

2. CHARACTERISTICS

The belt filling machine is designed for the rapid loading of cal. .30 machine gun web belts. It is attached to a bench when in use and is fitted with a crank for hand operation. The machine is identical with the Browning belt filling machine cal. .30 M1918 except that the needle bar slide assembly of the earlier model has been replaced with a shuttle assembly. In addition, the cam on the needle bar lever has been modified by filing off ¼ inch from the nearest the needle bar (fig. 3).

3. DATA.

Weight of the belt filling machine	14 lbs
Weight of the packing chest	7 lbs

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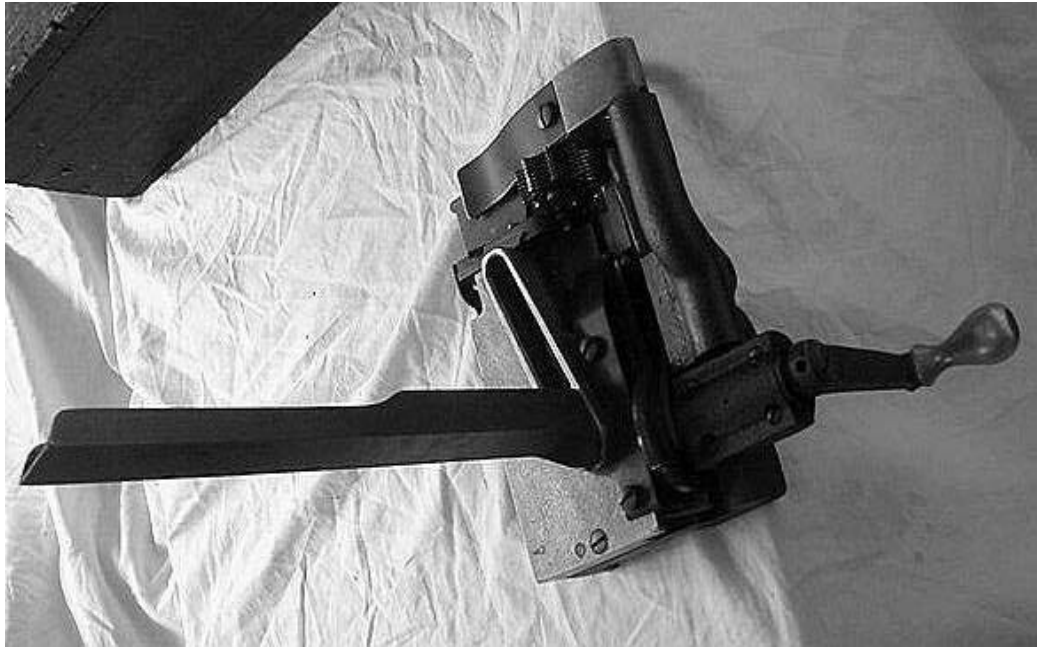


Figure 1

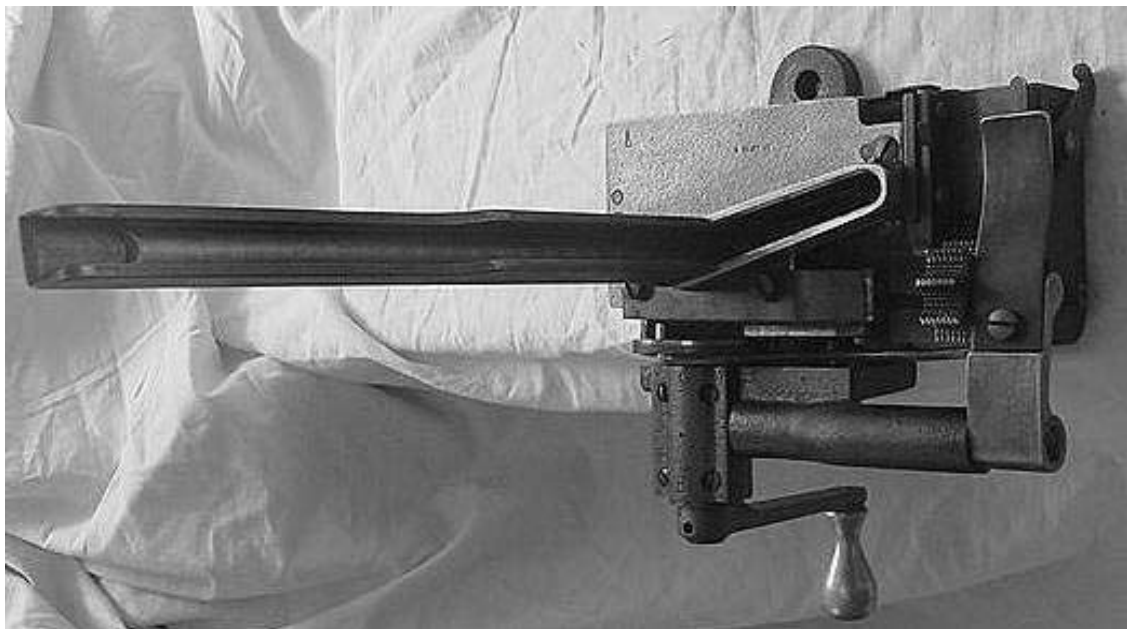


Figure 2

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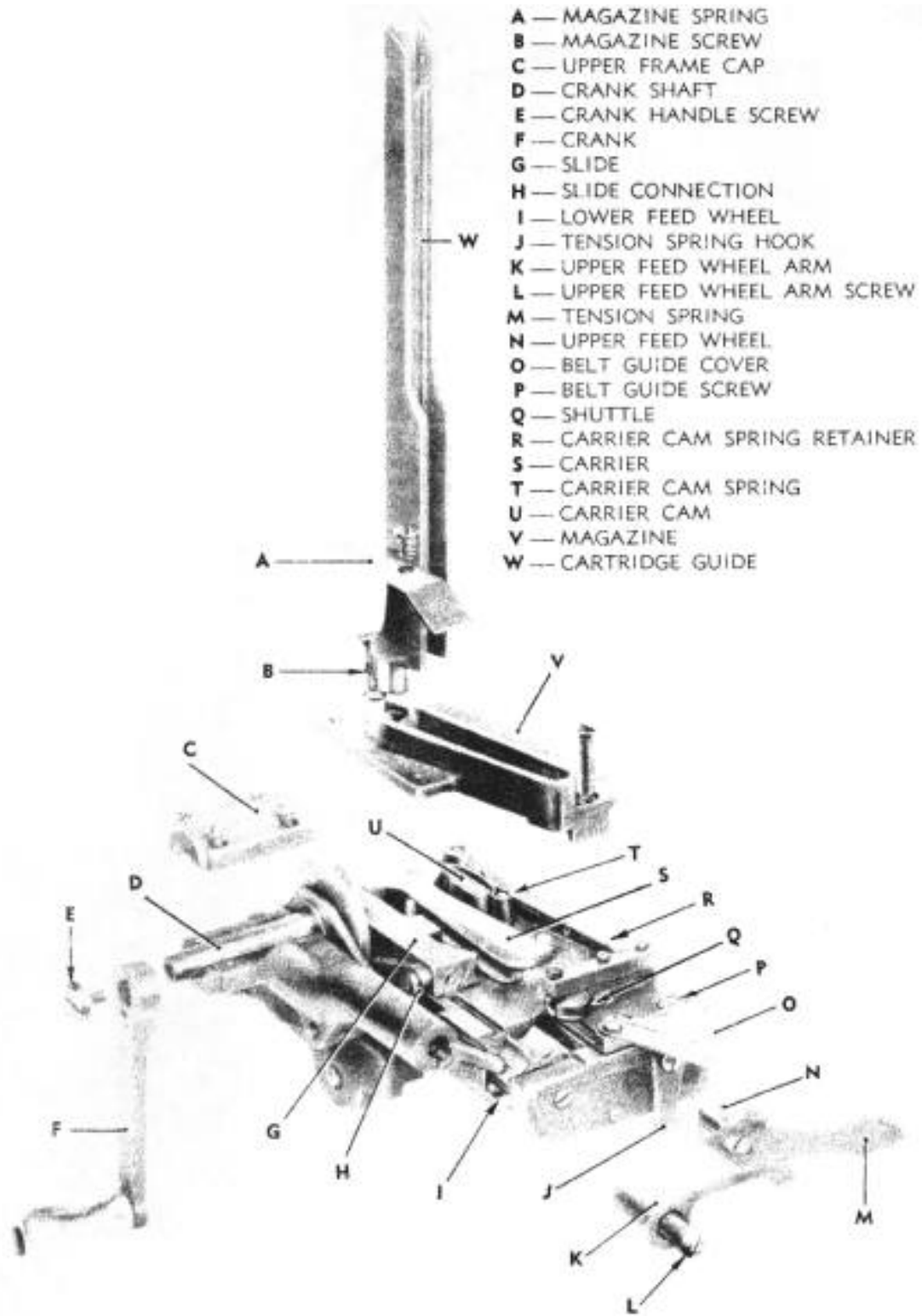


Figure 3

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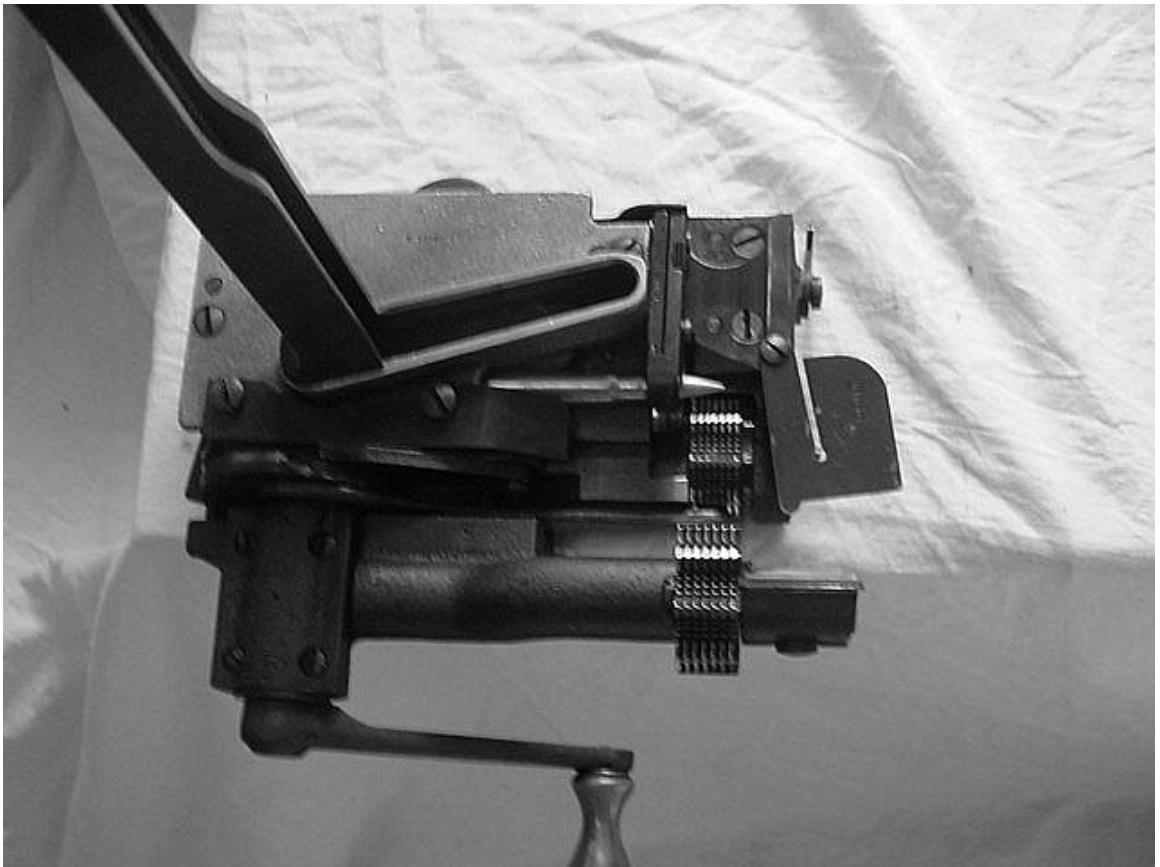


Figure 4

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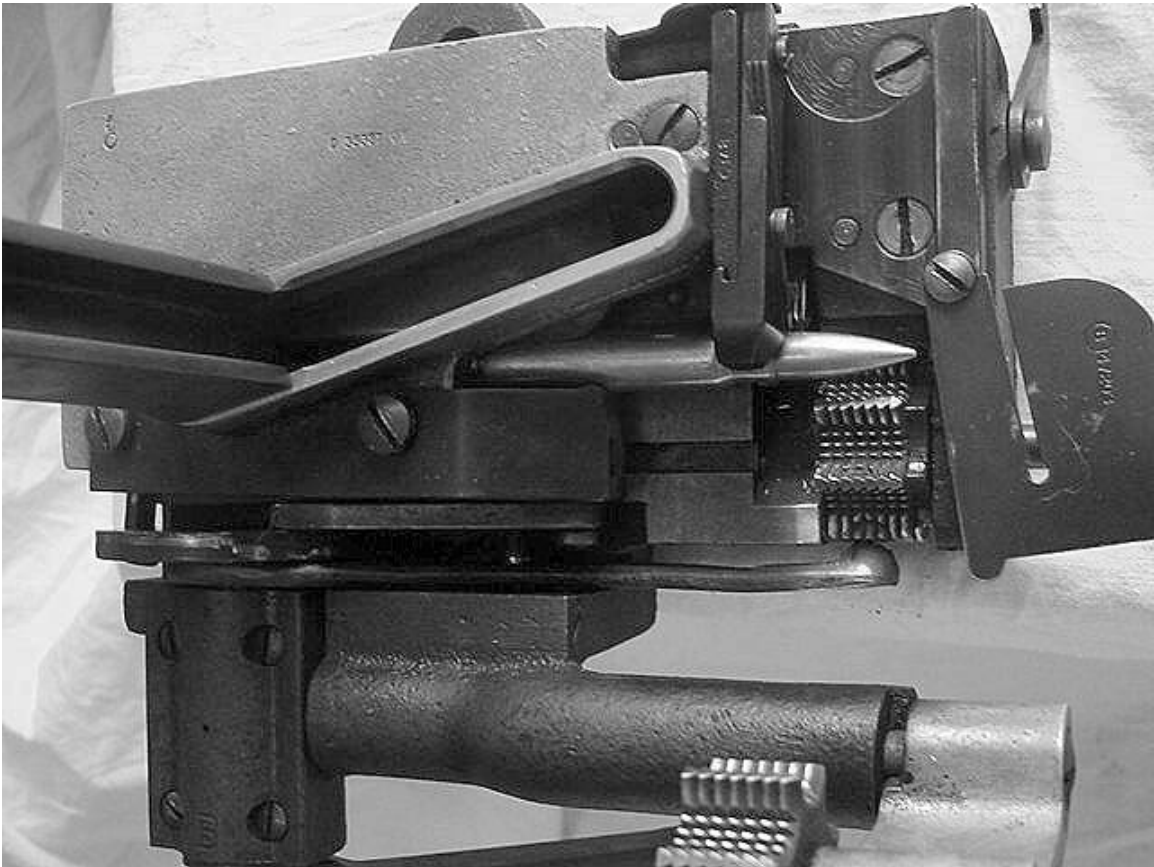


Figure 5

OPERATION

Section II

OPERATION

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Adjusting the shuttle	4
Filling the belt	5

4. ADJUSTING THE SHUTTLE.

a. Before proceeding with the operation adjust the shuttle in the following manner: Insert a round into the magazine. Turn the crank clockwise and advance the round to the limit of the first stroke.

b. Loosen the two large screws on the belt guide until it is free to slide. Adjust the shuttle so the neck of the cartridge case rests lightly against the rear groove of the shuttle blade (fig. 4). Fasten the guide securely. Remove the round.

c. Rotate the shuttle with finger and note freedom of movement. If the shuttle moves freely, the adjustment is complete. If the shuttle binds, proceed as in the following paragraph.

d. Loosen slightly one or both of the screws on the belt, making certain that the guide is still firmly secured and is not free to slide. Test movement of the shuttle. If the shuttle still binds, proceed as in e below.

e. Unscrew the large screws and remove the belt guide. With a fine file dress the surface of the cast iron frame where it interferes with the shuttle. Assemble the shuttle to the frame and test movement of the shuttle. If necessary, file off more metal until the shuttle moves freely. Then proceed to adjust the shuttle as in a and b above.

5. FILLING THE BELT.

a. Load the cartridge guide with rounds, by stripping from the paper boxes in which they were packed or by placing them in the cartridge guide, according to desired ratio of ball, tracer, incendiary, or AP. Rotate the crank clockwise until the point of a bullet in the machine engages the cupped end of the groove in the back of the shuttle blade and pushes the blade point about 1/16 of an inch into the path of the belt (fig. 5).

b. Insert a round by hand into the first pocket of the belt, binding the shoulder of the cartridge therein. Note: The black thread running near the edge of the belt indicates the side through which the cartridge is inserted.

c. Raise the upper feed wheel arm as far as it will go. Rotate the belt cover outward from the machine to clear the belt path on the belt guide. Place the belt on the belt guide with the inserted cartridge resting in the top groove of the lower feed wheel, inserting the belt between the lips of the shuttle so the blade and the point of the second cartridge slightly enter the second pocket of the belt (figs. 6 and 7). Rotate the belt cover fully inward so that it holds the belt in place. Lower

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Figure 6

Operation



Figure 7

the upper feed wheel arm so that the upper feed wheel straddles the first round in the belt. Raise the tension spring hook and fasten the tension spring (figs. 8 and 9).

d. Rotate the crank clockwise steadily and briskly. This operation will fill the belt with cartridges (fig. 10).

e. When all except the last four or five pockets of the belt have been filled, stop and swing open the belt cover. Raise the brass tip at the unfilled portion of the belt and continue to rotate the crank until all except the last two pockets are filled. Remove the belt and insert the last two remaining rounds by hand. This caution is necessary to prevent the metal end of the belt from wedging into and breaking the shuttle.

f. Catch the loaded end of the belt in a feed box supported below the machine at such a height that not more than 2 feet of filled belt will be suspended from the feed wheels of the machine.

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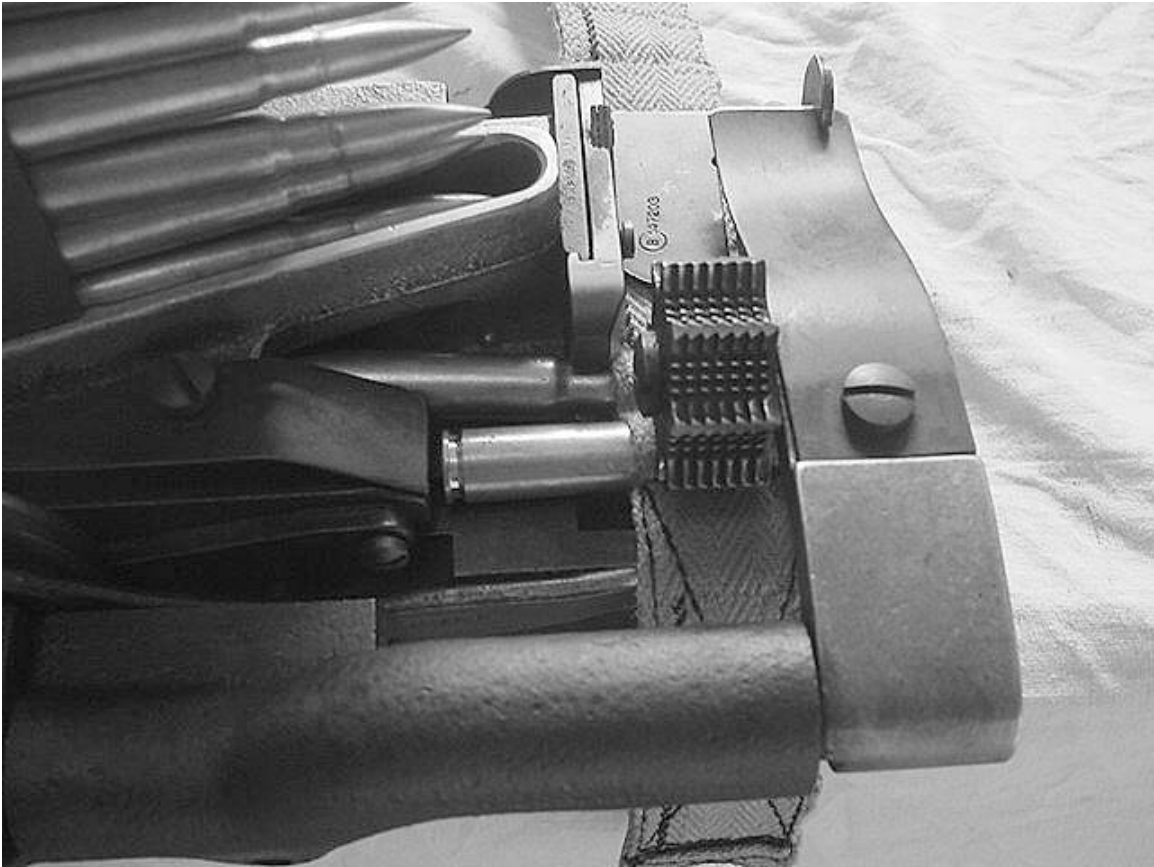


Figure 8

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Figure 9

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Section III

MALFUNCTIONS AND CORRECTIONS

Malfunctions and corrections

**Paragraph
6**

6. MALFUNCTIONS AND CORRECTIONS.

a. One of the pockets in the belt are missed. Stop and remove the belt. Tighten the slide connection. Turn the crank clockwise until it is straight down. Replace the belt in the machine with the next to the last cartridge in the top groove of the lower feed wheel. Close the machine and continue to rotate the crank. If the misses continue, the machine should be turned over to a mechanic or to ordnance maintenance personnel for inspection and repair.

b. Belt slides out of line when cartridges are inserted. This may be due to insufficient spring tension in tension spring of upper feed wheel arm. Bend spring so as to give more tension. The serrations of upper and lower wheel may be worn out. Replace the wheels.

c. Cartridge is jammed between shuttle and belt guide. If it cannot be easily removed with the aid of the point of a cartridge, turn the machine over to a mechanic or to ordnance maintenance personnel for inspection and repair.

d. Cartridge fails to enter pocket. Failure may be due to shuttle adjustment. Unscrew the two large screws on the belt guide and adjust the position of the guide until the machine functions properly. If cartridge goes over or under the pocket, adjust the winds of the shuttle until the blade is in the center. If this does not stop the miss, replace the shuttle.

e. Stoppage caused by failure of feed lever to move lower feed wheel. Turn the machine over to a mechanic or to ordnance maintenance personnel for inspection and repair.

f. Stoppage caused by two cartridges jamming into one pocket. Unscrew the lower feed wheel lock lever screw and remove the lever, taking care not to lose the lock lever spring. Examine the lever. If it is worn or broken at the neck, replace it. If the malfunction persists, the machine should be turned over to a mechanic or to ordnance maintenance personnel for inspection and repair.

g. Malfunction caused by tight fit of the cartridges in pocket of belt. See paragraph 6 b above.

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Figure 10

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Section IV

INSPECTION

Inspection

Paragraph

7

7. INSPECTION

a. Examine the exterior of the machine for damage or broken parts. Check whether the magazine, crank, and upper feed wheel arm are firmly secured. Test all screws and bolts for tightness.

b. Turn the crank clockwise until it is straight down. Note the position of the carrier. The carrier should be clear of the opening in the magazine and allow unobstructed passage for the cartridge.

c. Turn the crank clockwise to the limit of the first stroke. Note the position of the carrier. The carrier should cover the opening and prevent the cartridges from falling down onto the frame.

d. With one hand, press the handle of the screwdriver against the top groove of the lower feed wheel so as to turn the wheel backward; at the same time, rotate the crank with the other hand. Note whether the wheel turns one groove for each revolution of the crank.

e. Tighten the two large screws on the belt guide and test whether the guide is firmly secured. If the guide slides, replace the two screws.

f. Rotate the shuttle and note the freedom of movement. If the shuttle binds, loosen the belt guide screws or file off some metal from the surface of the frame in accordance with instructions in paragraph 4 d and e.

g. Test the functioning of the cartridge stop.

h. Load the cartridge guide with rounds, adjust the shuttle, and test the functioning of the machine in accordance with instructions 4 and 5.

i. Examine the shuttle to see that the blade is in the center of the opening between wings and that the space between blade and wings will not permit the double web of the belt to enter, but easily permit one thickness to enter. The space between the wings near the point of the blade should be such that the belt will enter with very slight difficulty. The belt should not enter freely. If too loose, close with the aid of pliers. If too tight, open with the aid of a screwdriver blade. A badly damaged shuttle should be replaced.

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Section V

CLEANING AND LUBRICATION

	Paragraph
Cleaning	8
Lubrication	9

8. CLEANING.

The machine should be cleaned and oiled after use. In cleaning, remove the magazine and clean the frame and all working parts with a dry rag. Care should be taken to remove all dirt and other extraneous matter from the slide groove and from the contacting surfaces of the carrier, carrier cam and spring. Clean the upper and lower feed wheels. Particular attention should be given to cleaning the shuttle because the accumulation of extraneous matter between the lips of the shuttle and the grooves of the shuttle blade might cause a stoppage. For transportation or storage of the machine use the wood chest provided.

9. LUBRICATION.

After cleaning the machine with a dry rag, wipe with a light oiled rag. Do not leave any oil on the front face of the slide because it might get on a primer. Oil the crank shaft through the oil hole provided in the upper frame cap.

By order of the Chief of Ordnance:

H.R.KUTZ,
Brig. Gen., Ord. Dept.,
Chief of Field Service .

(O.O. 300.5/1144)