May 28, 1957 E. A. KAMP 2,793,567

SIDE EJECTION ARRANGEMENT

Filed Dec. 7, 1954 2 Sheets-Sheet 1

Fig. 1.

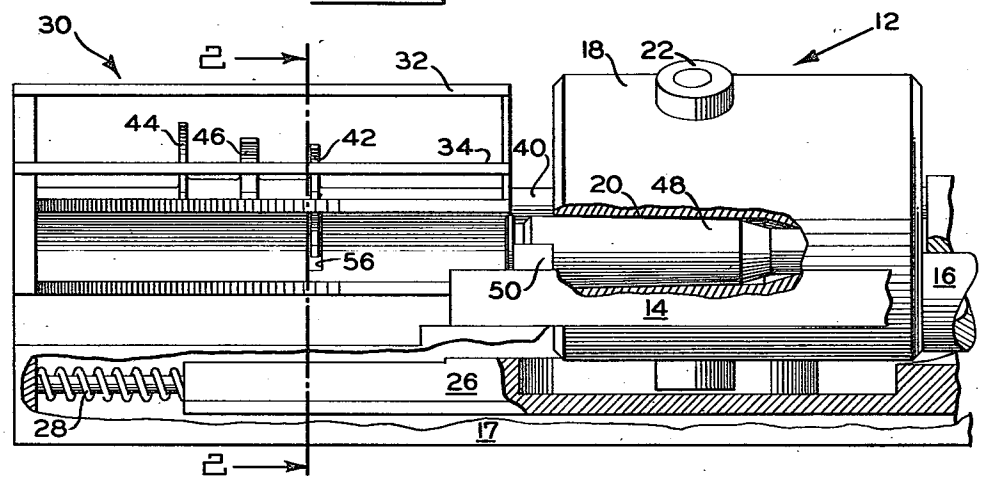
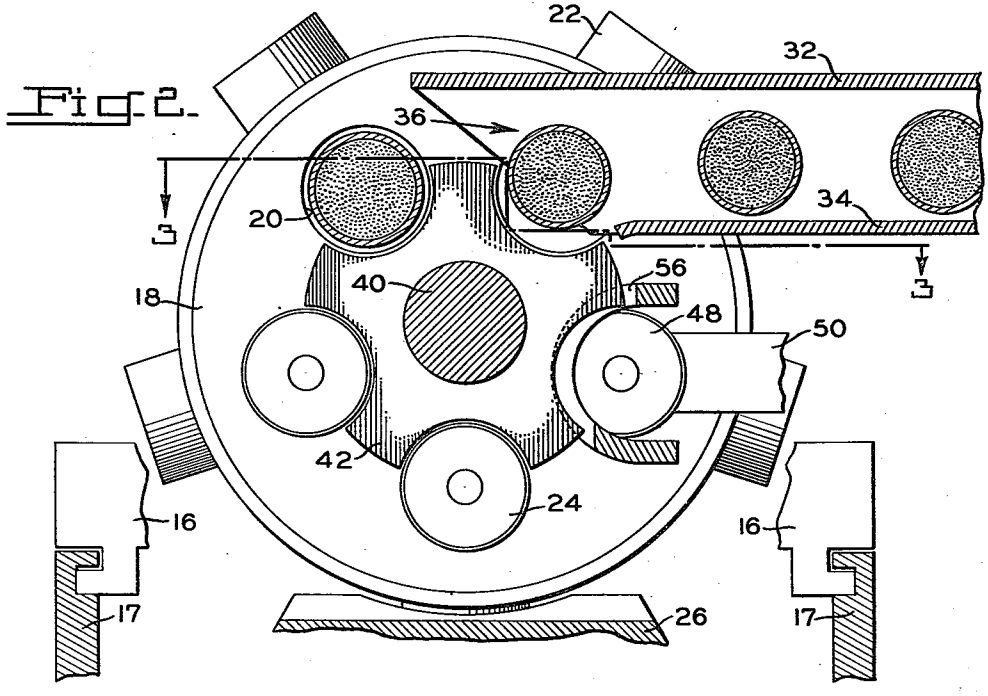


Fig. 2.



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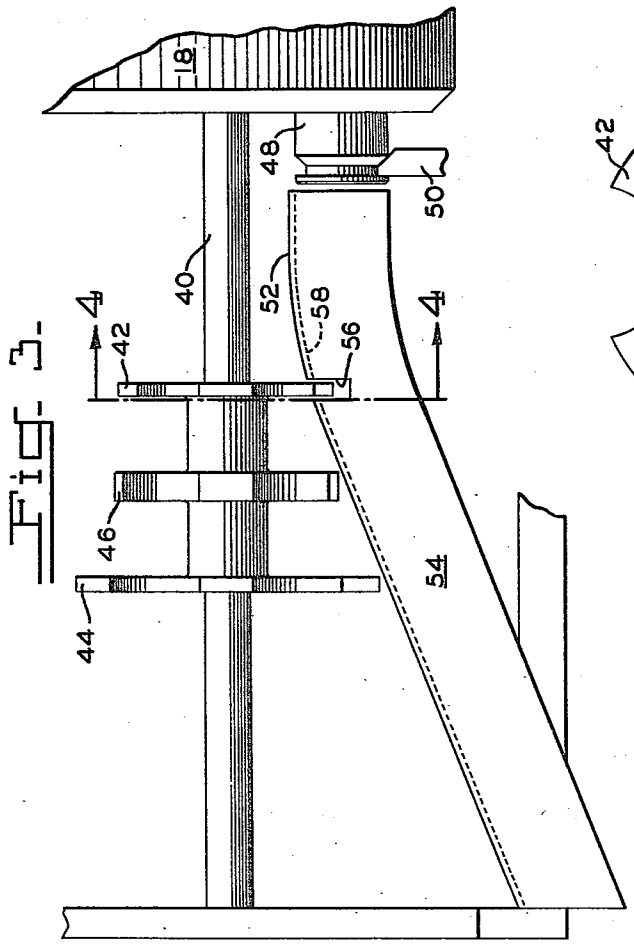

Fig. 3.

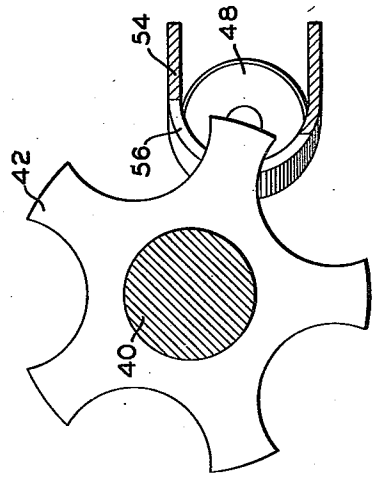

Fig. 4.

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SIDE EJECTION ARRANGEMENT

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Application December 7, 1954, Serial No. 473,768

2 Claims. (Cl. 89—33)

My invention relates to a revolver-type automatic weapon and more particularly to a cartridge feed and ejection device therefor.

In the usual revolver-type automatic weapon, a recoil unit supporting a barrel includes a drum provided with cartridge chambers and corresponding index rollers and rotatably disposed with the six o'clock drum station of the chambers in axial alignment with the barrel. The weapon is fired by electrical discharge of cartridges chambered in the six o'clock station.

The weapon is provided with an actuator constructed for engagement with the index rollers and biased to a battery position to retain a chamber in a firing station. The actuator is slidable in rearward and forward strokes responsive to discharge of cartridges chambered in the firing station to sequentially rotate the chambers to the firing station.

A feeder rotatable with the cartridge drum includes a plurality of sprockets with tooth spaces corresponding to the chambers for rotating cartridges slidably secured in an ammunition belt. A rammer mounted on the actuator projects the cartridges into the chambers as they stop in stations preceding the firing station.

The cases of the discharged cartridges are rearwardly removed from the chambers in the station thereof rotationally following the firing station by an extractor disposed on the recoil unit. The extractor is pivoted to propel the cartridges rearwardly responsive to the forward stroke of the actuator. During extraction, the path of the discharged cartridge cases passes through the sprocket tooth spaces corresponding to the extraction station and in the comparatively slow original weapons, such passage was accomplished without difficulty.

As the rate of fire of the weapon was increased, however, it was found that the extracted case interfered with the teeth of the sprockets remote from the barrel to cause malfunctions of the weapon.

It is therefore an object of my invention to provide an extraction mechanism for such a weapon to accommodate increased rate of operation thereof.

Another object of my invention is to provide such a weapon with a device for guiding discharged cartridge cases from the drum thereof.

A further object of my invention is to provide such a weapon with a device for guiding discharged cartridge cases in a path free from interference with the sprockets of the feeder.

Other aims and objects of my invention will appear from the following explanation thereof.

In carrying out my invention, a semicylindrical chute is disposed on the recoil unit with one end adjacent the extraction station. The chute is provided with an intermediate slit for rotation therethrough of the sprocket of the feeder adjacent the drum, and the chute is longitudinally curved to guide the discharged cartridge cases away from the remaining sprockets of the feeder.

For a more complete understanding of my invention

reference is directed to the following description and the accompanying drawings in which:

Fig. 1 is an elevational view, partly in section, of a revolver-type automatic weapon incorporating my invention, with the actuator proceeding in the forward stroke thereof;

Fig. 2 is a view along the line 2—2 of Fig. 1 with a cartridge belt shown in position in the weapon;

Fig. 3 is a view along the line 3—3 of Fig. 2; and

Fig. 4 is an enlarged view along the line 4—4 of Fig. 3 with the front sprocket in rotation through the discharged cartridge case guide.

Accordingly, an automatic weapon **12** includes a recoil unit **14** with a barrel **16** secured thereon slidably disposed on a receiver **17**. A drum **18** including cartridge chambers **20** and corresponding radial index rollers **22** is rotatably disposed on recoil unit **14** to convey the chambers to a firing station in axial alignment with barrel **16**. A cartridge **24** is shown chambered in the firing station in Fig. 2.

An actuator **26** is biased to a battery position by springs **28** engaging receiver **17** for battery position engagement with one of the index rollers as in Fig. 1 to retain the chamber corresponding thereto in the firing station. Actuator **26** is slidable in rearward and forward strokes for engagement with rollers **22** to successively convey chambers **20** to the firing station and to the immediately following discharge station responsive to discharge of cartridges **24** chambered therein.

Weapon **12** includes a feeder **30** having a frame **32** secured to recoil unit **14** and frame **32** includes a tray **34** for supporting a cartridge belt **36** having cartridges **24** slidably secured therein as in Fig. 2. Feeder **30** includes a shaft **40** removably secured to drum **18** for rotation therewith and sprockets secured to shaft **40** including forward and rearward cartridge sprockets **42** and **44** and a link sprocket **46** therebetween for engagement with cartridge belt **36**. The tooth spaces of the sprockets are disposed in correspondence with chambers **20**. Sprocket **42** is provided with stub teeth for engagement with the projectile ends of cartridges **24**.

The sprockets convey cartridges **24** to the pair of stations preceding the firing station for ramming, and the cartridges are chambered in the drum by means of a rammer (not shown) of actuator **26**.

Cases **48** of cartridges **24** are removed from drum **18** in the chamber discharge station by an extractor **50** disposed on recoil unit **14**. Extractor **50** is disposed for engagement with actuator **26** in the last portion of the forward stroke thereof, to rotate and remove case **48** from the extraction chamber, as the actuator slides into battery position. A case **48** is shown in the process of removal from an extraction station chamber **20** in Figs. 2 and 3.

One end **52**, of a substantially semicyclindrical chute **54**, is disposed adjacent the extraction station, and the chute is provided with a slit **56** for rotation therethrough of the teeth of sprocket **42**. A curved portion **58** of chute **54** is disposed adjacent the path of sprockets **44** and **46**. Stub teeth of forward sprocket **42** are formed for minimum depth of slit **56**.

Although a particular embodiment of the invention has been described in detail herein, it is evident that many variations may be devised within the spirit and scope thereof and the following claims are intended to include such variations.

I claim:

1. In an automatic weapon including a recoil unit, a drum thereon provided with chambers for cartridges and rotatively disposed to sequentially convey the cartridges to a firing station for discharge thereof and the cases of the cartridges to an extraction station responsive to the

discharge, a feeder including spaced sprockets with tooth spaces corresponding to the chambers secured to the drum for rotation therewith, and an extractor for projection of the discharged cartridge cases rearwardly from the extraction station responsive to the discharge, a guide device comprising a cylindrical chute, including a section adjacent the extraction station, an intermediate curved section provided with a transverse slit for rotation therein of the one of the sprockets adjacent the drum, and an end section adjacent the remainder of the sprockets to direct the cases from the extraction station.

2. A guide device as described in claim 1 with said device provided with a semicylindrical cross-section and secured to the recoil unit.

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