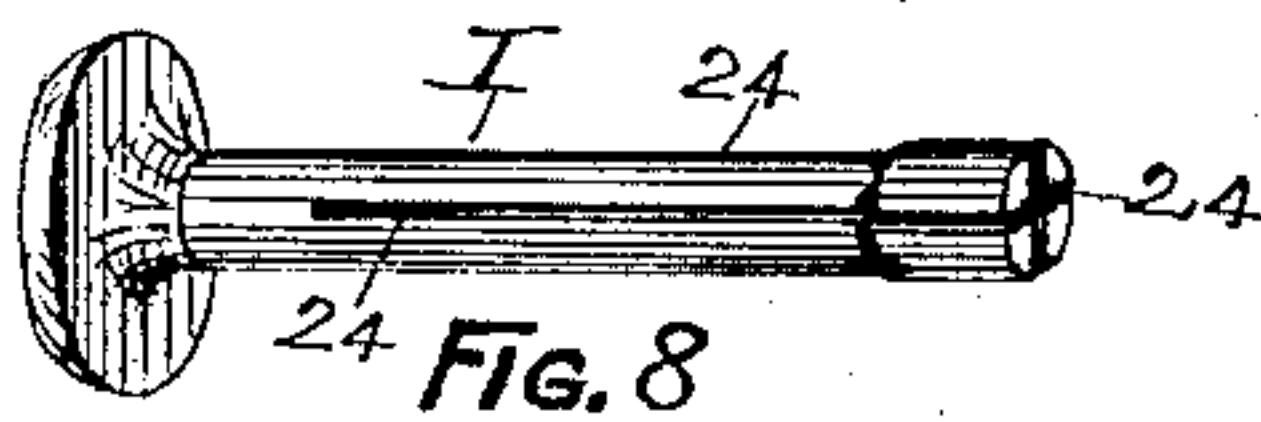
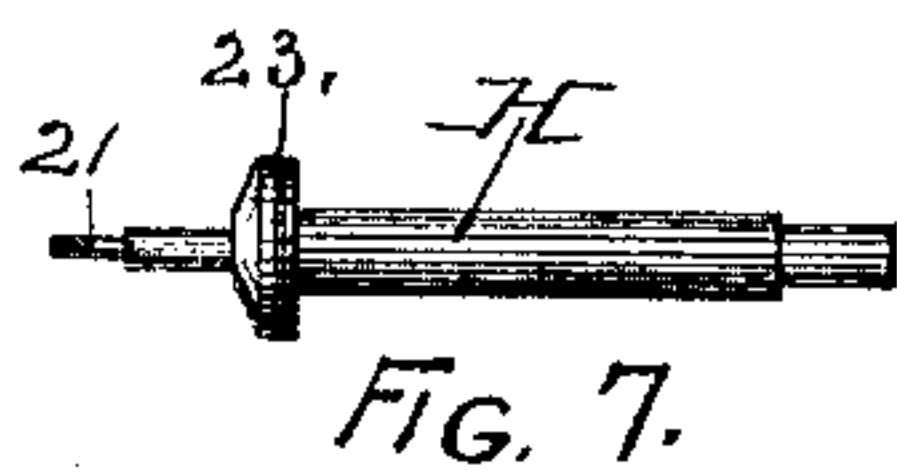
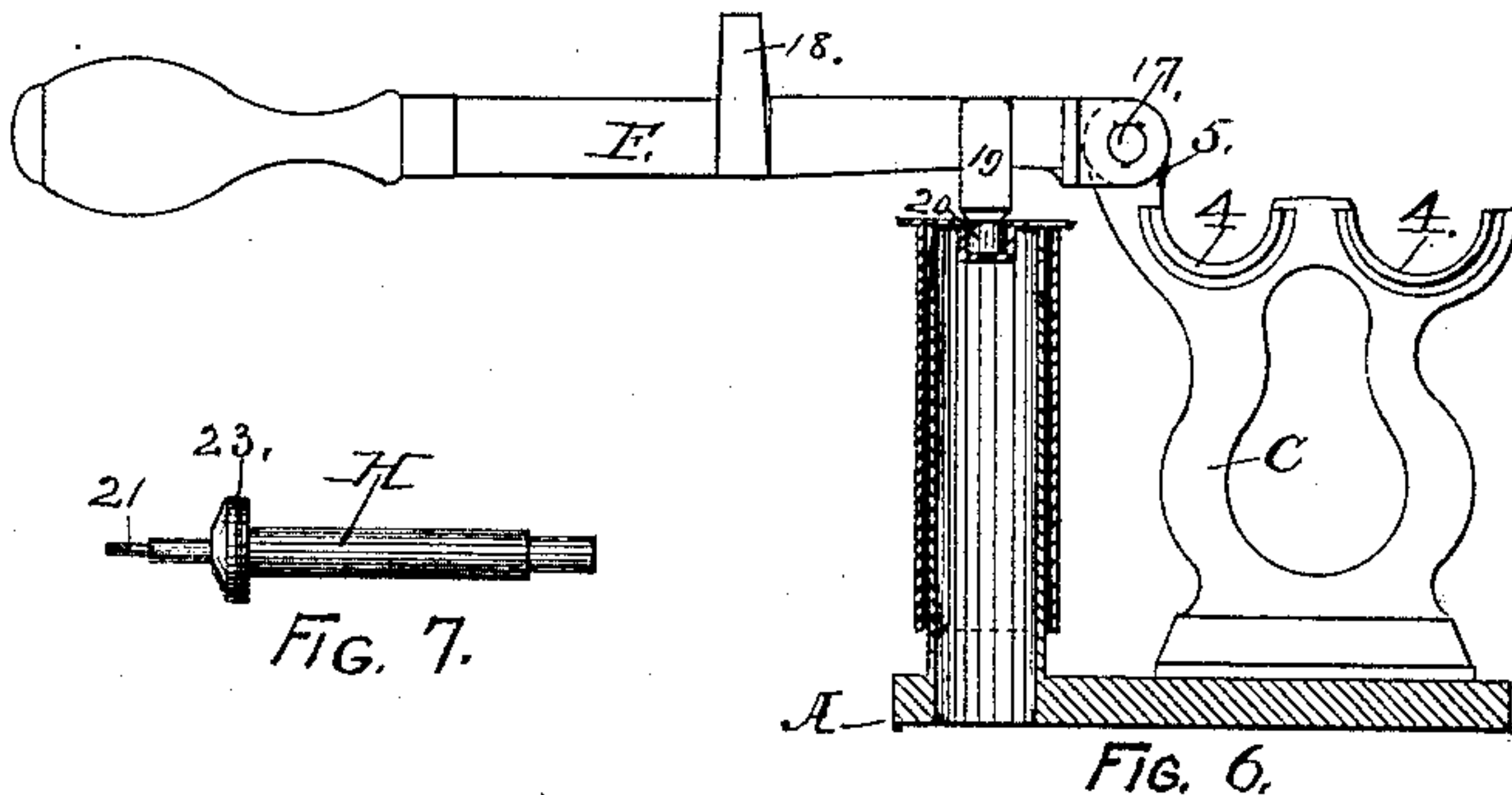
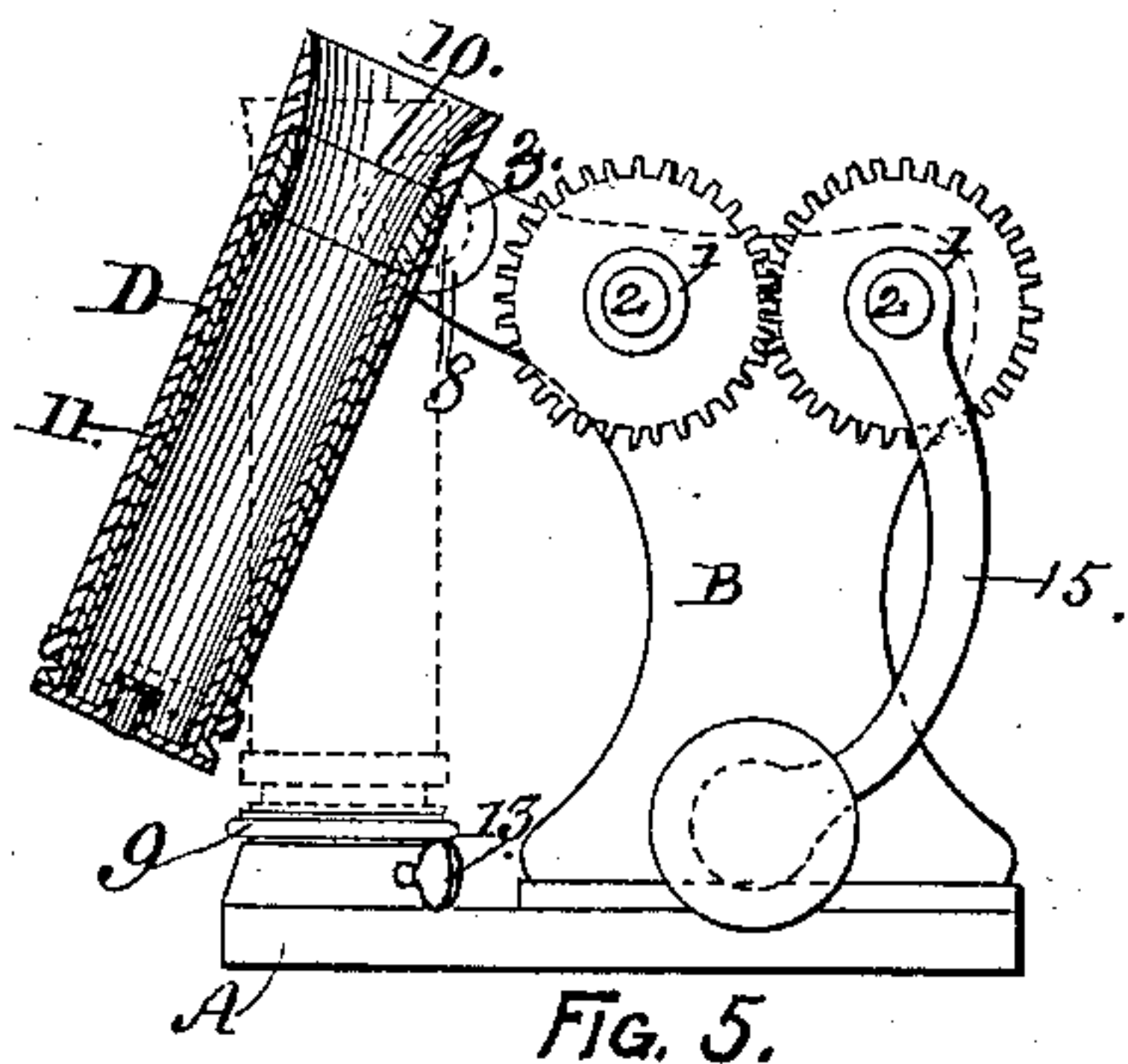
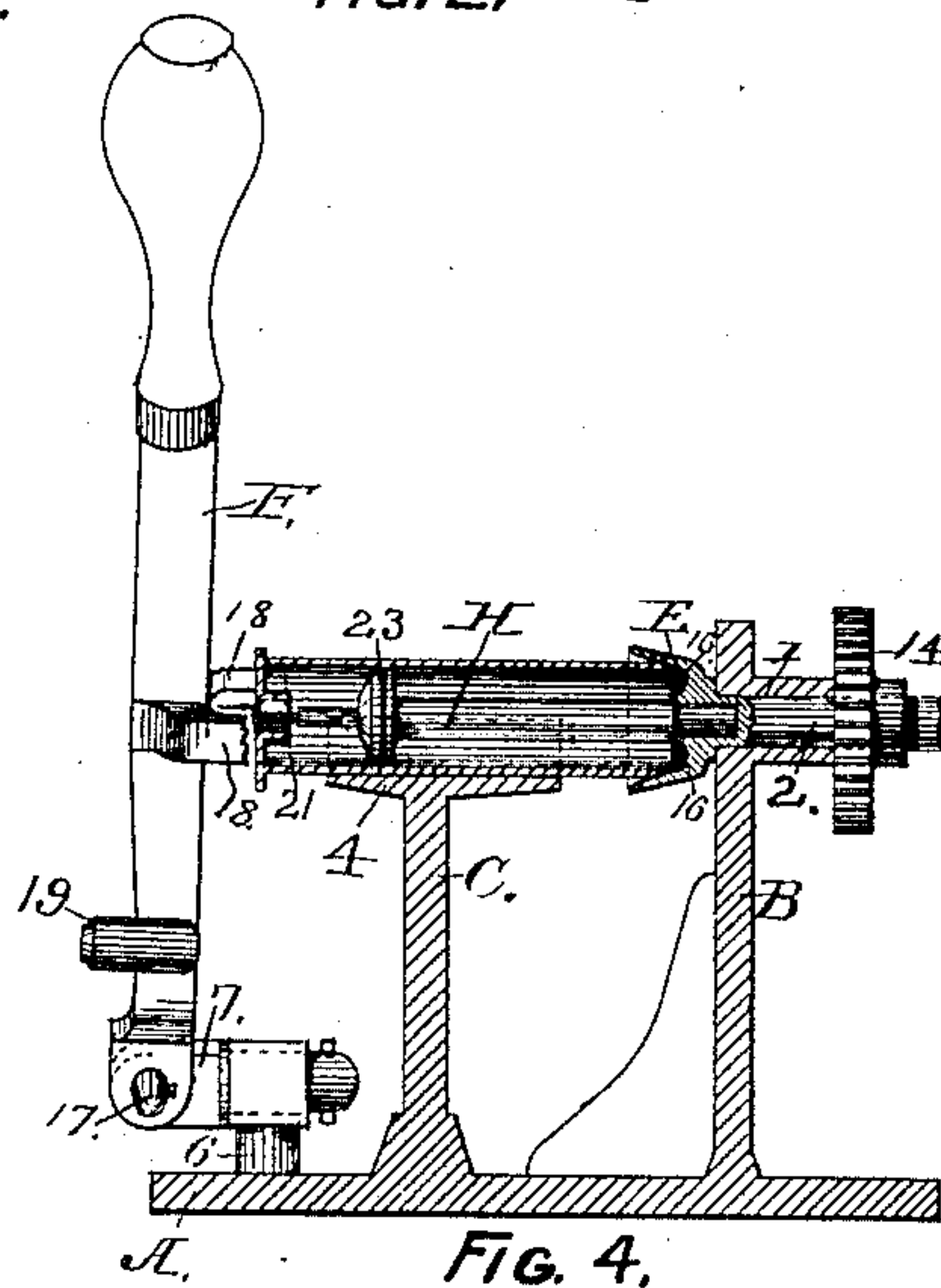
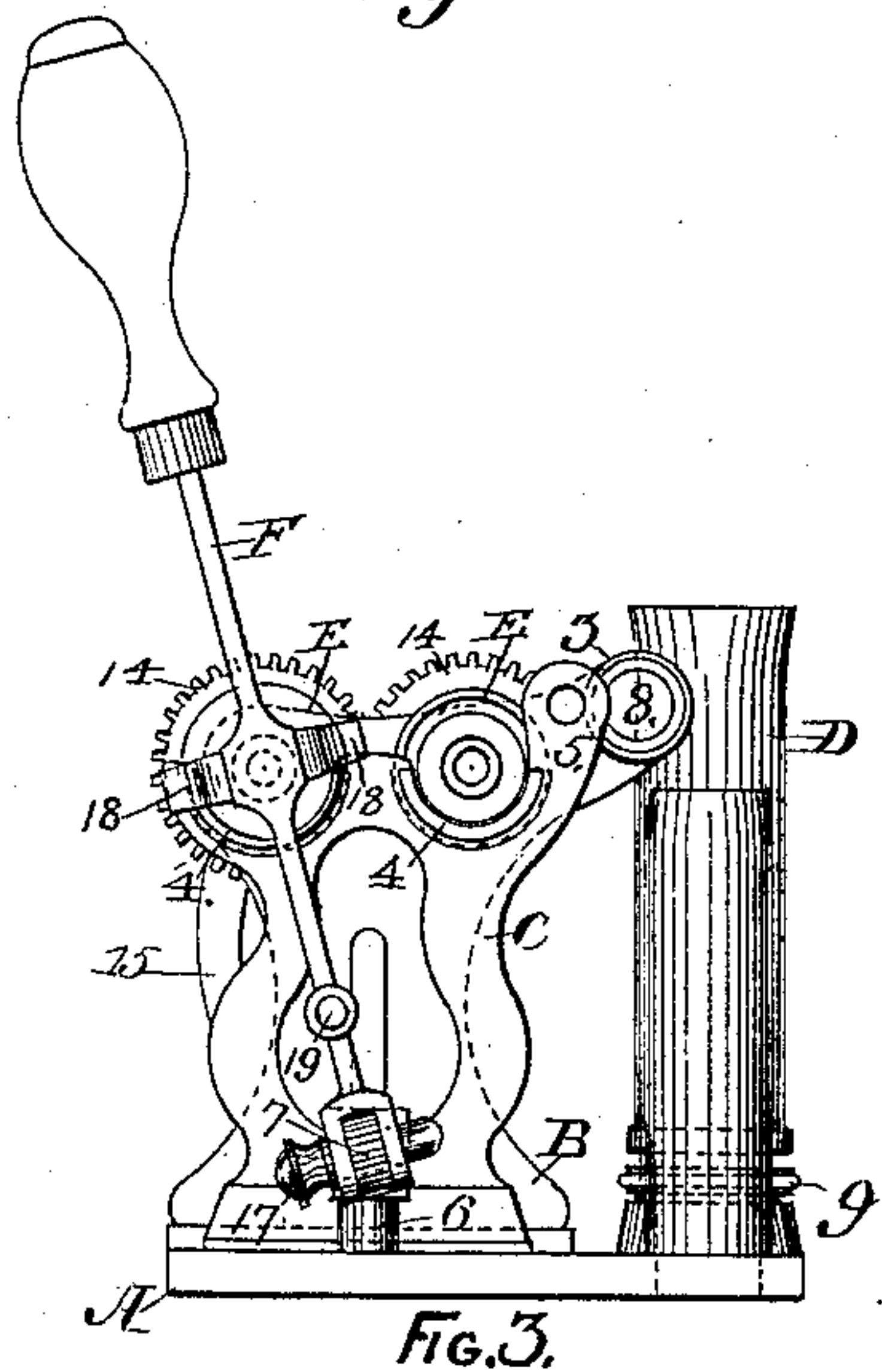
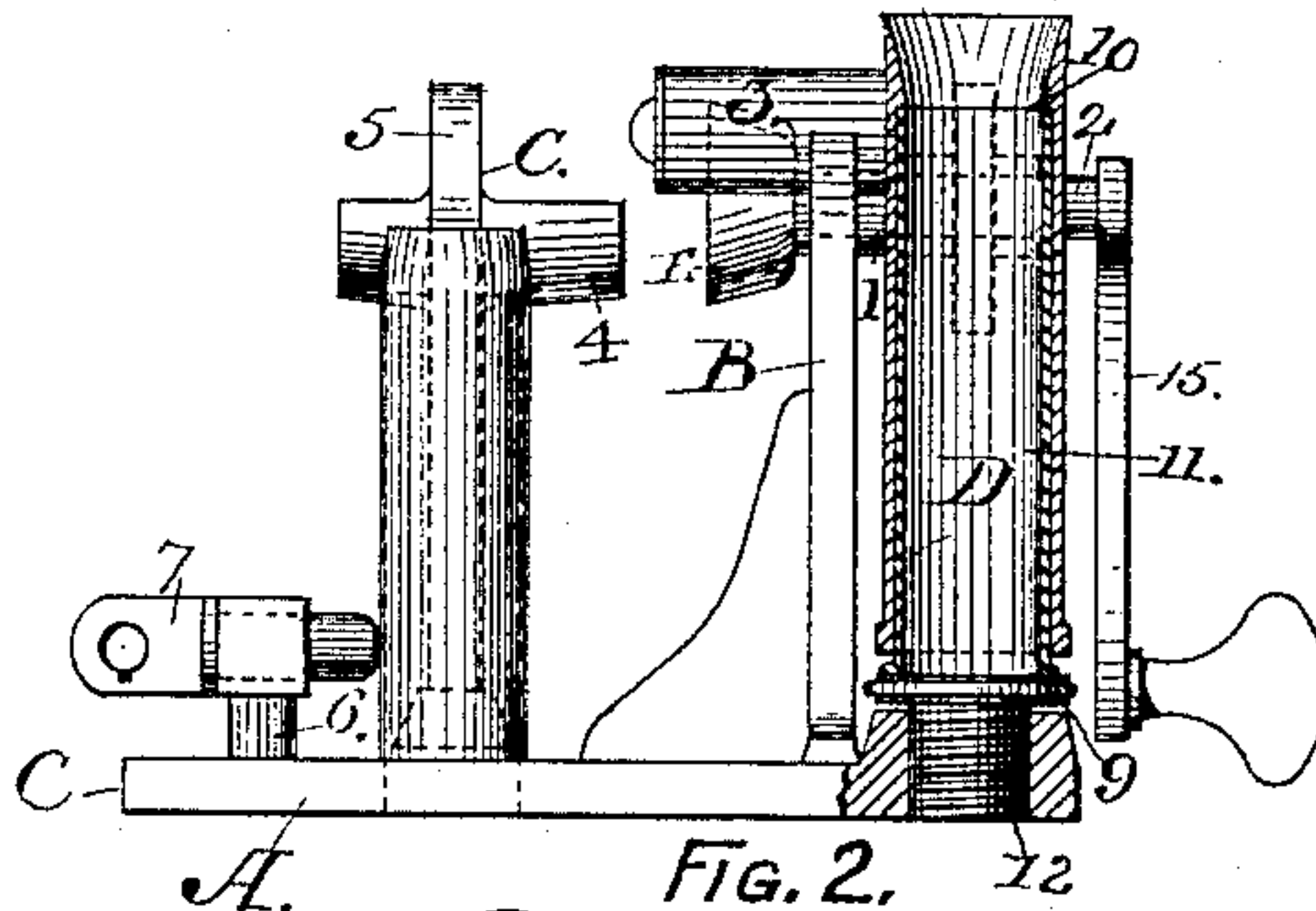
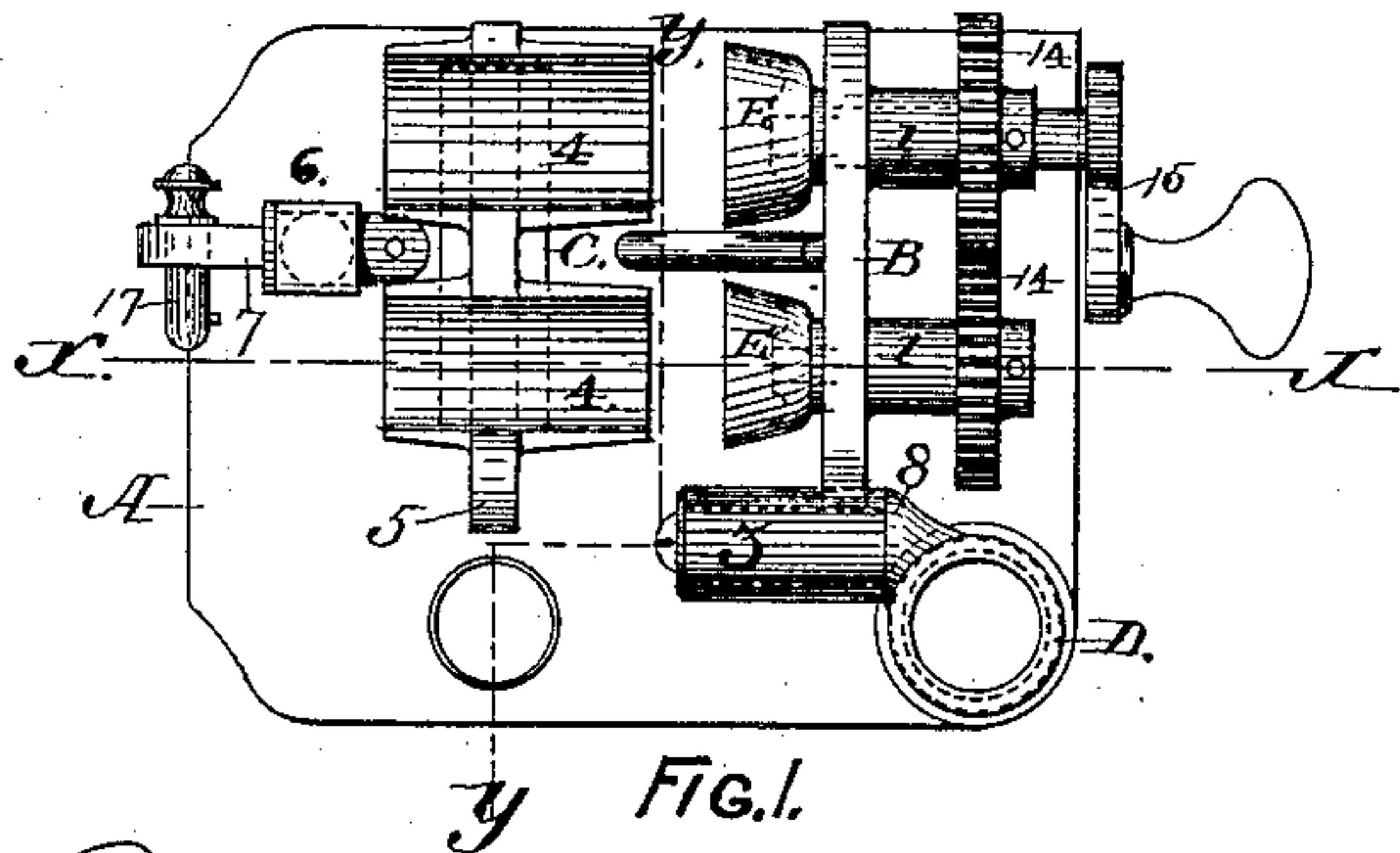


(No Model.)

H. GARDNER.  
CARTRIDGE LOADER.

No. 387,223.

Patented Aug. 7, 1888.



Witnesses:

S. B. Brewer,  
H. V. Scattergood.

Inventor:

HOLLY GARDNER,  
by William H. Low,  
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# UNITED STATES PATENT OFFICE.

HOLLY GARDNER, OF ALBANY, NEW YORK.

## CARTRIDGE-LOADER.

SPECIFICATION forming part of Letters Patent No. 387,223, dated August 7, 1888.

Application filed April 12, 1888. Serial No. 270,417. (No model.)

*To all whom it may concern:*

Be it known that I, HOLLY GARDNER, of the city and county of Albany, in the State of New York, have invented a new and useful Apparatus for Loading, Crimping, Capping, and Decapping Shot-Shells, of which the following is a specification.

My invention consists of the combination of elements hereinafter described and claimed, when arranged to form a portable and convenient apparatus for loading, crimping, capping, and decapping two different sizes of shot-shells for the cartridges or fixed ammunition for use in breech-loading shot-guns.

In the accompanying drawings, which are herein referred to and form part of this specification, Figure 1 is a plan view of my apparatus, the lever for gripping and capping the shell being removed therefrom. Fig. 2 is a side elevation of the same with the charging-cylinder shown in vertical section. Fig. 3 is a front elevation with the lever in position for gripping a shell operated on by the crimper on the left side of the apparatus. Fig. 4 is a longitudinal section at the line X X, showing the mode of decapping a shell. Fig. 5 is a rear elevation showing the charging-cylinder in vertical section and swung outwardly. Fig. 6 is a vertical section at the line Y Y on Fig. 1, showing the lever in position for capping a shell. Fig. 7 is a side elevation of the decapping spindle, and Fig. 8 is a perspective view of a rammer adapted to ramming the charges into two different sizes of shot-shells.

As represented in the drawings, A designates the bed-piece of the apparatus, which is provided with the brackets B and C, which are arranged one before the other in parallel position to each other. The bracket B is provided with bearings 1, in which the shafts 2 of the crimpers are journaled. Said bracket is also provided with a sleeve, 3, in which the trunnion of the charging-cylinder D is fitted to oscillate. The bracket C is provided with two semi cylindrical gutters or guides, 4, of different size, to correspond to the diameters of the shot-shells—that is to say, one to fit the larger size and one to fit the smaller size of said shells. The center lines of said gutters should be parallel with each other and should

range in line with the axial centers of the crimpers. The bracket C is also provided with an ear or lug, 5, for a purpose hereinafter explained. A stud, 6, is erected on the bed-piece A in front of the bracket C and at a point that will range intermediately between the center lines of the gutters of said bracket, and to said stud a lug, 7, is pivoted in such manner that its pivotal center will range on a line that will be parallel with the center lines of the gutters 4. Said lug can be oscillated on its pivotal center, and it is intended for a purpose hereinafter set forth.

The charging-cylinder D is provided with a side trunnion, 8, that is fixed at right angles to the center line of said cylinder, but out of center with said center line, so that when said cylinder is swung outwardly, as shown by the full lines in Fig. 5, the bottom end of said cylinder will move in a curved line that will raise it clear from the seat 9, on which it rests when the cylinder D is in its erect position, as indicated by dotted lines in Fig. 5.

The charging-cylinder D is bored out below the shoulder 10 to receive the larger size of shot-shell, and above said shoulder it has a funnel-shaped bore whose lower end corresponds to the outside diameter of the smaller size of shot-shell. A sleeve, 11, whose bore corresponds to the outer diameter of the smaller size of shot-shell, is fitted to slide into the bore of the charging-cylinder until the upper end of said sleeve is brought in contact with the shoulder 10, and thereby said charging-cylinder is adapted to use for loading the two different sizes of shot-shells. The lower end of the sleeve 11, which is preferably made with an external flange, projects slightly below the lower end of the charging-cylinder, thereby requiring the seat 9 to be made adjustable to height, and for that purpose said seat is provided with a screw-stem, 12, that is fitted to screw into a hub on the bed-piece A. A set-screw, 13, bears on the screw-stem 12, to prevent the seat 9 from being accidentally moved from the height at which it has been set.

The crimpers E—of which there are two, one for each size of shot-shell—are secured to the forward end of the shafts 2, and the latter are connected by the gear-wheels 14 so as to rotate



together. One of said shafts is provided with a hand-crank, 15, by which a rotatory motion is imparted to the crimpers. Said crimpers are bored out to a tapering form with the smaller end at the inward side, with an annular groove, 16, of a semicircular form at its inner end. The tapering form of the bore of the crimpers is designed to give the initial contraction to the end of the shot-shell, and the annular groove completes the operation of crimping by giving a bead finish to the end of the crimped end of the shell.

A hand-lever, F, is fitted to be interchangeably pivoted by the pivot-pin 17 to either the lug 7 or the ear 5, as occasion requires. Said lever is provided with gripping-arms 18, which are adapted to engage with the metallic head which forms the cap end of the shell, and thereby is held in a fixed position while a crimper is performing its operation. The lever F, when pivoted to the lug 7, can be swung sideways in either direction to bring the gripping-arms into position for either of the crimpers.

A capping-point, 19, is also formed on the lever F for the purpose of forcing the cap of fulminate 20 into the metallic head of shell, and when said lever is used for the last-named purpose must be pivoted to the ear 5, so that the capping-point 19 will be brought into correspondence with the center line of a vertical capping-cylinder, G, that is erected on the bed-piece A near one end of the bracket C.

H is the decapping-spindle, which is fitted to enter a hole in the center of the crimpers E, so as to be detachable therefrom. The outer end of said spindle is provided with a reduced portion, 21, that is adapted to pass through a perforation in the center of the metallic head of the shell under the cap 20 in the operation of decapping an empty shell. The decapping-spindle is also provided with a head, 23, which enters the bore of the shell to steady the same during the operation of decapping, which operation is performed in the following manner:

The decapping-spindle H is fixed in the crimper, and an empty shell, from which the cap is to be ejected, is slipped upon said spindle, with the reduced portion of the latter fixed in the perforation of the metallic head of said shell. The lever F, which must then be pivoted to the lug 7, is then thrown up to bring the gripping-arms 18 into contact with the metallic head of the shell; then by a continued pressure on said lever the decapping-spindle will eject the cap from its place. I is the rammer used for forcing down the wads which are placed over the charges of powder and shot. Said rammer has an enlarged diameter at its lower end, and in order to render it contractible, so that it may be used for the two different sizes of shells, longitudinal slits 24 are made in said rammer.

The operation of my apparatus is as follows: The operation of capping is effected by placing the shell on the capping-cylinder G

and fixing the cap in the recess formed in the metallic head of the shell for the purpose of receiving it. The lever F, which must be pivoted to the ear 5 in performing this operation, is turned downwardly, with its capping-point 19 resting on the cap, and by continued pressure on said lever said cap will be forced down to its place. The loading of the shell is effected by inserting it in the charging-cylinder E, and putting into it, first, the required quantity of powder; second, two wads or disks cut from heavy felt; third, the required charge of shot, and, fourth, a thin disk of card-board, each of the three disks being forced down by the rammer I to their several places. The shell is then removed from the charging-cylinder and placed in one of the crimpers E—which crimper it is placed in depending on the size of the shell—wherein it is fixed so that the end to be operated upon will enter the taper bore of said crimper. The lever F, now pivoted to the lug 7, is swung up until the gripping-arms 18 will engage with the diametrically-opposite edges of the metallic head of the shell, so as to hold said shell so that a rotatory motion cannot be imparted to it; then, while the shell is forced up to the crimper by the lever F, motion is imparted to the crimper by the crank 15, and by the rotations of said crimper the inner end of the shell is crimped over to form a bead, which overlaps the outer disk or wad, to securely hold the charge of ammunition within the shell.

When preferred, the pivoted end of the lever F may be made in the form of a hook that is adapted to engage in suitable eyes that will be substituted for the lug 7 and ear 5, so that said lever can be readily shifted from its position for operating in conjunction with the crimpers to the one where it will perform its work in the operation of capping the shell.

I claim as my invention—

1. The combination of two revolving crimpers, which are geared to rotate together, shell-guides whose center lines range with the centers of said crimpers, and a lever by which the shells are held in a non-rotative position, and are forced into said crimpers, the said lever being fitted to swing sideways into correspondence with the centers of said crimpers, as and for the purpose herein specified.

2. A charging-cylinder having a trunnion arranged tangentially to the bore of said cylinder, so that the lower end of a cartridge-shell fixed in the latter will be swung directly to bear evenly on the level surface of a seat on which said cartridge-shell rests when said cylinder is in a vertical position, as and for the purpose herein specified.

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Witnesses:

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