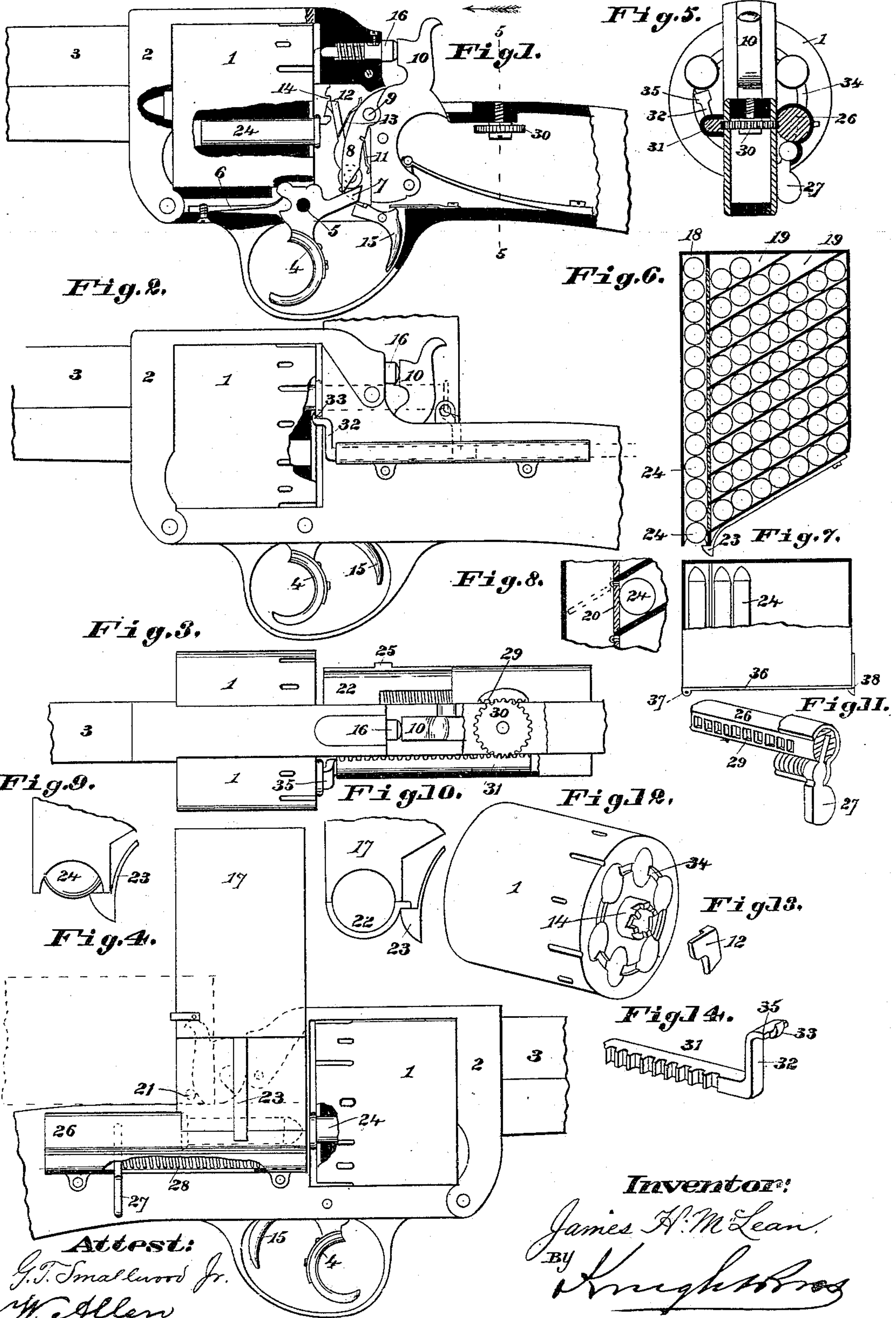


J. H. McLEAN.
MAGAZINE GUN.

No. 282,552.

Patented Aug. 7, 1883.



(No Model.)

2 Sheets—Sheet 2.

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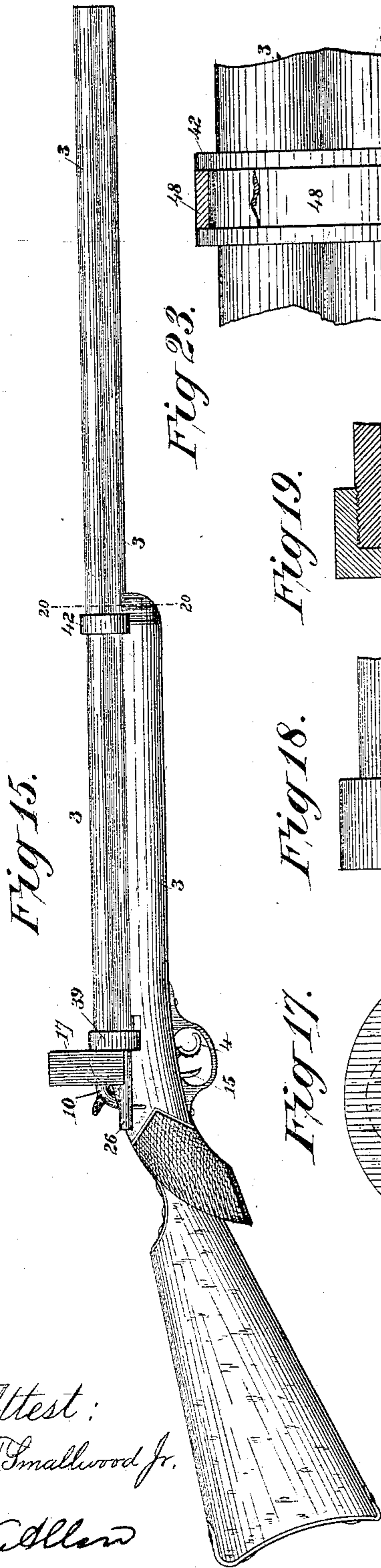


Fig. 15.

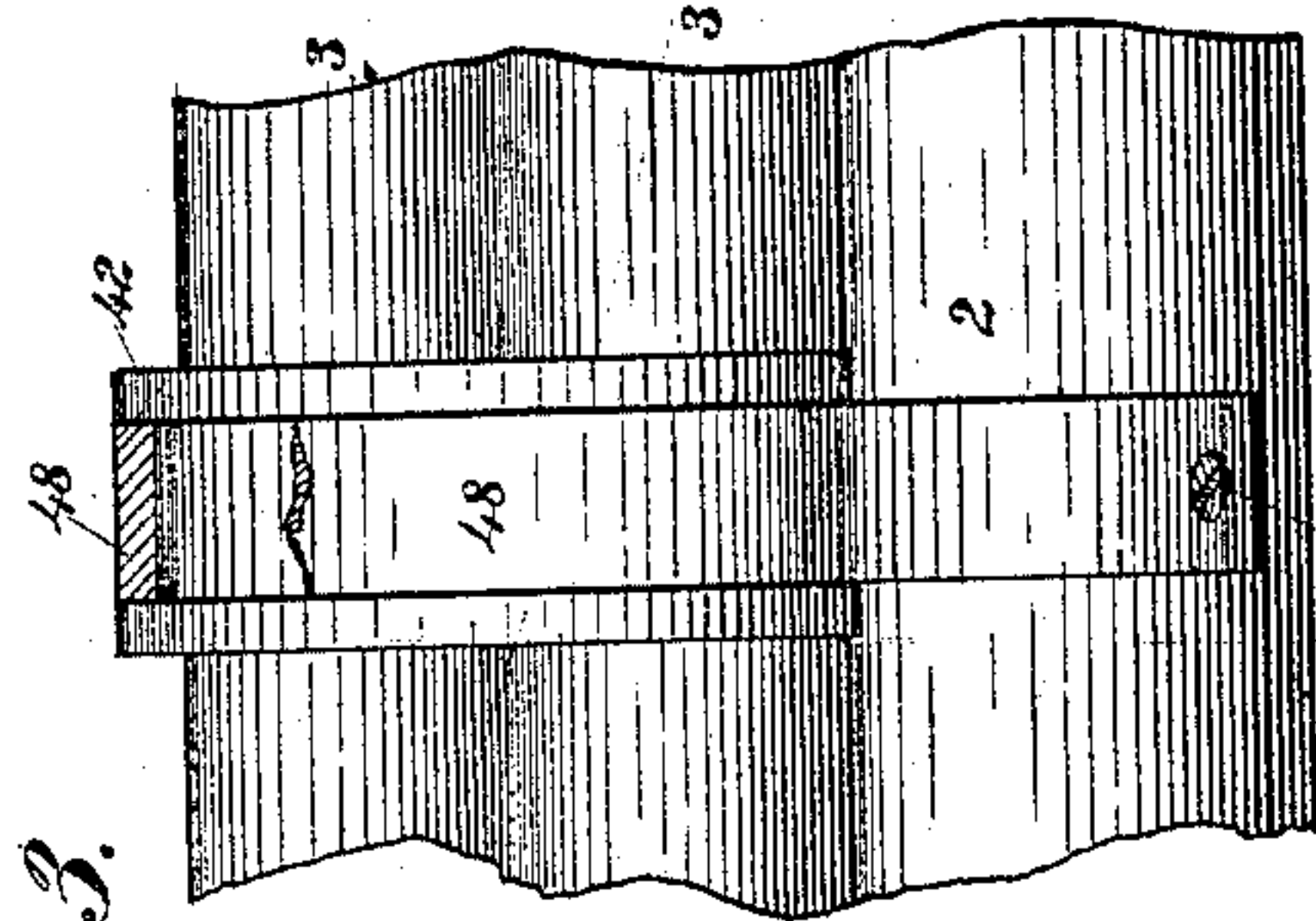


Fig. 23.

Fig. 19.

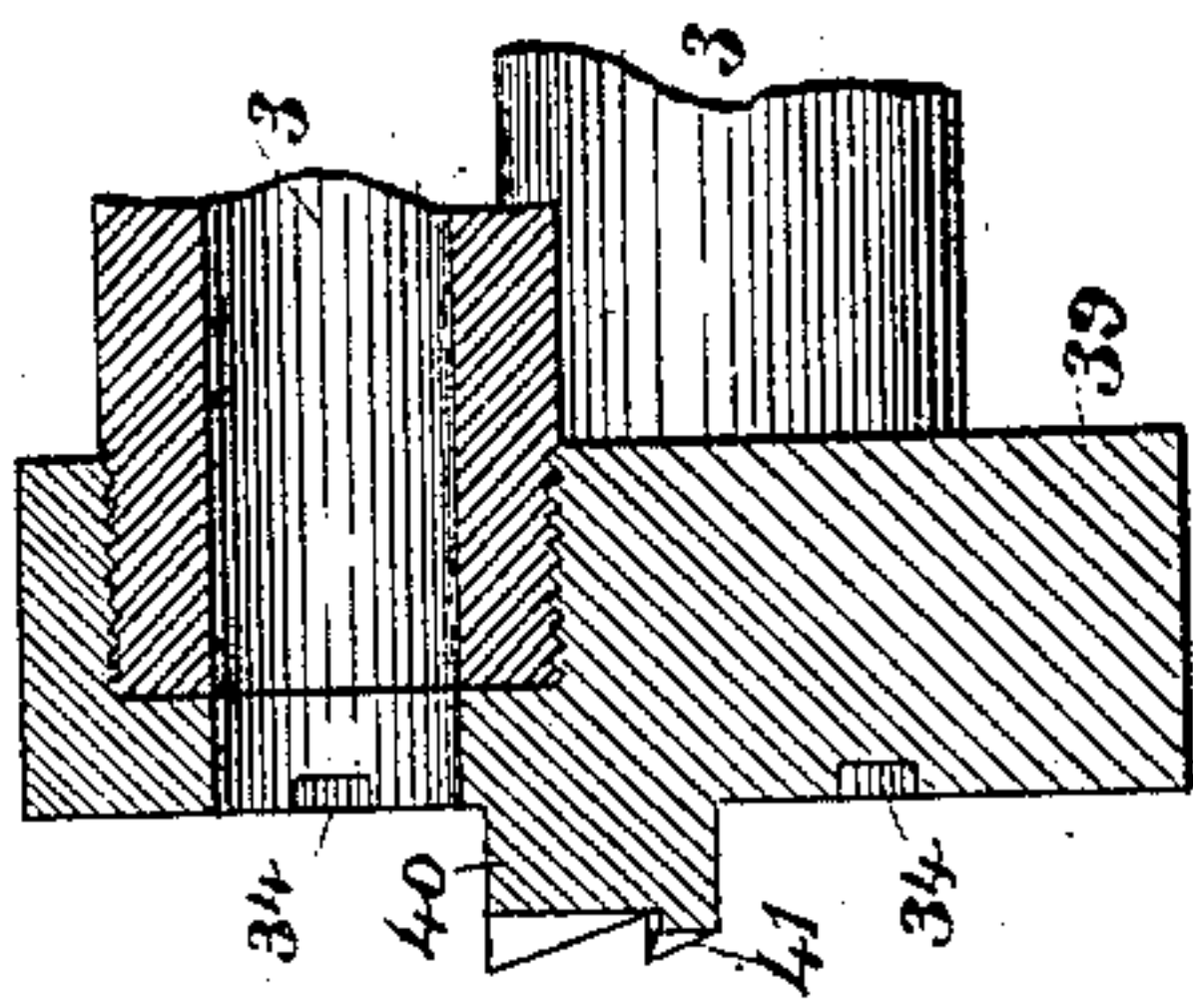


Fig. 18.

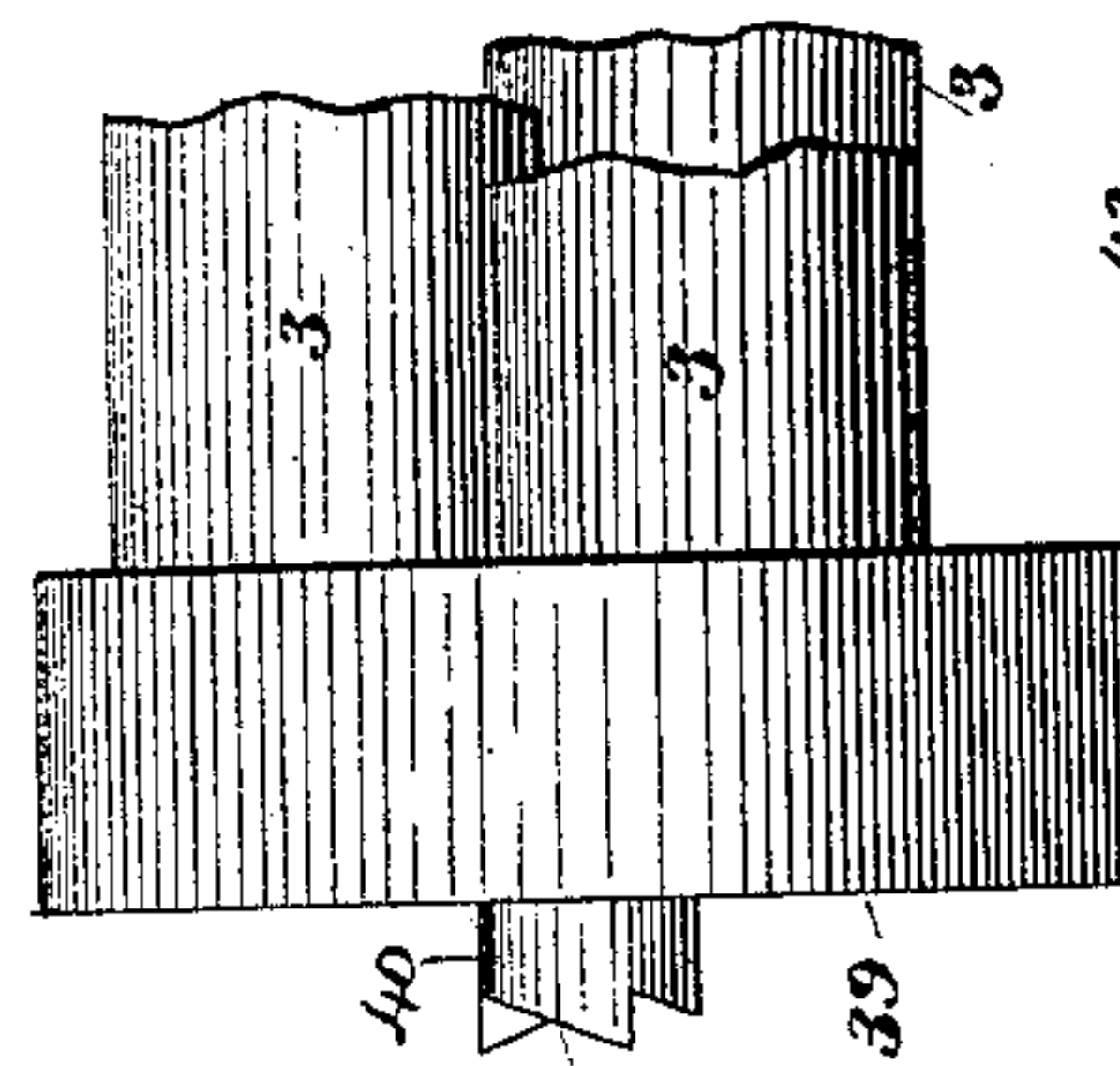


Fig. 17.

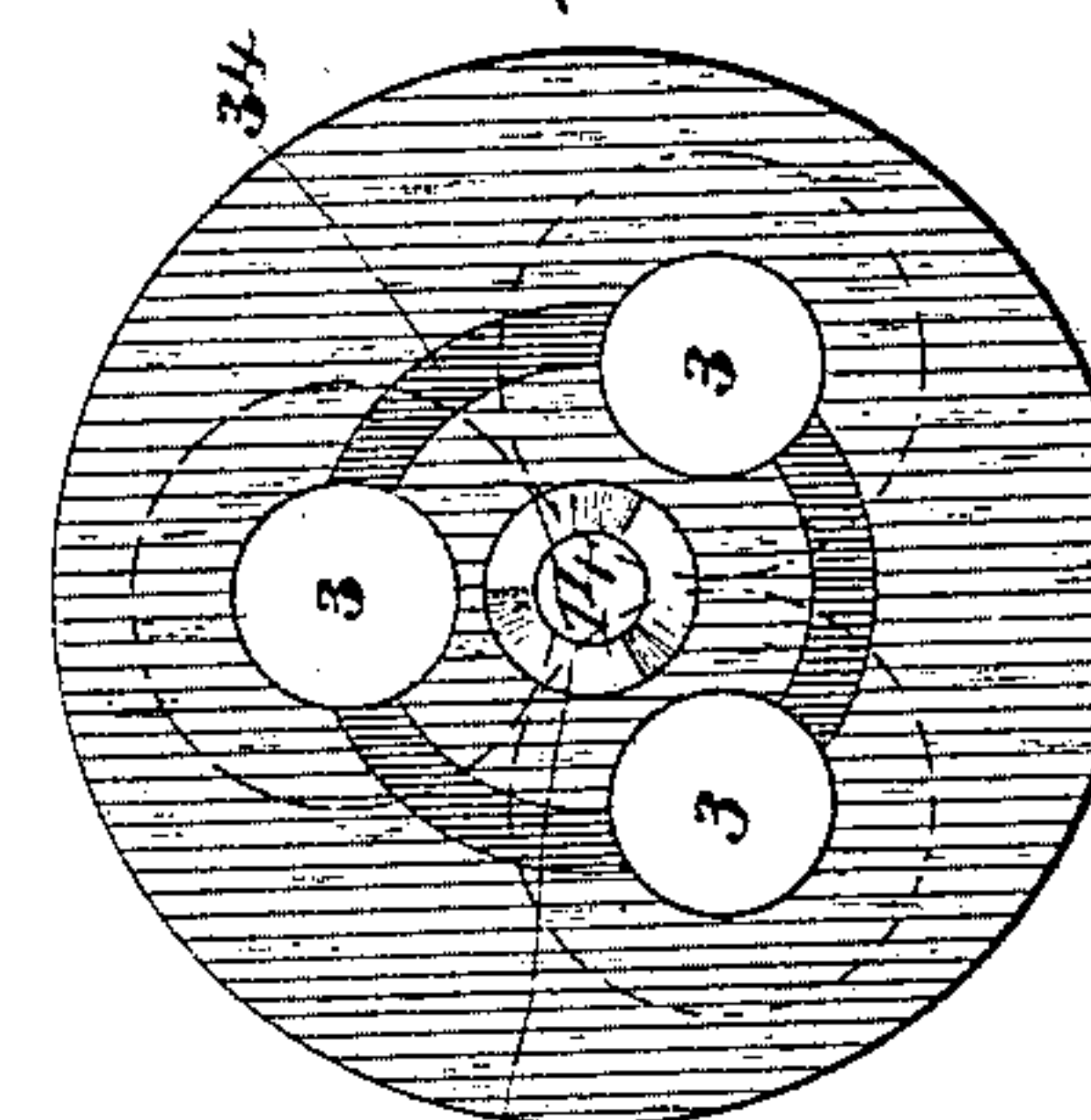


Fig. 16.

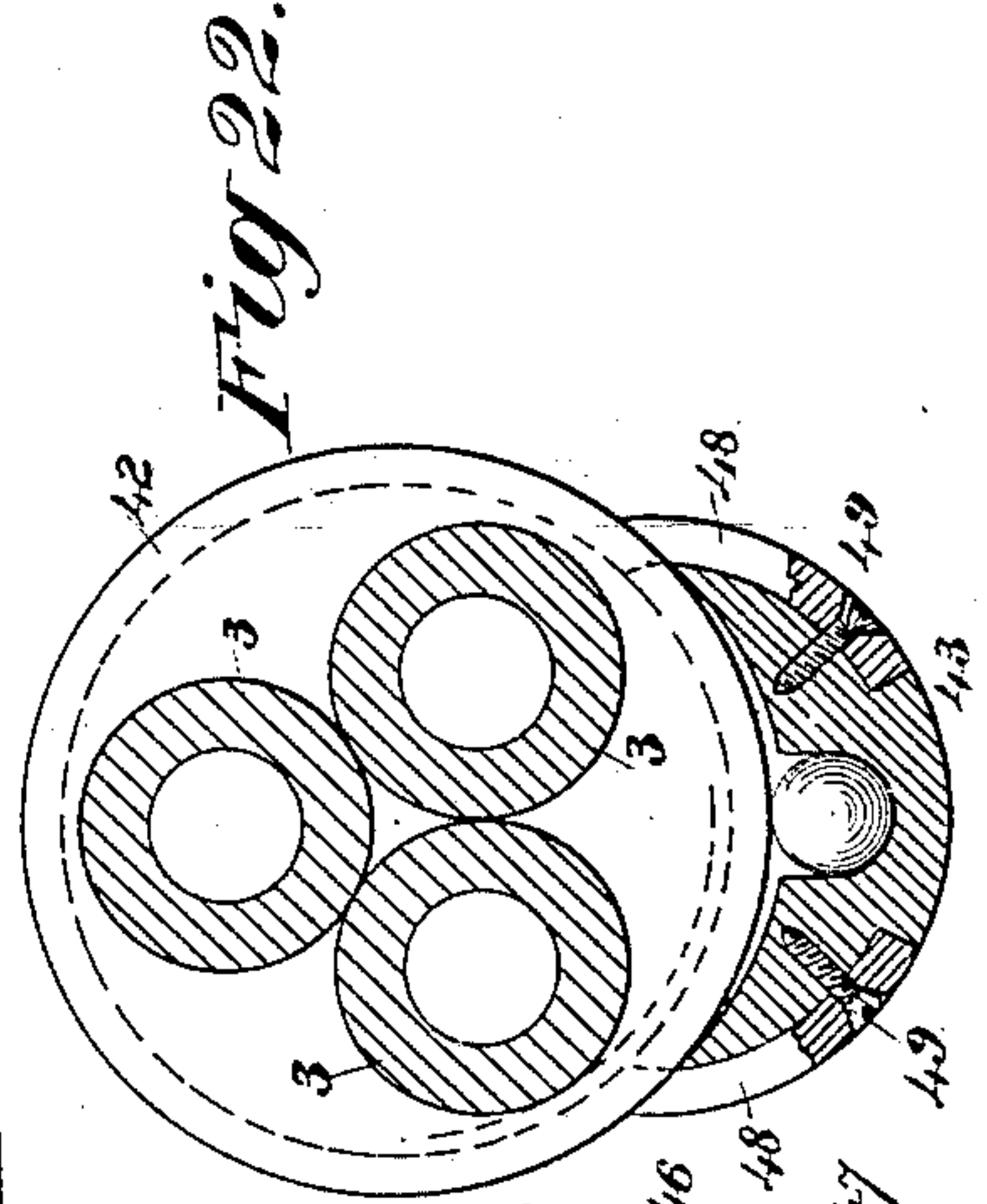
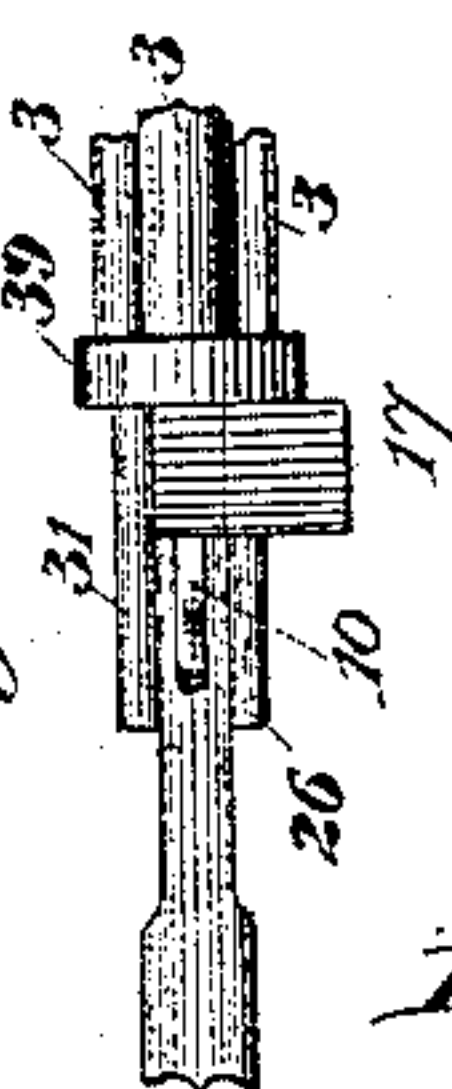


Fig. 22.

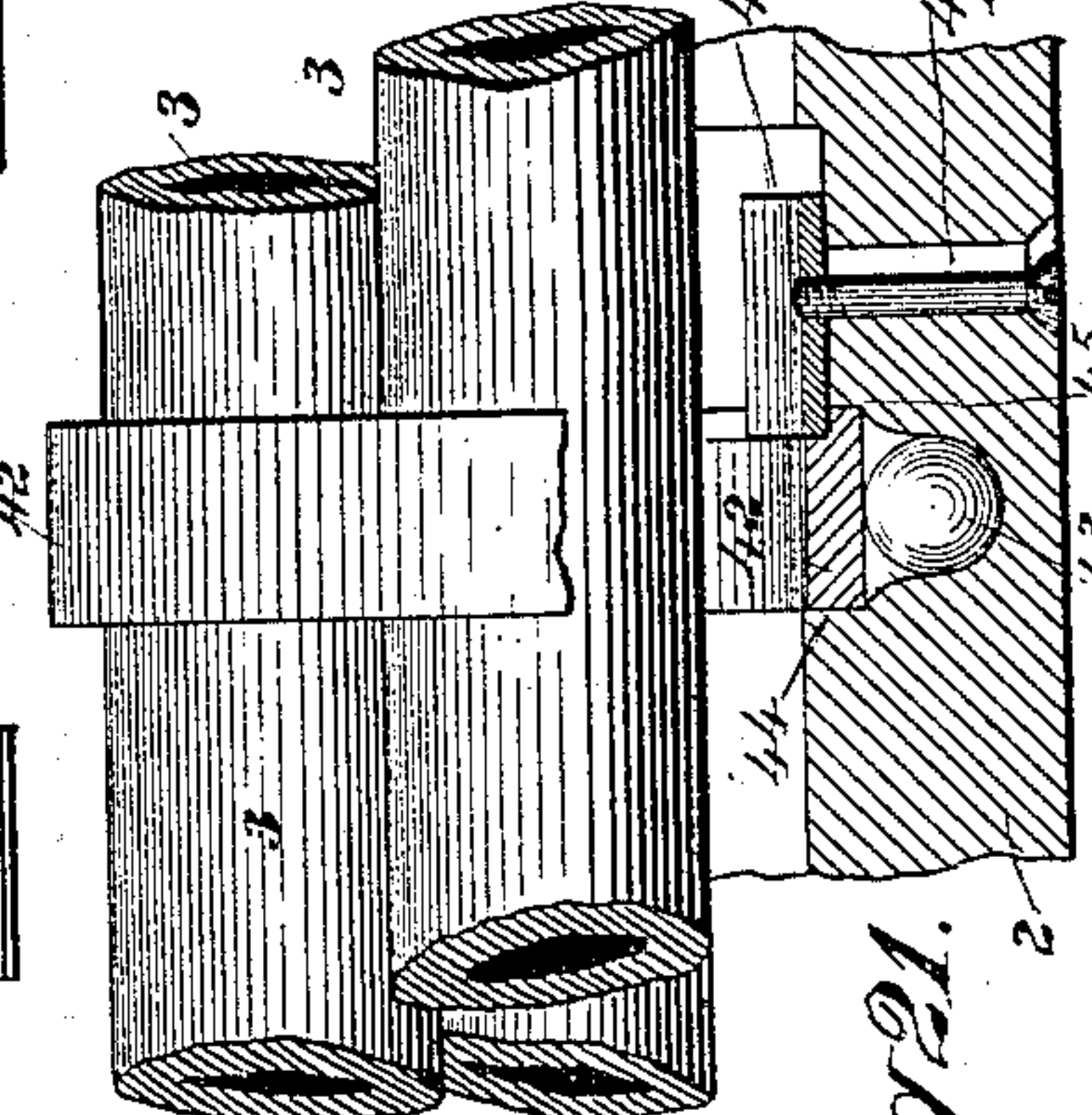


Fig. 21.

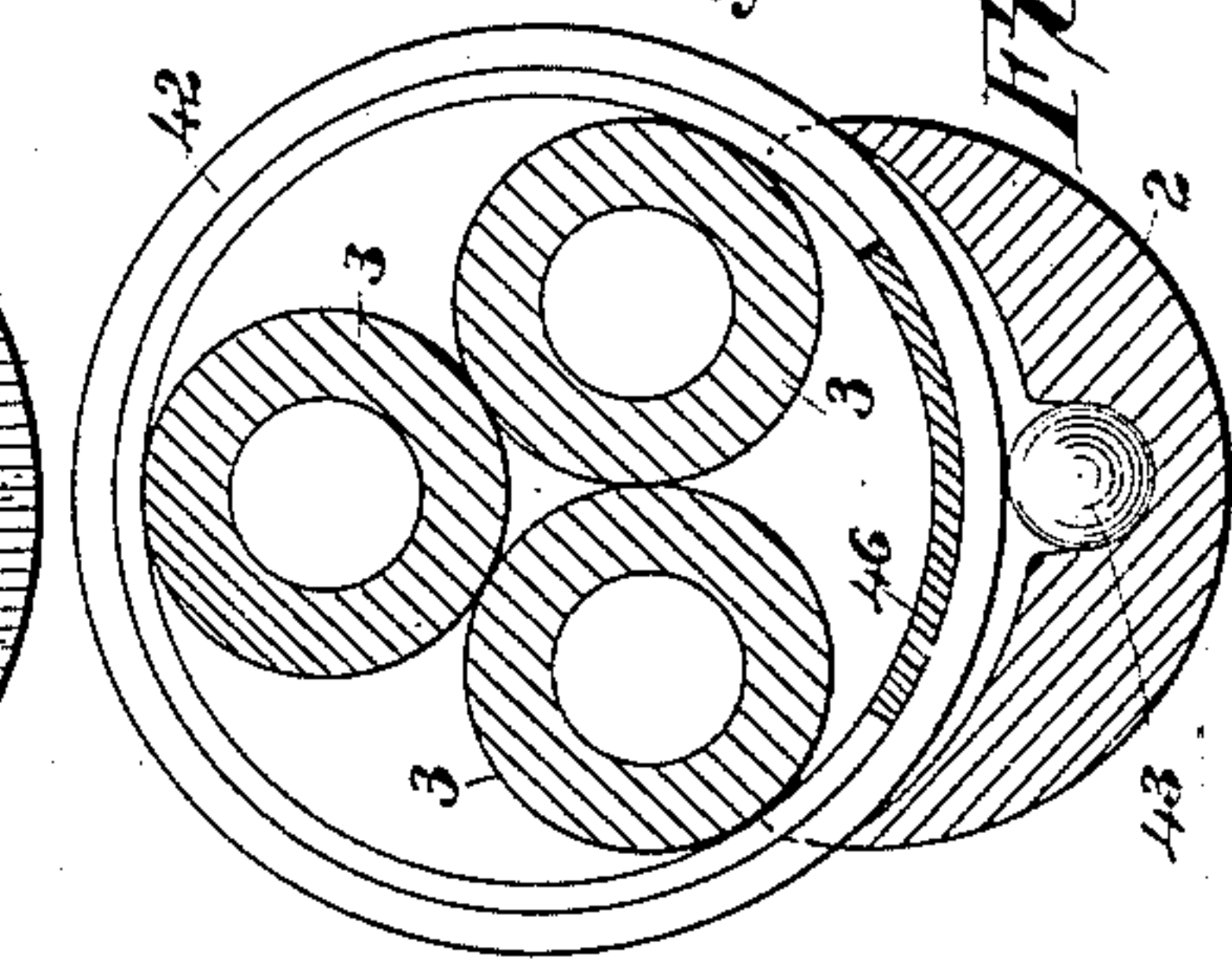


Fig. 20.

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attys

UNITED STATES PATENT OFFICE.

JAMES H. McLEAN, OF ST. LOUIS, MISSOURI.

MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 282,552, dated August 7, 1883.

Application filed October 26, 1881. (No model.)

To all whom it may concern:

Be it known that I, JAMES HENRY McLEAN, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain Improvements in Magazine Fire-Arms, of which the following is a specification.

The subject of this invention is an arm constructed with a many-chambered revolving cylinder or barrels, loaded from an automatic magazine or feeder by means of a plunger, and having a shell-extractor of novel construction, consisting of a hook or catch working in a circular groove in the rear of the revolving cylinder or barrels, and retracted by gearing connecting it with the loading-plunger, as hereinafter described. The feed-magazine is provided with reserve-chambers, which, in succession, discharge their contents automatically into the feed-chamber, so that forty rounds may be contained within compact space, and the cartridges may be delivered successively to the loading mechanism without lodging or obstruction.

In the accompanying drawings, Sheet 1 illustrates the application of my invention to a rifle; but the invention may also be applied to pistols, and likewise to artillery and heavy guns. Figure 1 is a sectional side elevation, showing the operating mechanism. Fig. 2 is a side elevation with part of the revolving cylinder broken away to show the cartridge-shell extractor. Fig. 3 is a plan or top view of the operating parts. Fig. 4 is an elevation of the opposite side from Fig. 2, showing the magazine and its accessories. Fig. 5 is a transverse section on the line 5 5, Fig. 1. Fig. 6 is a vertical section of the magazine. Fig. 7 is a top view of the same partly broken away. Fig. 8 is a partial vertical section of the magazine on a larger scale to illustrate more clearly the construction and operation of the trap doors or valves which pass the cartridges from the reserve-chambers to the feeding-chamber, as hereinafter described. Fig. 9 is an enlarged back view of the lower end of the magazine, showing the position of the retaining-spring when the magazine is in prostrate position or is detached from the gun. Fig. 10 is a rear view of the same in position for use. Fig. 11 is a perspective view of a

portion of the charging-plunger. Fig. 12 is a perspective view of the revolving cylinder. Fig. 13 is a detached perspective view of a dog for turning the cylinder. Fig. 14 is a perspective view of the cartridge-shell extractor and cylinder-stop. Sheet 2 represents a modification under which my invention is embodied in a gun, having a cluster of barrels revolving bodily instead of a cylinder revolving in rear of a stationary barrel, as in the former illustration. Fig. 15 is a side elevation of the said gun. Fig. 16 is a plan of the breech portion thereof. Fig. 17 is a rear elevation of the butt-ring and barrels on a larger scale. Fig. 18 is a side elevation of the said butt-ring and the rear portion of the barrels. Fig. 19 is a vertical longitudinal section of the same. Fig. 20 is a transverse section on the line 20 20, Fig. 15, looking backward. Fig. 21 is a side elevation of the central portion of the barrels with their containing-ring and the front portion of the stock in section. Figs. 22 and 23 are respectively a transverse section and a side elevation, illustrating a modification in construction of the parts shown in Figs. 20 and 21.

1 represents a revolving cylinder having any desirable number of chambers (three or more) and turning within the breech-frame 2, to which is fixed the barrel 3, so that the successive chambers of the cylinder may be brought into firing position in the rear of said barrel in customary manner. For revolving the chambered cylinder when cocking the piece I have shown a trigger, 4, fulcrumed at 5, and retracted by a spring, 6. Said trigger is provided with a rigid arm, 7, bearing on an arm, 8, pivoted at 9 to a hammer, 10, and thrown out by means of a spring, 11, an anti-friction roller being mounted in the lower end of the arm 8 to receive the bearing of the rigid trigger-arm 7.

12 represents a dog hinged to the cocking-arm 8 and thrown out by a spring, 13. Said dog engages with the ratchet-teeth 14 in the rear of the cylinder 1 for revolving the same. The firing-trigger is shown at 15, and a firing-pin of common construction at 16.

My improved magazine is shown at 17 and in the detailed views Figs. 6, 7, and 8. It is

constructed with a vertical feeding-chamber, 18, at one side, extending the whole height of the magazine, and with a number of reserve-cartridge chambers, 19, having inclined floors 5 and communicating with the vertical feeding-chamber 18 through hinged trap-doors 20, so that when the cartridges in the vertical feeding-chamber 18 descend below the trap-door of the uppermost reserve-chamber, 19, the said 10 door will open either by the gravity of the cartridges in the reserve-chamber or by means of a spring, and permit the reserve-cartridges to slip or roll into the feeding-chamber, and so on with all the inclined reserve-chambers 15 successively from the top. An automatic and continuous feed of all the cartridges in the magazine is thus effected without obstruction or choking. This magazine may be constructed, mainly, of paper, or of simple sheet metal, 20 and may readily be adapted to contain forty cartridges. The magazine is pivoted at 21 (see Fig. 4) by one of its lower corners to the top of the gun-stock directly in rear of the revolving cylinder 1, and in position to bring 25 the vertical feeding-chamber 18 directly over the loading-trough 22. This mode of engaging the magazine admits of its being tipped back into prostrate position, as indicated by dotted lines in Fig. 4.

30 To the inclined bottom of the magazine is fixed a spring-catch, 23, projecting beneath the bottom of the vertical feed-chamber 18, so as to prevent the escape of cartridges when the magazine is removed from the gun or is 35 in the prostrate position shown in dotted lines, Fig. 4. This position of the spring-catch is shown in Fig. 9. The cartridges are shown in the various figures at 24.

When the magazine is erected in feeding position the spring-catch 23 engages beneath 40 a lug, 25, on the side of the feeding-trough 22, as illustrated in Fig. 10, said spring-catch being thus removed from the bottom of the magazine, and serving to hold the magazine in place 45 while permitting the cartridges to feed successively into the trough 22. The bottom cartridge is now directly in front of the charge-plunger 26, the construction of which is shown in the detached view, Fig. 11. It is provided 50 with a downwardly-projecting handle, 27, and is retracted by a spring, 28. On its inner side is formed a rack, 29, Fig. 11, gearing with a pinion, 30, Figs. 1, 3, and 5, the opposite side of which meshes with the sliding stem or stock 55 of my cartridge-extractor 31. This is formed in front with an upwardly-projecting rigid arm, 32, terminating in a hook, 33, which fits in a circular groove, 34, extending around the rear face of the cylinder 1 in a circle coincident with the centers of the charge-chambers. 60 The hook 33 is flanked by shoulders 35, which rest against the rear face of the revolving cylinder and limit the penetration of the hook 33 into the groove 34, and serve also, by contact 65 with the projecting flanged bases of the cartridge-shells, to arrest the rotation of the cyl-

inder at the proper points for firing. The hook 33 at the same time engages beneath the flanged cartridge-shell in readiness for drawing out the said shell when the extractor 31 70 32 33 is retracted by the movement of the loading-plunger 26, as before described.

The cartridges are introduced into the magazine 17 from the rear, a door, 36, for this purpose being shown in Fig. 7, hinged at 37, and 75 held in closed position by a catch, 38. The opening of this door exposes all the chambers 18 and 19 simultaneously.

I have shown, for the purpose of illustration, a cylinder with six load-chambers. A modified 80 form of cylinder may be used with but three chambers. If preferred, the cylinder may turn on a fixed pintle, and may be rotated by teeth in its periphery, according to another well-known mode. 85

In the modified form of gun (shown in Sheet 2) three barrels, 3 3 3, are shown in a connected revolving cluster, instead of a revolving cylinder with a stationary barrel. These barrels are secured together at their rear ends 90 by being screwed into a revolving breech-ring or band, 39, said band being provided with a pivot, 40, on which the barrels turn, and having notches 41 for the revolution of the barrel by the means already described. Located at 95 a convenient point on the barrels, so that they may be as nearly balanced between butt and muzzle as practicable, is a second ring, 42, to hold the barrels firmly together, and also to hold them in position in the stock 2. The 100 ring rests and turns on an anti-friction ball, 43, and bears backward against a shoulder, 44, in the stock 2, and in front against a shoulder, 45, of less depth, being confined in the seat thus provided by a sliding segmental 105 catch, 46, secured by a screw, 47. The said catch 46 fits within the annular groove in the forward edge of the ring 42, so as to permit the free rotation of said ring, together with the barrels, as already described. 110

In the modified construction (shown in Figs. 22 and 23) I employ a band, 48, passing either partially or entirely around the barrels and stock, and secured to the stock by any suitable means—as, for example, by screws 49—the 115 said band fitting within a peripheral groove in the ring 42, as clearly shown in Figs. 22 and 23, and the ball 43 being used as before. The loading magazine and plunger and the cartridge-extractor are used as before, the 120 rear face of the butt-ring 39 being provided with the annular groove 34 to receive the hook 33 of the cartridge-extractor and permit it to take an effective grip upon the flange of the shell which is presented to it. 125

By a gun of this construction lightness will be obtained, as the barrels are separate and distinct from each other, and yet held firmly together by means of the rings and bands 39 and 42. 130

I am aware that it is not broadly new in revolving fire-arms to employ the mechanism

which turns the barrels or revolving cylinder to operate the loading and discharging mechanism, and also to remove the shells of the cartridges after they are fired, or to arrange in connection with such a fire-arm an inclined feeding-trough for the reception and dispensing of fresh cartridges.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a magazine fire-arm, a revolving chambered cylinder or a revolving cluster of barrels provided with a circular series of ratchet-teeth, 14, in combination with a cylinder or barrel operating and cocking and firing mechanism, consisting of a pivoted trigger-arm, 4, formed with a tappet-arm, 7, a hammer, 9, carrying a pivoted arm, 8, engaged by said tappet-arm, a dog or pawl, 12, pivoted upon the said arm 8 and engaging with the ratchet-teeth 14, and a firing-trigger, 15, and suitable springs acting upon the said parts, substantially as described.

2. In a magazine fire-arm, the combination, with a loading-plunger provided with a rack, a retracting-spring and a hand-lever, and an extractor provided with a rack and a shouldered hook for engaging a flanged cartridge-shell, of a geared pinion interposed between the loading-plunger and the extractor and engaging with the racks thereof, whereby the loading and extracting shall be effected simultaneously by hand manipulation of the loading-plunger.

3. The combination, with a series of revolving load-chambers, a ratchet-ring moving therewith, a circular groove intersecting said load-chambers, and mechanism, substantially as described, for actuating said revolving load-chambers, of a loading-plunger provided with a rack, a retracting-spring and a hand-lever, an extractor provided with a rack and a shouldered hook working in the said circular groove and engaging with the flanged cartridge-shells in said loading-chambers, and a gear-pinion interposed between the said plunger and extractor and engaging with the racks thereof, substantially as and for the purposes set forth.

4. The combination, with a series of revolving load-chambers, provided with a circular groove intersecting their axes, and a ratchet-ring, suitable mechanism, substantially as described, for actuating said load-chambers, a feed-trough at the rear of said load-chambers, provided with an ingress-aperture for the cartridges, and a loading and extracting mechanism, consisting of a loading-plunger working in the feed-trough, and provided with a rack, a retracting-spring, and a hand lug or lever, an extractor provided with a rack and a shouldered hook, and an interposed gear-pinion engaging with the said racks, of a feeding-hopper composed of a main vertical feed-chamber, communicating at its lower end with the said loading-trough, and auxiliary chambers opening into said main chamber, and provided with attachments controlled by the contents of the main chamber, substantially as and for the purposes described.

5. The combination of the clustered barrels, and the binding and balancing ring turning upon an anti-friction ball in the stock, and secured in position by means of shoulders and a sliding segmental catch in such a manner as to permit the free rotation of the ring and the removal of the barrels, with a second ring provided with a notched pivot, substantially as and for the purposes set forth.

6. The combination of the flanged binding-ring 42, moving upon an anti-friction ball in the gun-body 2, with the said gun-body carrying an adjustable catch or stop, 46 47, substantially as and for the purposes specified.

7. The combination, with the clustered barrels 3 and suitable binding-rings therefor, substantially as described, of a disk, 39, for holding said barrels, and provided with a ratchet-ring, 40 41, substantially as and for the purposes specified.

JAMES HENRY McLEAN.

Witnesses:

JAS. MILLAN,
W. E. LEFFERTY.