

(No Model.)

A. H. RUSSELL.  
MAGAZINE GUN.

2 Sheets—Sheet 1.

No. 295,285.

Patented Mar. 18, 1884.

Fig. 1.

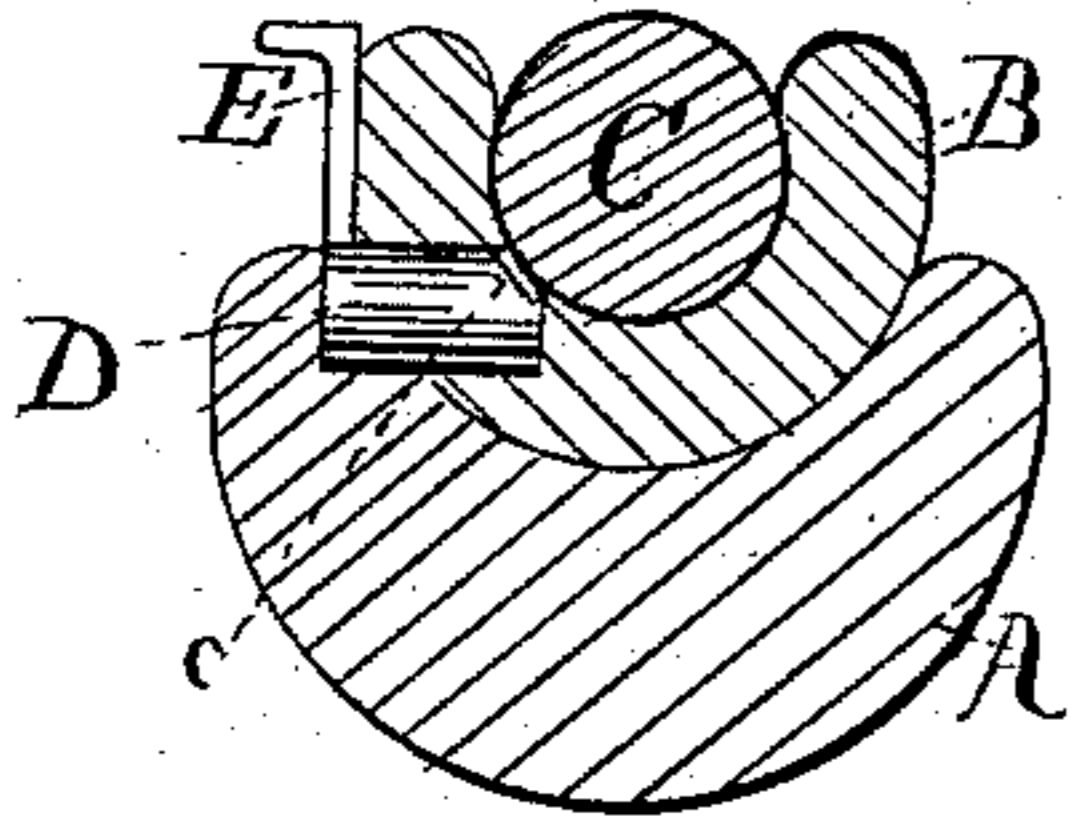


Fig. 3.

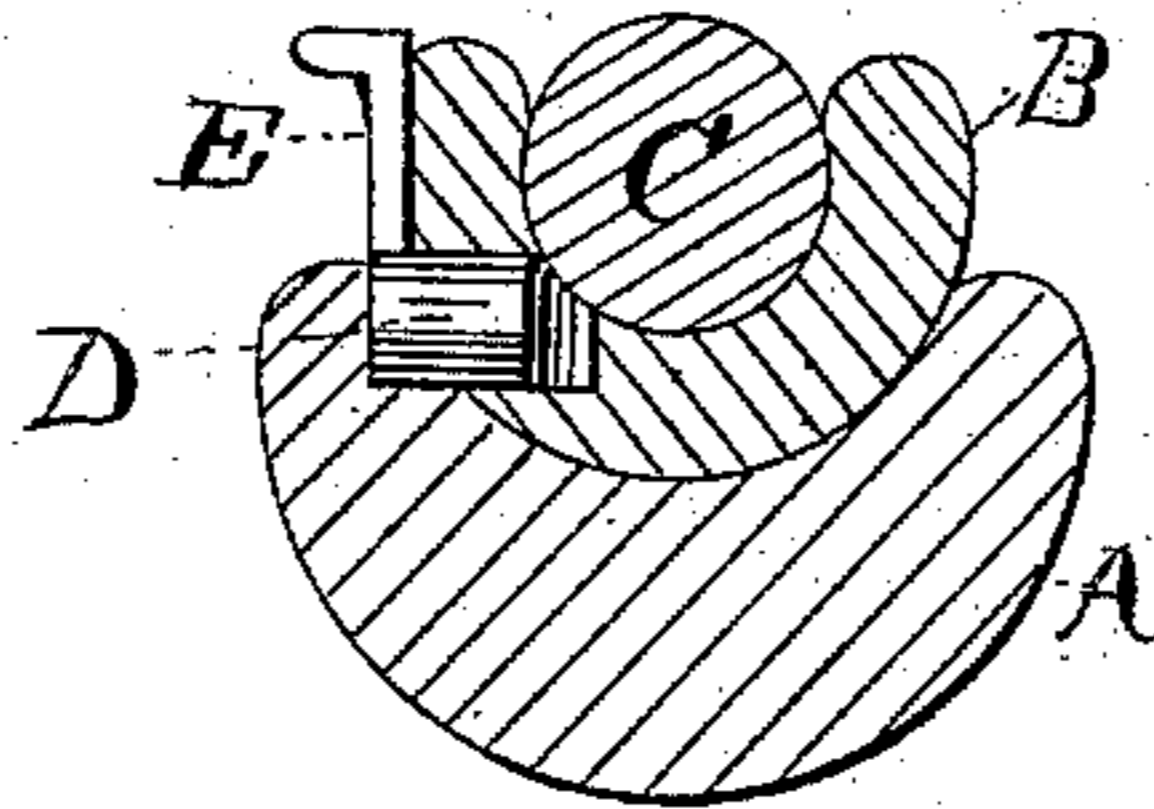


Fig. 2.

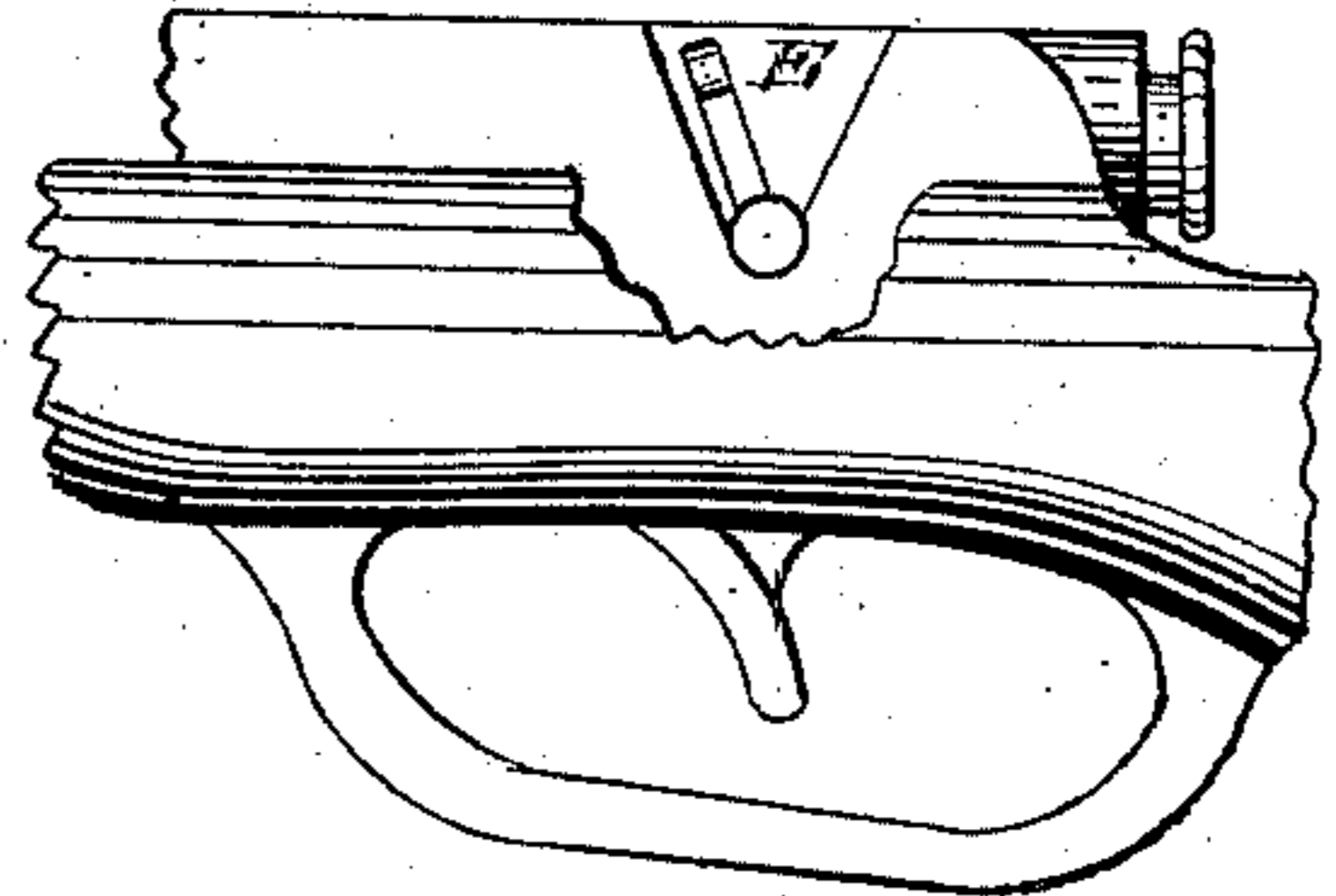


Fig. 5.

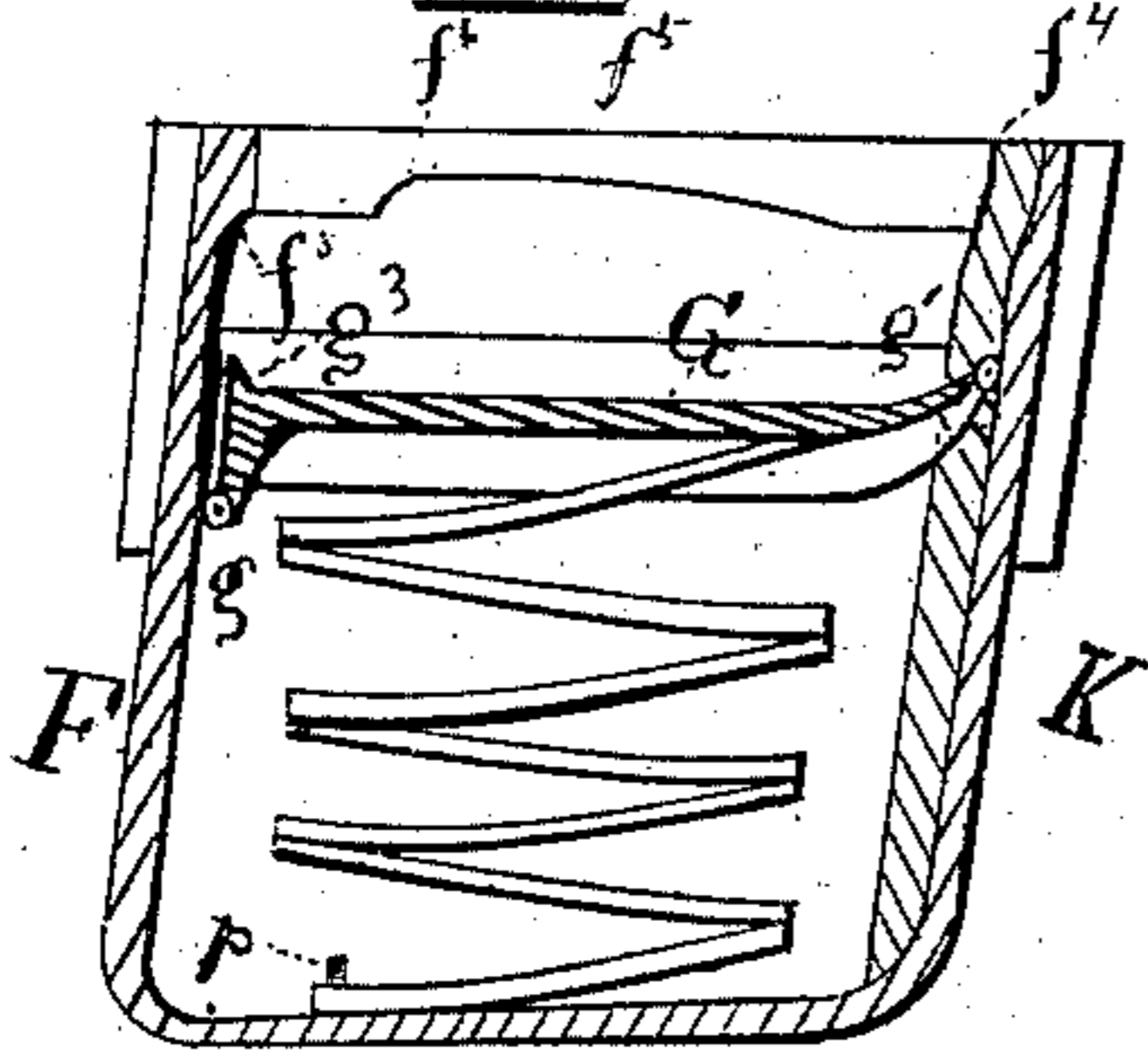


Fig. 4.

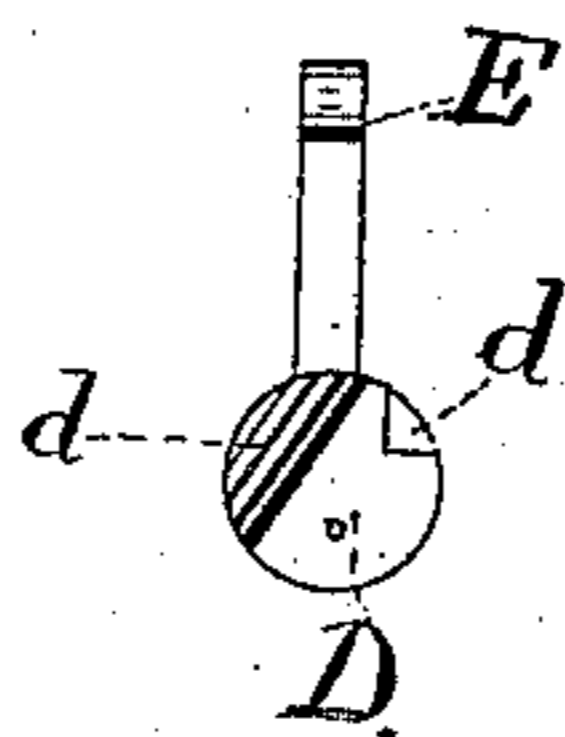


Fig. 9.

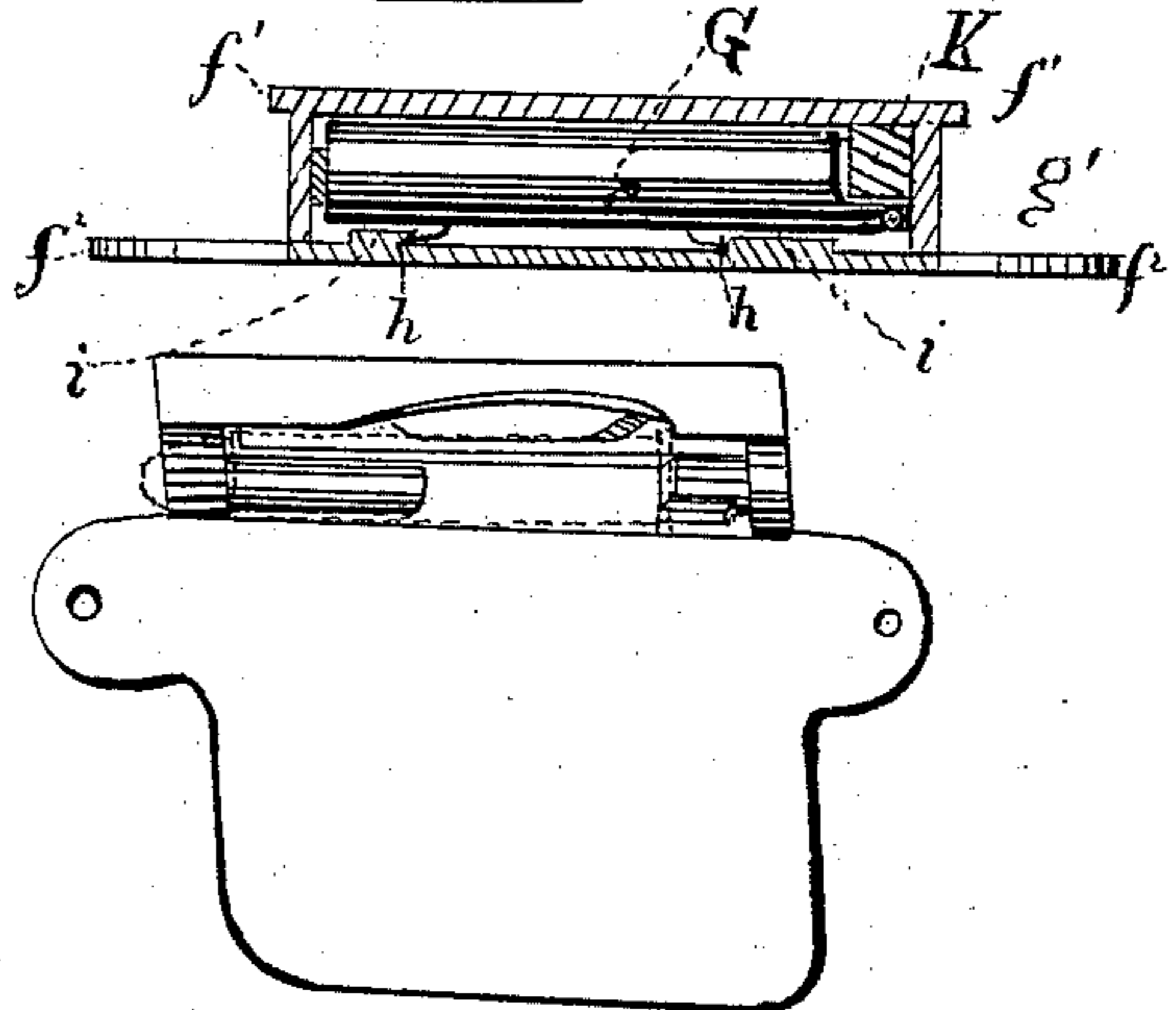


Fig. 7.

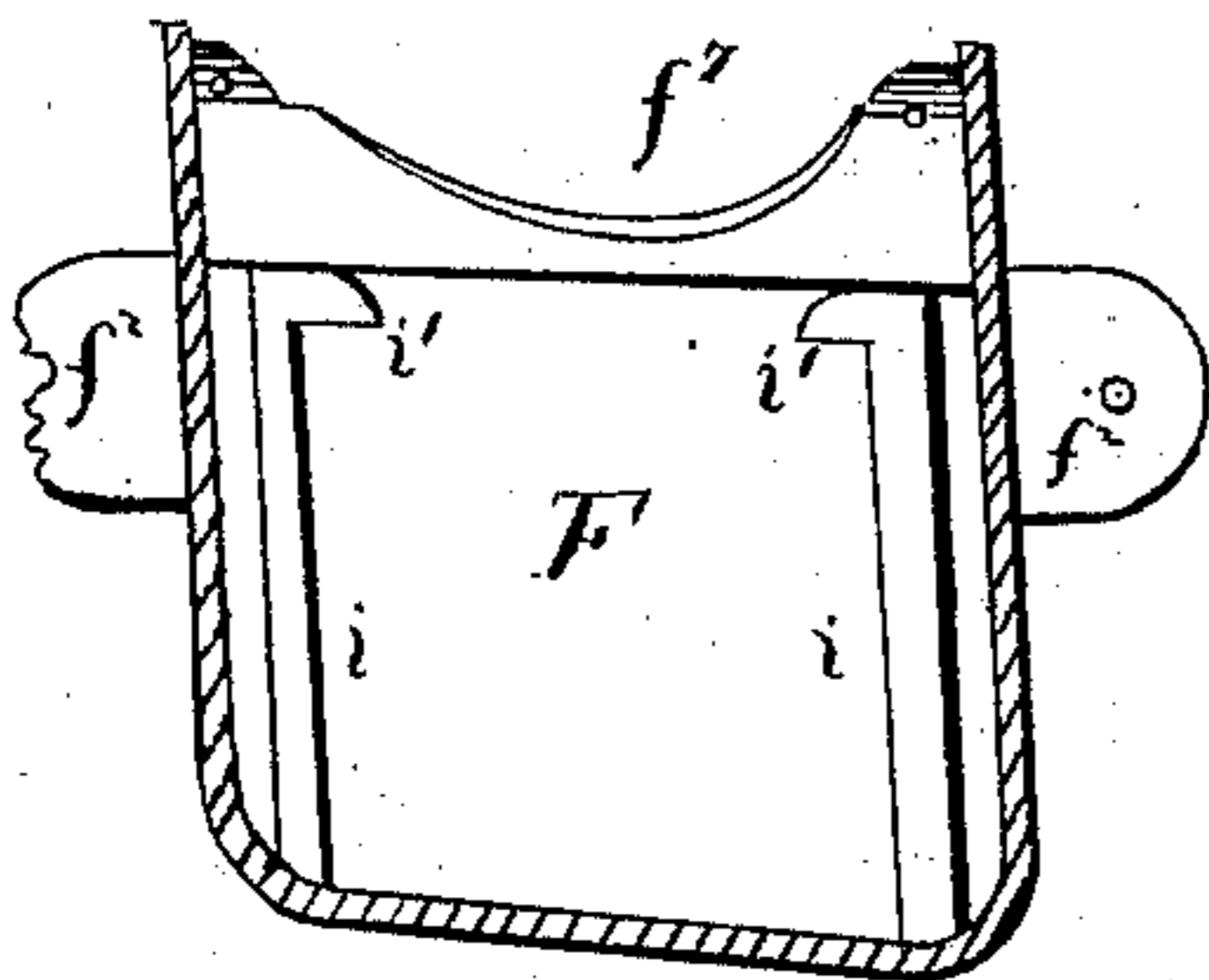


Fig. 10.

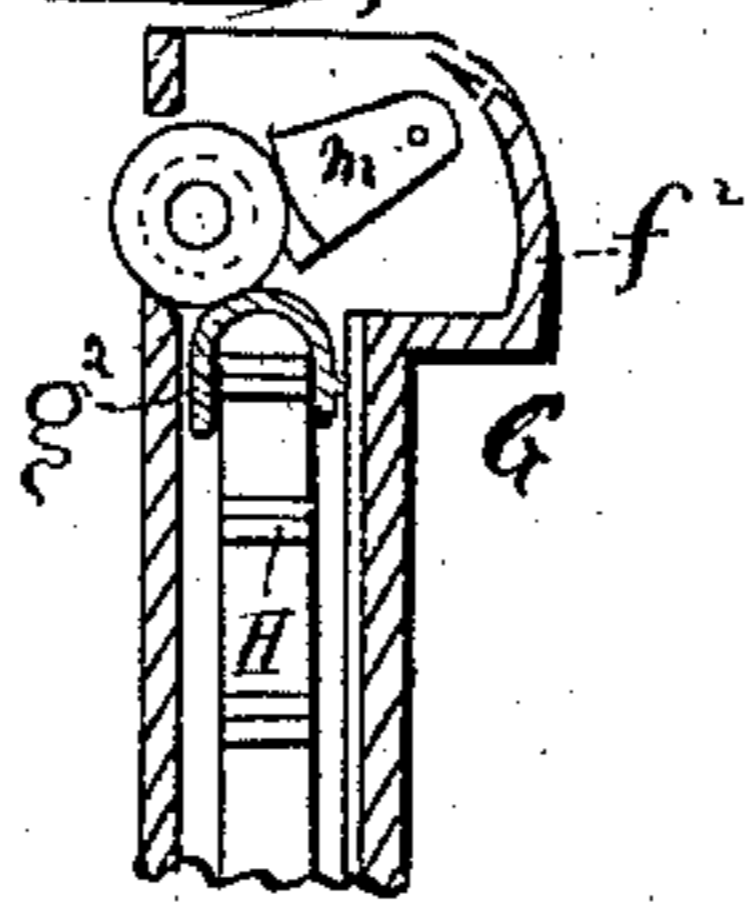


Fig. 15.

Fig. 11.

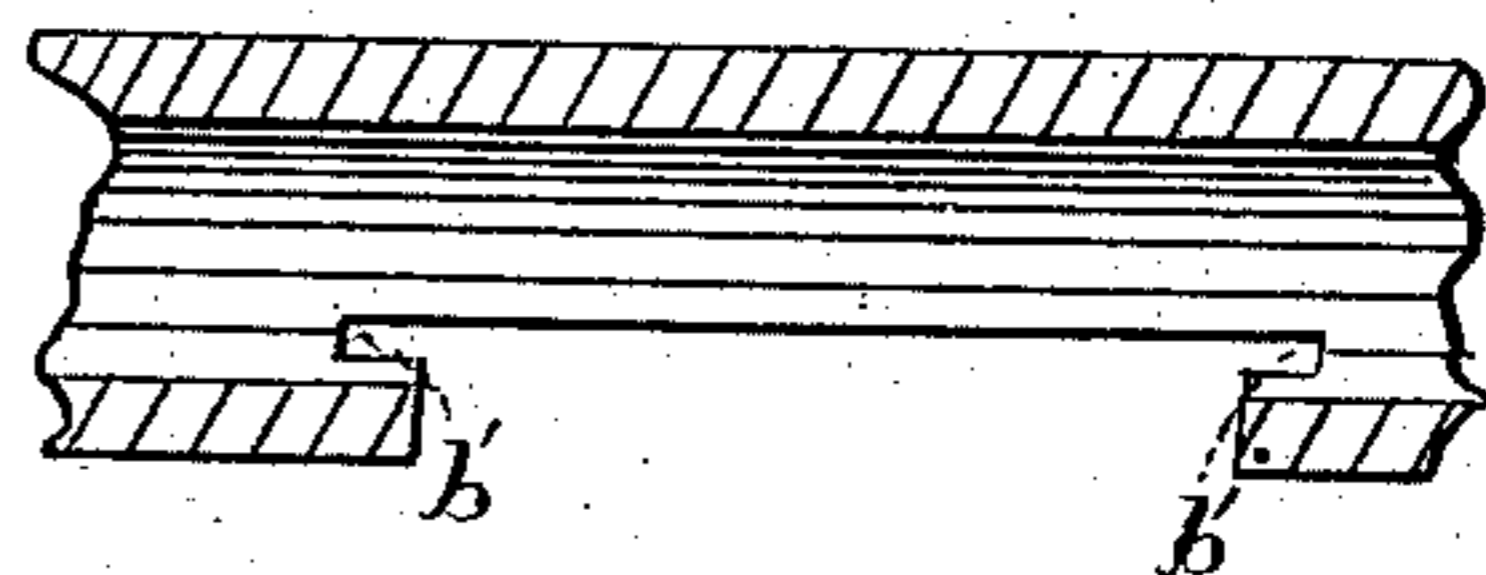
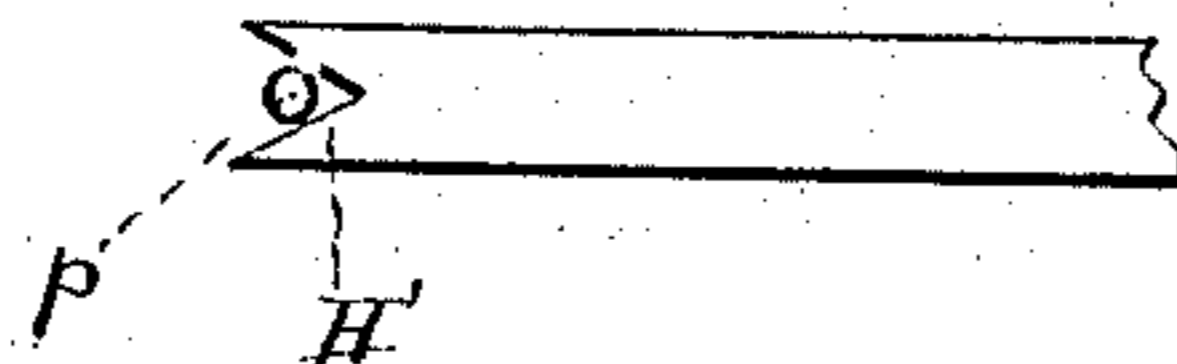


Fig. 8.



WITNESSES—

W. W. Brown.  
James F. Smith.

INVENTOR.

A. H. Russell  
per Warwick & Bartlett  
His attorneys

(No Model.)

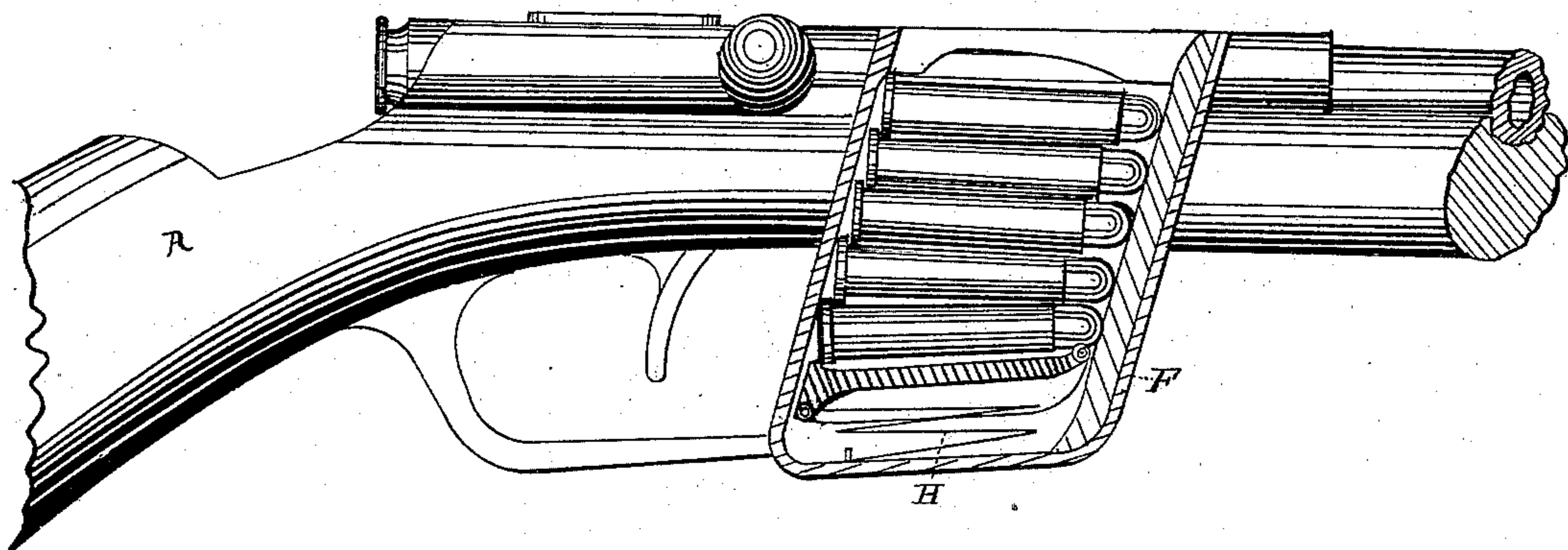
2 Sheets—Sheet 2.

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MAGAZINE GUN.

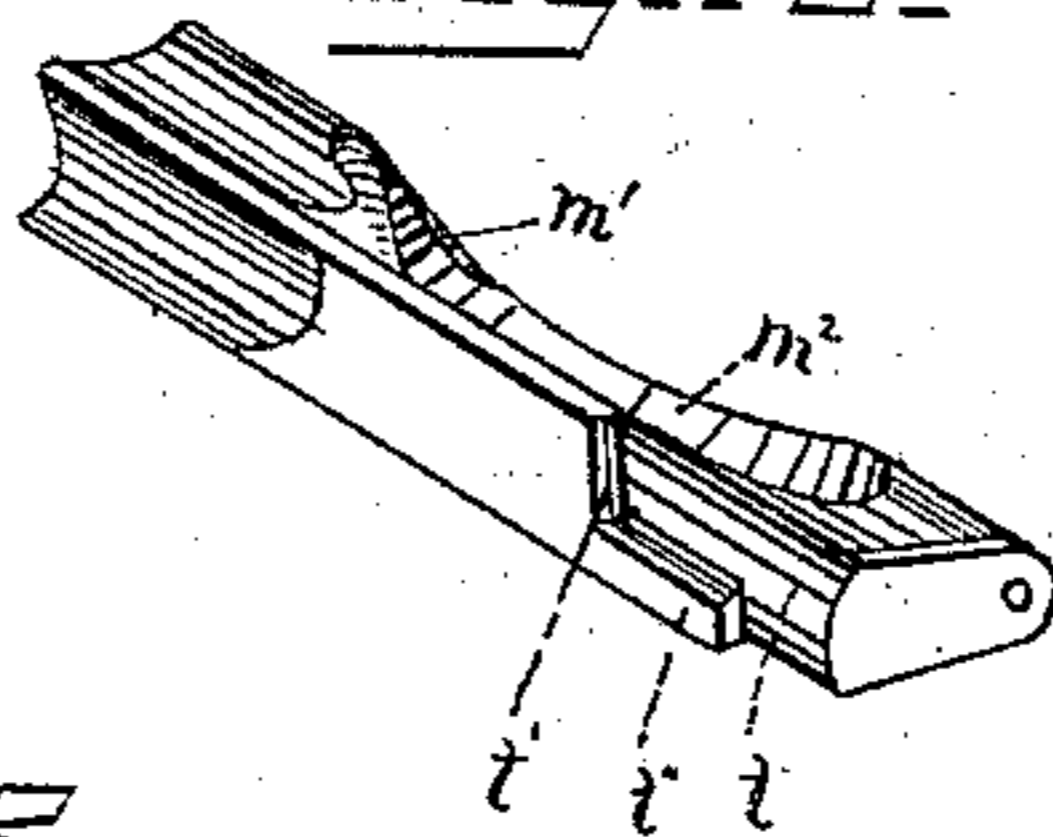
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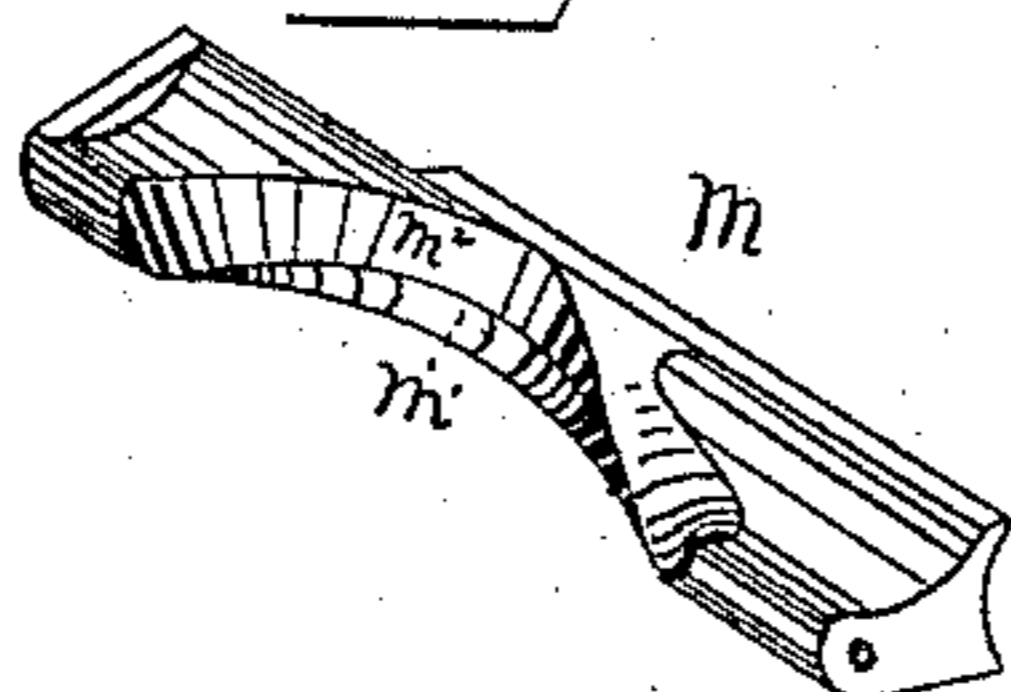
*Fig. 5.*



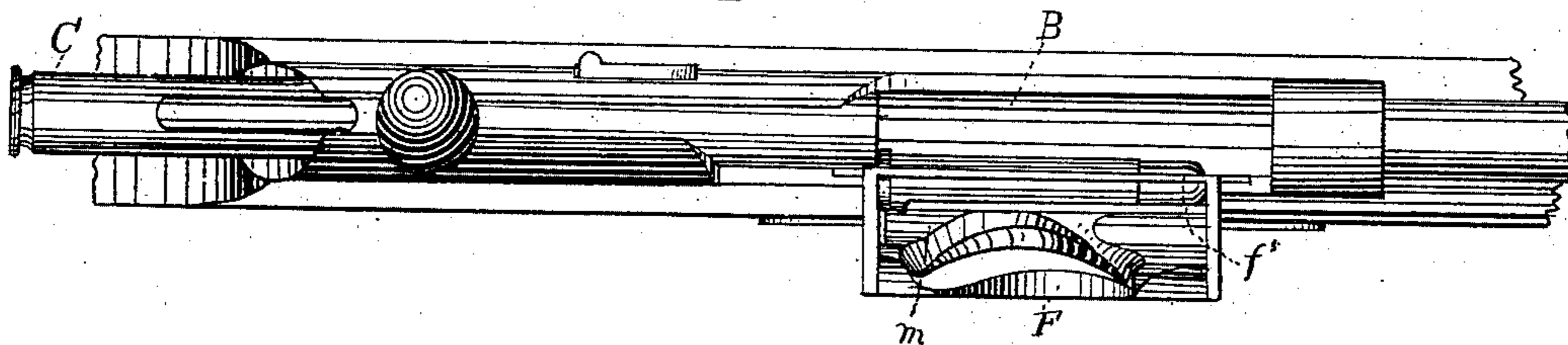
*Fig. 12.*



*Fig. 13.*



*Fig. 14.*



Witnesses.

J. W. Brown.  
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per  
Warwick & Bartlett  
His attorneys.

# UNITED STATES PATENT OFFICE.

ANDREW H. RUSSELL, OF THE UNITED STATES ARMY.

## MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 295,285, dated March 18, 1884.

Application filed July 26, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW H. RUSSELL, a citizen of the United States, of the Ordnance Corps, United States Army, have invented certain new and useful Improvements in Magazine-Guns, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in magazine-guns, and the novel features of the improvements will be hereinafter pointed out in the claims.

The object of the invention is to simplify the construction of the arm shown in my patent No. 230,823, of August 3, 1880; to provide a magazine-gun of this character with a bolt-stop, which may serve as a cut off to the magazine; to adapt the magazine, by a simple change, to cartridges of different lengths; and, generally, to overcome objections found to exist in guns of this character. The magazine is of that character in which the cartridges are placed side by side, and fed sidewise by spring-pressure, so that the ends of the cartridges are not liable to be battered, and there is no danger of exploding the cartridges in the magazine, as in a magazine in which the cartridges are placed end to end.

In the drawings, Figure 1 is a section of a bolt-gun through the receiver and bolt, showing the bolt-stop. Fig. 2 is a side elevation of so much of the gun as is necessary to show the bolt-stop, the stock being broken away. Fig. 3 is a view similar to Fig. 1, showing bolt-stop in another position. Fig. 4 is a view of the bolt-stop detached. Fig. 5 is a side view of the breech-mechanism of a bolt-gun, showing the magazine (in section) in position. Fig. 6 is a longitudinal section of the magazine and follower. Fig. 7 is a reverse section of magazine, with follower detached. Fig. 8 is a detail. Fig. 9 is a plan, partly in section, showing the magazine arranged for short cartridges. Fig. 10 is a vertical cross-section of the upper portion of the magazine. Fig. 11 is a plan of the receiver, showing notches to retain the magazine. Figs. 12 and 13 are perspective views of the spring-gate detached from magazine, on large scale. Fig. 14 is a plan of Fig. 5. Fig. 15 is an elevation of the magazine, detached from the side toward the

bolt, showing a cartridge in dotted lines in position just before it leaves the magazine.

A denotes the stock; B, the receiver or shoe of the gun; C, the bolt, which may be operated in any usual way. The bolt C has at one side a projection, *c*, which projection may travel in a groove in the receiver, as the bolt is moved toward or away from the barrel of the gun.

D is a stop pivoted in the receiver, and operated by lever E. One corner of the stop D is cut away, as at *d*, and the face of the stop is slightly notched, as at *d'*. The front end of stop D extends through an aperture in the receiver, and when the lever E is turned in one direction the cut-away portion *d* comes in the path of the projection *c*, and the bolt is free to move back to the extent of its usual travel, as shown in Fig. 1. When the lever E is turned in the other direction, the stop comes in the path of projection *c*, and the bolt, as shown in Fig. 3, is not permitted to move farther back. This stoppage of the bolt before it reaches the extreme of its rearward movement makes the bolt serve as a cut-off to the magazine, so that the magazine cannot feed cartridges to the receiver, and the arm may be used as a single-loader, holding the magazine in reserve. When the motion of the bolt is so limited, the cartridge cannot be driven forward by the friction of the bolt, because the cartridge is held back by projections inside the magazine, acting on the flange or the nose of the cartridge, until the bolt is withdrawn far enough to allow the cartridge to rise above the obstruction.

It is obvious that the position of the stop and projection may be reversed, so that a part of the stop may enter a slot in the bolt to check its backward movement, or that other devices may be used to stop the bolt before it has completed its backward movement.

The magazine F has a follower, G, which is pressed upward by a spring, H. The follower G extends the full length of the magazine, and has its front end slightly turned up at *g'*. The rear end of the follower extends down, as at *g*, in a direction parallel with the side of the magazine, so that the distance from *g* to *g'* shall be greater than the (horizontal) distance between the front and rear inner walls of the magazine. This will prevent the front end of

the follower from being pressed down more than the rear end, but will permit the front end to rise slightly, as is desired. If the front end of the follower were permitted to fall, it would be possible for the flange of an upper cartridge to get behind the flange of the one below it in the magazine, and thus clog the magazine. This objection is overcome by preventing the front end of the follower from falling below the rear end, as before stated. The left side of the follower is extended down along the side of the magazine a short distance, for the purpose of preventing any sidewise tip or cant when the projections  $h\ h$  of the follower strike the hooks  $i' i'$ , (see  $g^2$ , Fig. 9,) and also to close the aperture leading from the magazine to the receiver when the magazine is exhausted, so that when a shell is withdrawn by the bolt it shall not accidentally pass into the magazine.

In the interior of the magazine attached to the front plate are two ribs,  $i\ i$ , which are bent over and form hooks  $i' i'$  at the top. The follower  $G$  has side projections,  $h\ h$ , which run between these ribs  $i\ i$  until the follower has reached the top of its throw, when it is prevented from further rise by the hooks  $i' i'$  coming in the path of the projections  $h\ h$ . The rear rib also serves to limit the forward motion of the cartridges in the magazine by engaging their flanges. The studs  $h\ h$  may be adapted to prevent the tilting down of the front end of the follower by extending the rear one of these downward.

The follower may be removed from the magazine by pressing down the rear end of the follower until the front projection or stud,  $h$ , can be disengaged from the hook  $i'$ . The ends of the follower may be provided with anti-friction rolls, as at  $g\ g'$ . It is obvious that the upward motion of the follower may be checked in a similar way by projecting studs on the inside of the magazine, made to catch in holes or indentations in the side of the follower. The cartridges must be of such length as to fill the magazine, or so nearly so, that the flange of an upper cartridge cannot get behind that of one below it, when the cartridge is nearly horizontal. It is sometimes desirable to use shorter cartridges than those generally used with the arm. To permit this I adapt my magazine for short cartridges in several ways, some of which will be now stated.

The magazine  $F$  is preferably secured to the arm by sliding down from the top, the flanges  $f' f'$  of the magazine entering grooves  $b' b'$  in the receiver and stock, and the flanges  $f^2 f^2$  being held by the screws passing through holes therein and into the stock, or by some equivalent device. The body of the magazine may be made shorter than the distance between the grooves  $b' b'$ , leaving the rear wall of same thickness as before—that is, two or more magazines of different lengths, internally, may be made to fit the slot in the stock and receiver, and that one adjusted for use which is of the

right length to suit the cartridge. I prefer, however, to use the same magazine long enough for the longest cartridge in use, and I adapt this magazine for shorter cartridges in the following manner: A piece,  $K$ , is placed in the front of the magazine and extends from top to bottom. When this piece  $K$  is inserted a shorter follower,  $g$ , may be used; but by making the follower  $G$  in the form shown in Figs. 6 and 9, the same follower may be used with two lengths of cartridges. To effect this object the piece  $K$  may be made narrower than the internal width of the magazine, but wide enough to extend past the middle of the ball end of the cartridges. In the space between the side of the piece  $K$  and the side wall of the magazine the front end of the follower  $G$  is made to extend, as at  $g'$ ; or, rather, the follower  $G$  being the full length of the magazine is notched out at one of the front corners, to permit the insertion of piece  $K$ . The relation of the follower with the front end of the magazine is therefore the same whether piece  $K$  be inserted or not; but when said piece is in the magazine said magazine is only adapted to feed cartridges as long as the distance between the rear wall of the magazine and the piece  $K$ . The top of follower  $G$  is rounded, and at the rear of said follower there is an upward extension,  $g^3$ , which may come under the flange of the last cartridge in the magazine and force it into position in the mouth of the magazine.

The spring  $H$  is forked at the bottom, as shown at  $H'$ , and the fork embraces a stud or projection,  $p$ , in the bottom of the magazine. Cartridges are pressed down from the top of my magazine upon the spring-follower  $G$ , as in my patent referred to, the spring-gate  $m$  swinging to one side in the recess  $f^2$  of the magazine. The slight offset  $f^3$  in the rear wall of the magazine, especially if accompanied by bevel  $f^4$  at the front of the magazine, will cause the cartridges to feed slightly backward in the magazine as they are forced down against the pressure of the spring-follower, so that the flange of each lower cartridge will be behind that of the one above it, as shown in Fig. 5. The gate  $m$  thrown constantly out from the recess  $f^2$  by the pressure of a spring, will, in connection with the cross-bar  $f^3$  at the top of the magazine, prevent the cartridge from escaping upward through the open mouth of the magazine, but the cartridge being pressed upward by follower  $G$ , and sidewise by spring-gate  $m$ , will, when the bolt is drawn back, be forced into the delivery-aperture of the magazine, as shown in Fig. 15.

The face of the spring-gate  $m$  of the magazine, against which the cartridges bear when forced up by the follower, is slightly recessed at  $t$ , terminating in beveled shoulder  $t'$  a little way forward from the rear of this face of the gate, and leaving a projection,  $t''$ , extending nearly to the rear of the gate. The uppermost cartridge will be held by the one below

it, (or by the follower, if it be the last one in the magazine,) and by the spring-gate *m* in the delivery-aperture of the magazine toward the receiver, the flange projecting slightly into the pathway of the bolt, as shown in Figs. 10 and 14, and being held from rising by the bar *f*<sup>5</sup> of the magazine. When the bolt is moved forward it strikes the flange of the cartridge, and carries the cartridge forward, the flange running along the recess *t*. As soon as the flange of the cartridge reaches the incline on the bar *f*<sup>5</sup> *f*<sup>6</sup>, and at the same time the shoulder *t'* on the gate *m*, it is permitted to pass under said bar, and the slight impulse it receives from the shoulder *t'* impels it through the openings sidewise into the receiver when it is carried forward into the chamber of the gun in the usual manner by the manipulation of the bolt. Before the bolt is withdrawn the cartridge rests against it instead of against the bar *f*<sup>5</sup>, the flange being held behind the projection *t''*, so that the cartridge cannot be forced forward. The end face of the projection *t''* is nearly continuous with the rear face of the rear rib *i*, which also assists in preventing a forward motion of the cartridge. The inner face of the front wall of the magazine is rounded out in line with the receiver, as shown in Fig. 15. The piece *K* is similarly rounded. The inner face of bar *f*<sup>5</sup> is beveled forward of incline *f*<sup>6</sup>.

The spring-gate *m* is concaved or cut out at the top, as shown at *m'*, so as to swing back under the inturned edge *f*<sup>7</sup> of the offset to the magazine. The corner *m*<sup>2</sup> of the gate is also concaved or beveled, to permit the ready insertion of the thumb or finger in pressing the cartridges into the magazine.

Cartridges may be pressed down into the magazine from the top, either singly or by means of a feed-case. The rear end of the spring-follower will be pressed down somewhat faster than the front end by reason of the flanges of the cartridges; but the follower is free to assume an inclined position to compensate for this, as shown in Fig. 5. The spring-gate swings forward over the cartridges, and holds them from rising out of the top of the magazine, but presses the top one sidewise toward the receiver, and the combined pressure of the gate and follower tends to pass the flange of the cartridge through the aperture in the side of the magazine whenever the bolt is drawn back far enough. As the aperture in the side of the magazine will not permit the cartridge to pass sidewise into the receiver when the cartridge is at the rear of the aperture, the cartridge remains in this position until the bolt is moved forward, when it strikes the flange of the cartridge and carries it forward to a point where the aperture is wider, when the cartridge is pressed sidewise into the receiver. If the bolt be stopped before its front end gets behind the flange of the cartridge there will be no feed from the magazine, the bolt itself serving as a stop to the mouth of the magazine. The side plate, *f'*, of the magazine will be of

such length as to fit the notches *b'* in the receiver, whether the magazine be long or short.

I claim—

1. The combination, with a cartridge-magazine of the character described, of a follower adapted to force the cartridges sidewise in the magazine, and mechanism, substantially such as described, to adapt the magazine for the reception of short or long cartridges, as set forth.

2. A cartridge-magazine having a spring-follower, adapted, as described, to force the cartridges sidewise in the magazine, in combination with an inserted piece to reduce the length of the magazine and adapt it for shorter cartridges, substantially as shown.

3. A cartridge-magazine having a spring-follower adapted to bear against the side of the cartridges, as described, one corner of the follower being cut away, as stated, in combination with an insertible piece to be placed in the magazine and occupy the space of the cut-away corner of the follower, for the purpose of reducing the length of the magazine, as set forth.

4. In combination with a magazine of the character described and its spring, the follower having a projection at its rear end extending some little distance down in the magazine parallel with the rear wall thereof, the follower and projection being of such length as to prevent the front end of the follower being pressed downward into inclined position, substantially as described.

5. The combination, with a magazine of the character described, of a spring-follower, having its side extending down parallel with the wall of the magazine, said side extension serving to close the opening into the receiver when the follower is elevated, and also serving to prevent the follower from tilting in the magazine, as stated.

6. The combination, with a magazine of the character described, of interior guide ribs or projections at one side thereof, and a follower having projections which engage with said ribs, substantially as set forth.

7. The combination, with a magazine of the character described, having a stop-bar at the top thereof, against which the cartridge rests when in position to be struck by the bolt, of the spring-gate, with offset, as *t''*, in its face, and spring-follower, all operating in combination, substantially as stated.

8. The combination, with a magazine of the character described, and its spring-follower, of the spring-gate having recess *t* in its face, which recess terminates in a projection, and the stop-bar *f*<sup>5</sup>, recessed and beveled at *f*<sup>6</sup>, substantially as described.

9. The spring composed of flat leaves, as described, the lower leaf being forked at the end, in combination with a magazine having a stud or stop at the bottom which is embraced by said fork, as shown and described.

10. The combination, with a magazine adapted, as described, to force a column of

cartridges placed side by side in the direction  
of the receiver without the intervention of a  
carrier, of a bolt which reciprocates past the  
mouth of the magazine, and a stop mechanism,  
5 substantially as described, whereby the bolt  
may be stopped short of its rearmost position  
and serve to close the mouth of the magazine  
and prevent the escape of a cartridge there-  
from, substantially as stated.  
10 11. The combination, with a magazine  
adapted by spring-pressure to force a column  
of cartridges placed therein toward the receiv-  
er, and a bolt adapted to reciprocate past the

mouth of the said magazine, of a pivoted stop,  
as D, in the receiver, adapted to engage with 15  
and stop the bolt when turned in one position  
and to permit a full movement of the bolt when  
turned in another position, as described and  
shown.

In testimony whereof I affix my signature in 20  
presence of two witnesses.

ANDREW H. RUSSELL.

Witnesses:

JAMES M. BARRY,  
JAMES BARRY.