

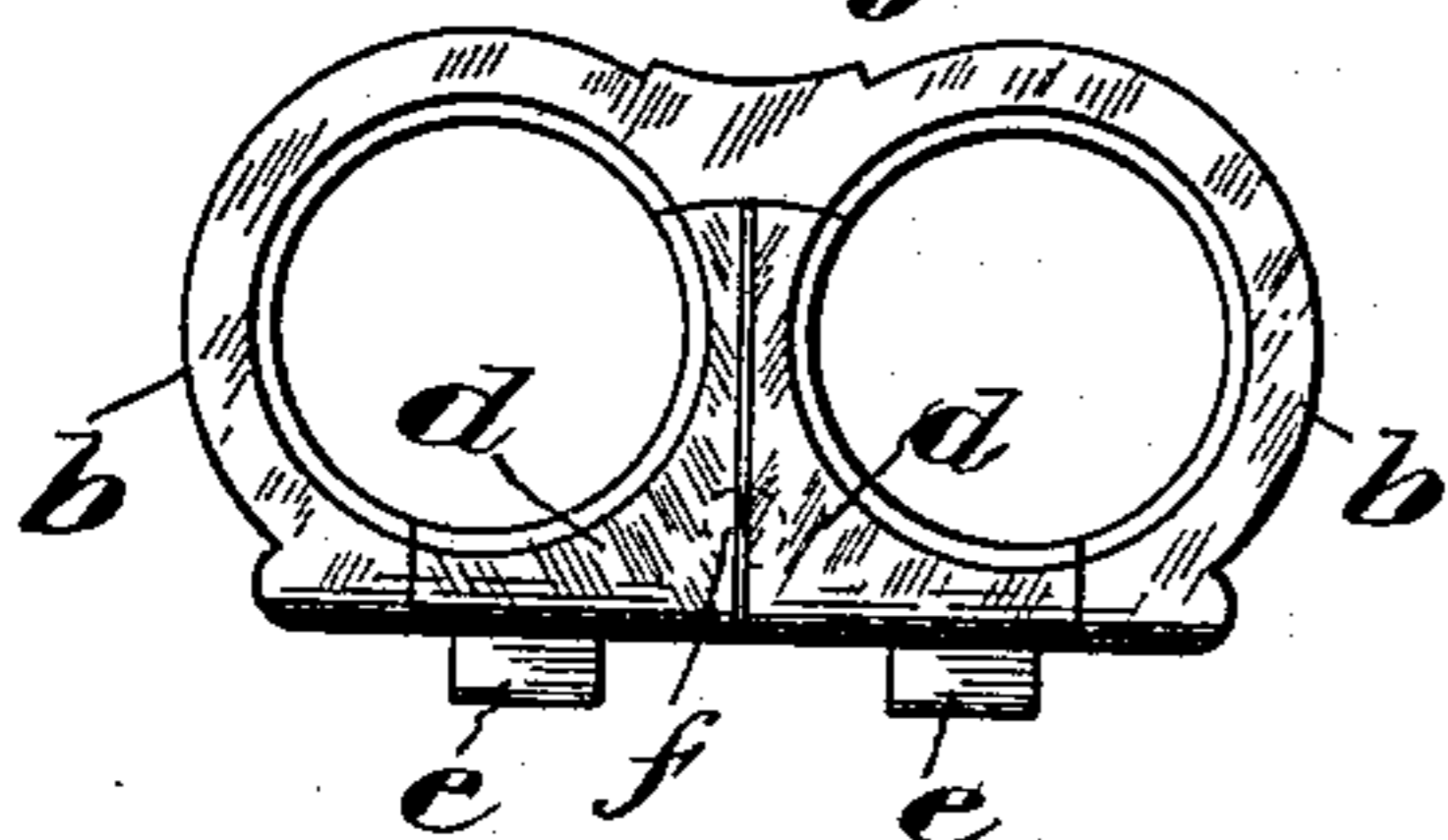
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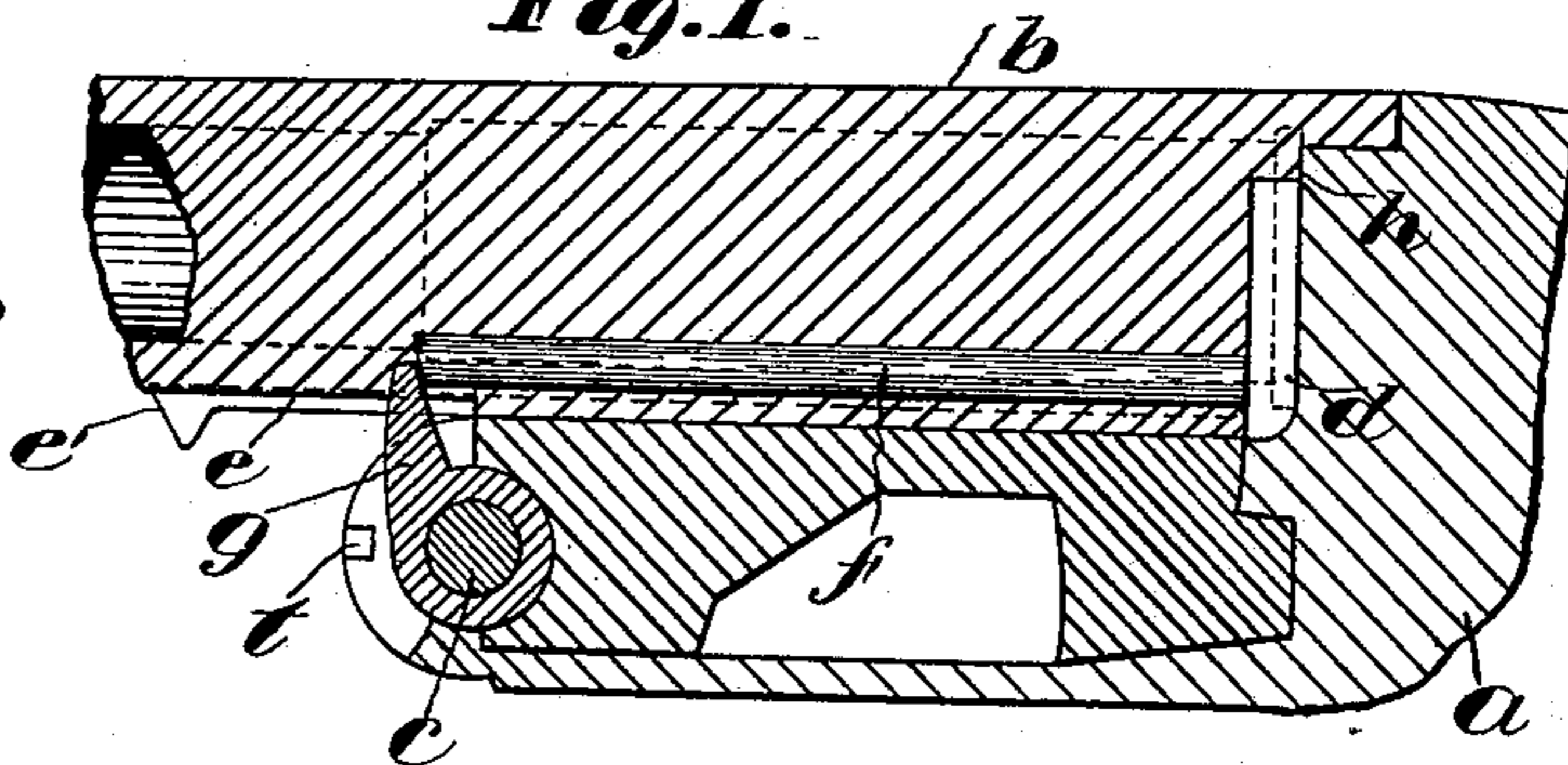
D. M. WINANS.  
EJECTING MECHANISM FOR DROP-DOWN GUNS.  
No. 593,408.

Patented Nov. 9, 1897.

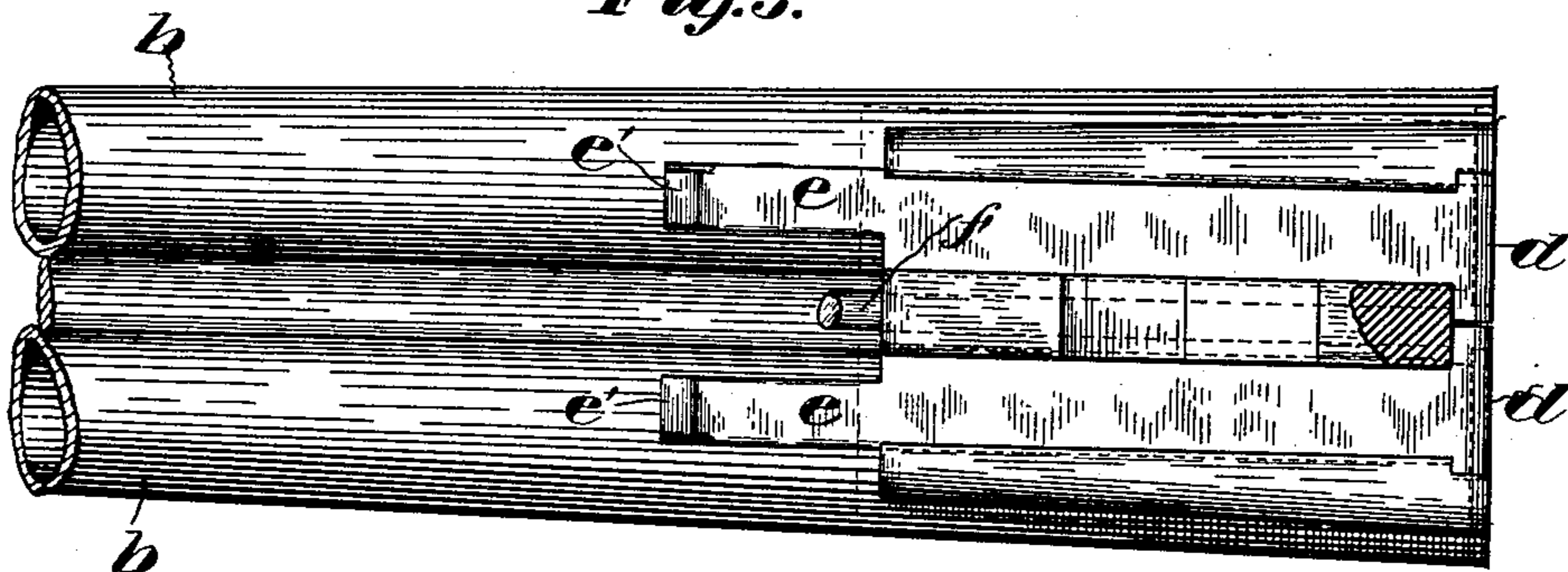
*Fig. 2.*



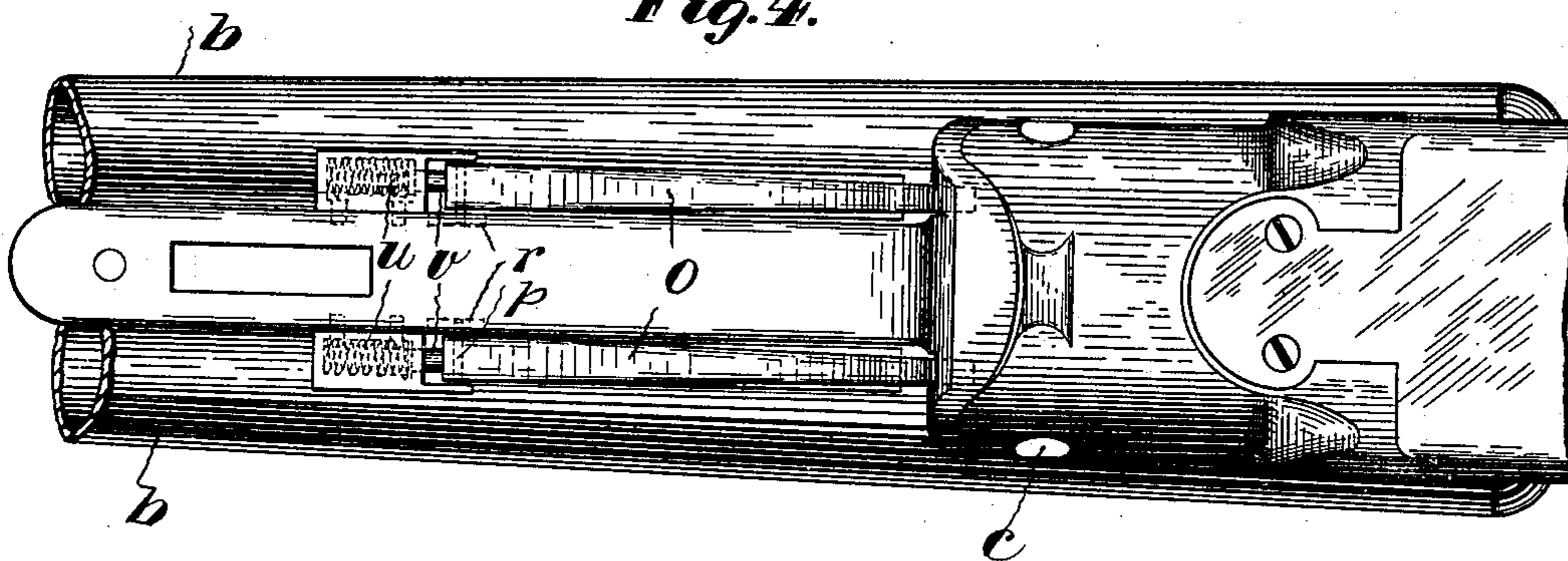
*Fig. 1.*



*Fig. 3.*



*Fig. 4.*



Witnesses  
Wm. H. Barker  
Alice Commons

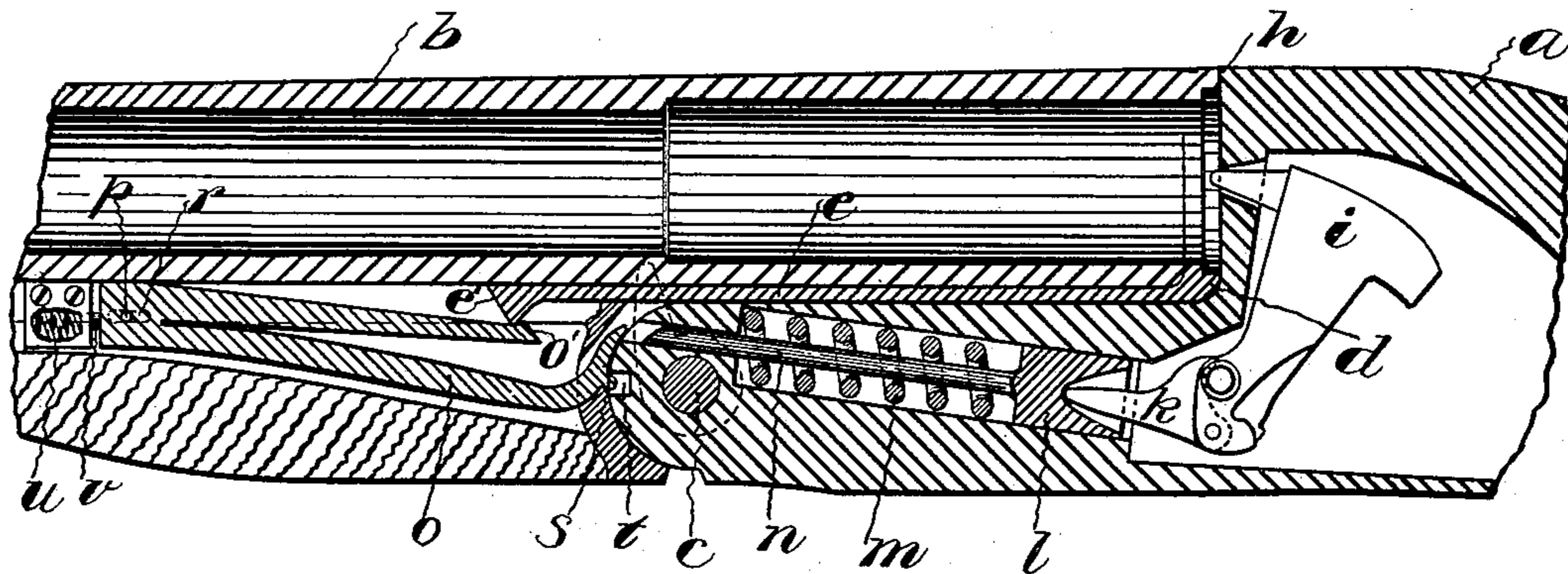
Inventor  
Dan M. Winans  
By W. E. Simond  
Attorney

(No Model.)

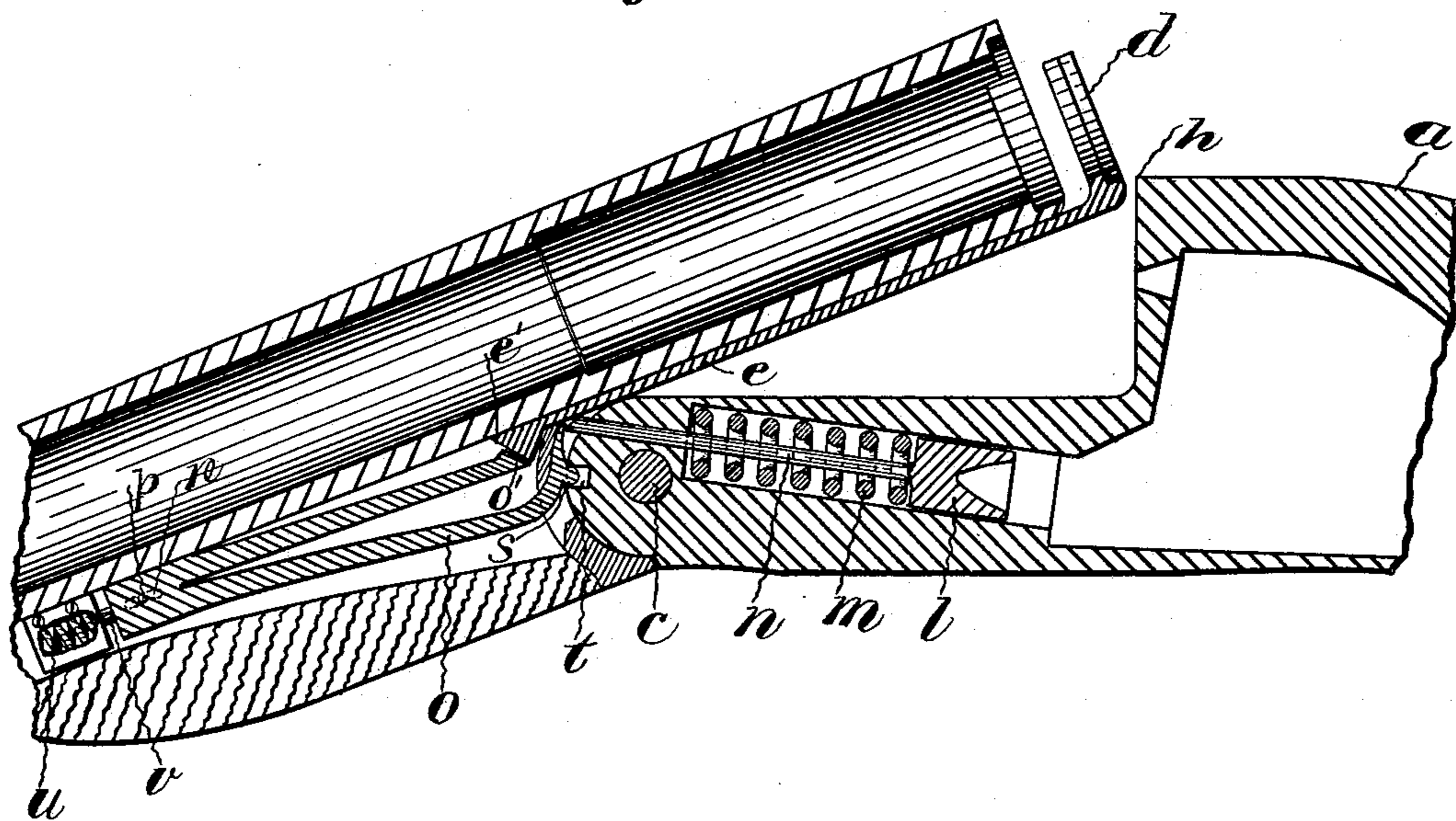
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*Fig. 5.*



*Fig. 6.*



Witnesses  
W<sup>m</sup> H. Barker.  
Alice Emmers.

Inventor  
Dan M. Winans  
By W. E. Simonds  
Attorney

# UNITED STATES PATENT OFFICE.

DANIEL M. WINANS, OF BINGHAMTON, NEW YORK, ASSIGNOR TO THE  
CHARLES PARKER COMPANY, OF MERIDEN, CONNECTICUT.

## EJECTING MECHANISM FOR DROP-DOWN GUNS.

SPECIFICATION forming part of Letters Patent No. 593,408, dated November 9, 1897.

Application filed March 22, 1897. Serial No. 628,570. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL M. WINANS, a citizen of the United States of America, residing at Binghamton, in the county of Broome and State of New York, have invented a certain new and useful Improvement in Firearms, of which the following is a description, reference being had to the accompanying drawings, where—

10 Figure 1 is a view of the middle portion of a (closed) double-barreled breech-loading gun embodying said invention with a part thereof in central vertical longitudinal section. It is chiefly the purpose of this view to show the  
15 extractor-pin and the cam or tappet which operates it when the gun is being opened. Fig. 2 is a view from the rear of the parts which are shown in Fig. 1, the gun in this view being opened. Fig. 3 is a view of the  
20 under side of a portion of the barrels, exposing the extractor-stems to view. Fig. 4 is a view of the under side of parts of the gun with the fore-end piece removed, bringing the ejector-springs into view. Fig. 5 is a view of  
25 parts of the closed gun in central vertical longitudinal section, bringing into view the rotarily-acting hammer and the connection therefrom to the ejector-spring. Fig. 6 is a view of the same parts which are shown in  
30 Fig. 5 with the gun opened.

The object and purpose of the improvement are to provide breech-loading guns—double-barreled shotguns, for instance—with a novel feature of cartridge-shell ejection additional to the ordinary positive-extraction  
35 feature of the prior art, that additional feature being operative only after the hammer has been “snapped” or let down. One practical result of mechanisms of this general  
40 class is that in opening a double-barreled breech-loading shotgun only that shell is thrown out which has been fired or exploded.

In the accompanying drawings the letter *a* denotes the frame.

45 The letters *b* denote the two barrels, situated side by side in the ordinary manner.

The letter *c* denotes the pivot-pin, which pivotally attaches the frame to the barrels.

50 The opening and closing movements of the gun are like those of the prior art. The opening of the gun cocks the hammer and ejects

the shells. Each barrel has a separate extractor *d*, carried by an extractor-stem *e*, adapted to have a limited longitudinal reciprocation in dovetailed grooved ways formed  
55 in the metal underneath the barrel-bore. In opening the gun both the separate extractors *d* are moved rearwardly a certain distance with a positive motion by the extractor-pin *f* striking against the extractor tappet or cam  
60 *g*, the tappet *g* being stationary in its relation to the frame. Then when the gun is opened the pin *f* is necessarily moved rearwardly in its relation to the barrels as it moves along  
65 the surface of the tappet, and as a consequence it pushes the extractors rearwardly in their relation to the barrels at the same time. This is a positive movement and always takes place when the gun is opened. In  
70 closing the gun the shoulder *h* on the lock-frame strikes the extractors and forces them both (and with them the extractor-pin) back to the forward limit of their longitudinal  
75 play, which is their normal position in a condition of “rest.” This operation of two extractors by a single extractor pin and tappet is believed to be a new feature in firearms.

The additional feature of shell-ejection will now be described. That operation of the extractors already described always takes place  
80 when the gun is opened. It starts both the shells back from their seats in the shell-chambers and leaves them lying so loosely that one can readily grasp them with the fingers. The gun has, as to each barrel, an additional de-  
85 gree and feature of shell-ejection only operative as to either barrel when its hammer has been snapped or let down—that is, generally and practically, only after the barrel is fired.

As has been mentioned, each extractor *d* is  
90 borne by and carried on an extractor-stem *e*. The front end of the extractor-stem is equipped with a cam-surface *e'*, called herein a “cam.”

The letter *i* denotes a hammer (there being  
95 one for each barrel) having a rotary movement both in cocking and firing.

The letter *k* denotes a pawl pivotally attached to the hammer, with its front end taking into a socket in the rear end of the piston *l*.  
100

The letter *m* denotes a spiral spring bearing rearwardly on this piston. It is this

spring that operates the hammer in its firing action.

The piston carries a forwardly-projecting rod *n*. When the hammer is cocked, this rod is moved forward with the piston and necessarily remains locked in that forward position so long as the hammer remains cocked.

The letter *o* denotes an ejector-spring having an upper and a lower leaf. It is adapted to have some little longitudinal play as a whole. Its front end carries the pin *p*, traversing the slot *r*. Its rear end has a tenon *s*, which takes, loosely at times, into the mortise *t*, formed in the forward end of the lock-frame. A spring *u*, acting through an intermediate pin *v*, pushes the ejector-spring to the rearward limit of its play when permitted, at which times the tenon *s* enters the mortise *t*. The rear end of the upper leaf of the ejector-spring is equipped with the cam-surface *o'*, called herein a "cam."

The cocking movement of the hammer is synchronous with the opening of the gun, a matter of the prior art not necessary here to be described. In such an opening and cocking movement the extractor *d* moves positively, as already described, a certain distance, and the extractor-stem *e* moves with it. Meanwhile (supposing the hammer to have been in the snapped position at the opening movement of the gun) the ejector-spring *o* is compressed, its under leaf being pressed toward its upper leaf through the coöperating action of the tenon *r* and mortise *t*. When in the rearward movement of the extractor-stem the two cams *e'* and *o'* overlap each other, the action of the now-compressed ejector-spring is brought into play, the force thereof being exercised to press these two oblique surfaces against each other, with the result that the extractor-stem with the extractor which it carries is forced rearward with a sudden kicking motion beyond and additional to the positive extracting movement already described, giving the extractor a force and movement adapted to throw the exploded shell entirely out of the gun. Now in opening the gun (which cocks the hammer) the rod *n* forces the ejector-spring *o* to the limit of its forward movement and holds it there, no matter how often the gun is opened and closed, until the hammer is snapped, the ejector-spring in this locked position having no coöperative action with the extractor-stem. When the hammer is snapped, the rod *n* is retracted and the ejector-spring, then unlocked, moves rearward under the influence of spring *u* to coöperate, as before, with the extractor-stem when the gun is opened.

I claim as my improvement—

1. In a breech-loading firearm, the combination of the two barrels, the separate extractors for the two barrels, the single extractor-pin adapted to coöperate with both extractors, and means adapted to operate the extractor-pin in the opening movement of the arm, and a cam projection on the forward end of the extractor-stem, an ejector-spring, and a cam-surface on the end of the said spring acting upon the cam-surface of the extractor-stem to eject the extracted shell, all substantially as described and for the purposes set forth.

2. In a breech-loading firearm, the combination of a gun-frame, a barrel pivotally attached to said frame, a hammer for exploding the cartridge, the extractor borne on the reciprocatory extractor-stem, a cam-surface on the forward end of the said extractor-stem, the ejector-spring having an inclined cam-surface acting on the said cam-surface on the forward end of the extractor-stem to eject the extracted shell, and means intermediate of said spring and hammer adapted to hold said spring from operation while the hammer is cocked, all substantially as described and for the purposes set forth.

3. In a breech-loading firearm, the combination of a gun-frame, a barrel pivotally attached to said frame, a hammer for exploding the cartridge, the extractor, means for giving the extractor positive extracting movement in the opening of the arm, the reciprocatory extractor-stem provided with a cam, the pawl pivotally attached to the hammer, the piston adapted to be actuated by said pawl, the hammer-spring, the ejector-spring and the rod extending from said piston and adapted to operate on said ejector-spring, all substantially as described and for the purposes set forth.

4. In a breech-loading firearm, the combination of a gun-frame, a barrel pivotally attached to said frame, a hammer for exploding the cartridge, the extractor, means adapted for giving the extractor positive extracting movement in the opening of the arm, the reciprocatory extractor-stem provided with its cam, the mortise *t* the reciprocatory two-leaved ejector-spring provided with its cam and with its tenon taking into the mortise *t*, the pawl pivotally attached to the hammer, the piston adapted to be actuated by said pawl, the hammer-spring, and the rod extending from said piston and adapted to operate on said ejector-spring, all substantially as described and for the purposes set forth.

DAN. M. WINANS.

Witnesses:

CHAS. AVERY HICKEY,  
THOMAS J. KEENAN.