

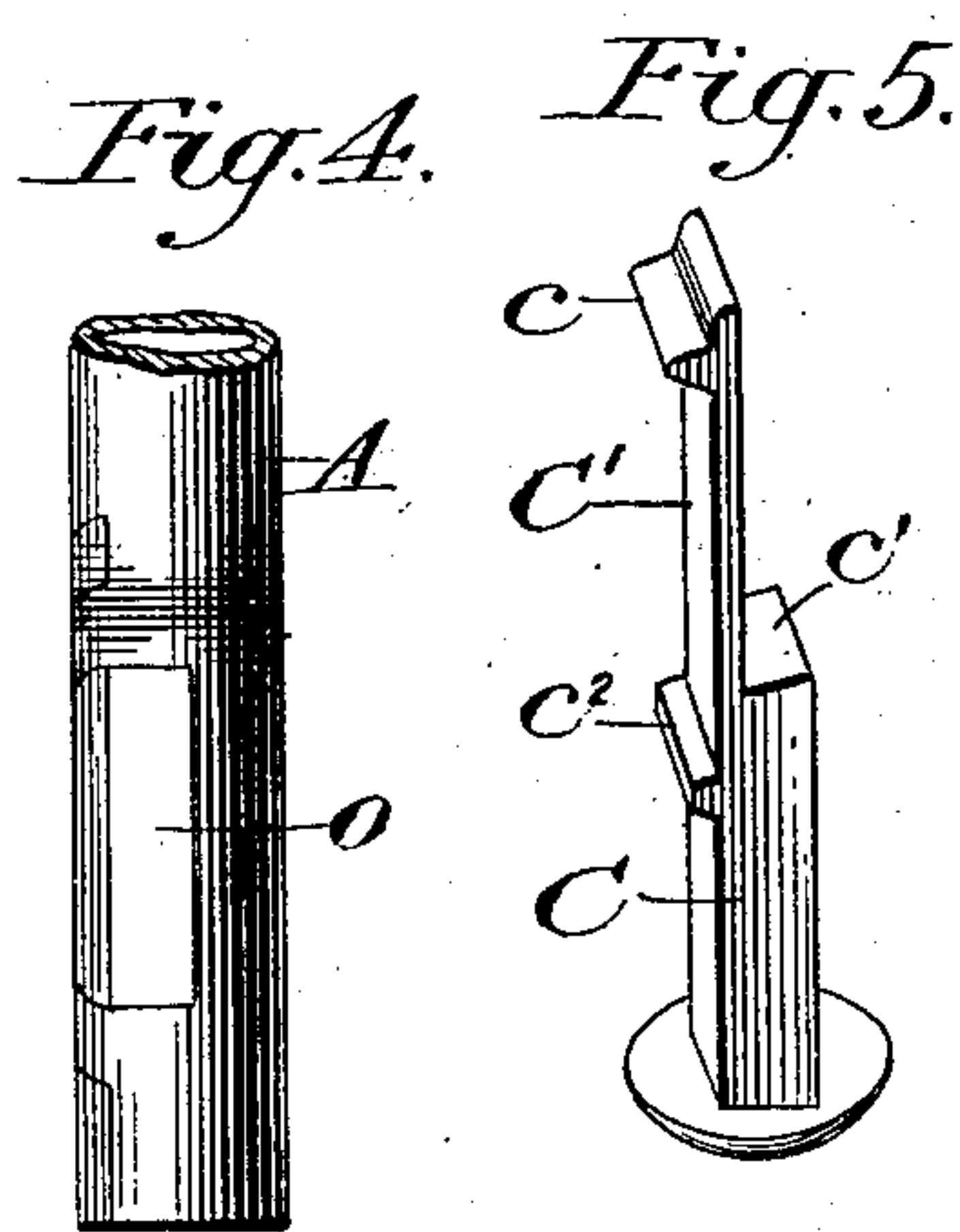
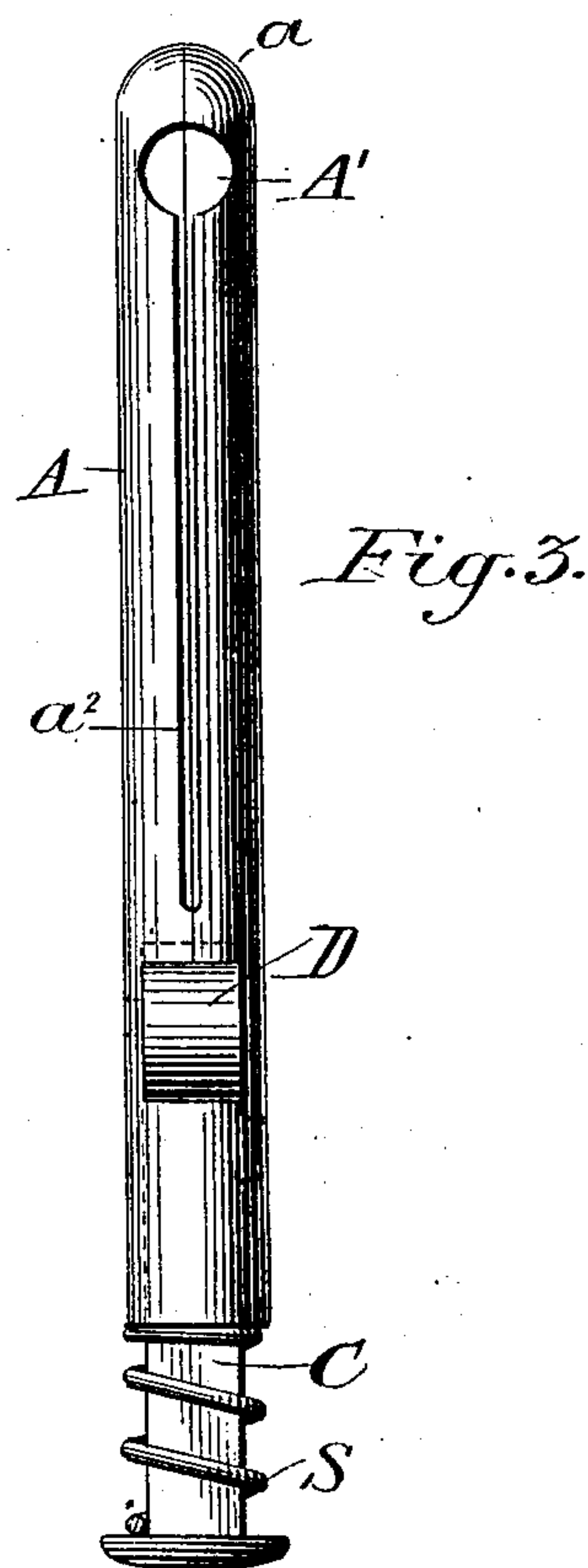
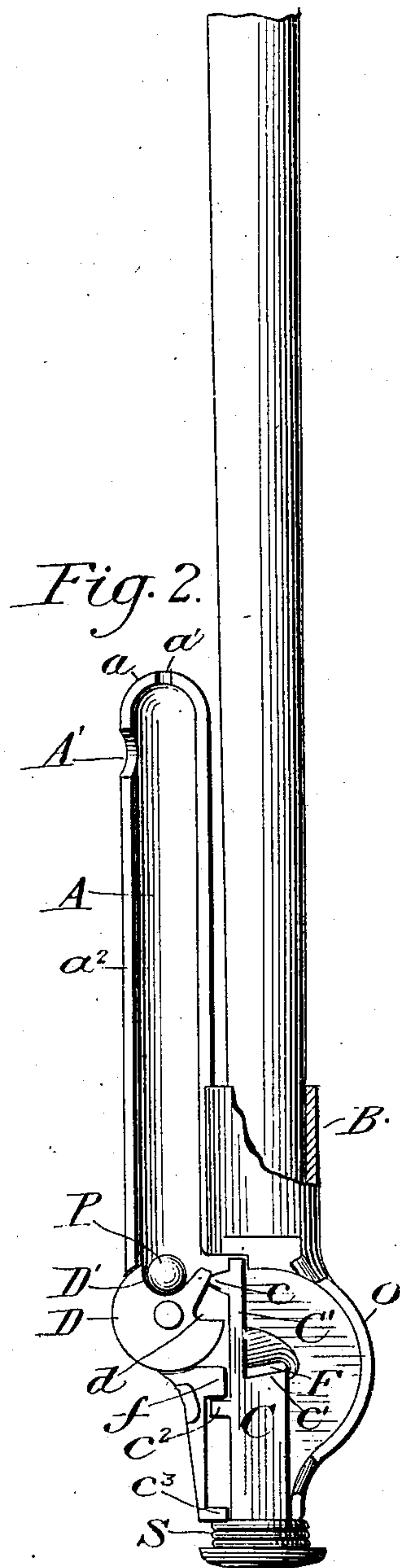
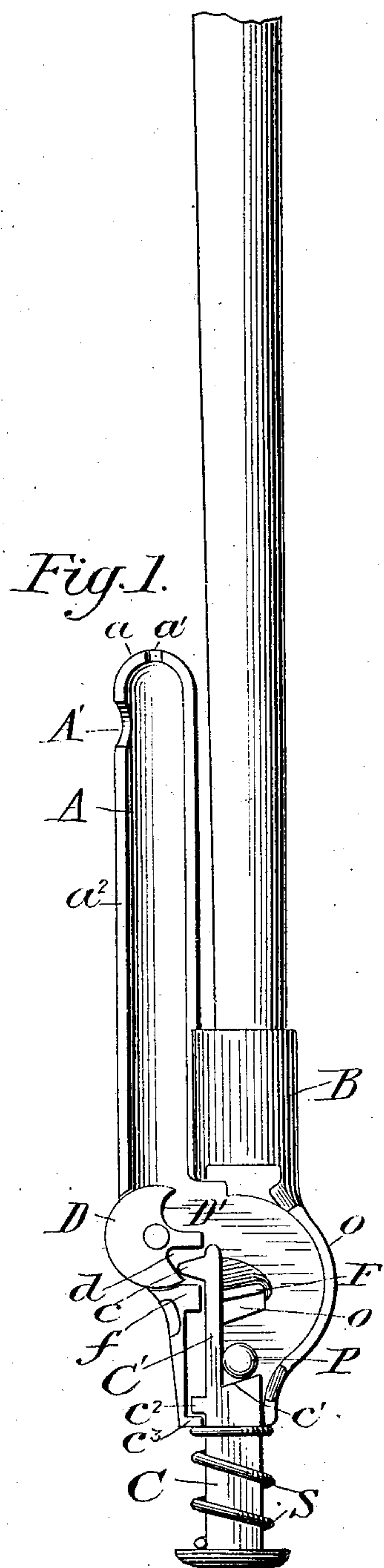
No. 755,934.

PATENTED MAR. 29, 1904.

J. G. RAQUETT.
DETONATOR.

APPLICATION FILED FEB. 17, 1904.

NO MODEL.



Witnesses:
D. W. Edelin
J. E. Berryman

Inventor:
Joseph G. Raquett
By D. E. Foulke
Att. atty.

UNITED STATES PATENT OFFICE.

JOSEPH G. RAQUETT, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO
GEORGE M. POTTER, OF CLEVELAND, OHIO.

DETONATOR.

SPECIFICATION forming part of Letters Patent No. 755,934, dated March 29, 1904.

Application filed February 17, 1904. Serial No. 194,075. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH G. RAQUETT, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Detonators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to detonating devices adapted to feed and explode detonators.

The invention is particularly adapted for use in connection with a cane, an umbrella, or like article for use in parades and during campaigns and other celebrations.

The objects of my invention are to provide a safe, effective, and cheap device which is adapted to be secured, preferably, to a cane or the like and when so secured will automatically feed explosives from a magazine to an exploding-chamber and in position so that it may be exploded, preferably, by forcibly striking the lower end of the device against a resisting substance.

My invention consists in the peculiar construction of the device whereby the above objects are attained and which will be hereinafter fully set forth and claimed.

In the drawings, Figure I is a view in elevation, illustrating a device constructed according to my invention, showing the same with the front plate removed, illustrating the internal mechanism in position when the explosive is about to be operated upon, showing the explosive in position between the engaging surfaces of the exploding mechanism. This figure also illustrates the position of the feeding-tumbler in relation to the other parts. Fig. II is a like illustration to Fig. I, but illustrating the position of the parts after the explosion has occurred and showing the feeding-tumbler in position to receive the explosive from the magazine. Fig. III is a view looking toward the magazine end or edge of the device, showing the device with the front plate attached and in complete condition. Fig. IV is a fragmental view of so much of the device as is necessary to illustrate the front of the exploding-chamber and to show the open-

ing for allowing the gases to escape after the explosion. Fig. V is a detached view of the plunger, by means of which the mechanism is put into operation for the purpose of exploding and feeding the explosive pellets.

In forming my device I preferably cast it of suitable metal and form the body portion in two parts, which are secured together by means of lugs which are clamped over the outer edges of the adjacent part. These two parts when fastened together form a magazine A, provided with a feeding-orifice A', this magazine being closed at the upper end, as at *a*, where it may be provided with interlocking projection and recess *a'*, which will cause the parts to register when assembling them. Extending along the adjacent edges at one side of the magazine I find it advisable to provide a space or opening *a''*, the object of which is to allow of the free escape of gases in case of an accidental ignition of the pellets or explosives when in the magazine, and while this rarely happens provision should be made, as hereinbefore stated, to avoid accidents by explosion in case of ignition. In one of the parts of the body portion I provide a socket B, adapted as a ferrule to receive an end of a cane-stick, umbrella, or like article, and thus be securely attached to the same. The socket B is in close juxtaposition to the magazine A, being located near the lower end thereof and so positioned that the magazine A will extend upward at the side of the cane-stick or umbrella with its feeding-orifice A' facing outward, so as to be easily accessible for the purpose of feeding the explosives to the magazine.

Located beneath the magazine and the socket of the device is the operating mechanism, which consists of a plunger C and a feeding-tumbler D. The feeding-tumbler D is located beneath the magazine A and is provided with a pocket D', which registers with the bottom of the magazine A and is of such capacity as to receive an explosive pellet, such as P. (See Fig. II.) The tumbler D is so secured in its position that it may be oscillated to bring the pocket D' first so as to register with the bottom of the magazine A and subsequently so as to feed the explosive to the explosion-cham-

ber, whence by gravity and by being directed by the contour of the walls of the explosion-chamber the explosive pellet will seat itself in position to be exploded. The oscillation of the feeding-tumbler is accomplished through the plunger C in its movement back and forth, and this is accomplished, preferably, by providing the plunger C with an extension C', which in turn is provided with a lateral projecting tooth *c*, the tooth *c* being adapted to play within a recess *d*, formed in the tumbler D. This recess *d* is of such area as to receive the tooth *c* and to time its engagement in such a manner that at the full upper stroke of the plunger C the pocket D' will register with the bottom of the magazine and receive the pellet, and at the lower or outward position of the plunger C the said tumbler will discharge the pellet and the plunger will be in position to receive the pellet upon an exploding ledge or shoulder *c'*, thus placing the pellet between said shoulder *c'* and an anvil F, against which the pellet is pressed for the purpose of exploding it. The anvil F is preferably formed integral with the side wall of the explosion-chamber and is positioned so as to guide the extension C' of the plunger C in its up-and-down movement, acting in conjunction with the projection *f* for this purpose. The plunger C is preferably provided with a lateral lug *c''*, which by engaging the flange *c''* the lower end of the explosion-chamber retains the plunger in proper relation to the other mechanism when the plunger is in projected position. For the purpose of positiveness of action I prefer to employ a spring S, which acts to project the plunger C positively. However, where the plunger is heavy enough and the action of the device is in a vertical direction this would not be absolutely essential. I prefer, however, to employ it, as it enables the plunger to assume its projected position against friction caused by particles of the explosives getting between the contiguous surfaces of the moving parts.

The operation of my device is as follows: The magazine A is approximately filled with a suitable number of explosives in the form, preferably, of pellets P. Then by forcing the plunger C inward the feeding-tumbler B is oscillated or turned to a position illustrated in Fig. II of the drawings, where it receives a pellet P. By raising the device through the medium to which it is attached the plunger C is permitted to be forced outward or downward, causing the tooth *c* to engage the tumbler B and rotate it to the position shown in Fig. I, which allows the pellet P to escape from the pocket D' and fall into the position illustrated in Fig. I, where it is between the upper portion of the plunger C, resting on a ledge or shoulder *c'* in position beneath the anvil F. It will now be seen that when the head of the plunger C is forcibly projected or struck against a resisting-surface the pellet is

compressed forcibly between its inner end and the anvil F, and thus exploded, the gases escaping through suitable orifices O, located at the sides and at the front of the explosion-chamber. This just-previously-mentioned manipulation and effect is repeated, the pellets being received by the feeding-tumbler, fed to the explosion-chamber, and exploded in succession until the magazine is empty.

It will be seen from the above description, taken in connection with the drawings, that the explosives after having been fed to the magazine are contained entirely within the device and that the operative part of the device, including the exploding mechanism, is shielded from wet and is in a position where it can do no damage, thus avoiding accidents and providing a reliable detonator.

In setting forth this invention I have shown and described it in operation and in assembly as I consider it best adapted for attaining its objects and have shown and described details of construction as I consider them best adapted to perform the functions; but I do not hence wish to be limited to these details, assemblies, or manipulations, as it is evident that they may be departed from and still retain the salient features of my invention.

What I claim is—

1. In a device of the class described, a magazine for explosives, an exploding-chamber, a feeding device separating the magazine and the exploding-chamber, said device being mounted to oscillate on an axis and being provided with a recess and a pocket in its peripheral surface, a plunger mounted to reciprocate in the exploding-chamber in a line at substantially a right angle to the axis of the feeding device, said plunger extending outside the chamber, a tooth projecting from the plunger and engaging with the recess to oscillate the feeding device as the plunger reciprocates, whereby the pocket in the feeding device is caused to alternately receive and discharge the explosives, and an anvil with which the plunger contacts to explode the explosives.

2. In a device of the class described, a magazine for explosives, an exploding-chamber, an oscillating feeding device having a recess and a pocket, an exploding-plunger projecting without the lower end of said chamber, a shoulder intermediate the length of said plunger, an anvil projecting into the said chamber in position to coöperate with the said shoulder to explode the explosives, a tooth projecting from the upper part of the said plunger, said tooth extending into the recess in the feeding device whereby as the plunger reciprocates, the feeding device will be oscillated to bring the pocket therein alternately into communication with the magazine and the explosion-chamber.

3. In a device of the class described, a magazine for explosives, said magazine having a slot or space along its side to permit the es-

cape of gases in case the explosives in the magazine should become ignited, an exploding-chamber, an oscillating feeding device separating the magazine and the exploding-chamber, said device having a pocket for the explosives, a plunger mounted to move longitudinally in the explosion-chamber, said plunger protruding from said chamber for the purpose specified, a tooth on said plunger for engaging the feeding device to oscillate the same, an anvil projecting into the explosion-chamber and coöperating with the plunger to cause

the explosive that is in the chamber to be exploded when the plunger is forced inwardly, and a spring surrounding the protruding portion of the plunger to force the same outwardly after the explosion. 15

Signed at Cleveland, in the county of Cuyahoga and State of Ohio, this 15th day of February, 1904.

JOSEPH G. RAQUETT.

Witnesses:

E. B. DONNELLY,
W. E. DONNELLY.