

Ammunition Loading,
Capping and Uncapping.

CHARLES A. KING.

IMPROVED PROCESS OF REMOVING CAPS FROM CARTRIDGE SHELLS

No. 120,075.

Patented Oct. 17, 1871.

FIG. 1

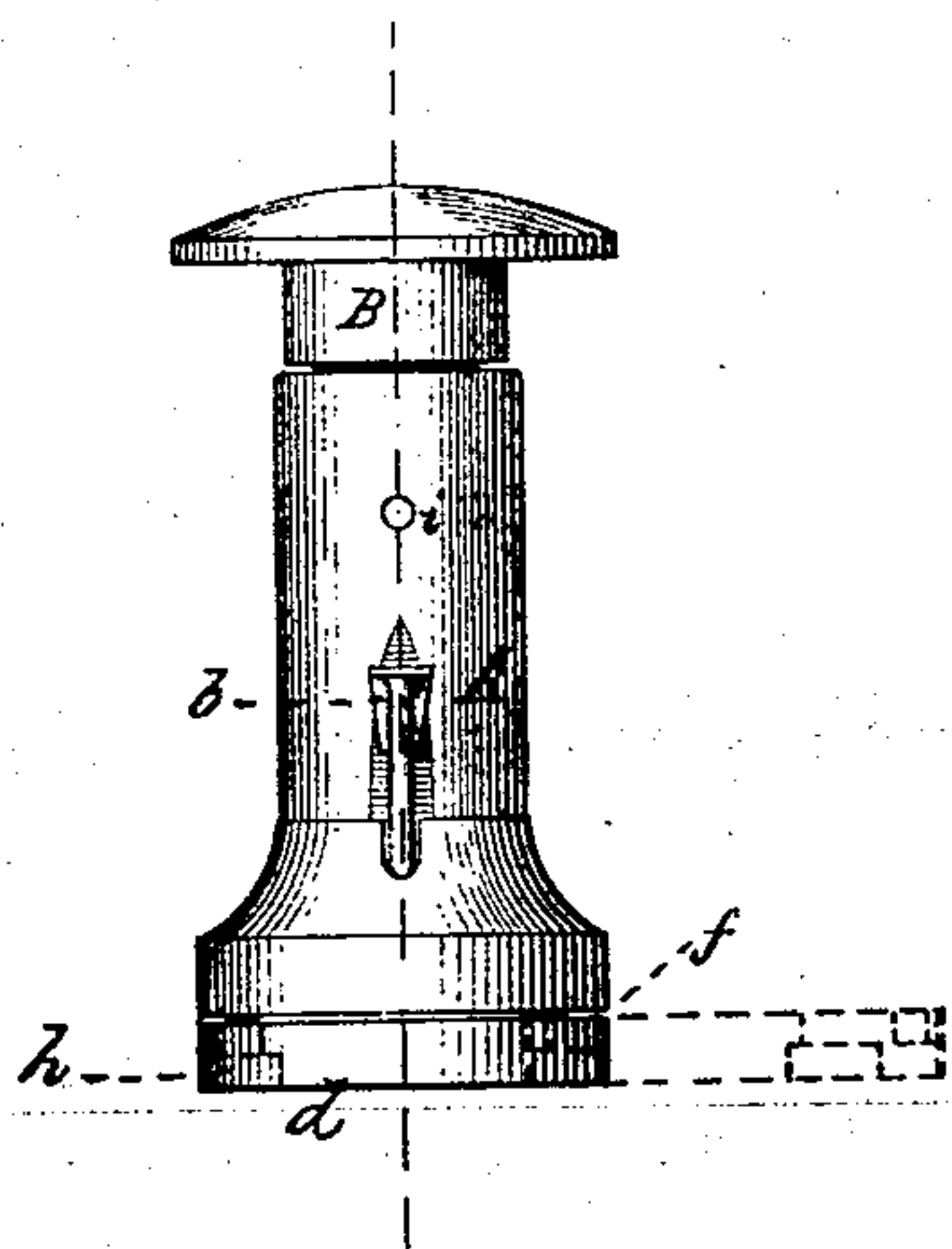


FIG. 2

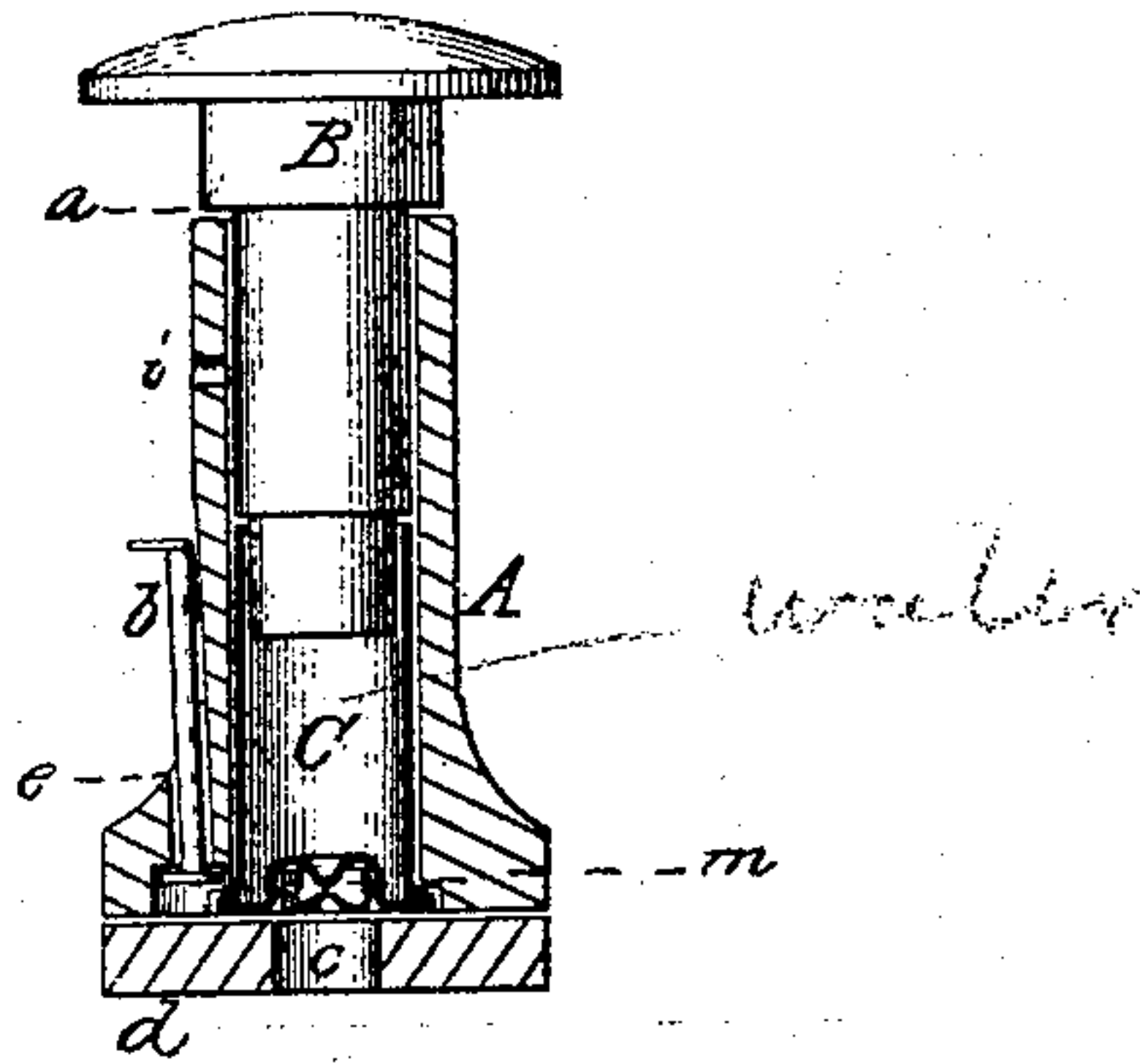
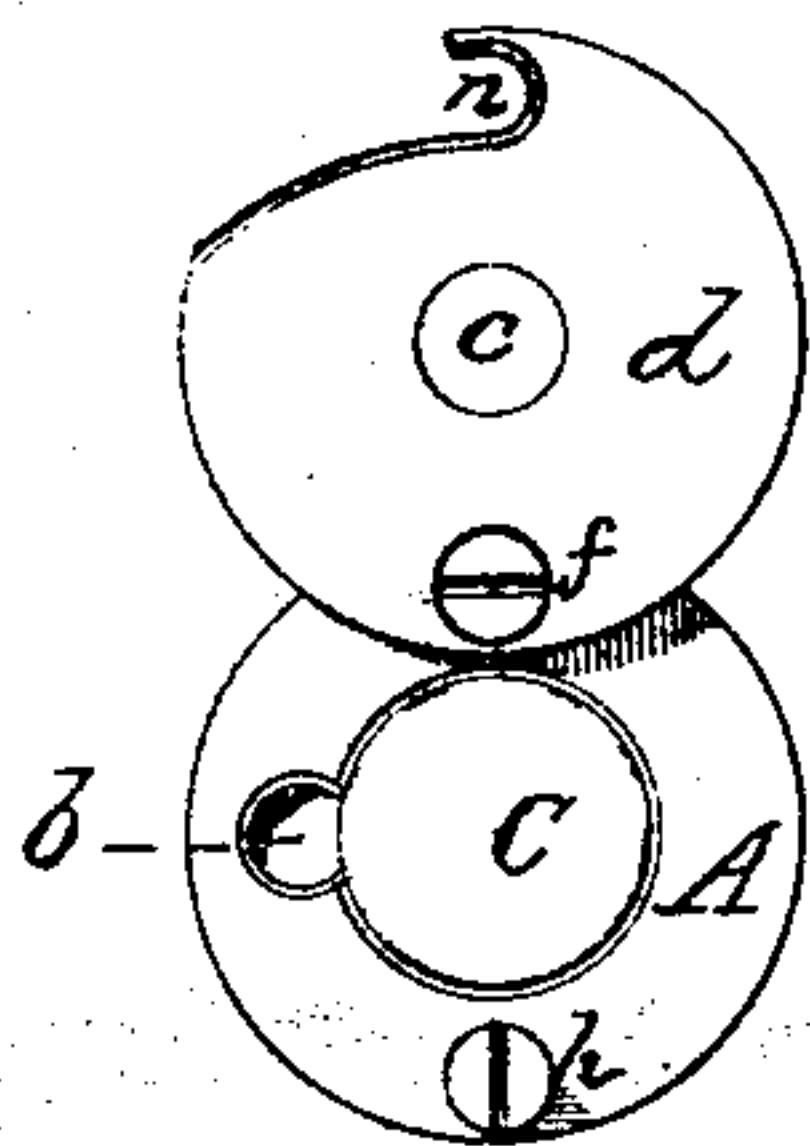


FIG. 3



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CHARLES A. KING, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN MEANS FOR UNCAPPING CARTRIDGES.

Specification forming part of Letters Patent No. 120,075, dated October 17, 1871.

To all whom it may concern:

Be it known that I, CHARLES A. KING, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in the Process of Removing Caps from Empty Cartridge-Shells; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a side view of a device illustrating my process. Fig. 2 is a longitudinal section of the same; and Fig. 3 is a plan view of the lower end with the plate open, showing the head of the shell exposed to view.

My invention relates to a process of removing the cap from an empty cartridge-shell, after the same has been exploded by the firing-pin of the gun; and it consists in confining the shell within a hollow cylinder, which it should fit properly; then pouring water into the cylinder or tube, and inserting a properly-fitting piston into the upper end of the cylinder or tube; and, by striking down the piston by a smart blow, the water will be forced through the small holes in the head of the shell or cap-receptacle into the space within the interior of the cap, between it and the anvil, and the extreme pressure of the water suddenly forced into the said small space, with the still greater pressure of the larger confined body of water within the shell and cylinder or tube, will quickly force off the cap from the head of the shell.

That others skilled in the art may be able to use my process, I will proceed to describe my application of it to practice.

In the drawing, A represents a hollow cylinder or tube, both ends being open, and upon the lower end I pivot, for convenience sake, a plate, *d*, which is arranged to swing freely upon its pivot *f*, as shown both open and closed in the two Figs. 1 and 3, said plate having a hole, *c*, therein larger than the cap to be removed. A small hole, *i*, may be made in the cylinder or tube to serve as a gauge, so that the same amount of liquid may be placed in the tube or cylinder at each removal of a cap; and a piston, B, is made to fit the bore of the tube or cylinder properly. A small plunger, *b*, may be made to operate through the lower part of the tube in

such manner that if a shell is in place within the tube, and the lower end of the tube be open, by pressing down the plunger *b* it is forced down against the flange of the cartridge-head, pushing the same out of the tube sufficiently to be seized and removed by the fingers.

If a cap is to be removed from an empty shell, the shell is placed within the tube A, as seen in Fig. 2, in which C represents the shell; and the lower end of the tube is then closed by the plate *d*. The piston B is then removed, and water or any other convenient liquid is poured into the tube, filling it to the outlet *i*. The piston B is then inserted in the tube, and by striking a smart blow thereon, the water, or a small part of it, will be forced down through the orifice in the head of the shell into the cap, and forcing it off and down through the hole *c*. The lower end of the tube is then opened and the shell C removed either by pressing down the plunger *b* against the flange of the shell, or the shell may fit the tube sufficiently loose to drop out when the end of the tube is left open and the piston is withdrawn.

Many of the metallic cartridges now manufactured which are exploded by means of a cap or primer applied to a receptacle at the head or base of the shell, can be reloaded and used in a gun a second time, if care be taken not to injure the empty shell or its cap-receptacle by abrasion in removing the exploded cap. As an example I may cite the Berdan cartridge, which is exploded by means of a small cap placed within a small cavity in the head, which has a protuberance or anvil at the base of said cavity. In removing the exploded caps from these shells it is a matter of great importance that this cavity and its anvil should not be injured in the least, but should remain intact, so that when reloaded the next cap applied should fit the cavity well and be sure to explode. This it has not been possible to do with the means used to extract the caps, as the forceps and other devices made for that purpose often have to be used with considerable force to remove the caps, which generally fit the cavity closely, and are driven in still more firmly by the firing-pin of the gun and by the explosion of the fulminate.

By my process no metal comes in contact with the shell, except the interior of the tube, which tends to preserve the proper cylindrical form of

the shell, and all the parts of the shell retain their original form and shape, and they may be reloaded and used as long as they withstand the force of the explosion. Of course any liquid may be used, as oil, or any other, and when the piston is made to fit the tube sufficiently tight, and the tube is of sufficient length, no liquid may be necessary, as the sudden compression of air within the tube and shell would give sufficient force to blow off the cap. For convenience of size, however, and for practical purposes, I prefer to use the short tube with its piston, substantially as described, and the employment of a liquid, as it is more dense and powerful in its results when suddenly compressed. The result would, of course, be the same should an accumulation and steady pressure be applied to the piston; but it would require a much greater power, and a percussion blow upon the piston would be far preferable in the practical application of the process.

In practice, when removing the caps from shells in quantities, I should prefer not to attach

the plate *d* to the lower end of the tube; but to make a recess or hole a little larger in diameter than the cap, but smaller in diameter than the shell, and placing the tube with the shell therein over said recess, drive off the cap into the recess. When removing the caps in a shop, a hole of the proper size might be made through a bench, with a pan placed beneath to catch the caps as they were forced off.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The process of removing caps or primers from empty cartridge-shells, substantially as herein described.

2. The combination of the tube A with the piston B and plate *d*, having a recess, *c*, therein, substantially as and for the purpose described.

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Witnesses:

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