J. GOLDMARK.

Filling Caps.

No. 10,262. Patented Nov. 22, 1853.

Fig. 1.

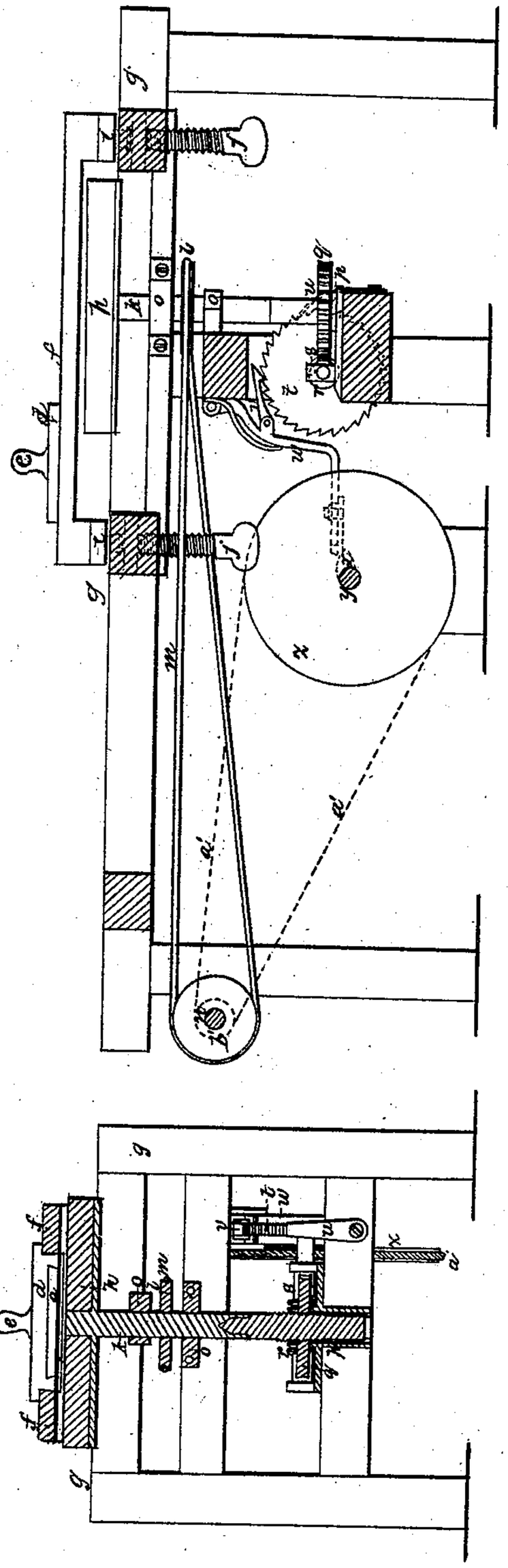


Fig. 2.

Fig. 3.

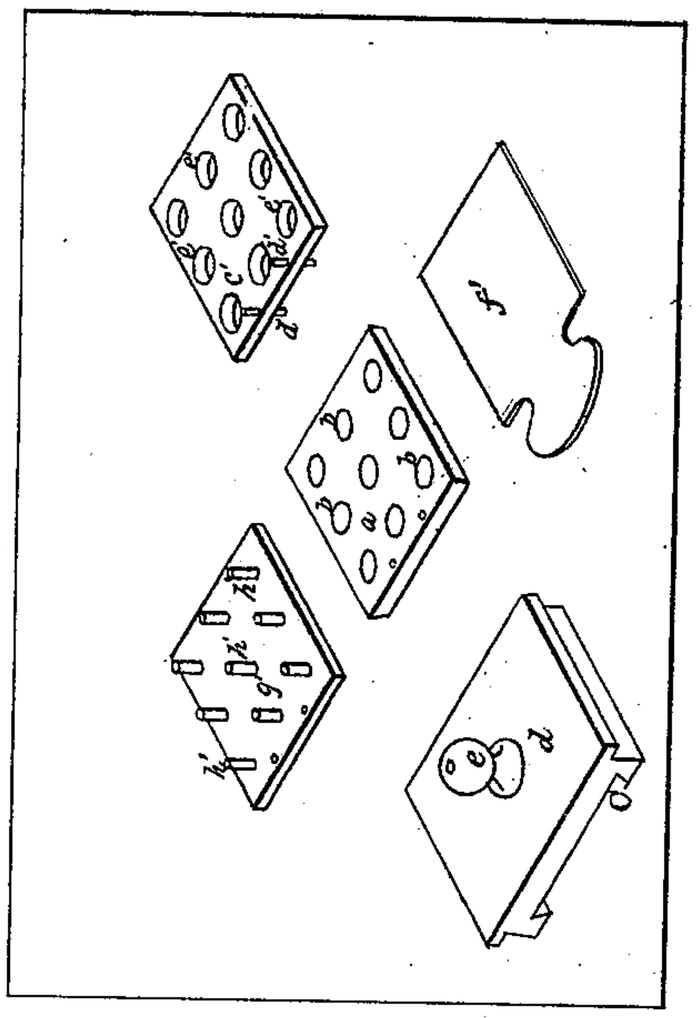


Fig. 4.

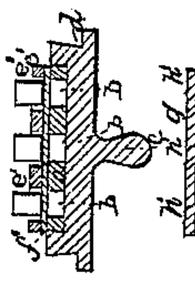


Fig. 5.

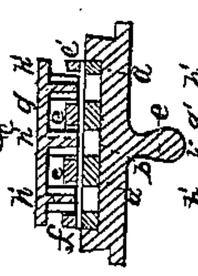
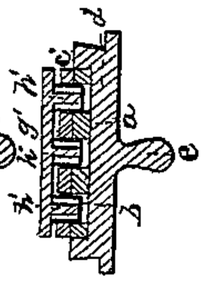


Fig. 6.



UNITED STATES PATENT OFFICE.

JOSEPH GOLDMARK, OF NEW YORK, N. Y.

IMPROVEMENT IN FACING ENDS OF PERCUSSION-CAPS.

Specification forming part of Letters Patent No. **10,262**, dated November 22, 1853.

To all whom it may concern:

Be it known that I, JOSEPH GOLDMARK, of New York city, New York, have invented a new and Improved Method of Facing the Open Ends of Percussion-Caps for Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of the machine for grinding or reducing, with part of the frame omitted; Fig. 2, a cross vertical section thereof; Fig. 3, a separate view of the different plates for holding the caps and inserting them in the holding-plate, and Figs. 4, 5, and 6 cross-sections of these plates in three different stages of the operation.

The same letters indicate like parts in all the figures.

The object of my invention is to grind or reduce and face the open ends of percussion-caps after they have been formed and before or after they have been charged with percussion-powder, so as to make them all of equal depth and to give a good finish to the edge; and to this end the nature of my invention consists in inserting a series of percussion-caps in appropriate holes made in a plate fitted to or making part of a stock to be used in combination with the surface of a grinding-wheel or other reducing-surface, so that when so inserted in the holes of the plate with the open ends outward or toward the grinding or reducing surface, and moved over or caused to slide in a plane parallel with the grinding or reducing surface, or vice versa, and the said grinding or reducing surface set in motion, all the caps will be reduced to an equal depth and the edges reduced to the same level; and my invention also consists in employing, in combination with the plate of holes, called the "holding-plate," a secondary plate, adapted to and temporarily, connected with the first or holding plate, and formed with holes in corresponding positions, but larger, that the caps, when thrown onto this secondary or guiding plate, may more readily enter and be guided into the holes in the holding-plate, and thus facilitate the operation; and my invention also consists in employing, in combination, a third plate with a series of pins or punches corresponding in position with the holes in the holding-plate for the purpose of forcing the caps to the required depth in the holes of the holding-plate, that, when subjected to the action of the grinding or reducing surface, they may all be reduced to an equal length; and, finally, my invention consists in combining with a grinding or reducing surface ways or guides for guiding the holding-plate, as a means of reducing caps to a uniform length and properly facing them.

In the accompanying drawings, *a* represents the holding-plate, made of metal and equal in thickness to or a little less than the intended length of the caps. This plate is pierced with numerous holes, *b*, at equal distances apart and of the diameter of the caps, so that they shall fit therein so tight as to be maintained in their position when inserted. This plate is fitted to a recess, *c*, in a metal stock, *d*, so that the face of the two may be on the same plane, and so that one holding-plate may be readily taken out and another inserted, that the same stock may answer for any number of plates to suit all sizes of caps. The best mode is to have the sides of the recess *c* and the corresponding edges of the plate slightly dovetailed. The stock *d*, thus adapted to receive the holding-plates, is provided with a handle, *e*, and is in turn adapted to slide between ways *f f* on the frame *g* of the grinding-machine, so that the operative, after inserting the stock between the ways, can move it back and forth in a straight line over the face of a grinding-wheel, *h*, which is set at a slight inclination to the face of the stock and holding-plate to grind off the caps. The ways *f f* are connected together by end pieces, *i i*, with holes to fit onto journals on the ends of vertical screws *j j*, fitted to turn in suitable nuts on the frame *g*, so that by turning these screws the ways can be elevated or depressed relatively to the face of the grinding-wheel, and any desired inclination given. The grinding-wheel is mounted on the upper end of a vertical shaft, *k*, provided with a pulley, *l*, to receive a belt, *m*, from a pulley on the driving-shaft *n* to rotate the wheel. The shaft has long journals, so that it can slide endwise in the boxes *o o*, and its lower or pivot end rests in a step made in the upper end of a vertical rod adapted to slide in a socket, *p*. Its upper end is tapped and passed through a nut, *q*, that rests on the top of the socket. The periphery of this nut is cogged to engage the

thread of a worm, *r*, on a horizontal shaft, *s*, which carries a ratchet-wheel, *t*, provided with a holding-pawl, *u*, and actuated by a hand, *v*, on a spring-lever, *w*, the end of which is operated by a cam, *x*, on a shaft, *y*, which carries a large pulley, *z*, that receives a belt, *a'*, from a pulley, *b'*, on the driving-shaft. From this it will be seen that at every rotation of the shaft *y*, which turns slowly, the cam lifts the lever of the ratchet-hand to turn the ratchet-wheel, which imparts a slight motion through the worm to the nut *q* to elevate the step which supports the shaft of the grinding-wheel. In this way the surface is elevated slowly and in proportion to the wearing away of the grinding-surface, so that when the ways have once been set to a given length of caps the machine will continue to grind them to the same length, notwithstanding the wear of the grinding-surface. The motion to be given to the nut must of course be adapted to the texture of the grinding-surface. If, however, the grinding-surface be made of metal, instead of stone, the mechanism for gradually elevating the shaft should be dispensed with, or its operation suspended, by simply throwing off the belt.

Instead of setting the ways at a slight inclination, the grinding-surface can be slightly beveled toward the periphery to rough off the caps and give the finish by the inner or flat part of the surface, and when so made the bevel part can be made coarse to cut away rapidly, and the inner or flat part fine to give a smooth finish.

For the purpose of inserting the caps in the holes of the holding-plate, I take a second plate, *c'*, called a "guide-plate," of the same size, and provided with dowel-pins *d'*, to fit corresponding holes in the holding-plate. This plate is formed with corresponding holes, *e'*, but larger than the holes in the holding-plate.

In putting the two plates together I interpose a thin metal plate, *f'*, and when thus connected a number of caps are thrown over the surface of the guide-plate and moved about over the surface until they drop into the holes. The closed ends of the caps being smallest and slightly rounded, they will generally fall into the holes; but if by accident any should drop in with the open end downward they can be readily picked out. I then take a third plate, *g'*, of the same size, with dowel-holes, and provided with a series of pins or punches, *h'*, corresponding in position with the holes in the plates, and this I apply, inserting one punch or pin in each cap. I then withdraw the plate *f'* and force down this plate until its surface is in contact, or nearly so, with the surface of the second plate, and thus I insure the forcing of all the caps to the required depth in the holes of the holding-plate. The punch-plate and the guide-plate are then removed and the holding-plate inserted in the stock to be applied to the grinding or facing machine.

It is to be understood that the thickness of the several plates and the size of the holes and punches must be adapted to the size of caps to be operated on, there being one set of such plates for each size of caps.

The area of the plates and the number of holes in each can be varied at the pleasure of the constructer and to the size of grinding-surface.

I claim—

1. In combination with the holding-plate, substantially as specified, the employment of the guide-plate, as specified, to facilitate the insertion of the caps into the holes of the holding-plate, as set forth.

2. In combination, substantially as specified, the employment of the plate with the series of punches or pins, as specified, for the purpose of forcing all the caps to the required depth in the holding-plate.

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Witnesses:
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