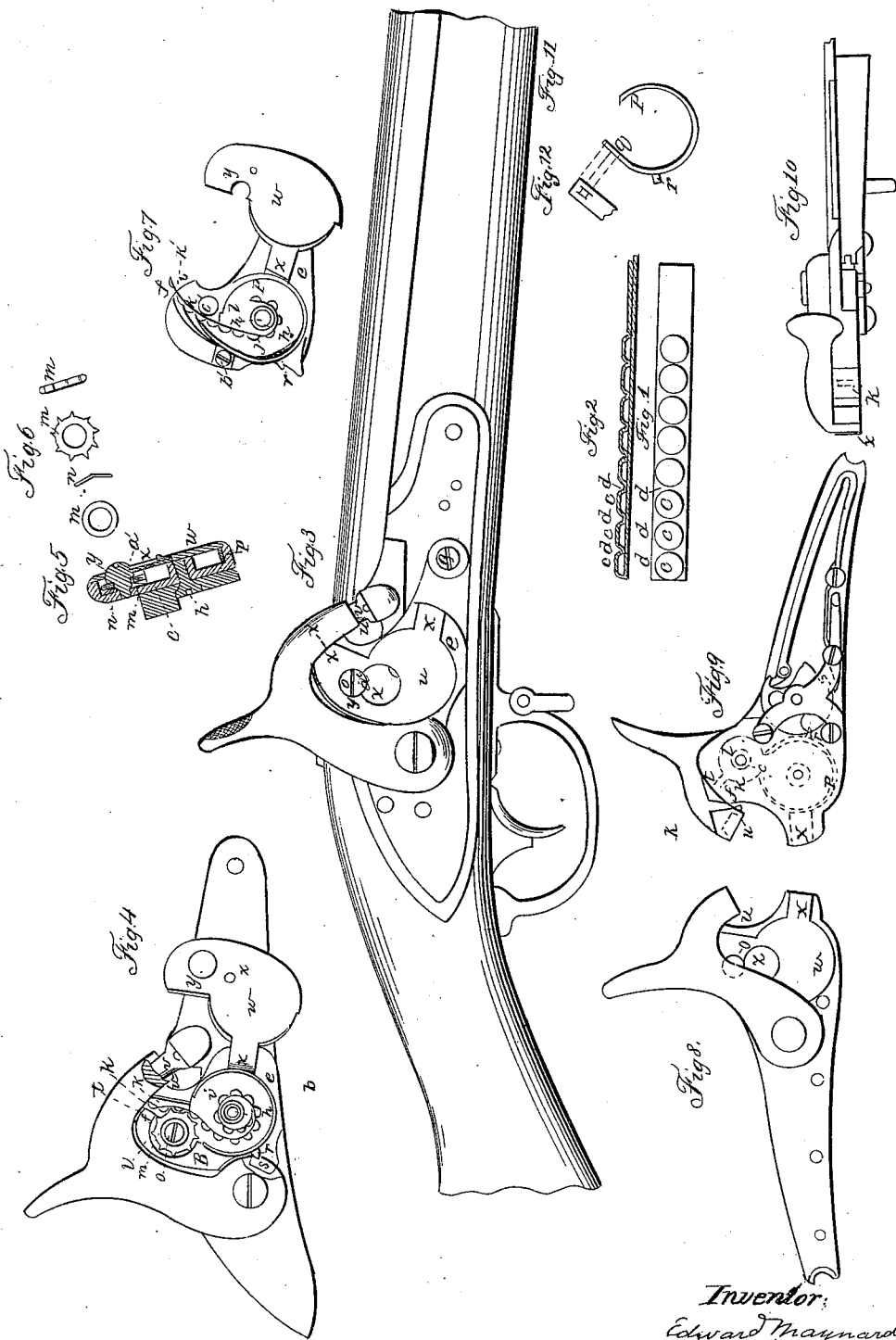


E. MAYNARD.

Priming-Cock.

No 4,208.

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Inventor:
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UNITED STATES PATENT OFFICE.

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PERCUSSION-PRIMER AND GUN-LOCK THEREFOR.

Specification of Letters Patent No. 4,208, dated September 22, 1845; Antedated March 22, 1845.

To all whom it may concern:

Be it known that I, EDWARD MAYNARD, of the city of Washington, District of Columbia, have invented a new method of making percussion-primers, connected together in a series, but having the fulminating or percussion matter of each primer separated from the others in the series, and also a method of applying the same to all kinds of firearms, and that the following is a full, clear, and exact description of the principle, manner of making, and modes of using the same.

The nature of the first part of my invention consists in so making primers of fulminating mixtures, or such compounds as ignite by percussion, as to have a series of any number of primers in a continuous strip, but each separated from the others, to prevent the communication of fire from the one exploded to the others, by means of which a magazine of such primers can be carried in connection with the gun, or other firearm, and each primer exploded without any danger of communicating the fire to the rest in the series. And, the second part of my invention consists, in connecting with all kinds of fire arms such as cannon, guns, pistols, &c., a magazine for containing primers made in accordance with the first part of my invention from which the primers, may or can be fed forward to the place where they are to be cut off preparatory to being exploded, or directly to the place of explosion, this magazine being so connected with the hammer or other moving part of the lock as to push forward the primer by the movement of the lock.

Having thus described the chief characteristics I will, to enable any one skilled in the art to make and use my invention, minutely describe its various parts, essential modifications, and manner of using the same, making reference to the accompanying drawings that make part of this specification, in which—

Figure 1, is a plan of the series of primers, Fig. 2, a longitudinal section of the same showing one manner of making them with the separations between the primers, Fig. 3, an outside representation of the flint lock altered to receive my improved magazine and primers, Fig. 4, the same with the magazine opened to show the location of the series of primers, and the manner of feeding by

means of the cock or hammer. Fig. 5, a transverse section of the same taken at the line A—B, of Fig. 4. Fig. 6, a plan and section of the wheel of cogs which moves forward the primers, and a spring washer placed under it. Fig. 7, a modification of the magazine in which the primers are moved forward without the wheel. And Figs. 8, 9 and 10 outside, inside and top views of a back action lock in which the magazine is let into the lock plate and the primers moved out by means of the tumbler.

In all these figures the same letters indicate corresponding parts.

The mode of making the series of primers, under the first part of my invention, which I prefer, is that represented in the accompanying drawings, and is as follows, viz: A strip of paper, either in a moist or dry state is, by means of appropriate instruments and by the application of pressure, forced out into cup forms, as at *c, c, c*, the spaces *d*, between the cups being sufficient to prevent the communication of fire from one to the other. These cups are filled with the percussion or fulminating mixture, even with the original surface of the strip, it is then coated with a varnish of gum lack dissolved in alcohol, and covered with a thin strip of paper, and the whole is then varnished over, which renders it impervious to moisture. It is important that the two strips of paper be made to adhere in the spaces between the several cups containing the fulminating compound, and that none of the mixture be deposited or left on the spaces or divisions. The method which I have pursued in making these primers is to form the cups, in the paper by forcing in the mixture, the one operation being sufficient instead of two, and it will be evident that this can be done by placing the strip of paper on a bed, having a counter sink of the form intended to be given to the cup and laying the paper thereon, and the mixture forced into it by a piston working in a hole in a plate placed above the paper to keep it in place and to hold the mixture, and form a guide for the piston. The fulminating mixture which I employ is composed of 100 parts of fulminating mercury and 60 of gun powder, but any of the fulminating or percussion mixtures may be substituted as it makes no part of my invention.

I have above stated that strips of paper

are used to form the shell of the series of primers, but other substances may be substituted such as cloth, parchment and many other substances not necessary to enumerate, as I deem good paper the best and cheapest. And although I have described what I deem to be the best mode of making these primers, I by no means confine myself to it, but may vary it as for instance the fulminating mixture may be put on the strip of paper without the cups and the covering be made to conform thereto. Or the mixture may be made into a paste, the primers modeled and then secured at proper distances apart on a strip of paper or other substance by glue or other mastic and the whole coated with varnish. Or the primers may be separated from each other by some incombustible substance. Or the mixture may be put in a soft metal tube, and the separation be formed by flattening the tube at proper intervals to interpose between each two primers the contact of the inner surface of the tube. In short the principle of making primers in a connected strip and each separated from the others may be applied in a variety of ways and yet retain this essential character which renders it more safe and convenient than any other mode of making primers, with which I am acquainted. And although I deem it important that the separation between the primers be a depression, as affording facilities in feeding or moving them out preparatory to explosion as will be fully explained hereafter, yet the great end of safety against communicating fire from one to another of the series, and protection against moisture fully attained. Under the second part of my invention, as indicated above, the primers are coiled, and put in a magazine *e*, and pushed through an aperture *f*, to be cut off by a cutter on the hammer preparatory to explosion.

In Figs. 3, 4 and 5 this magazine is represented as applied to the common flint lock, which, when thus altered, I denominate the magazine percussion lock. The magazine is represented as attached to the lock plate by two screws, *g*, and *h*, in manner fully represented in the figures. The cavity *i*, for the reception of the coil of primers, *j*, has a channel, *k*, leading therefrom for the delivery of the primers and an enlargement, *l*, in which turns a feeding wheel, *m*, with cogs in its periphery so formed and at such distances apart as to fit in the spaces between the primers in the series, which are thus held between this feeding wheel and the under part of the channel, *k*. This feeding wheel turns on a cylindrical pin projecting from the under plate of the magazine and rests on a spring washer, *n*, (represented in plan and profile at Fig. 6) which is bent to give it the requisite elasticity, to press the wheel up against the head of a screw, *o*, that fits ac-

curately in a hole in the cylindrical pin, and tapped into the lower plate. The object of this spring washer is to prevent the return of the wheel by the return action of the mechanism which operates it, and which consists of a hoop spring *p*, that fits accurately and without much binding in the case or magazine, *e*. This spring hoop is represented in section at Figs. 11 and 12, the end, *q*, which acts against the teeth of the feeding wheel is for a short distance tangential to the circle, and that part of the periphery of the magazine corresponding thereto, is of the same form as it will be seen on inspection of the drawings, that if these two parts were in the direction of the circle the end *q*, in pushing around the feeding wheel would escape from the cog, which is effectually prevented by giving them the direction of a tangent—this is not however indispensably necessary. The mortise in the end, *g*, shown in Fig. 12, is to receive the tooth of the feeding wheel next to the one acted upon by the end of the hoop spring for the reason given in describing the necessity of making this end tangential.

The spring hoop receives the movement which it transmits to the feeding wheel from the cock or hammer by a projection, *r*, that lies in a mortise, *s*, in the body of the cock or hammer, as fully shown at Fig. 4 in which a part of the cock is represented as cut off to exhibit this connection. The mortise, *s*, in the cock is of such length as not to act on the projection, *r*, in bringing it to the half cock, and then from the half to the full cock, the spring hoop is carried around sufficiently to turn the feeding wheel the distance of one cog, and thus feed out one primer. There is an opening made in the side of the magazine of sufficient length for the play of the projection, *r*.

The outer face, *t*, of the magazine is a segment of a circle of which the axis of the hammer is the center, and the under and lower faces of the channel *k*, should be such that the upper part of the strip of primers in being forced out by the feeding wheel will strike the upper face and by its elasticity cause the under side to bear on the lower face, *k'*, which is made sharp to form a bed cutter, in conjunction with which the knife edge, *a*, of the hammer acts to constitute shears by which the primer is severed from the strip and carried down by the motion of the hammer to be exploded on the nipple or cone, *v*, made in the usual form, and which is therefore in a condition to receive the common percussion cap, should it be desired to make use of this as a percussion cap lock. That portion of the lower face, *k'*, of the channel on which the strip of primers lies preparatory to being cut off should be so inclined as to deliver the primers in the direction of the dotted line *x-x*

of Fig. 3 or nearly so to insure the carrying of the primer after it is severed from the strip to the cone or nipple.

The screw, *h*, which aids in fastening the magazine to the lock plate is tapped into a cylindrical projection within the magazine around which the strip of primers is coiled. The magazine is closed by a cap *w*, hinged at *x*, and pierced at *y*, to shut over the head of the screw *s*, and is latched down by a turning latch plate, *z*, riveted to the cap, the circle of the latch plate, and that of the screw head intersecting each other, the former being cut out as shown at *a'*, to pass the head of the screw so that it may be turned into a notch cut in the head of the screw to latch and secure the cap, the latch being provided with a thumb or nail piece by which to turn it.

At Fig. 7, will be seen a modification of this magazine separate from the lock to show the mode of feeding without the feeding wheel, by extending the end *q*, of the hoop spring *p*, some distance into the channel *k*, (which is altered in form as represented in the drawing) and so curved as to fit into the recesses between the primers to feed them forward instead of acting on the teeth of the feeding wheel, as in the first example, and to prevent the back movement of the feeding hoop spring from drawing back the primers, they are retained by a spring *b'*, placed above them and attached to the upper face of the channel, *k*, and as the screw, *o*, in this modification is not employed, a projection *c'*, is substituted to receive the edge of the rotating latch for securing the cap.

Another modification is represented in Figs. 8, 9, and 10, in which the magazine is let into the lock plate, and the projection, *r*, of the hoop spring is embraced and operated by the tumbler, the same amount of play being given to admit of bringing the ham-

mer to the half cock without moving the hoop spring and primer as in the other example. The location of the magazine, hoop spring, feeding wheel, &c., are all indicated in Fig. 9, by dotted lines.

From the foregoing the manner of applying the first and second parts, of my invention to cannon, and pistols and other fire arms, and various modifications of locks will be obvious to all persons versed in the art of making fire arms, and it will also be evident that the first part of my invention may be applied without the second, and that the second part or magazine may be applied without connecting it with the lock, and that I have only given the above as examples of what I deem to be the most efficient modes of application; but these may be variously changed without affecting the principle or character of my invention as fully expressed above. And

Having thus fully explained the character of my invention, the essential modes of application, and the manner of making and using the same; what I claim as my invention and as distinguished from all other things before known, is—

1. Making primers of fulminating mixtures or such compounds as ignite by percussion in a continuous series, each primer, or any two, or greater number, being separated from the others by a substance which is non- or less combustible than the fulminating mixture by which one or more may be exploded without communicating fire to the others.

2. The mode herein described of moving and measuring out the primers by the movement of the lock, substantially as described.

EDWARD MAYNARD.

Witnesses:

E. OWEN,
WM. F. BAYLY.