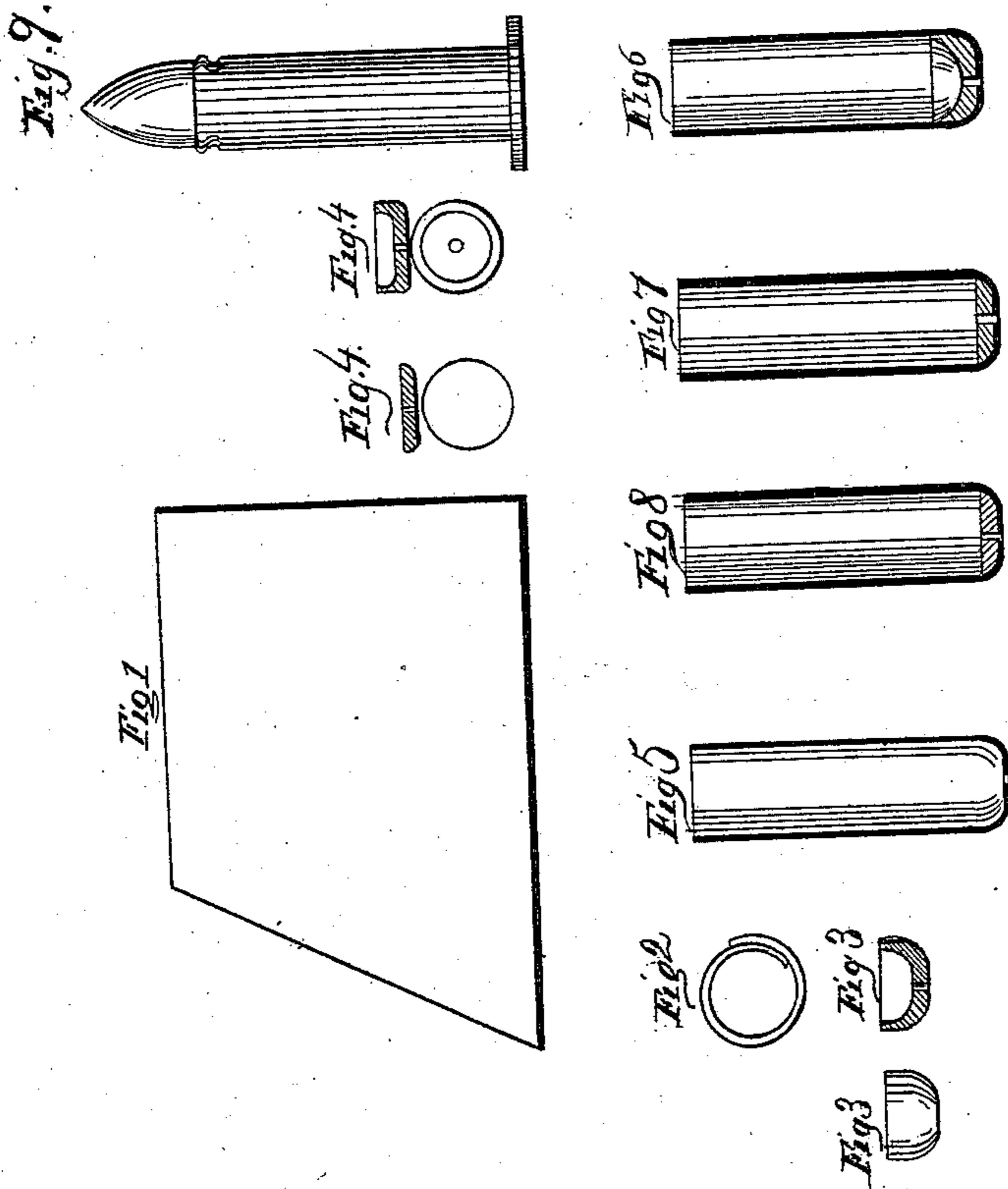


RODMAN & CRISPIN.

Cartridge.

Patented Dec 15, 1863.

No. 40,988.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN METALLIC CARTRIDGES.

*Specification forming part of Letters Patent No. 40,988, dated December 15, 1863.*

*To all whom it may concern :*

Be it known that we, THOMAS J. RODMAN, of the town of Watertown, county of Middlesex, in the State of Massachusetts, and SILAS CRISPIN, of the city, county, and State of New York, have invented certain new and useful Improvements in Metallic Cartridges, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 represents a piece of thin metal, which forms the walls and bottom of the cartridge-case. Fig. 2 represents a transverse section of the wrapped case. Figs. 3 and 3 bis represent, in section and elevation, a paper disk, made as hereinafter described. Fig. 4 represents a metallic disk and cup made in the usual manner. Fig. 5 represents a longitudinal section of the wrapped cartridge-case. Figs. 6, 7, and 8 represent longitudinal sections of the cartridge-case, combined in Fig. 6 with a paper cup or disk, in Fig. 7 with a metallic cup or disk, and in Fig. 8 with an elastic disk. Fig. 9 represents a modification, hereinafter described.

In all fire-arms constituting that class of breech-loaders which depend solely on the expansion of the cartridge-case to pack the opening incident to and inseparable from the moving-joint, and thus prevent the escape of the gases resulting from the explosion of the charge of powder, it has been the practice, prior to our invention, to use seamless cartridge-cases only, made in the form of a cup, of metal, rubber, or paper, and of a thickness varying with the character of the particular arm to which they were adapted.

The invention we desire to secure by the present patent consists of a metallic cartridge-case formed of thin-wrapped sheet metal, the metal being wrapped so as to extend around the circle at least beyond the point of the starting of the wrapped metal, so that the lap will permit the necessary expansion of the cartridge-case incident to the explosion, and still preserve the integrity of the metallic cartridge-case, which cartridge-case will thus pack the joint in the arm. This cartridge-case so

made can, if desired, be supported by an internal or external disk secured to its base. Its advantages are that it accurately packs the joint of the breech-loader, and forms a perfect check for the gases generated by the ignition of the powder, and can be removed with ease by the fingers after having been fired, and is extremely simple in its construction.

When it is desired to make cartridges, wrapped from thin sheet metal alone, for small-arms, by machinery adapted to the purpose, or otherwise cut from thin sheet-brass or other suitable metal, and of the proper width to make the cartridge as long as may be required for the arm in which it is to be used, sheets or strips of a trapezoidal or rectangular shape, and in length about three and a half, or more, diameters of the caliber of the bullet, are to be used, as shown in Fig. 1 of the drawings.

A cylindrical former, of either wood or iron, (the latter we deem preferable,) is now placed on one of the thin sheets of brass or other metal, and pressed and rolled until the thin metal is wrapped closely and completely around the former, the lower or open end of the wrapped metal projecting about one-sixth of a diameter of the former beyond its end, which in shape is made to match the base of the chamber of the arm for which the cartridge may be designed, while its gage must be such as to permit the finished cartridge to fit the chamber neatly. The wrapped thin metal is now crimped over the end of the former either by a choking-string, a crimping-tool, or the fingers. After thus compressing the thin metal tightly around the end of the former, the metal case, still on the former, is now placed in an iron, steel, or wooden die, and the former is struck a smart blow on its other end, and the base of the case receives the form of the die.

It is obvious that the case can be formed on a conical or pyramidal former, or one having any desired form of cross-section.

It is also apparent that the cartridge-case can be charged with powder and shot, as well as powder and ball, and thus form a shot-cartridge for breech-loading arms using this kind of ammunition.

A paper disk, like that shown in section by Fig. 3, or a metal disk or cup, like that shown in Figs. 4 and 4 bis, or an elastic disk may be inserted in the above-described cartridge-case, or a flanged disk of suitable metal may be attached to the outside of the base of either of them, (see Fig. 9,) either by solder or otherwise.

When an internal disk is to be used it may, after having been dipped in some adhesive substance, be inserted and forced to the bottom of the case, or the metal or paper disks or cups may be inserted before the case is crimped, and while yet on the former, when the crimping of the base will hold it in place, as shown in Figs. 6 and 7.

The external flanged disk is used to adapt our cartridge to those breech-loaders that now use a cupped flanged metal cartridge.

The paper disk, (shown in section and elevation by Figs. 3 and 3 bis,) is made as follows: Strong paper is moistened on one side with paste, gum, or some adhesive material, and the sheet so prepared is rolled up solidly until it becomes of the diameter of the former, on which the cartridge-case is wrapped. Cut the roll thus formed transversely into disks of the right thickness, then, by the application of pressure from either a press or punch, the disks, being placed in a proper-shaped die, are formed into cups of the form shown in section and elevation by Figs. 3 and 3 bis.

The metal disk or cup, like Figs. 4 and 4 bis, are made in the ordinary mode. An elastic disk may be cut by a punch from sheets of rubber or other suitable elastic material of the proper thickness, and all the disks may be centrally punched with an opening to admit the flame from the primer to explode the charge, before being inserted in or attached to the case, or afterward, as may be found most convenient. The finished cartridge, composed of the said case charged in the ordinary way,

will, when fired, expand by the uncoiling of the wrapped case, and be forced into direct and absolutely entire contact with the walls of the chamber of the gun, and the fibers or molecular particles of the metal will be forced into the crease or seam made at the junction of the parts of the breech-loader, and thus form a perfect gas-check.

After the discharge, the breech being opened, the case will be found not to adhere to its seat in the breech, but will lie loosely in position, and can be removed by the fingers almost without any resistance, for the coil of thin-wrapped metal will easily slip or yield to reduce the diameter of the now empty case.

It is manifest that this cartridge can be placed in the arm, where it is to be used, as rapidly as any other cartridge known; and it is equally manifest that no known metal cartridge can be removed with equal rapidity from the breech-loader.

It is obvious that to coat the cartridge case with any suitable varnish will render it water-proof.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The thin metal wrapped cartridge-case, made substantially in the manner described, and for the purpose set forth.

2. The forming of a wrapped thin-metal cartridge-case, combined with an internal or external strengthening disk or cup, whether this disk or cup is made of paper, metal, or an elastic material, substantially as above described.

In testimony whereof we have hereunto subscribed our names.

THOMAS J. RODMAN. [L. S.]  
SILAS CRISPIN. [L. S.]

Witnesses:

CHAS. E. FORMAN,  
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