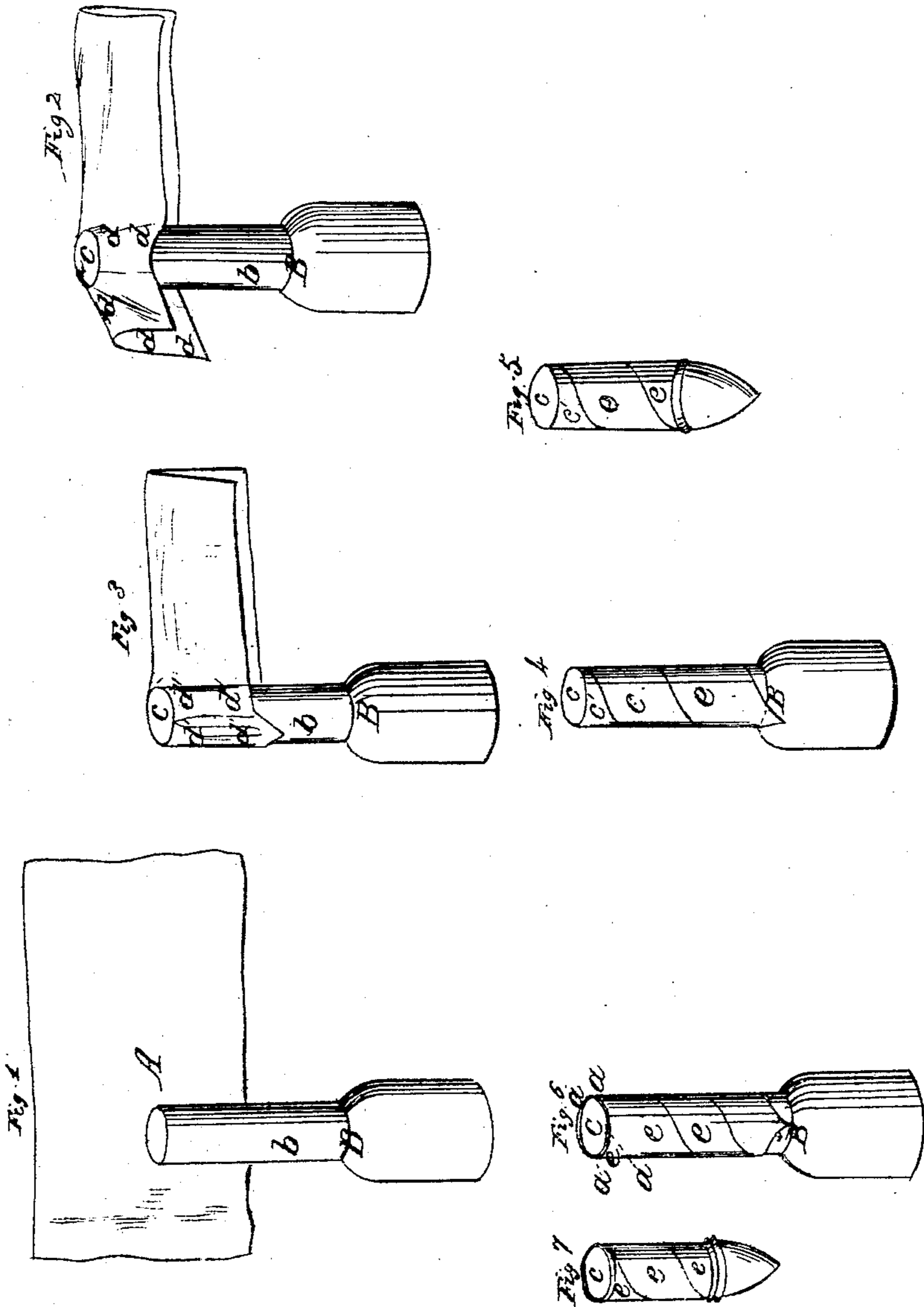


J. HOTCHKISS.

Cartridge.

No. 34,367.

Patented Feb 11, 1862.



Witnesses
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UNITED STATES PATENT OFFICE.

JULIUS HOTCHKISS, OF MIDDLETOWN, CONNECTICUT.

IMPROVEMENT IN SKIN CARTRIDGES.

Specification forming part of Letters Patent No. 34,367, dated February 11, 1862.

To all whom it may concern:

Be it known that I, JULIUS HOTCHKISS, of the city of Middletown, in the State of Connecticut, have invented a new and Improved Mode of Manufacturing or Forming Cartridges; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, like letters in the several figures indicating the same or analogous parts.

The object of my invention is to prepare a cartridge which, while it possesses the requisite strength to resist the wearing away to which it is ordinarily subjected, and be, in a great measure, impervious to water, will at the same time permit of the certain ignition of the powder inclosed by it by the contact of flame with its outer surface from burning, priming, or by the contact of a percussion spark, and will also be carried from the barrel of the gun in which it is used at the moment of its discharge, in case it is unconsumed, and which may be used either connected with a ball, as shown in the drawings, or be formed simply to hold the powder.

For this purpose I use either mutton or hog's gut, prepared in the usual way with a view of its application to the purposes of a cartridge, this material being of such a character as to always crisp or shrivel under the action of heat, so that when a cartridge composed of it is exploded in a gun that portion of it which remains unconsumed will form, as it were, an irregular corrugated wad, which, by the force of the explosion, will be carried from the gun, instead of being converted into a charred residuum, adhering to and fouling its interior, as is usually the case with the common paper cartridge.

An objection, however, has heretofore existed to the use of the material named from the fact that the fibers of the gut, in the direction of its width, or at right angles to its length, are so fragile and tender as to be easily separated, and hence the cartridges now made up from this material are liable by the incidents of use to split lengthwise and waste the powder unless they are wound from end to end, either by thread or ligatures of india-rubber, or bands of other material foreign to the gut itself; whereas the gut is capable of re-

sisting a very considerable strain if at right angles to its width, or in the direction of its length, a resistance amply sufficient to meet the requirements of its use for the purpose named.

The nature of my invention consists in so manipulating and applying a sheet or fillet of gut in the act of forming a cartridge as to utilize its strength in both the directions stated, thus dispensing with all subsequent winding by thread or other material, as now commonly practiced.

In the drawings, A, Figure 1, represents a fillet of gut cut in proper length to make a cartridge, the gut having been cut open lengthwise, and laid flat, as we will suppose, in the right hand of the operator, a former, B, in the left hand of the operator being placed upon it, as represented in the said figure. The fillet A is then doubled into the condition represented in Fig. 2, a portion, *c*, adhering to the top of the former, and becoming measurably set almost at the instant of its contact therewith. That portion *d*, in said Fig. 2, which partially surrounds, and is in contact with, the former, is then, by the fingers of the operator, pressed down upon the former into the condition as represented at *d'* in Fig. 3. The doubled portions of the fillet, which extend out to the right hand of the former, as shown in Figs. 2 and 3, are then pressed closely together, and wound spirally around the parts indicated at *d'* in Fig. 3, and also down upon and around the stem *b* of the former, either into the condition as shown in Fig. 4 or that shown in Fig. 6, the only difference between the condition of the spiral winding of the fillet shown by the last-named figure being that in Fig. 4 a single thickness of the gut is left at *c* and *c'*, whereas in Fig. 6 the single thickness is left only at *c*, the spiral winding in the latter case commencing after the said doubled portions of the gut have been wound entirely around the upper edge of the former, as indicated at *a* in the last-mentioned figure. Fig. 5 shows my cartridge complete and attached to an elongated ball, and made after the spiral winding, as indicated at Fig. 4, the parts *c* and *c'* being of a single thickness, and the parts *e* of more than one thickness of the gut or fillet. Fig. 7 shows my cartridge complete, with a single thickness of the gut at *c*, and of

more than one thickness elsewhere, as at *e*, the same having been formed or manipulated under the conditions as represented in Fig. 6.

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

In making a cartridge, so disposing the fillet or gut of which it is composed that the

fibers of one portion of the gut shall transversely or spirally cross the fibers of another portion of the gut, substantially as described.

JULIUS HOTCHKISS.

Witnesses:

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