

STEPHEN W. WOOD.

Improvement in Machines for Tapering Cartridge-Shells.

No. 126,610.

Patented May 7, 1872.

Fig. 1.

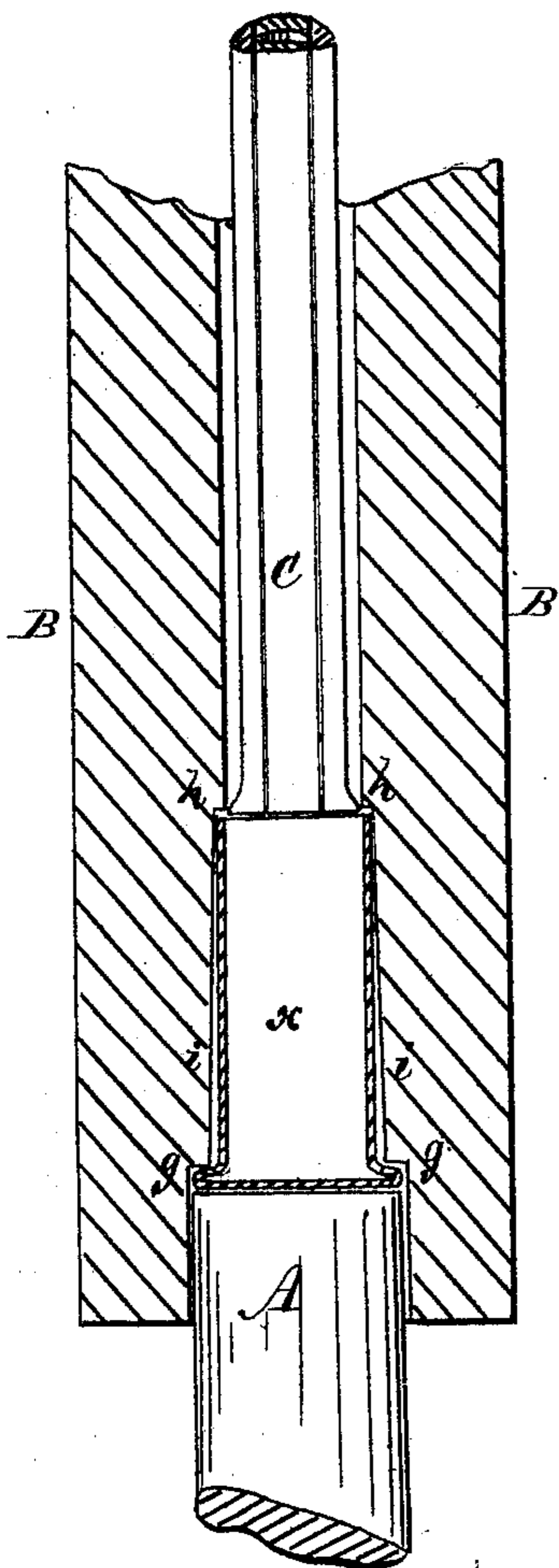


Fig. 2.

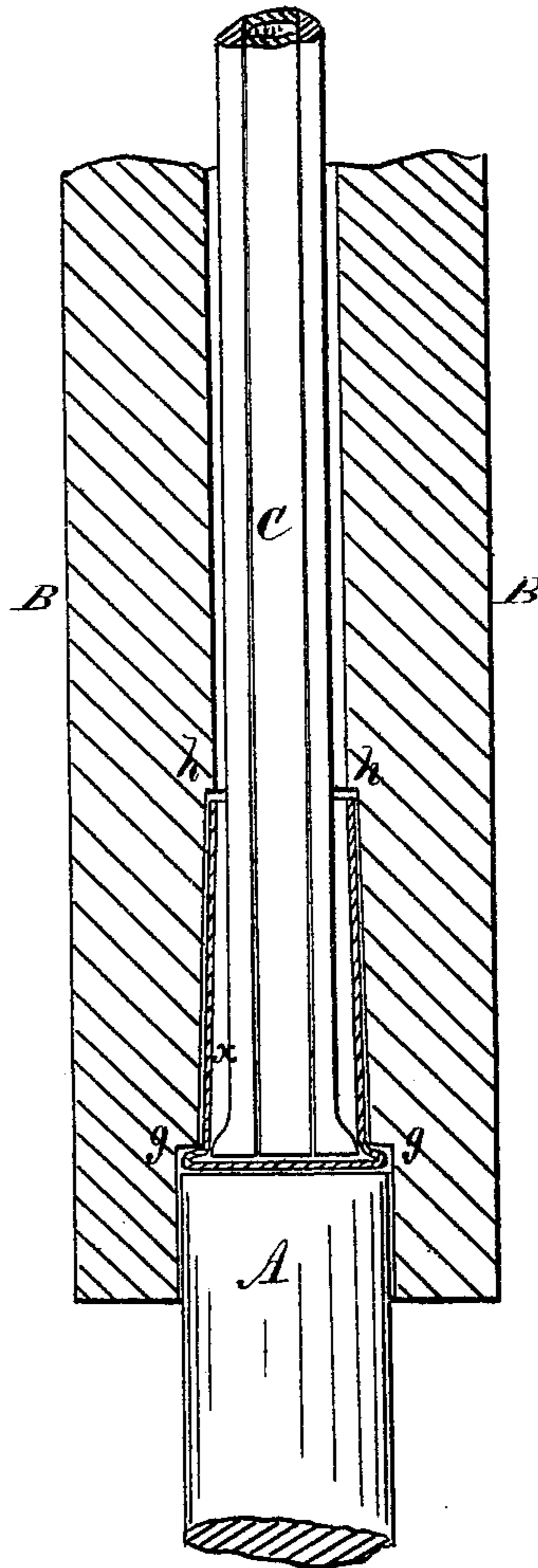
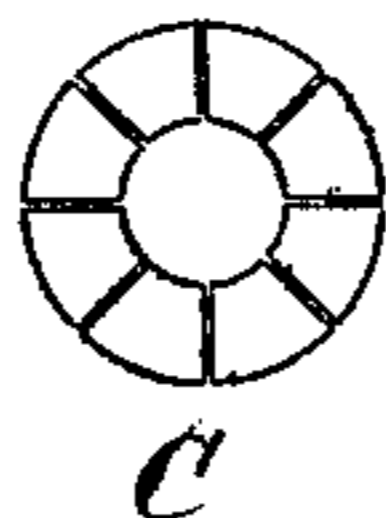


Fig. 3.



Witnesses.
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IMPROVEMENT IN MACHINES FOR TAPERING CARTRIDGE-SHELLS.

Specification forming part of Letters Patent No. 126,610, dated May 7, 1872.

To all whom it may concern:

Be it known that I, STEPHEN W. WOOD, of Cornwall, county of Orange, and State of New York, have invented a new Machine for Tapering Metallic Cartridge-Shells; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing making part of this specification—

Figure 1 being a central vertical or longitudinal section of the principal parts of the machine, showing their relative positions in one stage of the operation; Fig. 2, a corresponding section, showing the relative positions of the parts in another stage of the operation; Fig. 3, a view of the lower or inner end of the expanding tool used in the machine.

Like letters designate corresponding parts in all of the figures.

The tapering of the shells is effected by means of an expanding-tool passed longitudinally along the inner surface thereof, and thereby enlarging their periphery outward against a surrounding die, the inner surface of which has just the size and taper form required for the exterior surface of the shells.

The drawing represents the essential parts of the machine, the movements of which to effect the tapering are produced by any suitable and known means. The parts represented are: A seat or support, A, on which the cartridge-shells are successively placed for tapering; the shaping die B; and the expanding-tool C.

The shells are successively placed on the seat or support A, and then, by a suitable movement thereof, each shell H is carried up into the die B; or the die is brought down over the shells till the flange of the shell reaches a shoulder, *g*, of the die. The inner surface *i* of the die surrounding the shell is just the size and taper required for the outer surface

of the tapered shell. The expanding-tool C is introduced concentrically into the die above the open end of shell, its position before commencing the operation of tapering being indicated in Fig. 1. It is then forced down into the shell to the base thereof, as shown in Fig. 2, its expansive force being sufficient to enlarge the shell as fast as it enters the same, so as to shape the periphery thereof against the taper surface *i* of the die. The expanding-tool is then withdrawn, being again contracted by the action of the inner tapered surface of the shell thereon as it is drawn out. Then the shell is removed from the machine, and the succeeding shell is introduced and submitted to the same operation. In order to render the tool C expansible and contractible, the most, if not the only, practicable construction is to divide it longitudinally and radially into sections, as shown most clearly in Fig. 3, it being represented as divided into eight sections. And its force of expansibility is suitably produced by making the sections elastic and spring radially outward with sufficient force to expand the shell. In order to act efficiently on the shell, a projecting lip, *b*, is formed on the lower end of the tool, as shown in the drawing. It is this lip which comes in contact with the shell and produces the expansion thereof.

The position of the parts of the machine is not necessarily as represented, but it may be longitudinal, oblique, or inversely vertical.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the expanding-tool C, and die B, and anvil A, constructed and operating substantially as and for the purpose herein specified.

STEPHEN W. WOOD.

Witnesses:

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