

A. A. Stone,

Die for Forming Shuttle-Tips.

N^o 99,027.

Patented Jan. 18. 1870.

Fig: 1

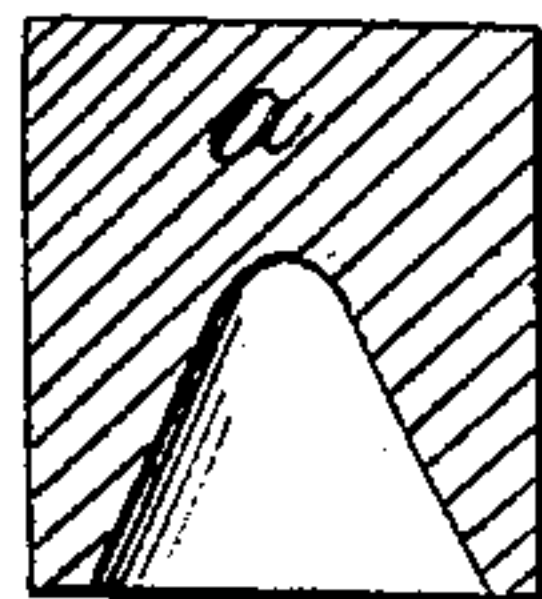
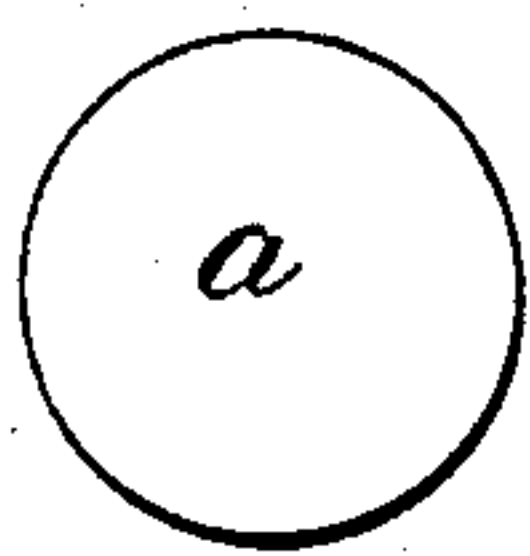


Fig: 2.

Fig: 3.

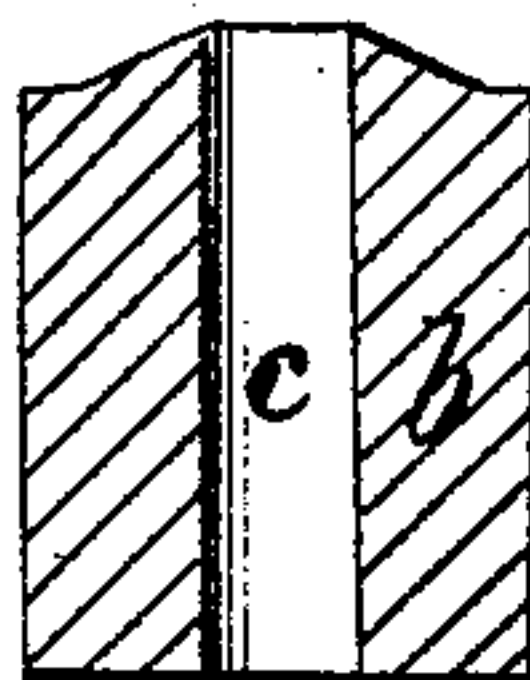


Fig: 4.

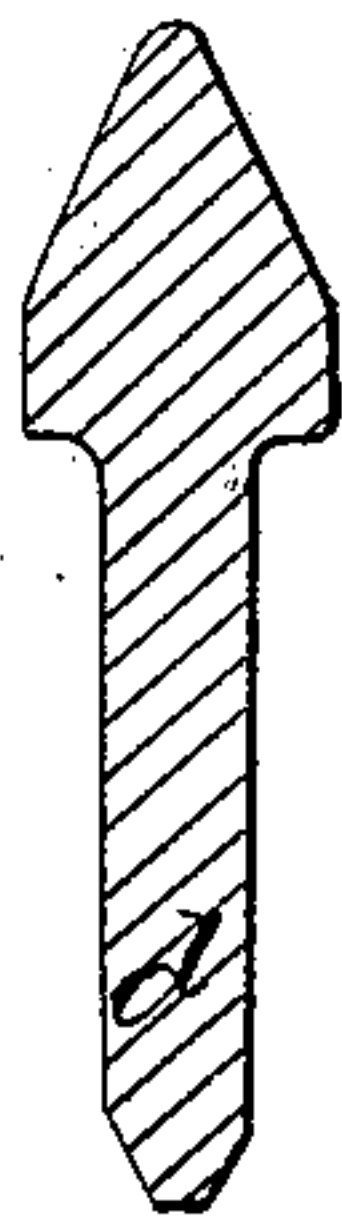


Fig: 5.

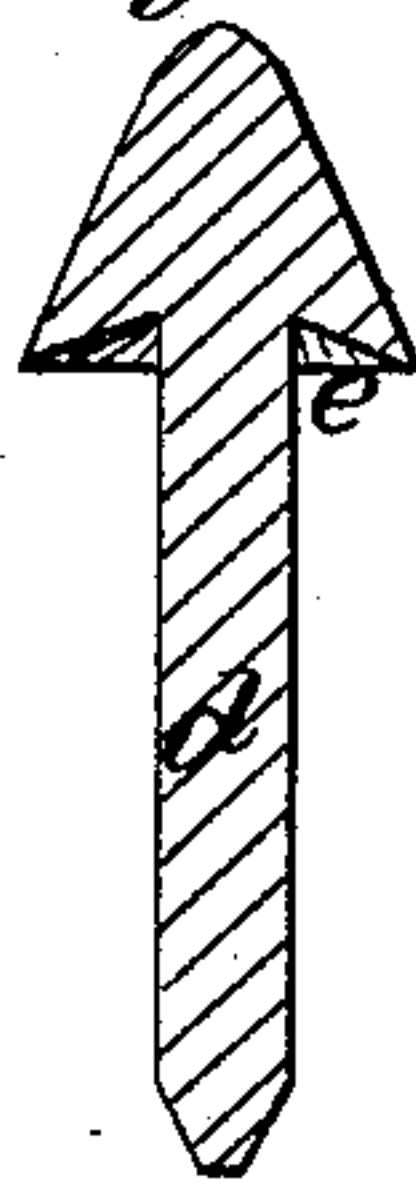
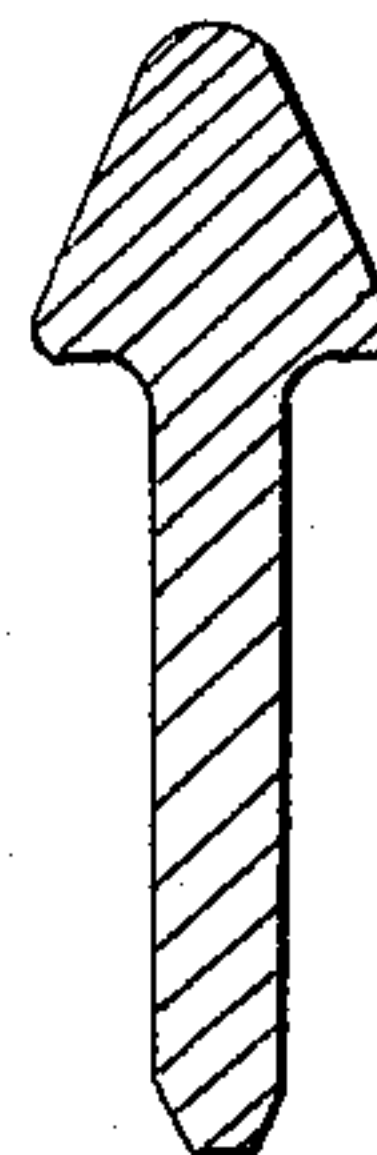


Fig: 6.



Witnesses;
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ALSON A. STONE, OF SHIRLEY, MASSACHUSETTS.

Letters Patent No. 99,027, dated January 18, 1870.

IMPROVED DIE FOR FORMING SHUTTLE-TIPS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ALSON A. STONE, of Shirley, in the county of Middlesex, and State of Massachusetts, have invented new and useful Improvements in Machine for Making Shuttle-Tips; 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.

The nature of my invention consists in providing a die, to be operated in a drop or tilt-hammer, its form and capacity being such, that metal shuttle-tips may be perfectly formed and finished, with a concave base, at one operation.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 represents a plan of my improved die.

Figures 2 and 3 represent a vertical section of the same.

Figure 4 represents a vertical section of an unfinished tip.

Figure 5 represents a vertical section of a finished tip, with concave base.

Figure 6 represents a vertical section of a hand-finished tip, without concave base.

Similar letters, in the different figures, indicate corresponding parts.

In the construction of my improved device, the die is formed in two parts—the cup *a*, and base *b*.

The base *b* of the die is provided with a hole, *c*, which corresponds in size with the shank *d* of the tip, the top part of this base *b* being formed convex.

When thus constructed, the die is placed in the drop or tilt-hammer, the cup part *a* being on top of the base *b*.

The unfinished tip, as shown in fig. 4 of the drawings, is then heated, as required, to a "cherry red," and placed in position in the base *b*.

The cup *a* is then brought in contact with the top of the same, by operating the drop or tilt-hammer, which compresses the same into the desired shape, as shown in fig. 5 of the drawings, and also, by the same operation, providing it with a concave base, *e*.

The common method of making shuttle-tips has been to forge and work the same in shape by hand, which leaves them in an unfinished shape, as shown in fig. 6 of the drawings; after which they would be finished, the concave base *e* and point of tip by being turned true and in shape in a lathe, which, by their peculiar form and shape, renders them extremely difficult to be handled and finished, even at a slow rate; while, by my improved device, after the tip leaves the die, they being formed by compression, the only finish required is to polish the outside surface of the tip, as they are formed as true and perfect as the die itself, and, by this process, can be compressed into shape as fast as they can be handled by the operator.

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

The construction and combination of the dies *a* and *b*, for forming shuttle-tips, as described, said dies being of the form and capacity as described.

Witnesses: ALSON A. STONE.

JOHN E. CHENEY,
GEO. E. PEVEY.