

J. A. Metcalf.
Shuttle.

N^o 79,490.

Patented Jun. 30, 1868.

Fig. 1.

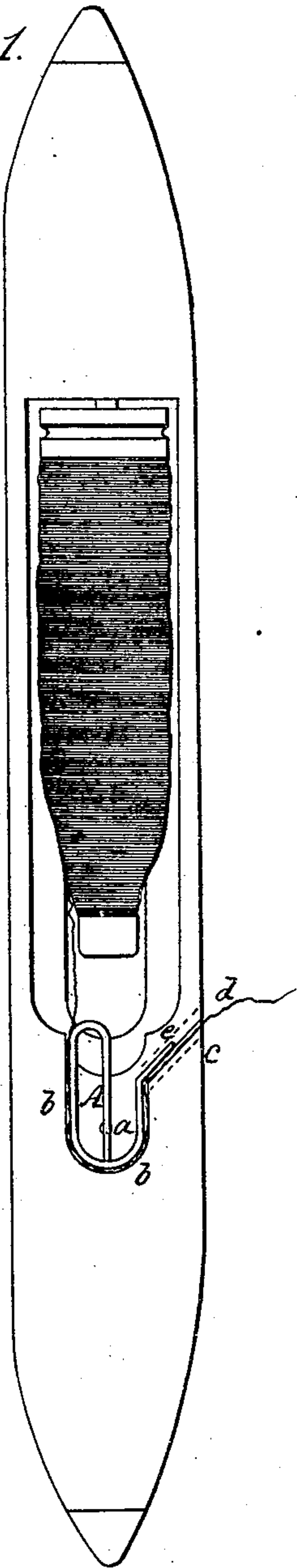


Fig. 2.

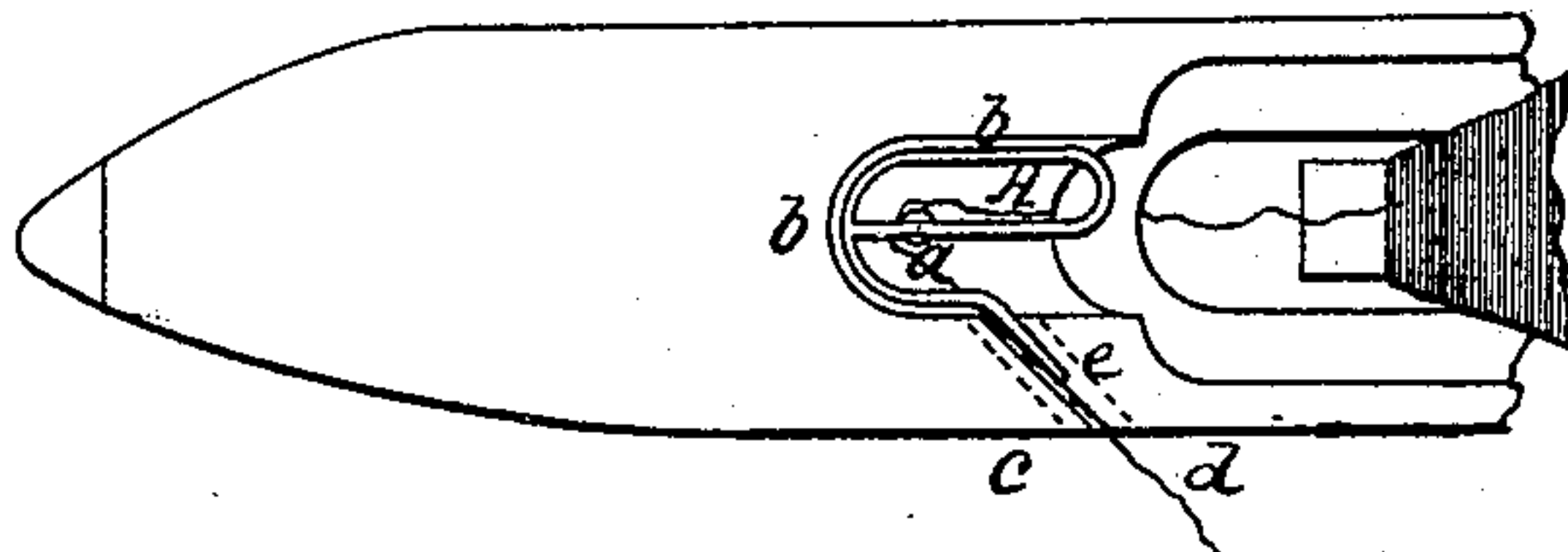


Fig. 3.

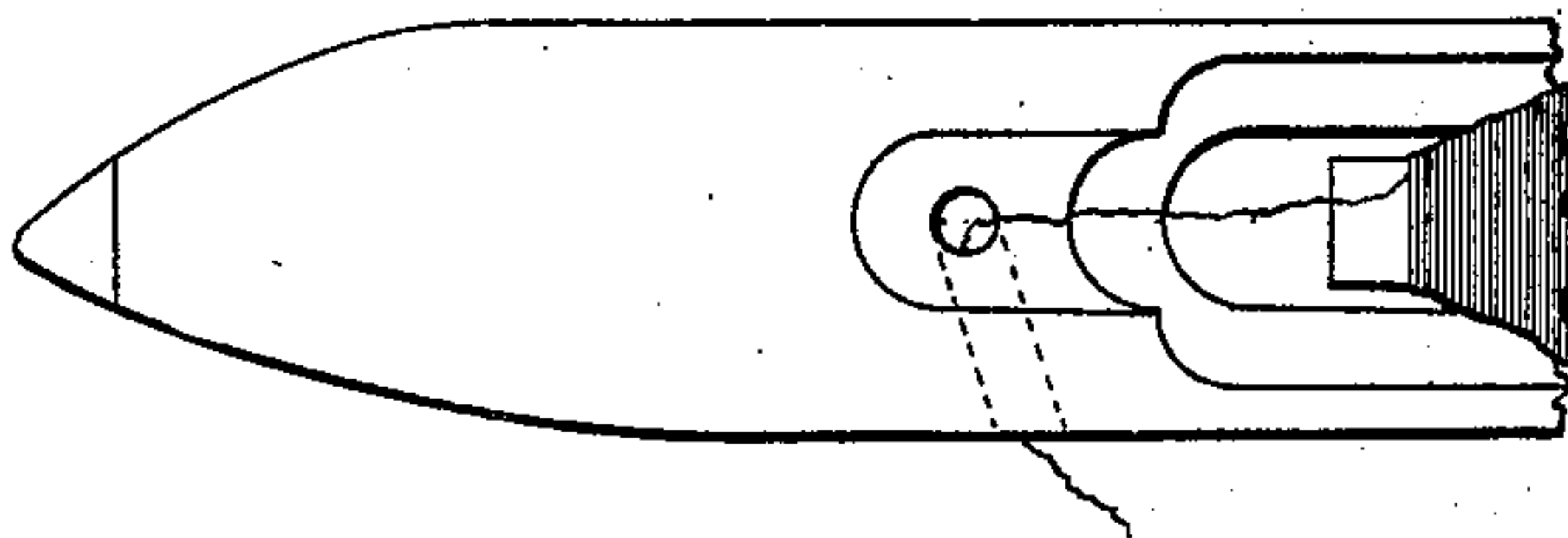
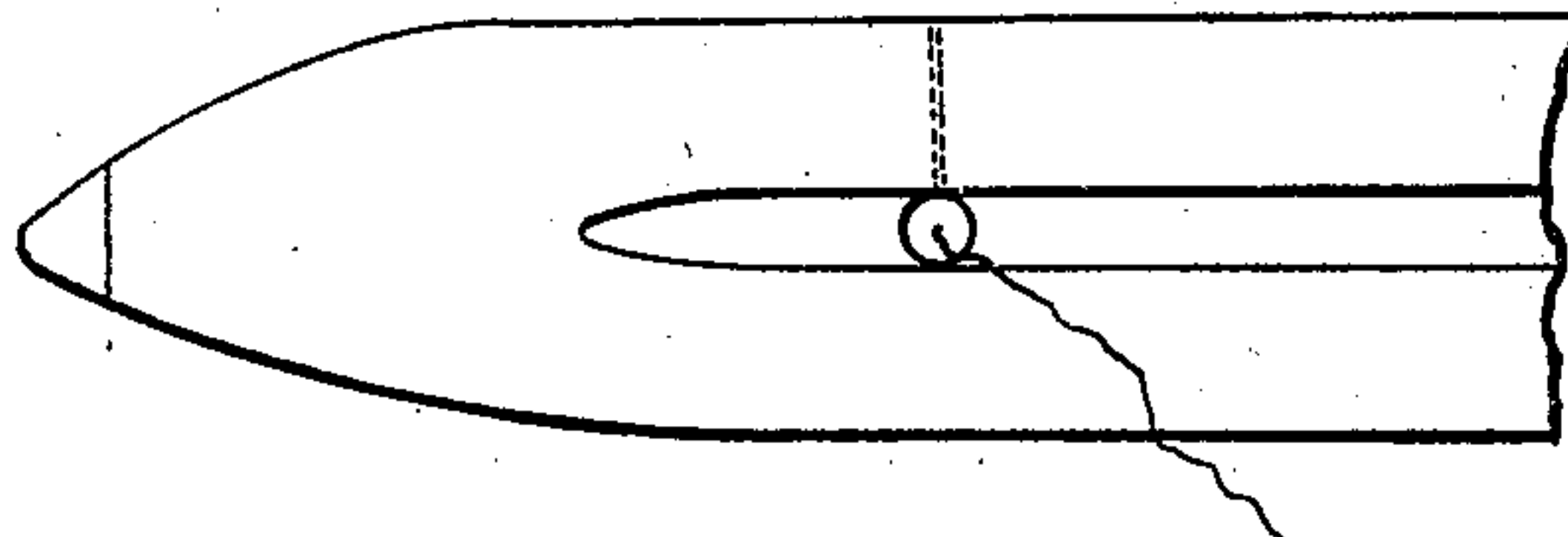


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES A. METCALF, OF LAWRENCE, MASSACHUSETTS.

IMPROVEMENT IN SHUTTLES.

Specification forming part of Letters Patent No. 79,490, dated June 30, 1868.

To all whom it may concern:

Be it known that I, JAMES A. METCALF, of Lawrence, county of Essex, and State of Massachusetts, have invented an Improvement in Shuttles for Looms; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification is a description of my invention sufficient to enable those skilled in the art to practice it.

The object of this invention is to provide a simple and efficient means for rapidly "threading" a loom-shuttle.

It is well known to power-loom weavers that an attendant having in charge the usual number of four looms is obliged very frequently, sometimes as often as once a minute, to substitute a full for an empty bobbin, and that every time this is done the thread of the full bobbin must be drawn or in some way passed through the "eye" of the shuttle before the latter is introduced into the loom.

It is found in practice that the attendants (who are generally females and frequently not of strong constitutions) almost universally have adopted the habit of applying the mouth to the eye of the shuttle and then drawing the end of the thread through the eye from the inside to outside of the bobbin by suction. This act of so sucking the thread through, so constantly and frequently repeated, many hundred times every day, is of itself hurtful; but, as the air of the factory is, of necessity, filled with myriads of fine particles of floating fiber, in addition to other dust and impurities, all of which the operators must breathe in their ordinary respiration, it is of great importance that some means for threading the shuttle be devised which shall not compel them to take into their lungs this large additional quantity of deleterious and health-destroying matter. The means provided for this purpose, in order to be promptly and spontaneously adopted to supplant a practice so very general in the mills, needs to commend itself to the operative as one equally simple, readily learned, and not productive of delays. Such an improvement I claim to have made in the shuttle, and which consists in placing within the cavity at the delivery end of the shuttle an upright guide-wire, so shaped as to allow the operative instantly, and by the mere sense of touch, unaided

either by the eye or mouth, to guide the thread to a narrow slit or slot in the side of the shuttle and thence to the eye.

Figures 1 and 2 represent a shuttle containing my improvement. Figs. 3 and 4 represent parts of shuttles having eyes of the ordinary kind.

The shuttle in its general features is of any ordinary construction.

A represents a guide-wire, inserted firmly into the cavity of the shuttle, at a point beyond the tip of the bobbin, as shown, and at right angles to its axis. This wire should, at a point, *a*, a little beneath the outer surface of the shuttle, be bent at right angles to itself, and then curved in such manner as to lie contiguous to, but not in contact with, the curved end of the cavity, a space, *b*, being left between them sufficient to admit freely the largest filling-thread to be carried by the shuttle. A narrow slit is sawed or cut from the outside to the inside of one of the side walls of the shuttle, reaching to the eye, which is inserted about in the usual place. The slit is marked *c* and the eye *d*, the latter opening into the former, as shown. The guide-wire, at its other end, *e*, should be given such direction as readily to guide the thread into the slot, and this end is preferably embedded in the wood. The wood of the shuttle, where it surrounds the bent or curved portion of the guide-wire, is preferably cut away a little, to facilitate the certain introduction of thread around and beneath the guide. The course of the thread while being threaded to the eye, and also after being so introduced, is shown in the drawings.

Instead of the curved portion of the wire, it is evident that a plate or cap having the same contour on its outer edge would answer the same purpose of guiding the filling-thread to the eye.

In practice the attendant has simply to hold the shuttle in one hand, and, taking hold of the end of the thread with the other, pull it against the shuttle in such a direction as to lay it under the curved wire, and then pull it around to the opposite side, toward the slit and eye, the free end of the wire guiding the thread directly into the slit, when a pull downward in the direction of the eye completes the threading.

The whole act is instantaneous, and is within

the capacity of a child to comprehend and practice with unerring certainty.

I claim—

1. A threading-guide or guide-wire constructed and disposed relatively to the walls of the shuttle so as to guide the thread directly to the slit, substantially as set forth.

2. The combination of the threading-guide, constructed substantially as shown and described, with a shuttle having a slotted eye.

3. A thread-guide, substantially as described, which performs the double duty of guiding the thread to the eye when threading the shuttle, and also of insuring the proper line of draft from the bobbin.

JAMES A. METCALF.

Witnesses:

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