

(No Model.)

2 Sheets—Sheet 1.

H. HALL, Jr.
AX HELVE.

No. 406,899.

Patented July 16, 1889.

Fig. 1.

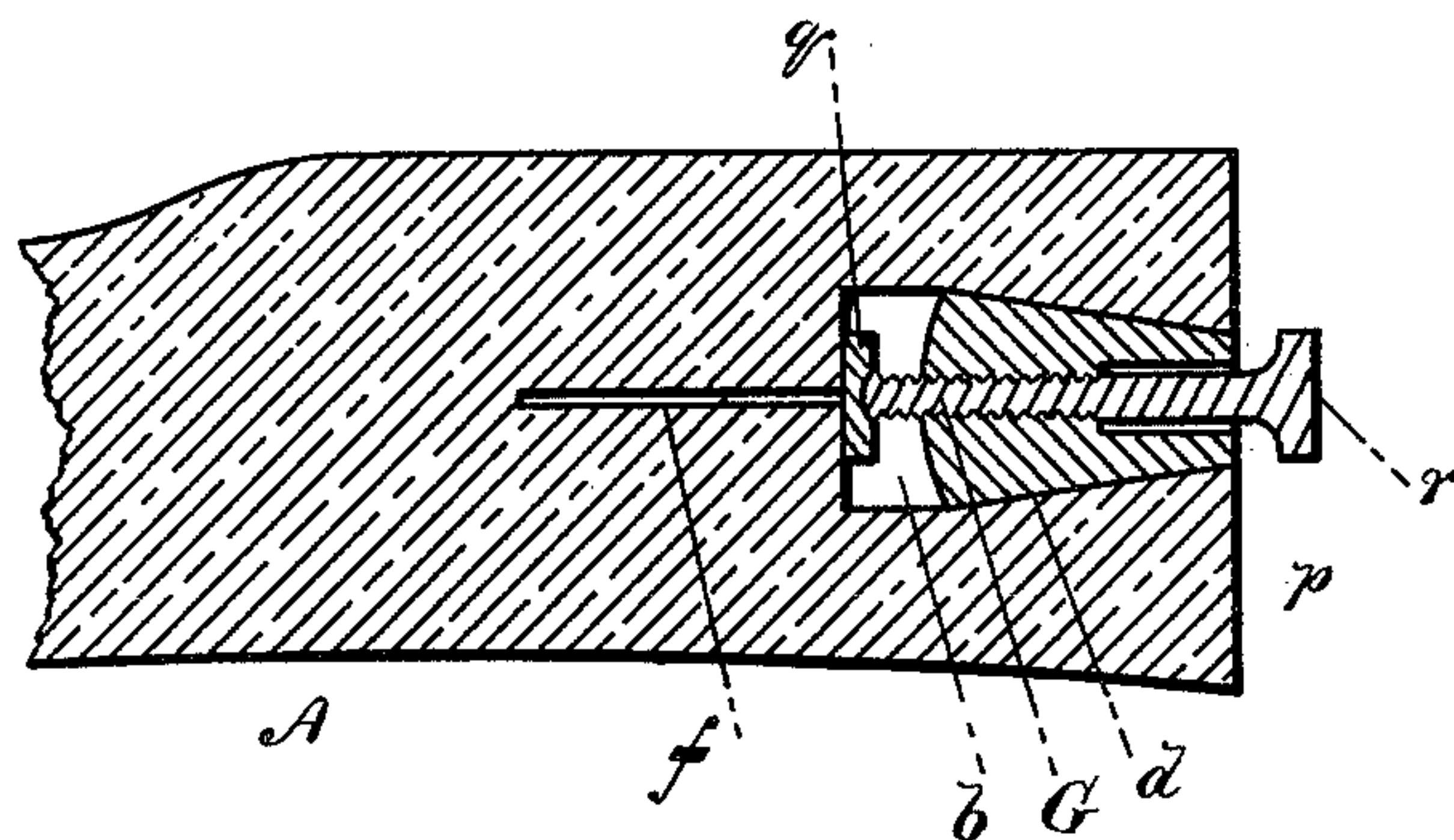


Fig. 2.

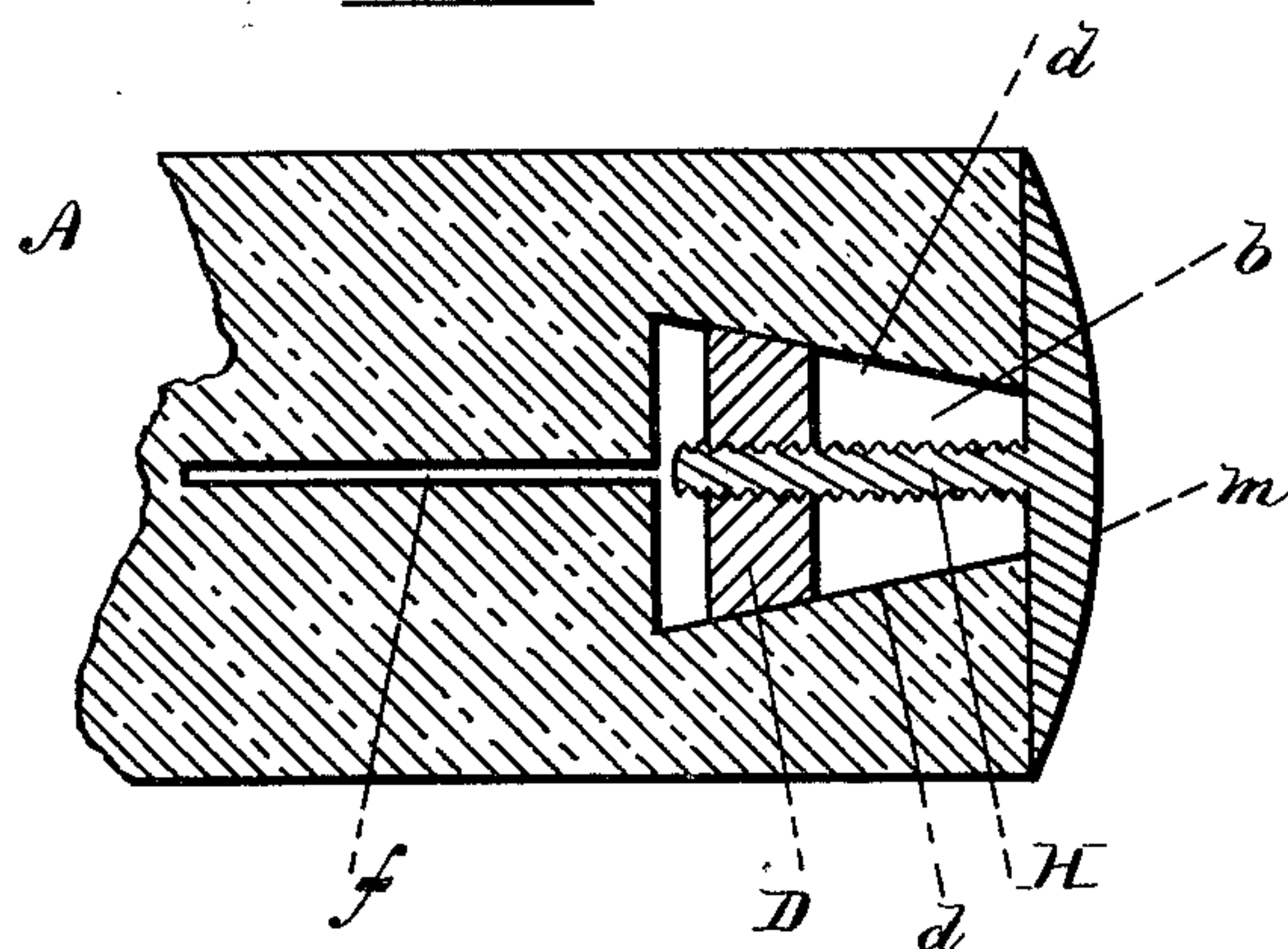
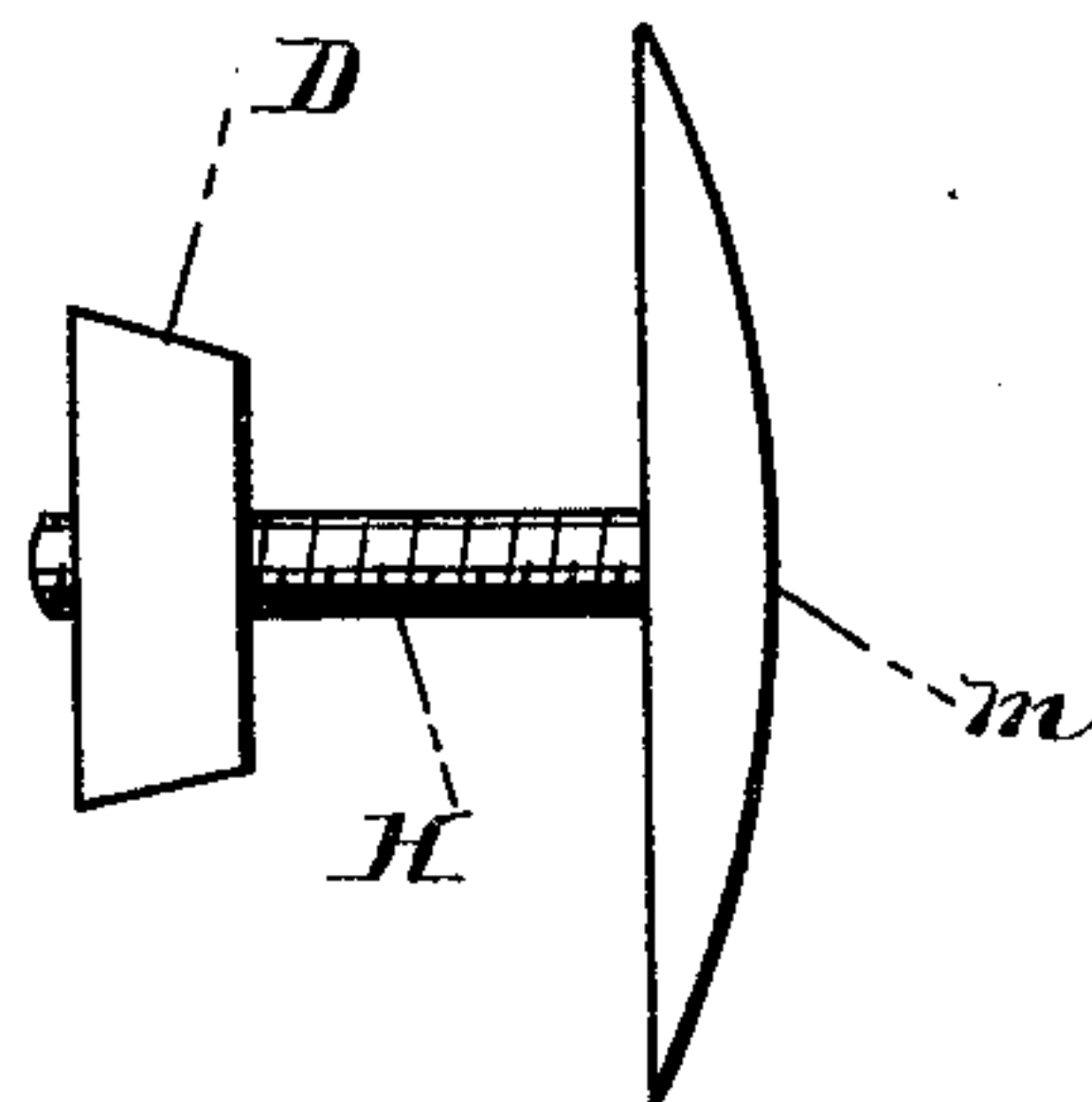


Fig. 3.



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Fig. 4.

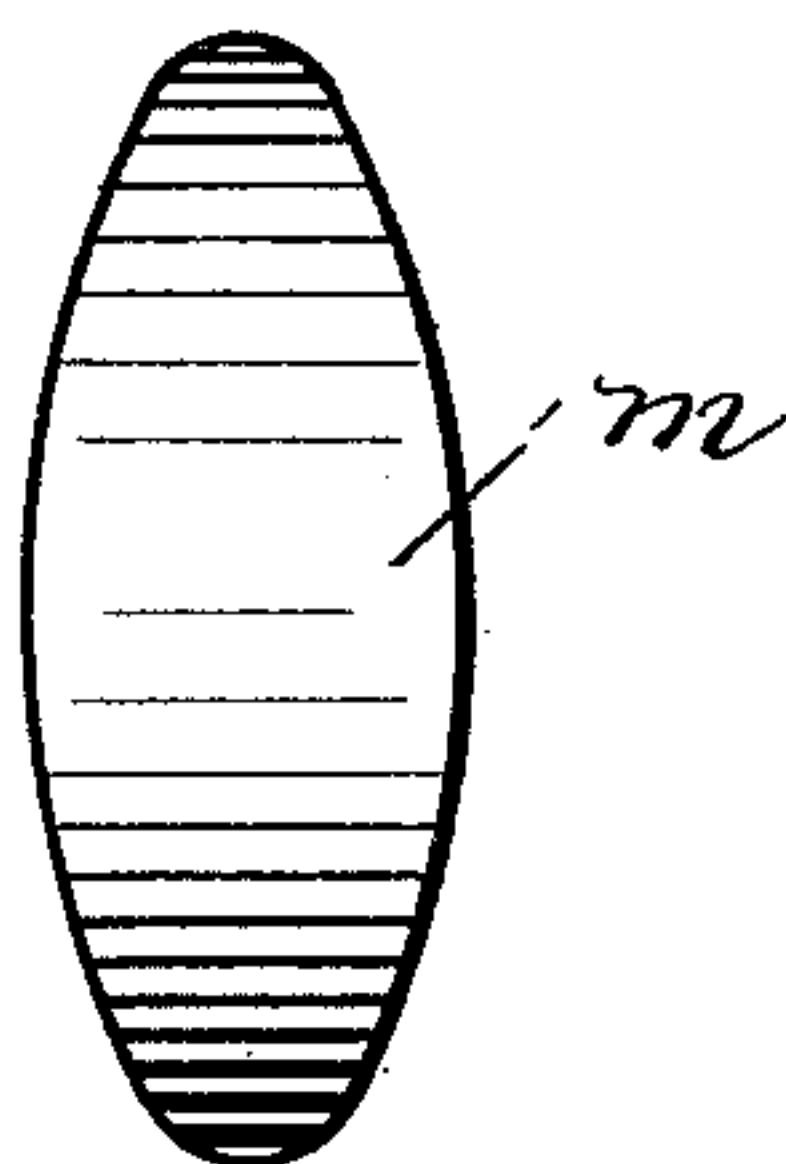
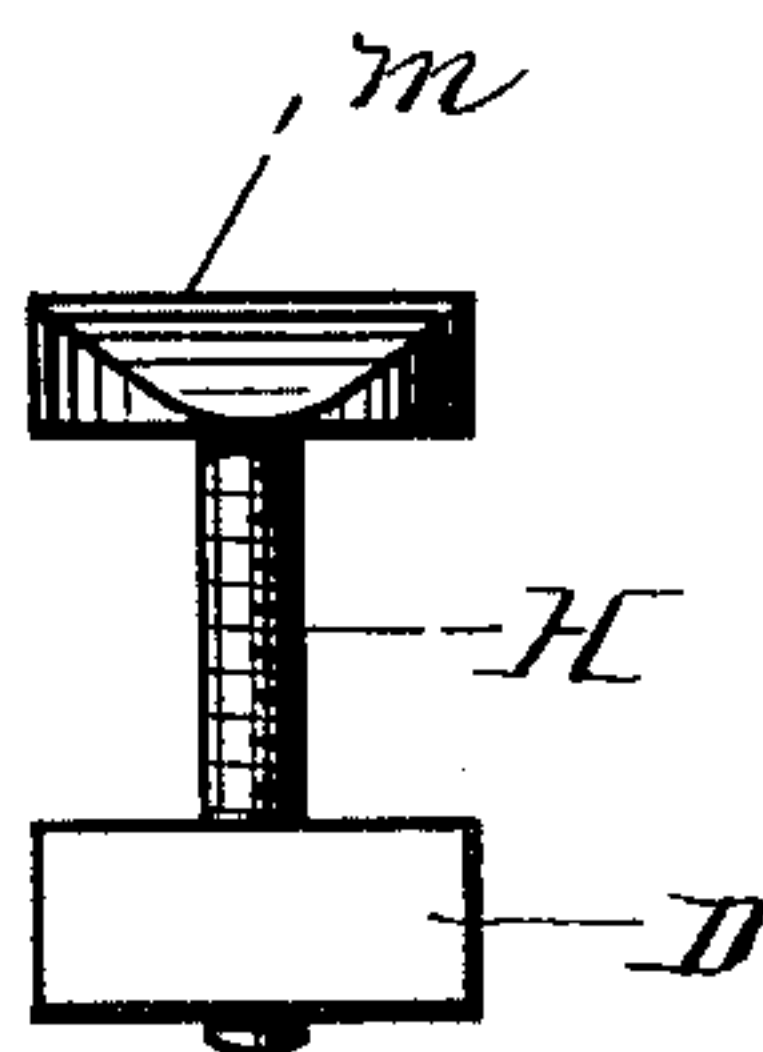


Fig. 5.



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UNITED STATES PATENT OFFICE.

HIRAM HALL, JR., OF SPRUCE HEAD, MAINE.

AX-HELVE.

SPECIFICATION forming part of Letters Patent No. 406,899, dated July 16, 1889.

Application filed March 5, 1889. Serial No. 301,828. (No model.)

To all whom it may concern:

Be it known that I, HIRAM HALL, Jr., of Spruce Head, Knox county, State of Maine, have invented a certain new and useful Improvement in Ax-Helves, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical longitudinal section of an ax-helve provided with an expanding device in ordinary use; Fig. 2, a like view of a helve provided with my improvement; Fig. 3, an enlarged elevation of the nut and screw detached; Fig. 4, a top plan view of the screw-head; and Fig. 5, a view of the screw and nut detached, the screw-head being shown in end elevation.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to means for fastening the helve in the socket of the ax; and it consists in certain novel features, as hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation:

In the drawings, A represents the ax-helve, which is provided centrally in its outer end with a chamber *b*, having outwardly-converging walls *d*, said chamber opening at the head of the helve. A saw kerf or slit *f* is formed horizontally in the body of the helve from the bottom of said chamber.

A thin nut-shaped expander D, Fig. 2, is disposed in the chamber *b*, its sides conforming to the chamber-walls *d*. The nut is provided centrally with a screw-threaded opening, in which a screw H is fitted to work, said screw being provided with an elongated oval-shaped head *m*, conforming in outline to the head of the helve.

In the use of my improvement, the helve

being inserted in the ax-eye by turning the screw H, the sides of which are vertical, as shown in Fig. 3, to adapt it to receive an ordinary wrench, the nut D is caused to work outward thereon, engaging the walls *d* of the chamber and expanding the helve-head, so that it will fit tightly into said eye. By turning back the screw and disengaging the nut from the chamber-walls, the inherent elasticity of the wood will cause the head to assume its normal position, when the ax may be readily removed.

In the device shown in Fig. 1 a long wedge *p* is used, and the end of the screw G is pivoted in a metallic step *q*, secured in the bottom of the chamber *b*. The head *r* of the screw projects a considerable distance from the helve, and is liable to catch in the branches when the axe is in use felling trees, and frequently injuring the user. Moreover, the screw-head as thus disposed is often accidentally broken off while chopping or splitting and the device rendered inoperative. I also find that in practice the wedge *p* will not act to spread the helve. The screw G, working in the step *q*, fixed at the base of the chamber, causes the inner corners of said wedge to move in a straight line and receive all the pressure of the wood, the sides of the wedge being freed. This causes all of the expansive pressure to come in the middle of the ax-eye, and, as the leverage on the handle when the ax is in use is great, the helve gradually works out from the eye.

By shortening the screw and disposing the beveled nut D thereon, as in my improvement, the pressure is brought nearer the end of the handle, which is thus forced against the ax-eye outside the center and prevents the ax from readily becoming detached. Furthermore, the bearing of the screw in my improvement is against the end of the helve by means of the button-shaped head *m* instead of at the bottom of the chamber, as in Fig. 1, thus obviating the danger of its becoming accidentally bent and rendered useless.

Having thus explained my invention, what I claim is—

1. In an ax-helve, the combination of a chamber having outwardly-converging walls

and a saw-kerf extending inward from the bottom thereof, a beveled nut disposed in said chamber, and a screw working in said nut and provided with an oval or button shaped head, 5 substantially as described.

2. In an ax-helve, the helve A, provided with the chamber *b*, having converging walls *d*, the saw-kerf *f*, the nut D, disposed in said

chamber, and the screw H, working in said nut and provided with the oval head *m*, all 10 being combined and arranged to operate substantially as described.

HIRAM HALL, JR.

Witnesses:

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MAYNARD SUMNER.