

(No Model.)

H. HALL, Jr.
AX HELVE.

No. 441,408.

Patented Nov. 25, 1890.

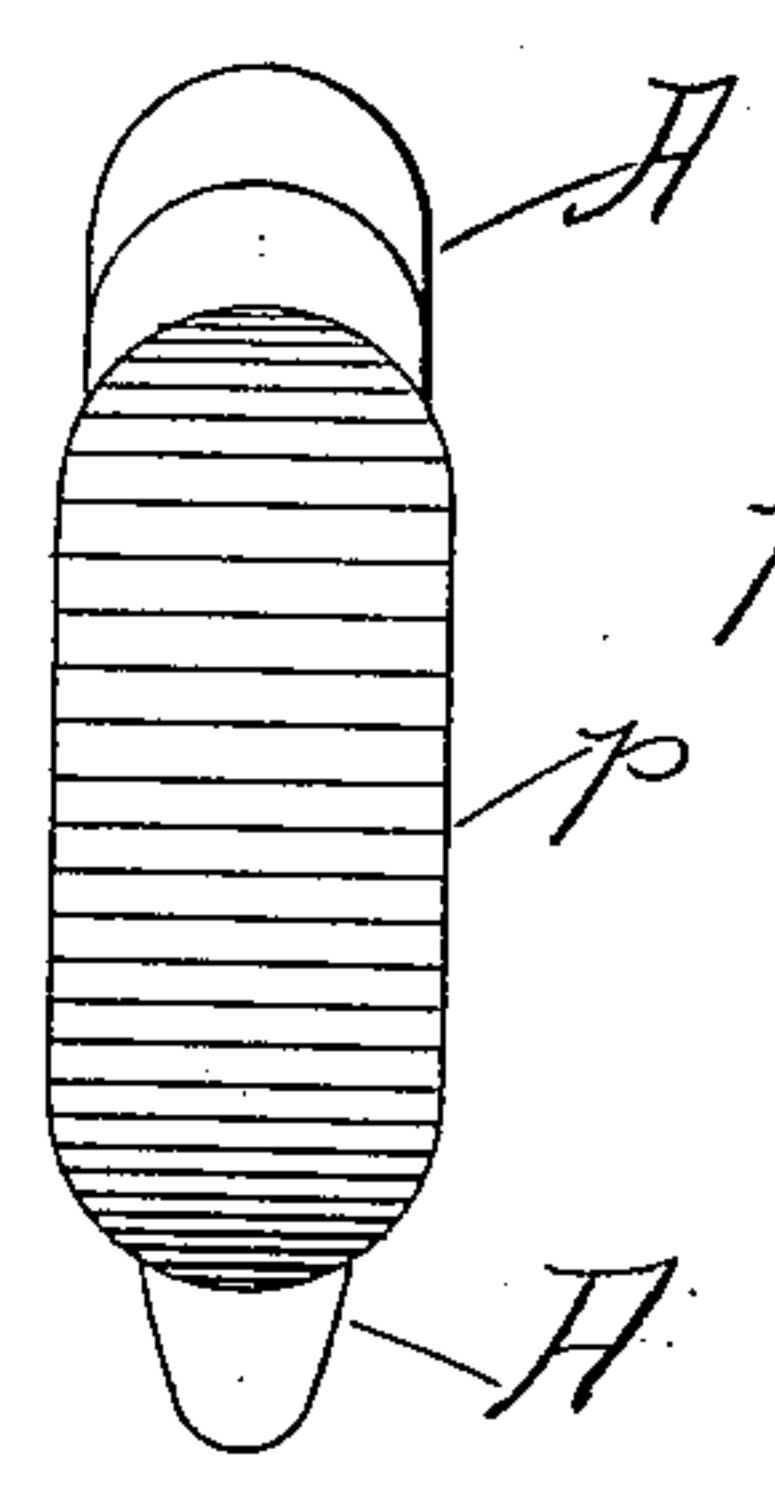


Fig. 2.

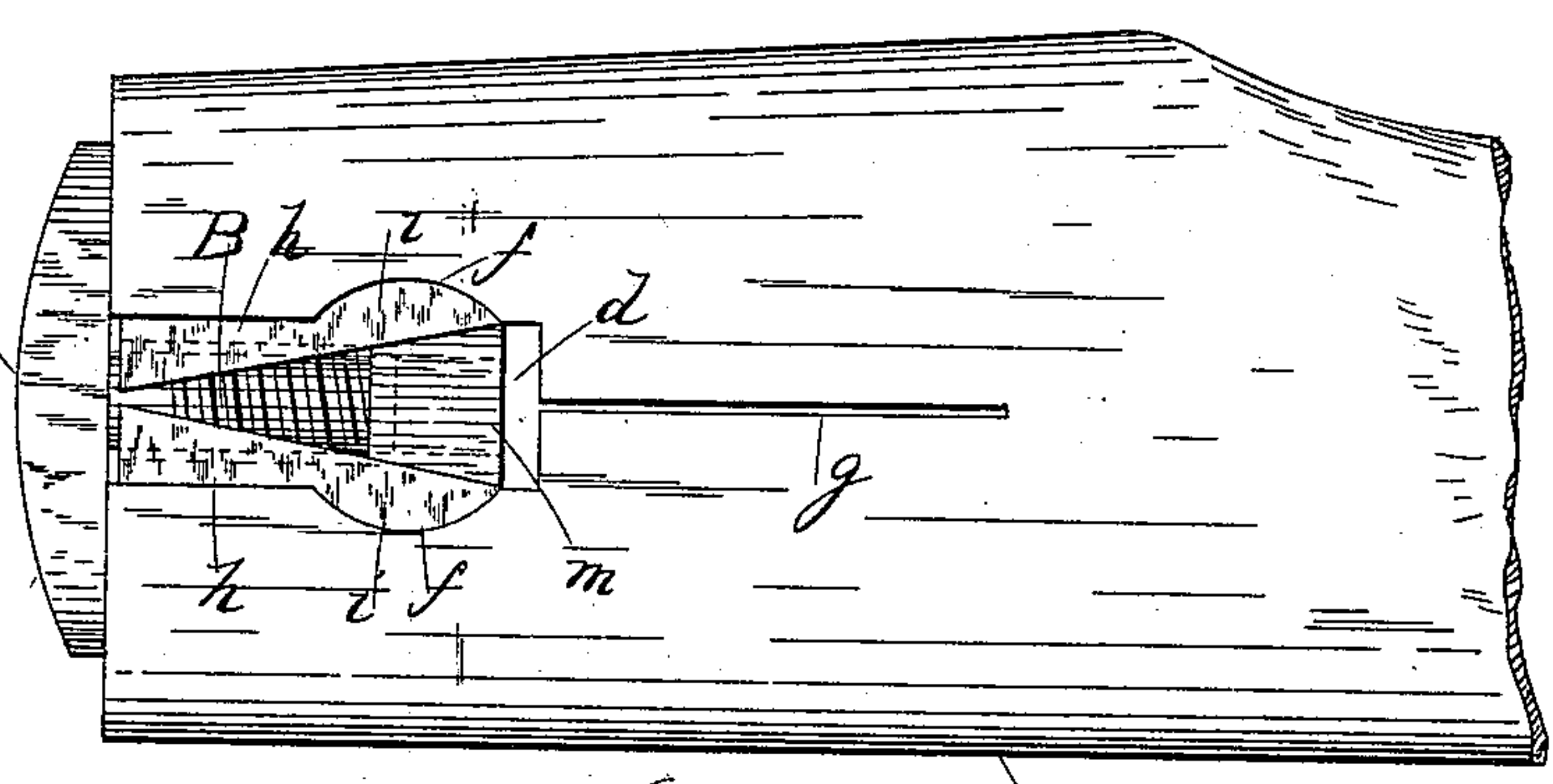


Fig. 1.

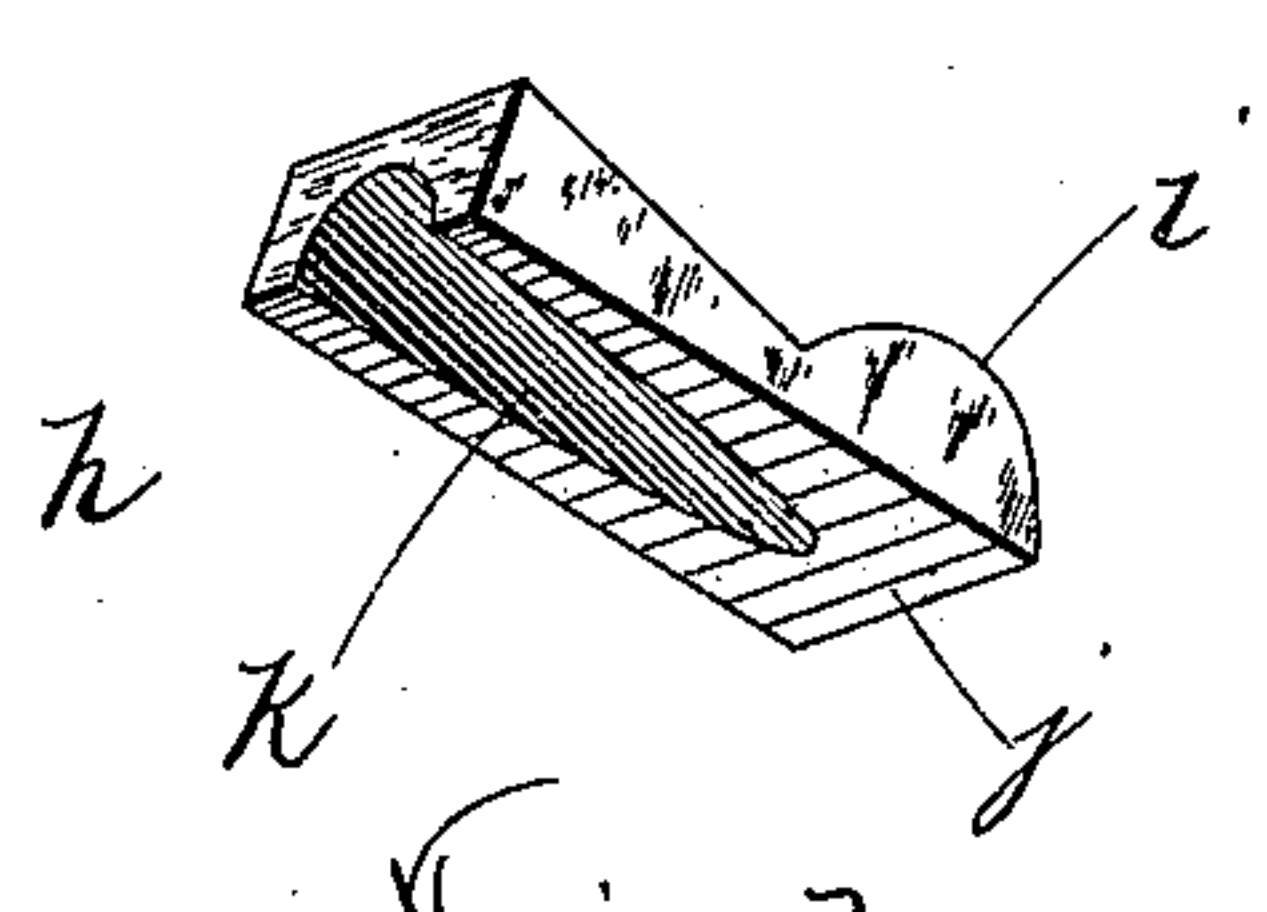


Fig. 3.

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UNITED STATES PATENT OFFICE.

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

AX-HELVE.

SPECIFICATION forming part of Letters Patent No. 441,408, dated November 25, 1890.

Application filed June 26, 1890. Serial No. 356,804. (No model.)

To all whom it may concern:

Be it known that I, HIRAM HALL, Jr., of Spruce Head, in the county of Knox, State of Maine, have invented certain new and useful
5 Improvements 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
10 part of this specification, in which—

Figure 1 is an elevation of an ax-helve provided with my improved expanding device; Fig. 2, an end elevation of the same, and Fig.
15 3 a perspective view of one of the wedges detached.

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

20 My invention relates to means for fastening the helve in the socket of an ax, and is designed especially as an improvement on the device shown and described in Letters Patent of the United States No. 406,899, dated July
25 16, 1889, granted to me for an improvement in ax-helves.

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

In the drawings, A represents the ax-helve, which is provided in its outer end with a chamber *d*, in the side walls of which a curved groove or indentation *f* is formed, said chamber
35 opening at the head of the ax. From the bottom of the chamber a saw-kerf *g* extends longitudinally into the body of the helve. Two wedges *h* (shown in perspective in Fig. 3) are adapted to be inserted in the chamber *d*, and
40 are severally provided with a curved boss or projection *i*, fitted to enter the grooves *f* of said chamber. The inner face *j* of said wedges is provided with a vertical groove *k*. A screw
45 B is fitted to enter the opening formed by the grooves in said wedges when in position in the chamber, and a nut *m* is turned onto the lower end of said screw, said nut having inclined walls adapted to engage the inclined faces *j* of said wedges. The screw is provided
50 with an elongated approximately oval-shaped head *p* of sufficient width to slightly overlap

the head of the helve at the sides and engage the ax when in position on said helve.

In the use of my improvement a nut *m* is disposed in the chamber *b* and the wedges *h* 55 adjusted therein, with their bosses *i* inserted in the grooves *f* of said chamber. The helve is then inserted in the ax-eye and the screw B passed into the opening formed by the grooves *k* in said wedges and turned into said
60 nut *m*. The nut as the screw is rotated works outward thereon and engaging the faces *j* of the wedges forces said wedges tightly against the walls of the chamber *d* and expands the
65 helve at this point, so that it is clamped securely into the ax-eye. The pressure thus exerted being lateral necessitates the employment of a short nut. In the device described in the Letters Patent above referred to such
70 pressure has a tendency to compress the wood or embed the nut therein, especially after remaining some time in one position. By employing the rectangular chamber *d* shown and the metallic wedges *h* the pressure is exerted
75 equally on the whole length of the chamber-wall. Moreover, the nut, moving on a metallic surface, slides much more readily and cannot embed itself in the wood. The bosses *i* on said wedges prevent them from becoming
80 displaced from the chamber by the pressure of the nut, and said nut distributes the pressure, so that it is applied to the extreme end of the handle or at the mouth of said chamber, where it is the most effective in securing
85 the ax-head thereon.

I do not confine myself to the use of this device in ax-helves, as it is equally applicable for use in hammer-handles and similar tools. By constructing the head *p* so that it will overlap the edges of the helve and engage the ax-
90 head an additional fastening is provided to prevent said head from accidentally becoming detached from the helve.

Having thus explained my invention, what I claim is— 95

1. In an ax-helve, the combination of a chamber formed in the outer end thereof, having curved grooves in its side walls, a saw-kerf extending inwardly from the bottom of said chamber, wedges having bosses adapted to
100 enter said grooves and inclined inner faces provided with vertical grooves for receiving

a screw, a beveled nut disposed in said chamber, and a screw provided with an approximately oval or button shaped head and working in said nut, substantially as described.

5 2. In an ax-helve, the helve A, provided with the chamber *d*, having the grooves *f* in its walls, the saw-kerf *g*, the wedges *h*, provided with the grooves *k* and bosses *i*, the nut *m*, and the screw B, working in said nut and provided with the curved head *p*, combined and
10 arranged to operate substantially as set forth.

3. In an ax-helve provided with a chamber in its head having a saw-kerf extending lon-

gitudinally from the bottom thereof, the combination of two wedges adapted to be inserted 15 in said chamber and provided with the inclined working-faces and vertical grooves, with a screw having an oval-shaped head and a nut on said screw provided with inclined faces adapted to engage said wedges, substan- 20 tially as described.

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Witnesses:

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