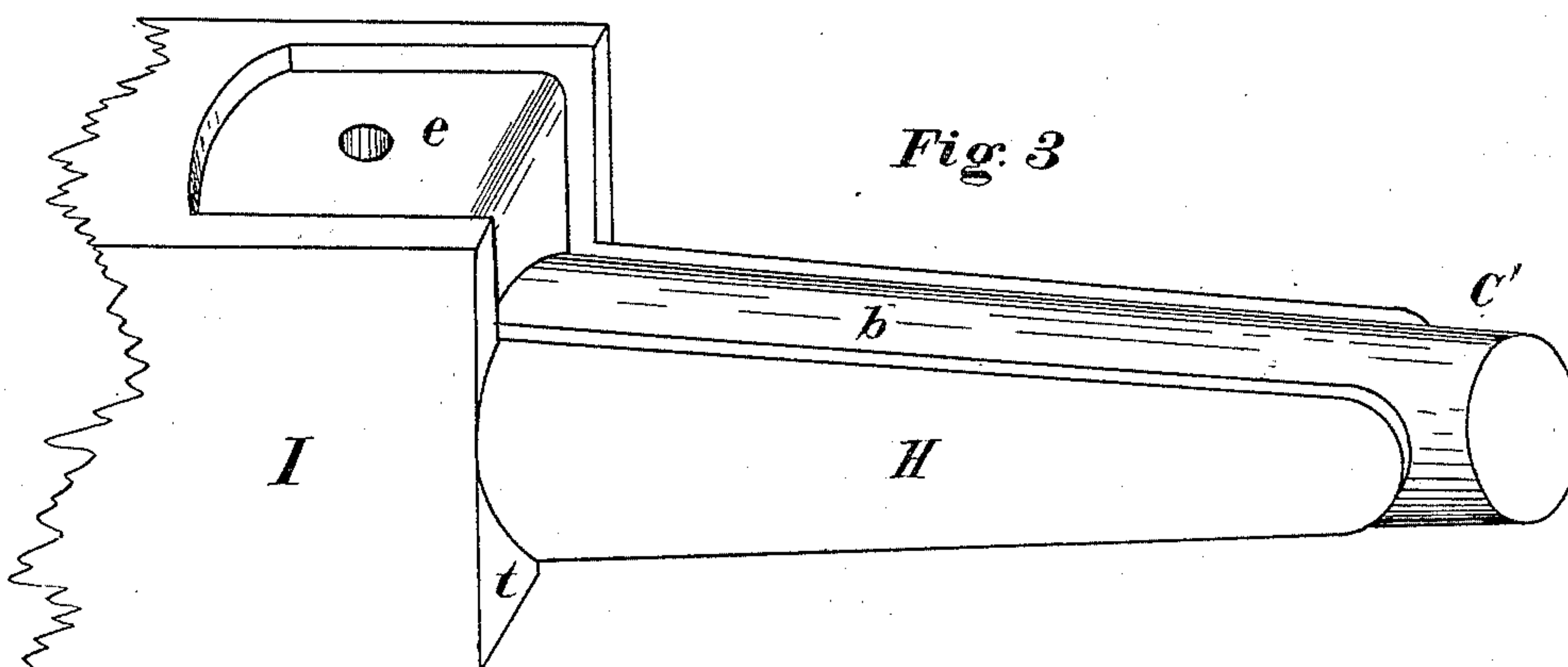
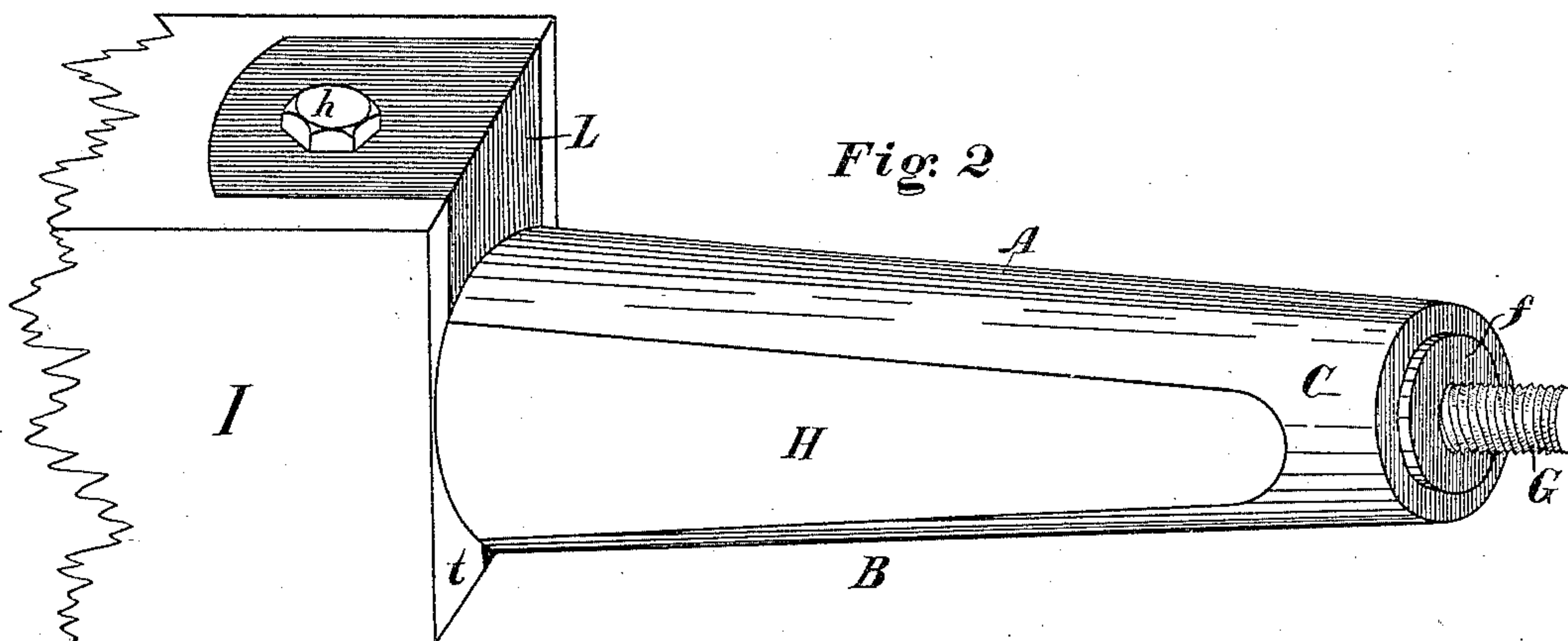
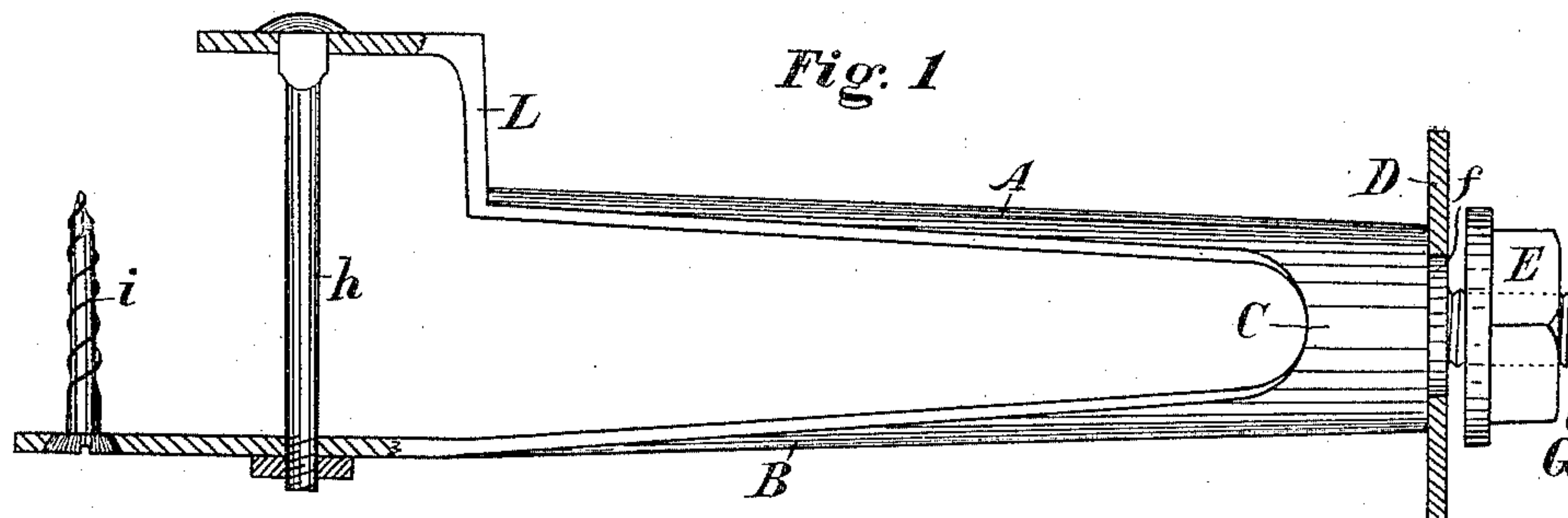


(No Model.)

G. M. FARNSWORTH.
AXLE SKEIN.

No. 436,827.

Patented Sept. 23, 1890.



Witnesses
James H. Kennedy
Thomas J. Maher

Inventor
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UNITED STATES PATENT OFFICE.

GUILFORD M. FARNSWORTH, OF WEST SULLIVAN, MAINE.

AXLE-SKEIN.

SPECIFICATION forming part of Letters Patent No. 436,827, dated September 23, 1890.

Application filed October 10, 1889. Serial No. 326,645. (No model.)

To all whom it may concern:

Be it known that I, GUILFORD M. FARNSWORTH, a citizen of the United States, residing at West Sullivan, in the county of Hancock and State of Maine, have invented a new and useful Axle-Skein; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved axle-skein, and is intended to cover and strengthen the bearing portion of heavy wooden axle-arms.

My device extends sufficiently upon the axle-bar to prevent the latter from breaking, and is furnished with improved means for retaining the wheel, as will hereinafter be described.

The object of my invention is to provide an axle-skein that can be used on large wooden axles for heavy teaming, one that will strengthen and prevent the axle to which it is attached from breaking, and be easily and quickly fitted thereto to cheapen the expense of axles.

Throughout the description reference is made to the accompanying drawings, in which—

Figure 1 shows a side elevation of my improved axle-skein. Fig. 2 is a perspective view of one end of a wooden axle, showing the axle-arm with my improved axle-skein attached. Fig. 3 is a similar view of a wooden axle-arm constructed to receive my improved axle-skein.

Similar letters of reference refer to correspondingly like parts throughout the different figures.

As can be noticed in the drawings, my invention is adapted for very heavy axles constructed with a large shoulder at the junction of the axle-arm or spindle to receive the side slat of the wheel-hub.

By the use of my device large axles can be used with reduced wheel-spindles and still obtain increased strength of axle-arm.

Referring to the drawings, I represents a small portion of a wooden axle, and H the axle-arm, which is constructed to receive my device. My improved axle-arm consists of

two convex strips of metal A and B, adapted to fit the curve of the axle-arm, extending over the end of the latter, and meeting in a short ferrule C, into which the end of the axle-arm H is fitted. The ferrule C forms a cap for this end of the axle-arm to prevent lateral movement of the latter and receive the bearing and wear of the axle-box at the end of the spindle. Projecting outward from the center of the ferrule C is the threaded portion or bolt G, upon which the axle-nut E is turned to prevent the wheel-hub from coming off. A further protection and advantageous improvement on this end of the axle-skein is a protruding circular ridge or shoulder *f*, which projects from the end of the ferrule C, and forms a seat for a large flat ring or washer D. (Shown in Fig. 1 of the drawings.) This washer D should be of sufficient width to extend over the end of the axle-box in the wheel-hub to furnish a broad bearing for the end of the hub itself and prevent the axle-box from being started or loosened in the said hub by any side movement while in use. By the use of the washer D a smaller axle-nut E can be used, which reduces the expense of the latter, and all turning of the wheel hub upon the axle-spindle is received against this washer, reducing the liability of having the nut E turn off while on the road. The diameter of the axle-nut E need only be sufficient to extend part way over the washer D in order to have a bearing upon a portion of the width of the latter.

The two convex strips A and B extend longitudinally from the ferrule C over the top and under side of the axle-arm H, conforming to the curve of the latter, and they each extend beyond the length of the axle-arm onto the axle I, where they are confined to the said axle by means of a bolt *h*, passing through a hole drilled through the latter and both ends of the extension of the axle-skein. The lower strip B may be extended, if desired, beyond this fastening-point under the axle I, and be provided with another hole drilled therein to receive a screw *i*, and thus strengthen the axle at this place. The upper strip A is formed convex the length of the axle-arm H, where at its base or junction with the axle I it is made flat and bent upward to

form a shoulder L and conform to the construction of the axle at this place. It is then bent at right angles over the end of the axle and provided with a hole to receive the bolt 5 *h*, hereinbefore described. This construction strengthens the axle greatly, and as the full weight of the load and jar in hauling is always borne by the axle-arm when the latter is provided with my device the strain is transmitted over the axle-skein to the thicker portion of the axle and the liability of breaking is greatly reduced.

My improved axle-skein is fitted to a wooden axle by gaining into the top and shoulder of 15 the latter the width and depth of the angular portion of the skein or upper strip A and grooving the upper and under side of the axle-arm H to receive the two strips A and B or legs of my device. The end C' of the axle-arm is rounded and fitted into the ferrule C of the skein, and rigidly holds this end of the latter. As the bolts for holding the opposite end of the axle-skein pass through the thick portion of the axle, the axle-arm is not in any 25 way weakened by fastening devices.

It can be easily understood that all the principal wear on an axle-arm is upon the under side, which, with an axle provided with my improved axle-skein, is received by the 30 under metal strip B, and as the weak point is at the junction of the axle with the axle-arm all breaking strain will be transmitted to the

thick portion of the axle, as the construction of my device forms a brace at this place.

Having thus described my invention, what I 35 claim, and desire to secure by Letters Patent of the United States, is—

1. An improved axle-skein consisting of the ferrule C, having axle-nut projection G, extending shoulder *f*, for the purpose described, the convex strips A and B, extending 40 over the axle-arm and upon the axle, the upper strip having upward bend L, and right-angle extension, with means for fastening to the axle, substantially as shown and described. 45

2. The combination, with a wooden axle having grooved axle-arm H, of an axle-skein for the same, consisting of the convex strips A and B, extending over the axle-arm and upon the axle, the upper strip bent upward and at 50 a right angle at the base of the arm and confined by the bolt *h*, the two strips meeting into the ferrule C at the end of the axle-arm and having the shouldered projection *f*, and axle-nut bolt G, with the nut E, and washer 55 D, for the purpose described, and substantially as shown and set forth.

In testimony whereof I have hereunto subscribed my name in the presence of two witnesses.

GUILFORD M. FARNSWORTH.

Witnesses:

CHARLES H. PREBLE,
JOHN W. HALL.