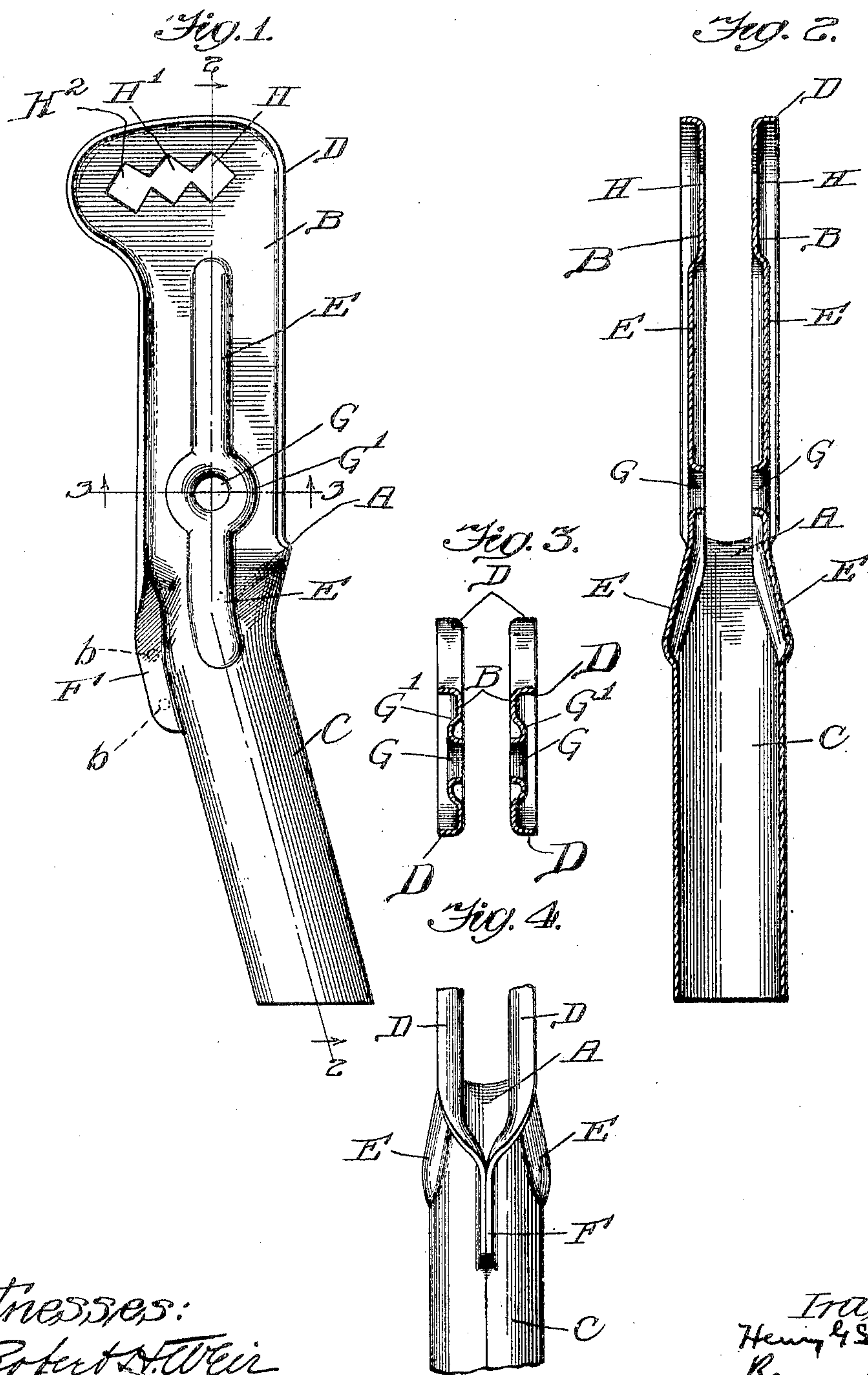


No. 797,756.

PATENTED AUG. 22, 1905.

H. G. SAWYER.
SHOVEL STANDARD.
APPLICATION FILED NOV. 17, 1904.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 5.

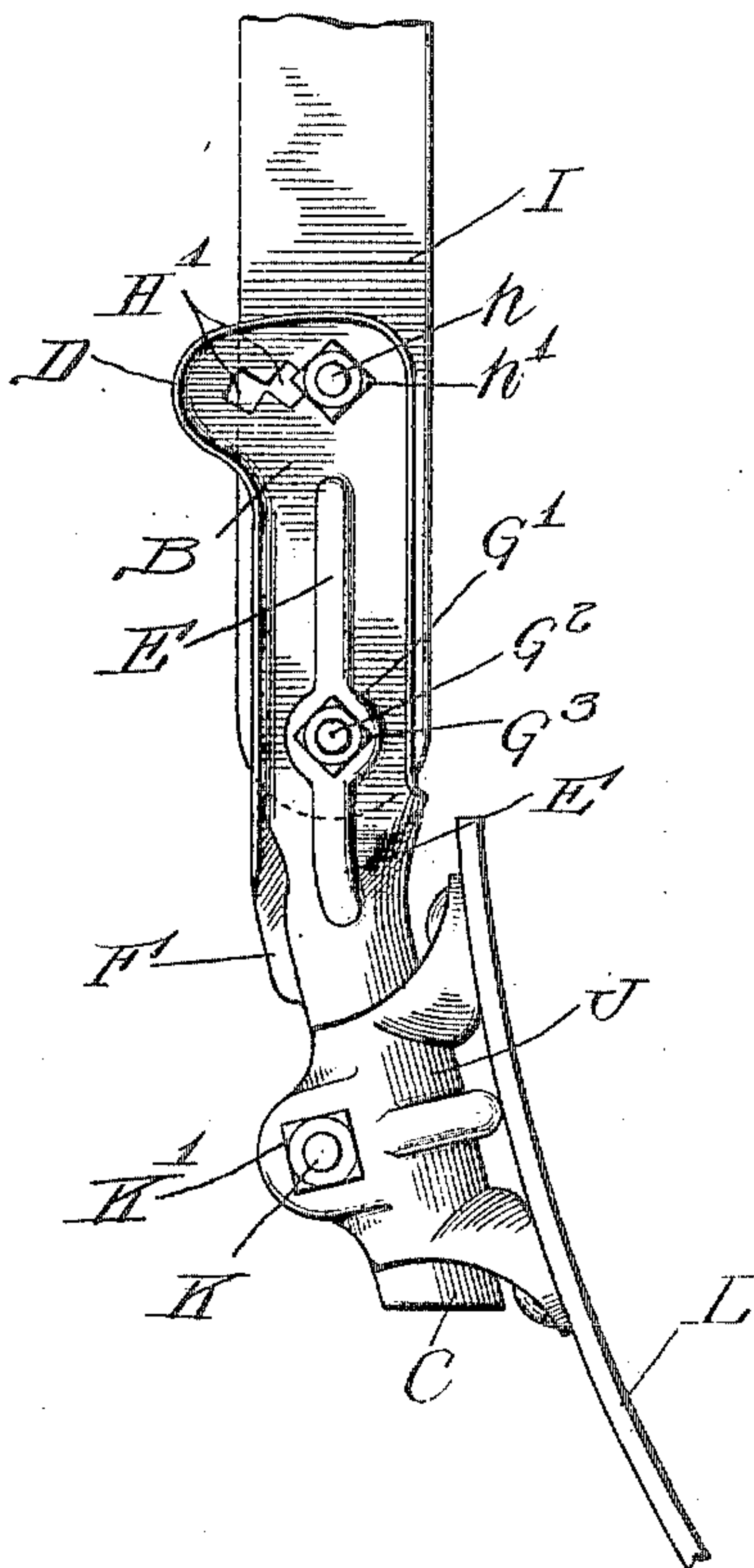


Fig. 6.

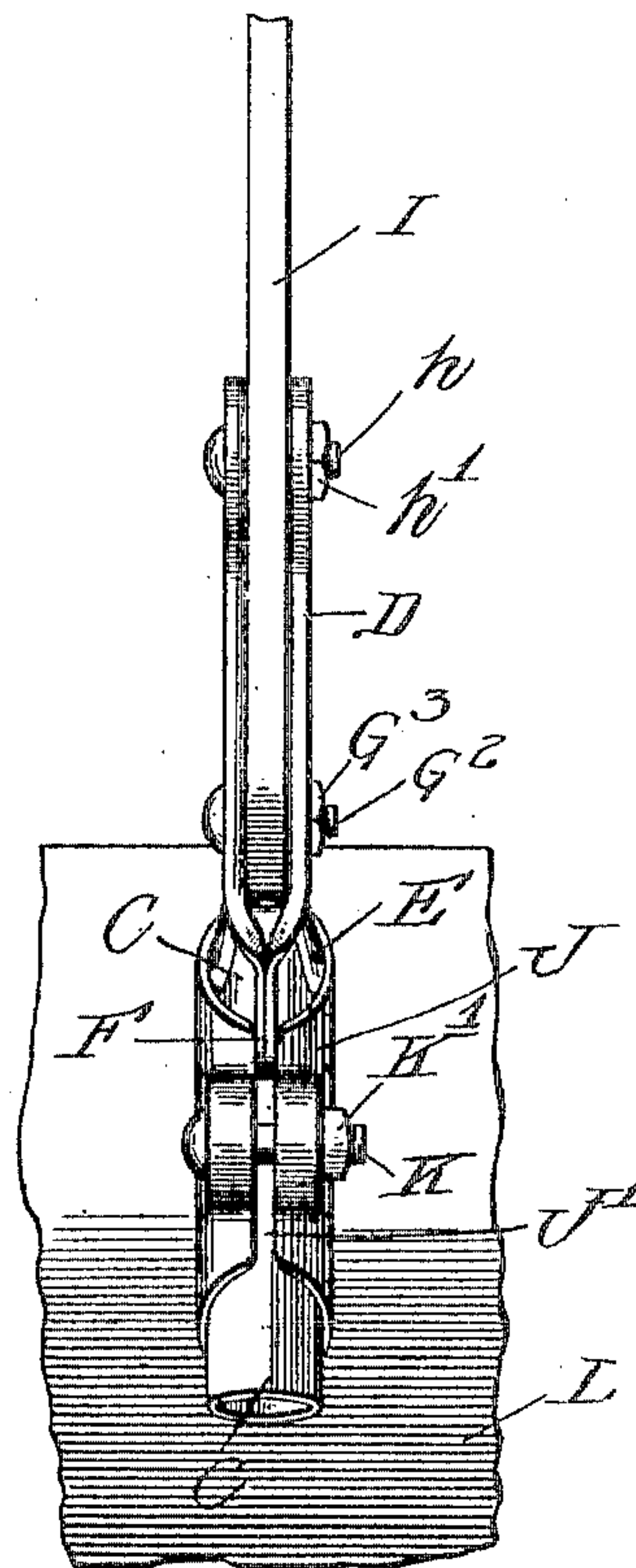
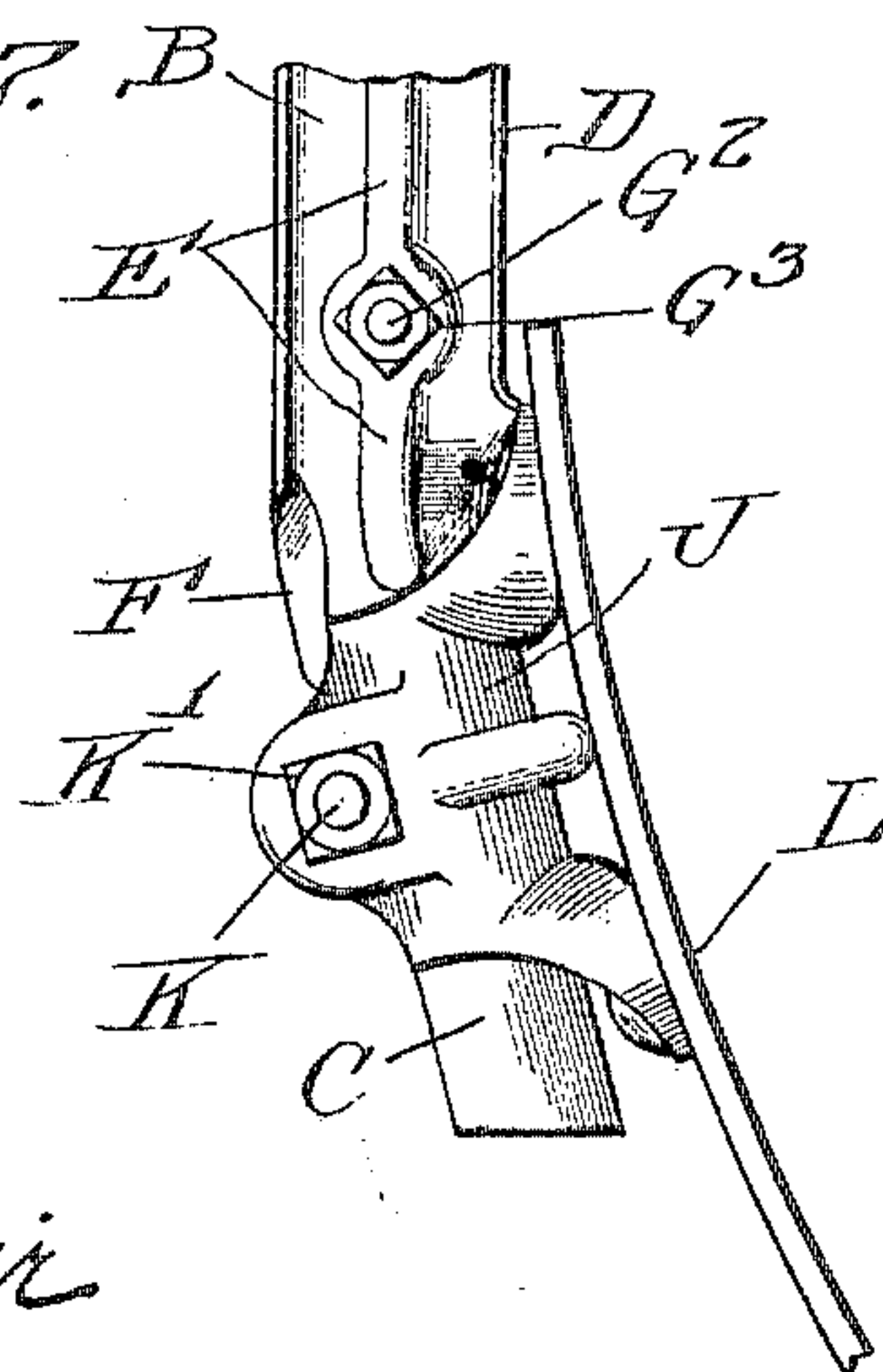


Fig. 7.



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SHOVEL-STANDARD.

No. 797,756.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed November 17, 1904. Serial No. 233,208.

To all whom it may concern:

Be it known that I, HENRY G. SAWYER, a citizen of the United States, residing at Carpentersville, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Shovel-Standards, of which the following is a specification.

My invention relates to improvements in shovel-standards by means of which shovel-blades are adjustably attached to the draw-bars, and is especially intended for use in connection with cultivators.

The object of my invention is to provide a sheet-metal standard so constructed that it may be formed from a single piece of sheet metal without heating, while at the same time it provides the necessary strength, durability, and adjustability and is so formed as to be readily and effectively attached to the draw-bar.

Another object of my invention is to provide a light, inexpensive, and durable standard.

These and such other objects as may hereinafter appear are attained by the devices shown in the accompanying drawings, in which—

Figure 1 represents a side elevation of my improved standard. Fig. 2 is a longitudinal sectional view on the line 2 2 of Fig. 1. Fig. 3 is a cross-sectional view on the line 3 3 of Fig. 1. Fig. 4 is a rear elevation of a portion of Fig. 1. Fig. 5 is a side elevation showing a shovel-clip attached to the standard. Fig. 6 is a rear elevation of Fig. 5, showing the shovel-clip in another position; and Fig. 7 is a side elevation of a portion of Fig. 6.

Like letters of reference indicate the same parts in the several figures of the drawings.

Referring by letter to the accompanying drawings, A represents a shovel-standard comprising wings B and a neck C. The wings B are turned outwardly at their edges, forming flanges D, and have ribs E and bosses G' formed in their faces. The flanges terminate in the rear in a double lip F. The wings are provided with bolt-holes G, located within the bosses G', and adjustment-holes H H' H² in the upper portion of the wing.

In Figs. 5, 6, and 7 I have shown the standard attached to a cultivator draw-bar by means of the bolt G² and nut G³ and the adjustment-bolt h and nut h'.

Attached to the neck C of the standard, by means of a bolt K and nut K', is a shovel-clip J, which in the device illustrated is formed

from a single piece of metal and to which is attached the shovel L.

Referring now to Figs. 1, 2, 3, and 4, my shovel standard or shank is made, preferably, from a single piece of steel. The blank is first cut to shape, the bolt-holes G and adjustment-holes H, H', and H² are next punched out, and the ribs E and bosses G' pressed into shape. The blank is then folded until the outer edges of the neck portion meet and the wings are parallel.

The lips F may be provided with holes f f and bolted or riveted together, if desired.

The standard is pivotally attached to the draw-bar I by means of the bolt G² and nut G³ or wood break-pin, and the desired adjustment is effected by means of the adjustment-holes H H' H² and the bolt h and nut h'.

The use of either the flanges or ribs and bosses imparts great strength to the standard, especially at those points most subjected to strain—as, for instance, the circular bosses G' about the bolt-holes in a great measure prevent the breaking of the metal at that point—and when the cultivator to which the standard is attached is in use the greatest strain will come between the point where the clip is attached to the standard and the point where the standard is pivoted on the draw-bar—that is, between the points K and G². This great strain is met by means of the change in direction between C and B by means of the ribs E extending into the neck and by means of the lips F, all in conjunction with the bosses G'.

The use of pressed steel with bosses, ribs, and flanges permits the use of metal of such a degree of thinness that a standard weighing not to exceed ten to twelve ounces will endure a greater strain than the ordinary standards now in use which weigh two pounds and upward.

As the position of the shovels is generally shifted by the foot of the operator, the fact that standards weighing five pounds per set are more effective than those of the old type now in use weighing sixteen pounds per set is persuasive as to the value of the former. So, also, the cost is materially reduced, as my improved standards can be manufactured for less than one-third the cost of those now in use.

The shovel-clip J, carrying the shovel L, is bolted to the neck C of the standard and may be shifted to any desired position by loosening the bolt K and turning the clip on the

neck until the desired position is reached, then tightening the bolt. If it is desired to attach the cultivator-blade at right angles to the standard, the clip may be moved upwardly on the neck until the lips F of the standard enter the throat J' of the clip, thus locking the clip and bolt against any lateral movement.

When the cultivator is used where the shovels are liable to encounter obstructions, I prefer to use wood break-pins in place of the bolt G². When bolts are used and the shovels meet an obstruction there is apt to be a severe straining or breaking of some of the parts, while when wood pins are used and the strain is great enough to injure the cultivator the pins are sheared off, thus allowing the shovel to adapt itself and pass over the obstruction. The bosses surrounding the bolt or break-pin holes peculiarly strengthen or thicken the point of contact with the bolt or pin, preventing them from being readily cut off by the edge of the metal.

While I have shown a standard having longitudinal ribs in the wings and circular bosses about the bolt-holes G, together with flanges on the edges, it is evident that the use of either of these elements used alone would be superior to the standard now in use. So, also, I do not limit myself to any particular style of ribs or any particular location of the same, as I am aware that there are various modifications that can be made without departing from the spirit of my invention.

I claim—

1. A shovel-standard formed of a single piece of sheet metal to comprise a tubular neck, and a pair of wings extending upwardly therefrom, a portion of the metal of said standard being embossed outwardly, said embossed portion being provided with bolt-holes and the metal being embossed inwardly around said bolt-holes to provide a relatively broad bearing.

2. A shovel-standard formed of a single piece of sheet metal to comprise a tubular neck and a pair of wings extending upwardly from

said neck, a part of the opposite sides of said standard being embossed longitudinally, the embossed portion projecting outwardly and being provided with bolt-holes, the metal being embossed inwardly around said bolt-holes to provide a relatively broad bearing.

3. A shovel-standard formed of sheet metal to comprise a tubular neck and a pair of wings extending upwardly from said neck, each of said wings being provided with an outwardly-turned marginal flange extending entirely around the free edges of said wings, a portion of said wings being also embossed longitudinally and outwardly, the embossed portion of each wing being provided with a bolt-hole, and the metal surrounding said bolt-hole being embossed inwardly to provide a relatively broad bearing.

4. As a new article of manufacture, a shovel-standard comprising flanged wings adapted to engage the draw-bar and a tubular neck adapted to receive a shovel-clip, said wings having longitudinal ribs and circular bosses surrounding the bolt-holes.

5. As a new article of manufacture, a shovel-standard comprising outwardly-flanged wings adapted to engage the draw-bar and a neck adapted to receive a shovel-clip, said wings having longitudinal offsets and circular bosses surrounding the bolt-holes, the flanges on the wings terminating in lips.

6. As a new article of manufacture, a one-piece shovel-standard, comprising wings having outwardly-projecting flanges terminating in lips, and a neck, said wings having circular bosses and longitudinal ribs extending into the neck.

7. A cultivator-shovel standard provided with lips adapted to enter an opening through the shovel-clip, so as to prevent rotation of the shovel-clip upon the standard, substantially as described.

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