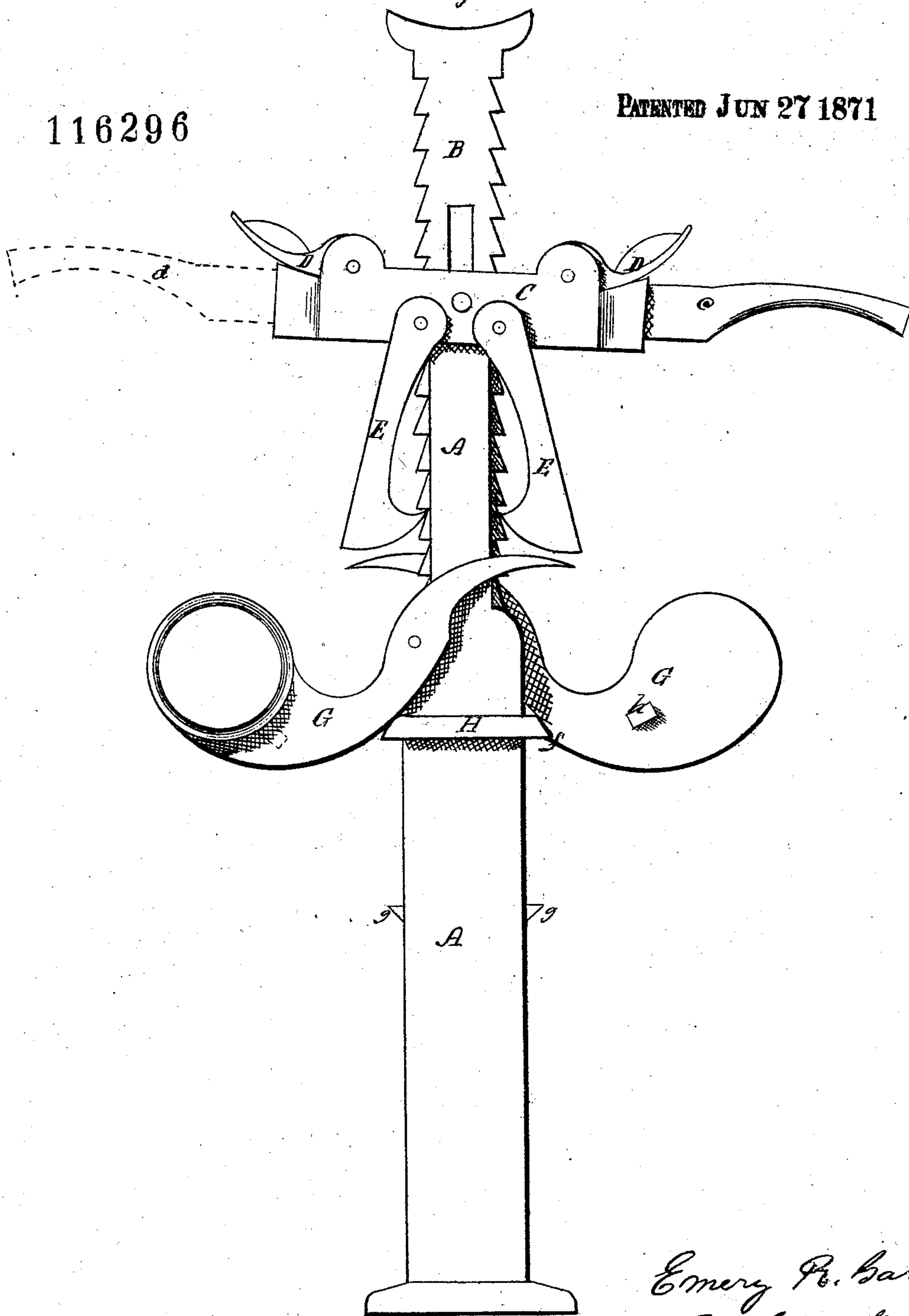


Emery R. Gard's Imp^d Lifting Jack.

116296

PATENTED JUN 27 1871

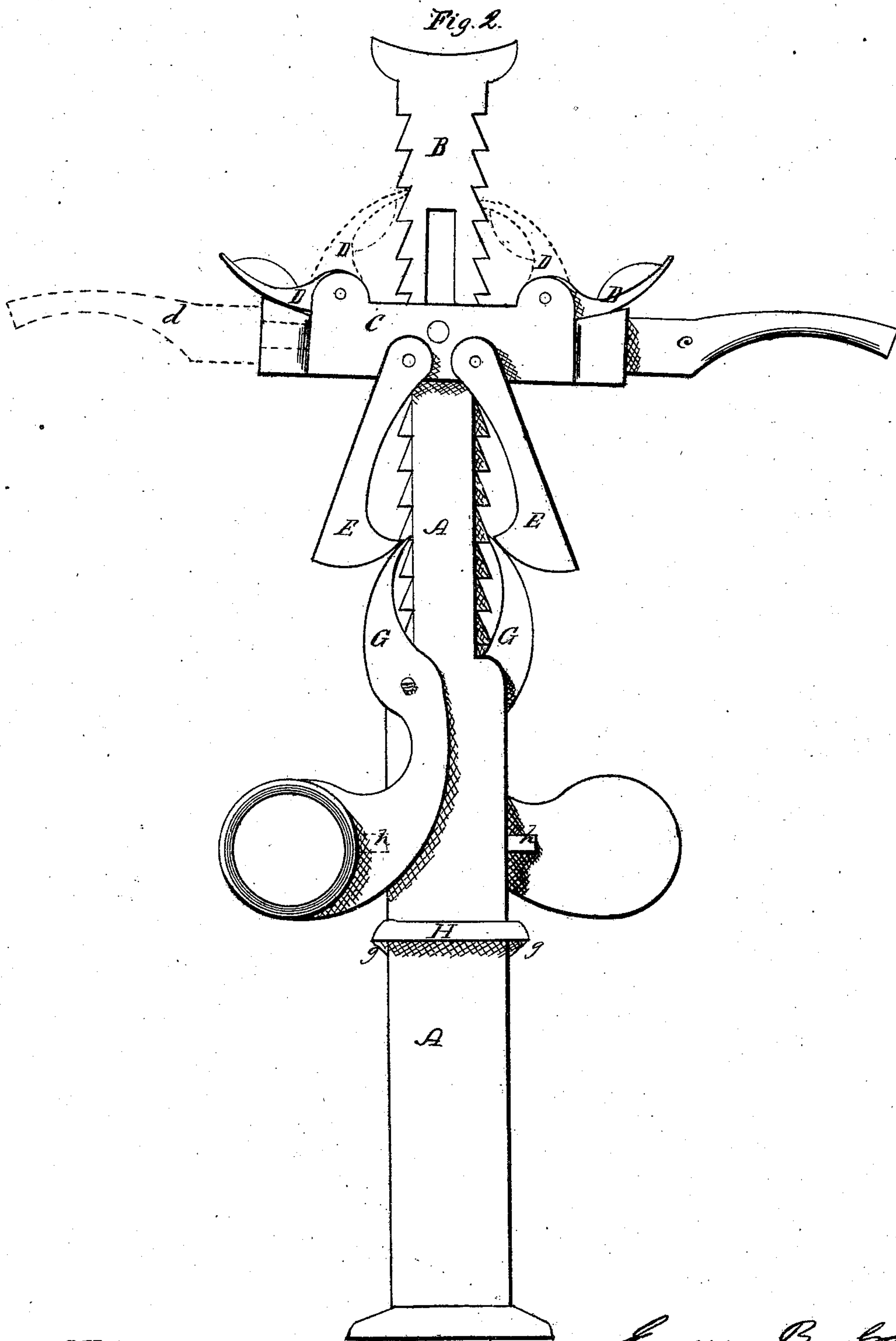
Fig. 1.



Witnesses,

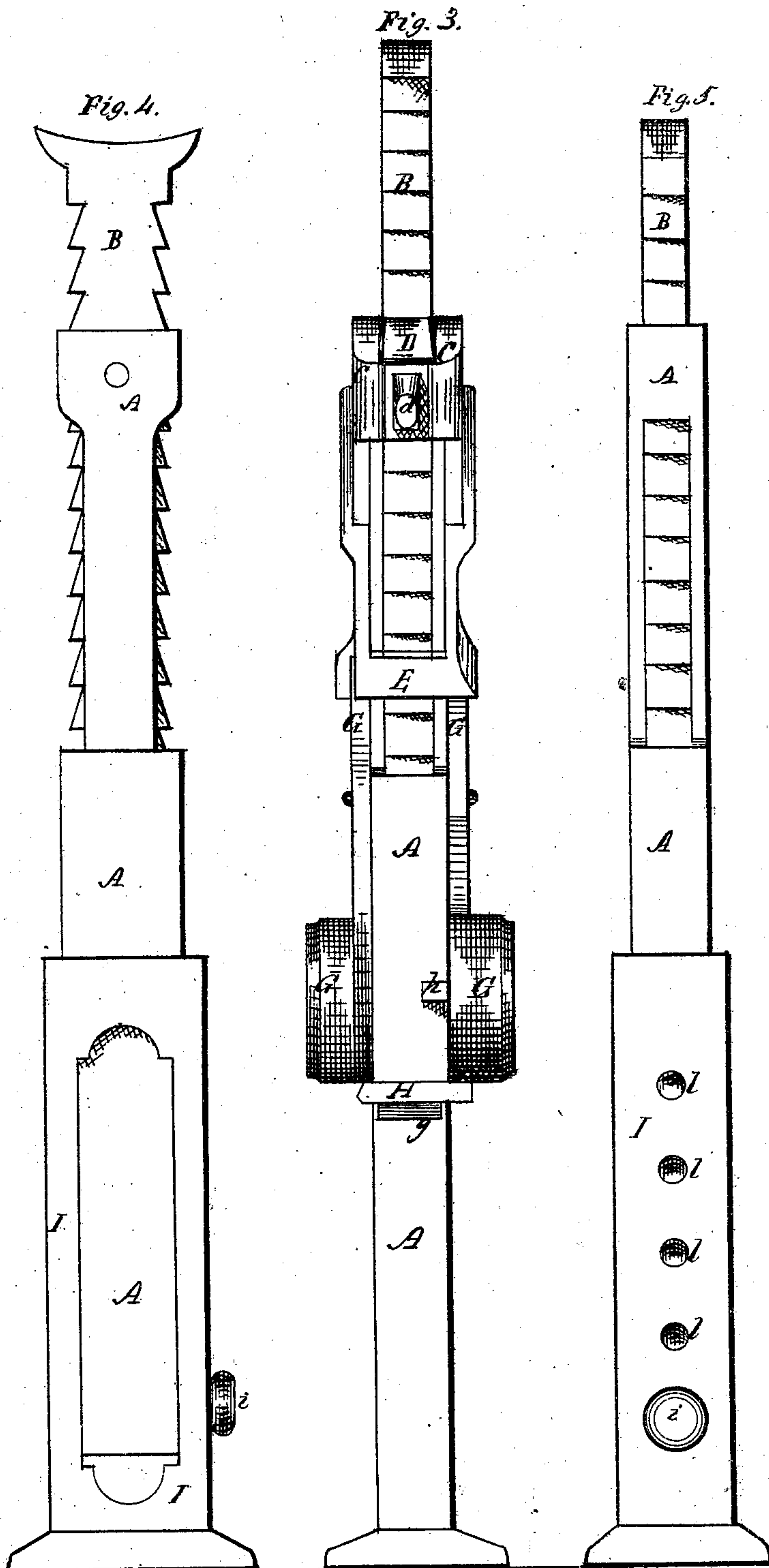
D. J. Brown
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Emery R. Gard,
Inventor's attorney,
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Witnesses

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UNITED STATES PATENT OFFICE.

EMERY R. GARD, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN LIFTING-JACKS.

Specification forming part of Letters Patent No. 116,296, dated June 27, 1871.

To all whom it may concern:

Be it known that I, EMERY R. GARD, of Chicago, in the county of Cook and State of Illinois, have invented an Improved Lifting-Jack; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing making part of this specification—

Figure 1 being a side elevation of the jack arranged for raising heavy weights; Fig. 2, a side elevation of the same arranged for lowering weights; Fig. 3, an elevation of the jack arranged as in Fig. 2 and taken at right angles to that view; Fig. 4, a side elevation of the body or standard of the jack, provided with an additional base for more fully adjusting the height of the jack to suit weights situated at various heights; Fig. 5, an elevation of the same taken at right angles to the view in Fig. 4.

Like letters designate corresponding parts in all of the figures.

A represents the base and standard of the jack; B, the lifting-bar, moving up and down vertically in the standard as a socket therefor; and C, the pawl-lever pivoted to the top of the standard. The lifting-bar B has two sets of ratchet-teeth, one on each opposite edge, so that each vibration of the pawl-lever acts upon it to lift it.

This jack is intended to be perfectly adapted to lifting heavy weights slowly and light weights more rapidly; and, first, to this effect it has two pairs of lifting-pawls on the pawl-lever, one pair, D D, with its pivots *a a* at a comparatively great distance from the fulcrum of the lever, so as to move a greater distance with a given extent of the lever's motion, and thus reach past two or three of the ratchet-teeth at once; and the other pair, E E, having its pivots *b b* comparatively near the fulcrum of the lever, so as to reach only a single ratchet-tooth at each vibration of the lever, and thereby lift slowly but with greater leverage. Second, the lever C is made with a single permanent handle, *c*, to be used alone when lifting comparatively light weights, and at the other end has a handle-socket, in which to place another handle, *d*, shown by dotted lines in Figs. 1 and 2, for an additional person or persons to work with in lifting very heavy weights; this additional lever being removable, so as not to encumber the jack when not needed to be used. The upper pawls D D, for lifting light weights, are

thrown back upon the lever, as shown in the drawing, when the lower suspended pawls E E are in action for raising heavy weights. The suspended pawls do not interfere with the action of the upper pawls, even when remaining in gear.

An important feature of this invention is a device for lowering weights automatically by the same action of the lever and pawls as when raising weights, the construction, arrangement, and operation thereof being substantially as follows: On the two opposite sides of the standard A are pivoted two guides, G G, so that they can be swung into different positions. Their upper ends are curved substantially as shown, or otherwise formed so as to effect the purpose desired, and their lower ends are weighted, so as to hold the upper ends steadily in position for the suspended pawls E E, which project laterally over the guides, to slide on without disturbing them when the device is in action. These guides, when not in use, are swung up into the position shown in Fig. 1, and are held there by a sliding band, H, (or its equivalent,) on the stock of the standard A, this band catching into a notch, *f*, in the edge of one of the guides, as shown. When the guides are to be brought into action, the one having the notch *f* is lifted a little to disengage the slide H, which drops or slides on the standard till it reaches and rests on stops *g g* on the standard, as seen in Fig. 2. The guides then swing down by their own gravity into the position shown in Fig. 2, being held there in the exact positions required by stops *h h* thereon striking the sides of the standard. The upper ends of the guides in this position are such as to throw the pawls E E sliding thereon successively out of gear with the teeth of the ratchet-bar B in descending, as indicated at the left hand in Fig. 2, but not to prevent the ascending pawl from taking into the next higher ratchet-tooth, as indicated at the right hand in the same figure. The effect is to lower the lifting-bar by the ordinary action of the lever, a great desideratum in lifting-jacks.

In order to give greater range to the lifting height of the jack, an auxiliary base, I, is employed, as shown in Figs. 4 and 5. This is a socket, in which the standard A slides up and down. There is properly a hole in the lower end of the standard, through which a pin or bolt, *i*, is inserted, and there is a set of holes, *l l*, in opposite

sides of the auxiliary base, through different ones of which the bolt I is inserted to vary the height of the standards.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The two sets or pairs of pawls D D and E E on the lever C, substantially as and for the purpose herein specified.

2. The lever C, provided with the two pairs of pawls D D and E E, and having a permanent handle, *c*, at one end, and a socket for a removable handle, *d*, at the other end, for the purpose set forth.

3. The guides G G, arranged and operating in combination with the pawls E E, substantially as and for the purpose herein specified.

4. The slide H, in combination with the guides G G, substantially as and for the purpose herein set forth.

5. The auxiliary socket-base I, with its adjusting-bolt *i* and holes *l l*, or their equivalent, in combination with the main standard A, for the purpose herein specified.

6. A lifting-jack constructed and arranged so that it can be caused either to lift or lower the weight by the same movement of the operating-lever, as herein specified.

Specification signed by me April 8, 1871.

EMERY R. GARD.

Witnesses:

J. S. BROWN,
D. J. BROWN.