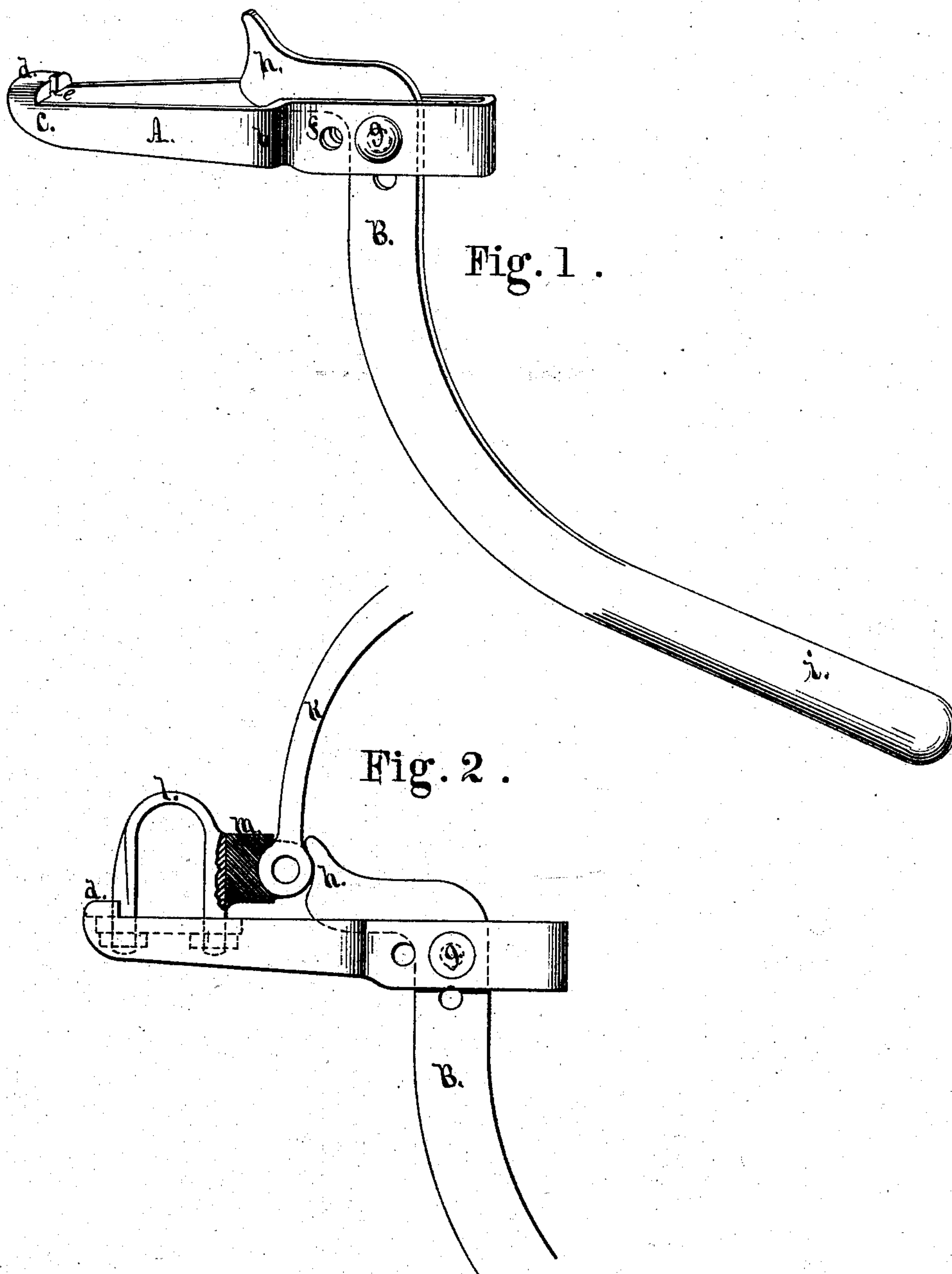


(No Model.)

R. GRAY.
Thill Coupling Jack.

No. 237,972.

Patented Feb. 22, 1881.



WITNESSES:

Wm. L. Cook,
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UNITED STATES PATENT OFFICE.

ROBERT GRAY, OF PROVIDENCE, RHODE ISLAND.

THILL-COUPLING JACK.

SPECIFICATION forming part of Letters Patent No. 237,972, dated February 22, 1881.

Application filed May 12, 1880. (No model.)

To all whom it may concern:

Be it known that I, ROBERT GRAY, of the city and county of Providence, State of Rhode Island, have invented a new and useful Improvement in Thill-Jacks; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

10 The object of this invention is to so construct a thill-jack that the clamp-frame to which the lever is hinged can be readily and firmly secured to the axle-clips, and the bolster of the lever bear fairly on the eye of the thill-iron.

15 The invention consists in the peculiar construction of the clamp and lever, as will be more fully set forth hereinafter.

Heretofore a thill-jack has been devised having a clamp provided with a recessed or notched nose to engage the axle-clip, and also provided with a forked end having a number of bolt-holes and a bolt changeable in said holes to afford different fulcrums for a lever, which lever is reversible in said forked clamp and upon 20 said changeable fulcrum, and has upon one of its ends claws for use in attaching thills or shafts, and upon its other end a flattened portion for use in detaching the thills or shafts. This lever is notched upon its back, and these 25 notches are adapted to engage with the bolt in the forked clamp, thereby forming a loose bearing. Now, my invention is designed, primarily, as an improvement upon this construction, and I have so altered the construction and arrangement as to obtain a fixed bearing 30 for the lever in the clamp, whereby I obtain greater security, avoid the liability to loss of the lever, and produce a stronger and simpler jack. The operating face of my lever is a simple curve, thus avoiding the expense of making claws, and the bearing of the lever, the operating face thereof, and the resistance-point of the clamp form, in operation, a toggle whereby I obtain ease in working my jack, 35 great strength, and a very durable and effective construction.

Figure 1 is a perspective view of my improved thill-jack; and Fig. 2 is a side view, showing the thill-jack in connection with the 40 axle-clip and thill-iron.

In the drawings, A is the clamp, to which the actuating-lever is hinged. This clamp is widest at *b* and narrower at *c*.

d is a bridge, which, when in use, extends over the plate of the clip, as is shown in Fig. 2, and the cavity *e* fits the rib of the clip. 55

The lever B is pivoted or hinged in the contracted portion *f* of the clamp, which portion is provided with two or more holes to receive the fulcrum-pin *g*. The lever B is also provided with two or more holes, so that the thill-jack can be quickly adjusted to any size clip and thill-iron. 60

h is the bolster end of the lever. It is concaved to fit the eye of the thill-iron. 65

i is the handle on the lever B. The lever B is curved on its handle portion below the fulcrum *g*, and bent at, or nearly at, a right angle at the bolster end of the lever. By this arrangement the clamp-piece A rests firmly against the axle, and the points *d*, *h*, and *g* occupy, with the clip, a toggle-joint, so that by raising the handle *i* of the lever the points *d*, *h*, and *g* approach a straight line, and the power of the lever increases as the resistance of the rubber bolster increases by the compression. The thill can therefore be connected more readily and the thill-jack operated with less power and with more certainty than thill-jacks as heretofore constructed. 70 75 80

K in Fig. 2 represents the thill-iron, *l* the axle-clip, and *m* the elastic bolster.

Having thus described my invention, I claim as new and desire to secure by Letters Patent— 85

The within-described improved thill-jack, composed of a clamp, A, having the narrow end *c*, and socketed bridge *d*, the widened portion *b*, and the perforated contracted portion *f*, in combination with the lever B, fixed in said clamp upon a changeable fulcrum, *g*, and having the curved handle *i* and the curved-faced bolster end *h*, the parts *d g h* being arranged so that in operation the jack acts as a toggle, substantially as specified. 90

ROBERT GRAY.

Witnesses:

JOSEPH A. MILLER,
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