

2 Sheets.

John C. Hendry's Boxing Machine.

Fig. 1.

PATENTED JUL 18 1871

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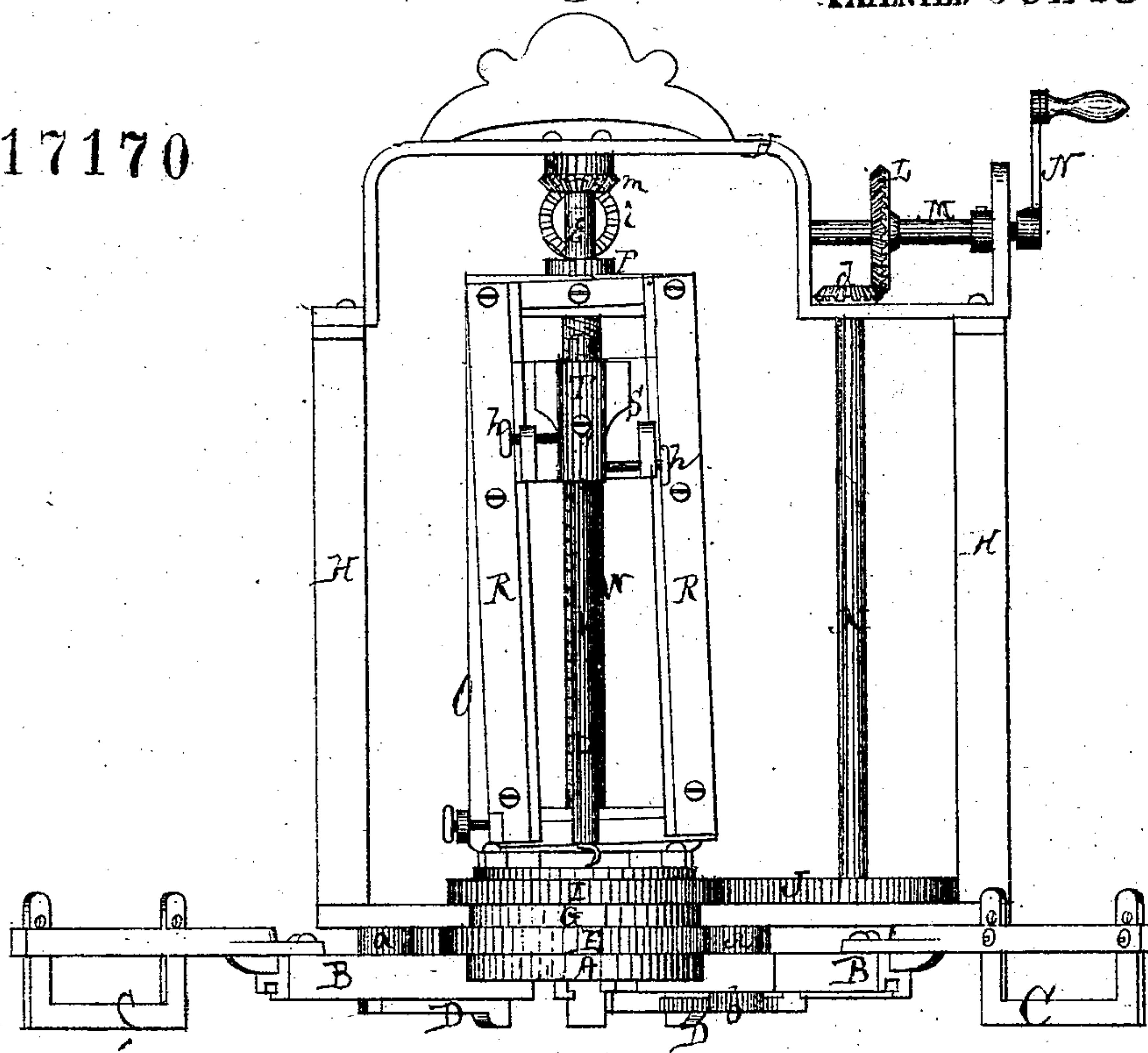
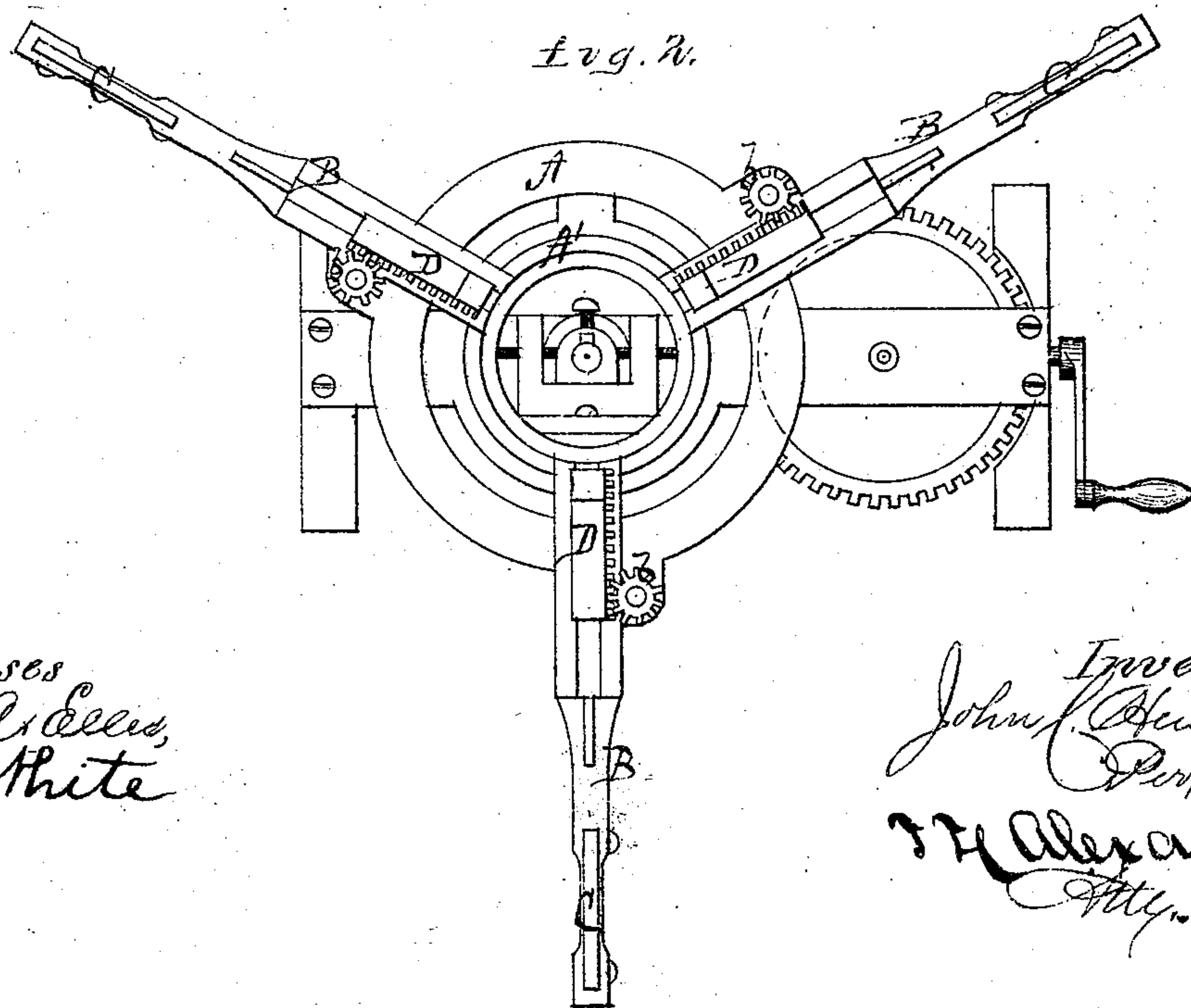


Fig. 2.



Witnesses
Jas. A. Ellis,
J. P. White

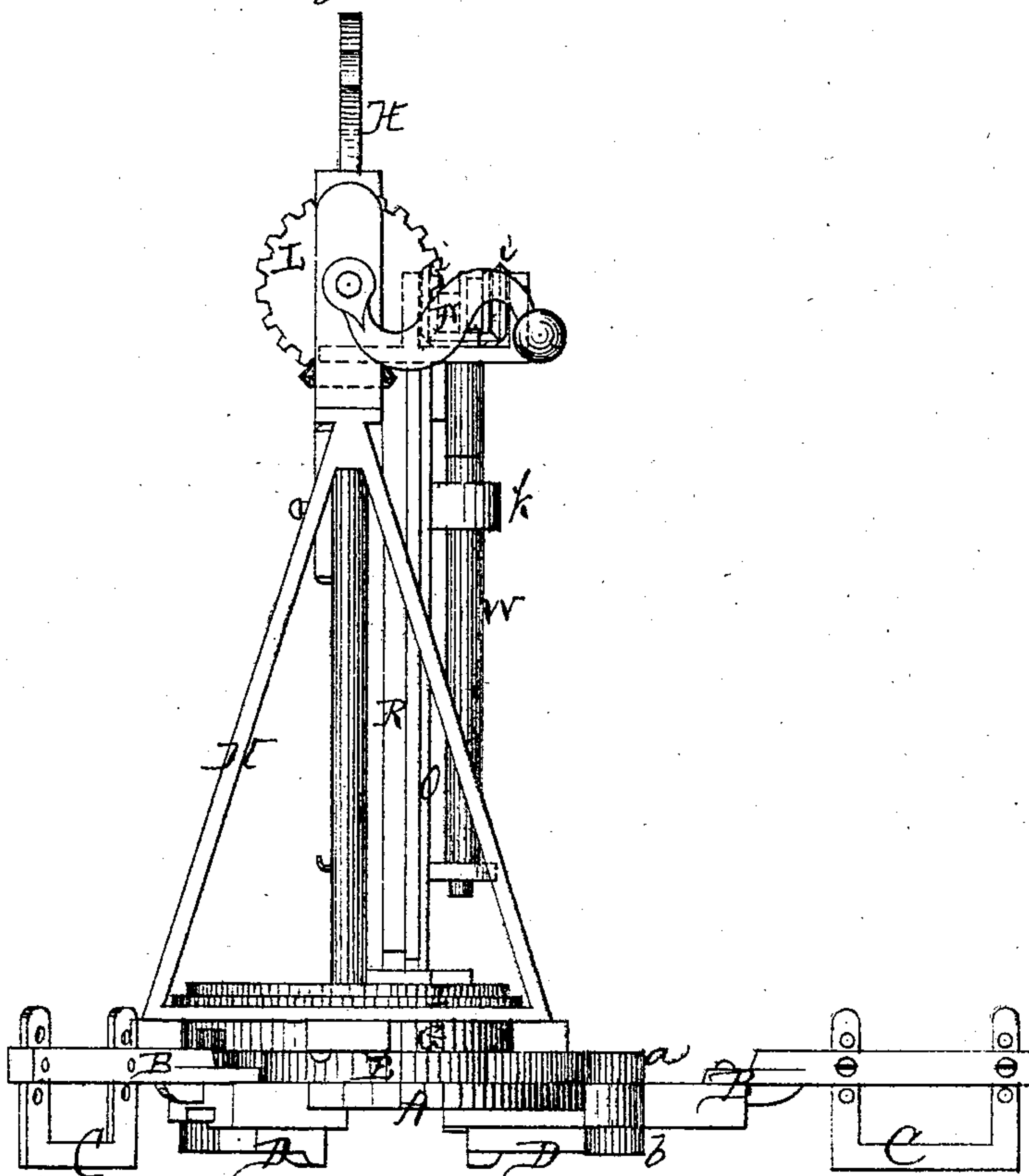
Inventor
John C. Hendry
Per,
W. H. Alexander
Atty.

Sheet, 2.

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Fig. 3.



Witnesses:
Jno. A. Ellis,
J. V. White

Inventor
John C. Hendry's
Per
J. H. Alexander
Atty.

UNITED STATES PATENT OFFICE.

JOHN C. HENDRY, OF MANCHESTER, NEW HAMPSHIRE.

IMPROVEMENT IN MACHINES FOR BORING WHEEL-HUBS FOR SETTING BOXES.

Specification forming part of Letters Patent No. 117,170, dated July 18, 1871.

To all whom it may concern:

Be it known that I, JOHN C. HENDRY, of Manchester, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Boxing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a machine for boring hubs for wheels at a taper to put in the box, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a front view, Fig. 2 a bottom view, and Fig. 3 a side elevation of my machine.

A A' represent two annular rings, placed one within the other, and connected by three arms, B B, forming the base or bed of my machine. The three arms B B are placed at equal distances apart, and extend a suitable distance beyond the outer ring A. Through the outer ends of the arms B B pass gauges C C to rest upon the rim of the wheel, said gauges being adjustable up and down so as to answer for both long and short hubs. The hub of the wheel is drawn to the center of the inner ring A' by means of sliding rack-bars D D, which move in dovetailed grooves on the under sides of the arms B B. These rack-bars are moved by an annular cog-wheel, E, placed around a circular flange on the upper side of the outer ring A, and gearing with pinions *a* upon the upper ends of short vertical shafts which pass through the arms B B. On the lower ends of these shafts are other pinions *b*, which mesh with the rack-bars D D, and thus said bars are moved simultaneously to or from the center. Upon the bed of the machine thus formed is secured another annular ring, G, with suitable arms to support the frame H, in which the entire boring mechanism is held. Around an upward-projecting circular flange on the ring G is placed an annular cog-wheel, I, which gears with and receives its motion from a cog-wheel, J, on the lower end of an upright shaft, K, said shaft being at its upper end provided with a bevel-pin-

ion, *d*. This pinion gears with a bevel-wheel, L, on the horizontal shaft M, which is turned by a crank, N. On one side of the cog-wheel I is secured an upright frame, O, with a cross-bar, P, on top, from which a short shaft or spindle, *e*, passes up into the stationary frame H, said shaft or spindle being perpendicularly over the center of the rings of which the bed is composed. On the inner or front side of the frame O, at the upper end, is pivoted another frame, R, the lower end of which is adjusted at will by the set-screw *f*. In this adjustable frame R moves the cross-head S up and down, and on the front side of this cross-head is pivoted a socket, T, for the reception of the mandrel V. The mandrel is held by a set-screw, *g*, and is adjusted at any angle desired by the set-screws *h h*, operating at the lower end on each side of the socket T. On the rear side of the cross-head S is a projecting nut, *k*, through which passes a screw, W, to raise and lower the mandrel. This screw is operated from a gear-wheel, *m*, on the shaft *e*, through a combination of gear-wheels, *i i*, as shown in Fig. 3.

By this machine the hub may be bored at any desired taper for the insertion of the required box, and any size without changing the taper.

As a modification I may, in place of the frame O R, use two round standards, with another similar standard in between, fastened to the cross-piece connecting the two outer standards at the top, and the lower end of this middle standard made to swing, as in the case above described. The screw W may also be arranged so as to do away with the gears *i i*.

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

1. The sliding rack-bars D D, constructed and arranged as described, and operated, by means of the annular cog-wheel E and pinions *a b*, substantially as and for the purposes herein set forth.

2. The combination of the swinging frame R, cross-head S, and swinging mandrel-holder or socket T, constructed, arranged, and adjusted as described, so as to cut any taper desired and any size without changing the taper, substantially as herein set forth.

3. The arrangement, upon one side of the revolving annular wheel E, of an upright frame carrying the mechanism for boring hubs, substantially as herein set forth.

4. In combination with the upright frame O placed upon one side of the revolving annular wheel, and carrying a mechanism for boring hubs, the screw W for raising and lowering the mandrel, substantially as herein set forth.

5. The within-described machine for boring hubs at a taper, when all its parts are constructed, combined, and arranged substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN C. HENDRY.

Witnesses:

S. N. BELL,
N. P. HUNT.