

(Model.)

2 Sheets—Sheet 1.

A. W. CLARK.
Saw Gummer.

No. 238,648.

Patented March 8, 1881.

Fig. 1.

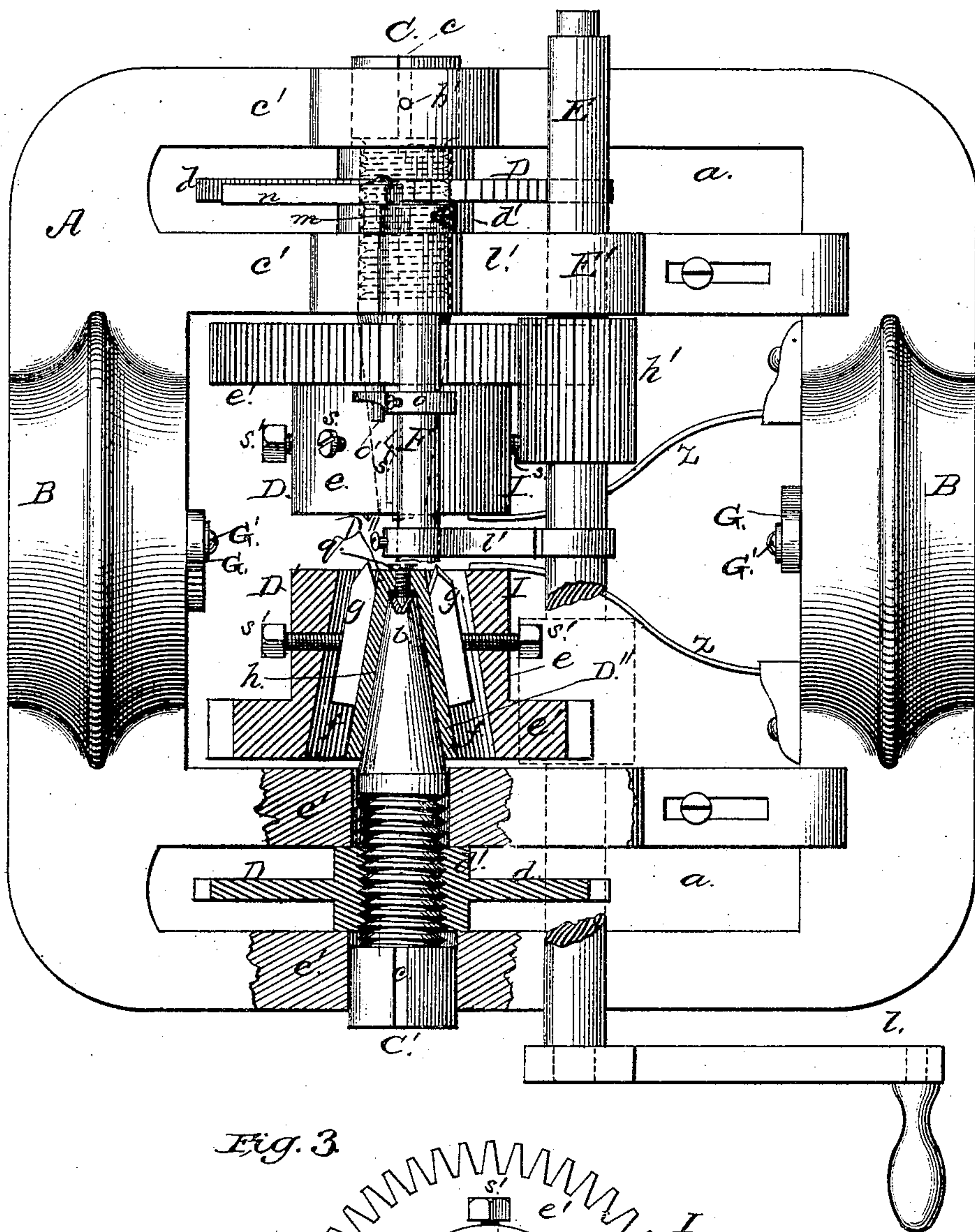
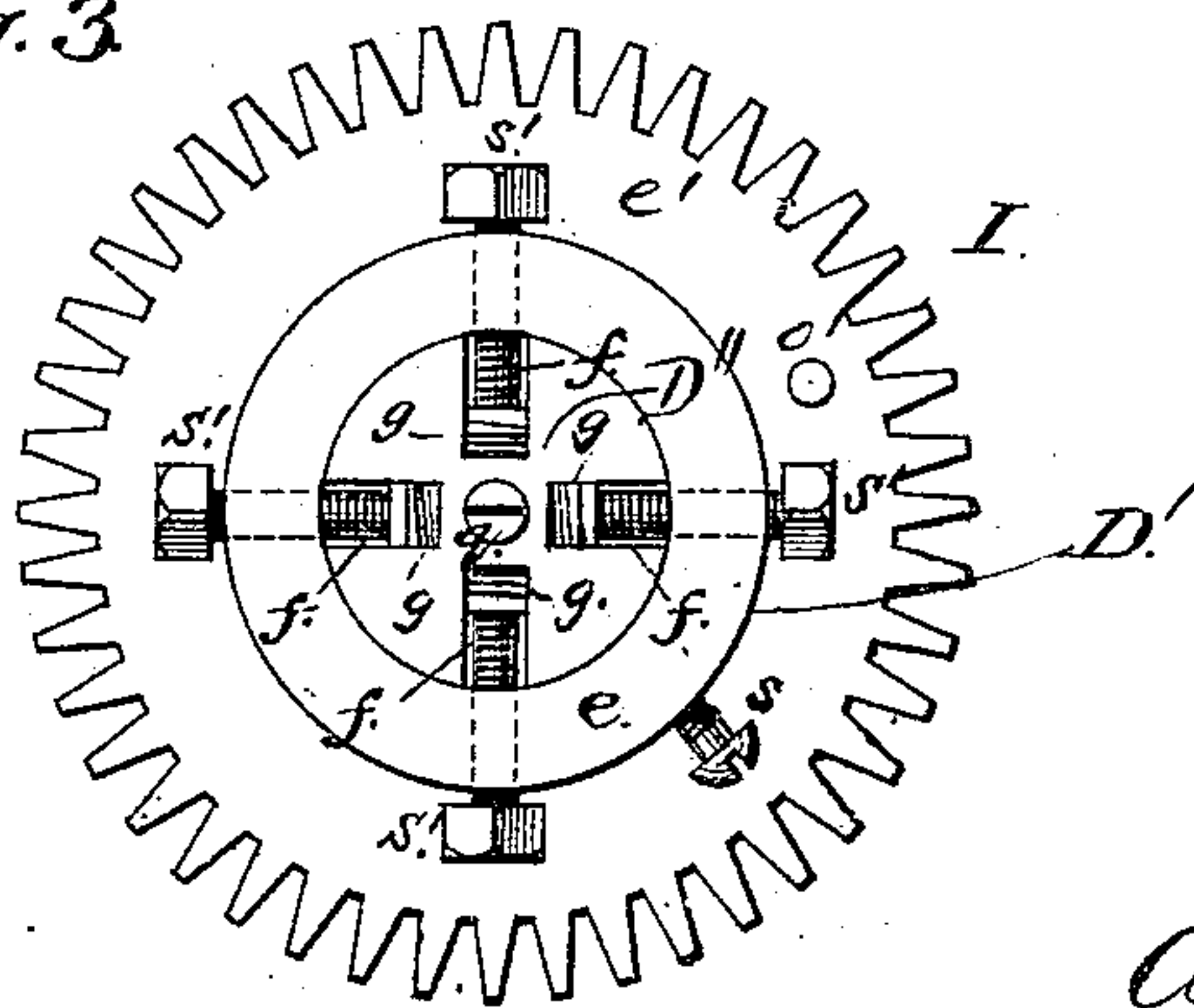


Fig. 3



WITNESSES

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his ATTORNEY

(Model.)

2 Sheets—Sheet 2.

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Fig. 2.

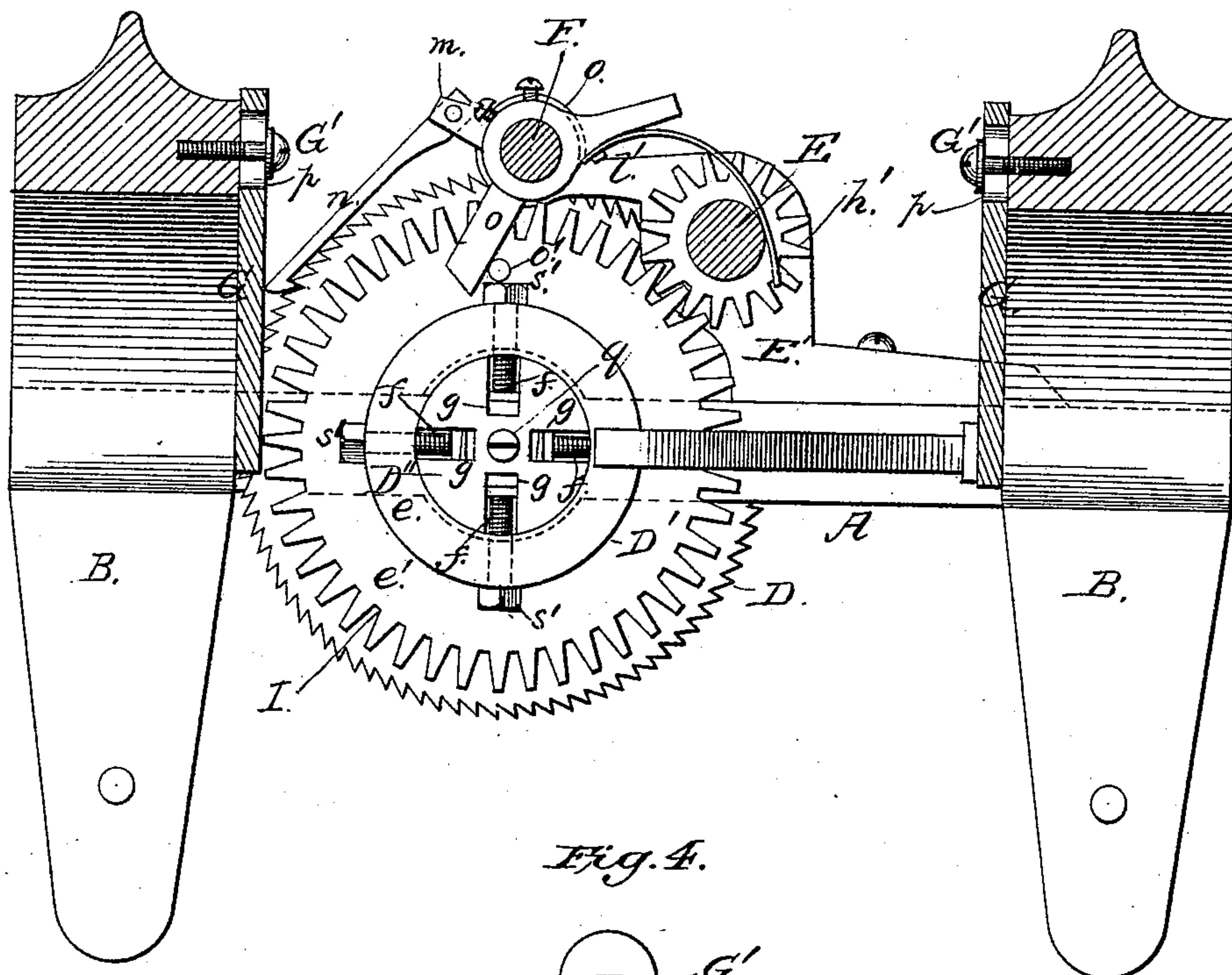
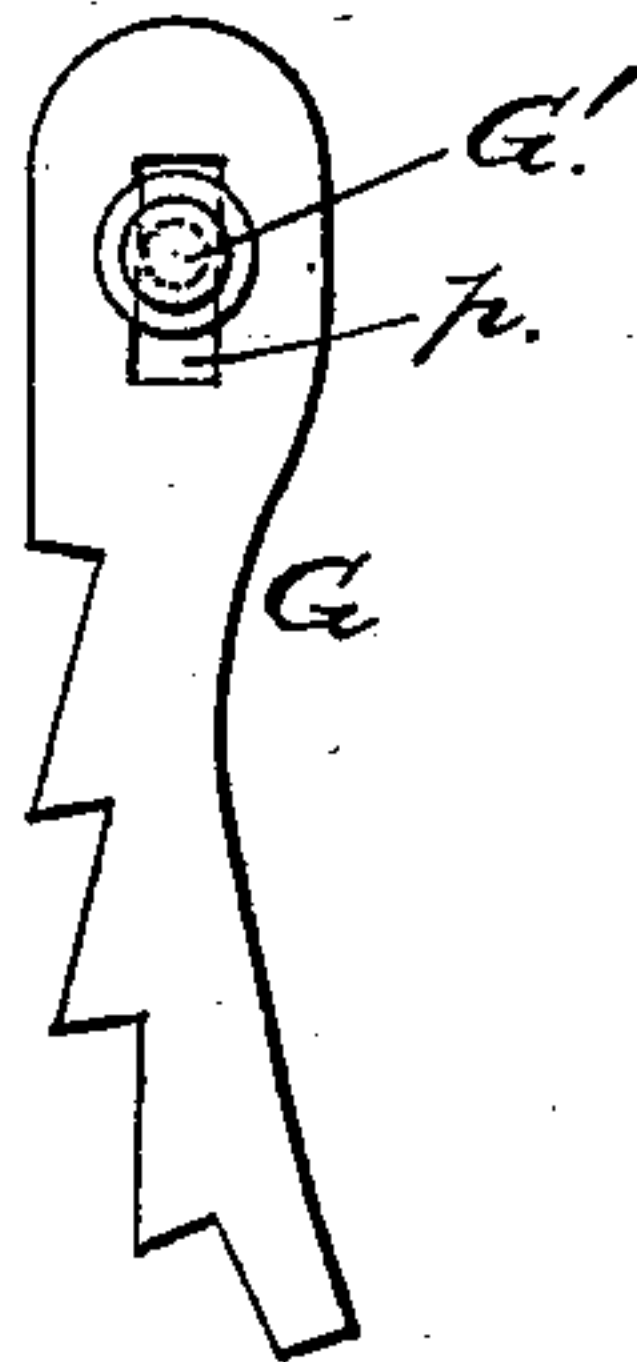


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

ASHER W. CLARK, OF SHOALS, INDIANA.

SAW-GUMMER.

SPECIFICATION forming part of Letters Patent No. 238,648, dated March 8, 1881.

Application filed May 15, 1880. (Model.)

To all whom it may concern:

Be it known that I, ASHER W. CLARK, of Shoals, in the county of Martin and State of Indiana, have invented a new and valuable Improvement in Saw-Gummers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a top view of my improved saw-gummer, partly in section. Fig. 2 is a longitudinal section thereof, and Figs. 3 and 4 are details.

This invention has relation to improvements in saw-gummers; and it consists in the construction and novel arrangement of parts, as hereinafter shown and described.

In the annexed drawings, the letter A designates a strong rectangular frame, having at each side the rectangular slot *a*, and at its middle portion, between said slots, the saw-clamps B, extending up above and below the plane of the frame, as shown. Usually the clamps are cast separately, and the side pieces, in which are the slots *a*, are bolted thereto; but if deemed expedient the whole frame may be cast in one piece.

C C' designate metallic shafts or spindles extending through the slots *a* of the frame and projecting into the middle space of frame A, with their longitudinal axes in line with each other. The inner ends of the shafts C C' taper to a point, *b*, and the bodies thereof are screw-threaded, the thread of the one being left-handed and that of the other being right-handed, and while they are endwise movable transversely of the frame to or from each other they are held against rotation by means of a pin, *b'*, extending downwardly through the frame and fitted into a longitudinal groove, *c*, of the said shaft. Endwise motion to or from each other is given to the said shafts by means of the wheels D, consisting, essentially, of a toothed disk, *d*, and of a sleeve-hub, *d'*, threaded to correspond to the threads of the shafts C C', and arranged in slots *a* on said shafts, with the ends of its hub bearing against the side bars, *c'*, of the frame bounding said slot. The turning of these wheels necessarily moves the shafts endwise.

D' indicates the body of the cutter-heads I, consisting, essentially, of a conically-tubular sleeve, *e*, and of a flange, *e'*, having its perimeter toothed, as shown. One of the arches of the clamps has secured to it springs Z, the outer ends of which bear against the bodies of the cutter-heads and prevent them from working off from the spindles or shafts C C'. Inside of this sleeve is passed a core, D'', of the form of a frustum of a cone, and having in its perimeter a number of sufficiently deep grooves, *f*, designed to receive the cutting-bits *g*. Two of these are V-pointed and act to cut the piece out of the saw-plate, and the remaining two are reaming-bits, that cut off the wire edge or burr at the bottom of the said cut. In the core D² is a conical recess, *h*, in which the tapered end of the spindle is received. The core is secured to its place by means of a set-screw, *s*, passing through the sleeve *e* of the cutter-body, and the bits are secured by means of similar screws, *s'*, likewise passing through the said sleeve. The cutter-heads rotate freely upon the ends of the spindles, and act with the cutters upon opposite sides of the edge of the saw-plate held by the clamps.

E indicates a driving-shaft rotating freely in bearings in pillow-blocks E', secured adjustably to the side bars of the frame A. This shaft is provided with gear-wheels *h'*, that engage the gears *e'* of the cutter-heads, and impart rotary motion thereto. This shaft is actuated by means of the crank-arm *l*.

In the overhanging ends *l'* of the pillow-blocks E' is journaled a rock-shaft, F, having at its ends the projecting arms *m*, to the extremities of which are pivoted the hook-ended pawls *n*. In between the gears *e'* of the heads this shaft is provided, close up against the said gears, with a tappet-arm, *o*, which during the rotation of the head comes in contact with a stud or studs, *o'*, on the cutter-head, thus causing the rock-shaft to turn in its bearings and actuate the pawls to rotate the adjusting-wheels D and move the shafts C C' endwise. By this means the heads are forced automatically against the saw-blank as fast as the cutters bite or cut into the same. The tappet-arm *o* is adjustably applied on the shaft F, for the purpose of regulating the degree of its rotation, and the consequent action of the pawls upon the adjusting-wheels D.

The operation of the machine is as follows: The saw-plate is placed in the clamp and secured by suitable screws, it having been previously "laid off" to mark the position of the cuts and the cutters in the heads having been adjusted according to the dimensions of the said cuts. The heads are then set up until the cutters touch the saw, when they are secured in position by applying their respective screws. The machine is then operated sufficiently to mark the saw and indicate whether the adjustment of the saw in the clamp is correct. This being ascertained to be correct, the machine is worked, and it will cut each saw-recess of precisely the same form and size. If the adjustment of the machine be not correct, it may be altered and rendered so by means of the notched rests G, pivoted to the arch of the clamp by means of a screw, G', extending through a slot, p, of the rests, as shown. The gradually-lessening width of the spindle-recess of the core allows the grooves for the cutters to be cut very nearly inward to the axis of said core, and consequently increases the range of adjustment of said cutters.

Extending through the face of the core, in its axial line, is a screw, q, the end of which bears against the extremity of the spindle. This screw serves to reduce friction of the core and spindle and take up wear thereof.

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

1. The springs Z, cutter-heads I, having the removable cores D'', each provided with a tapered recess, h, and longitudinal grooves f, for the reception of the cutting-points, in combination with non-rotating endwise-movable taper-ended spindles C C', substantially as specified.

2. The combination, with the taper-ended spindle C', a cutter-head, I, and core D'', having a tapering recess for the reception of the said spindle, of an axial screw, q, passing through the face of the core and bearing against the end of the spindle, substantially as specified.

3. The combination, with the frame A, having slots a at its sides, of the axially-aligned oppositely-threaded endwise-movable and non-rotary taper-ended spindles C C', the recessed cutter-heads I and cores D'', rotating on the inner ends of said spindles, and the gear-wheels D, arranged on said spindles in slot a, and female-threaded to correspond to said spindles, substantially as specified.

4. The combination, with the frame A, having slots a, the oppositely-threaded non-rotating taper-ended spindles C C', extending across the said slots and provided with the threaded gears D D', the cutter-heads I, and cores D'', rotating on the ends of said spindles and provided with the gear-wheels e', of the driving-shaft E, having pinions h', engaging the gears of the cutter-heads, the rock-shaft F, having end arms, m, the hook-ended pawls n, engaging the gears D, the adjustable tappet-arms o, attached to the rock-shaft, and a spur or spurs, o', upon the gears of the cutter-heads, engaging the said tappet-arms, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ASHER W. CLARK.

Witnesses:

DAVID A. NORCROSS,
WILLIAM L. TOWN.