

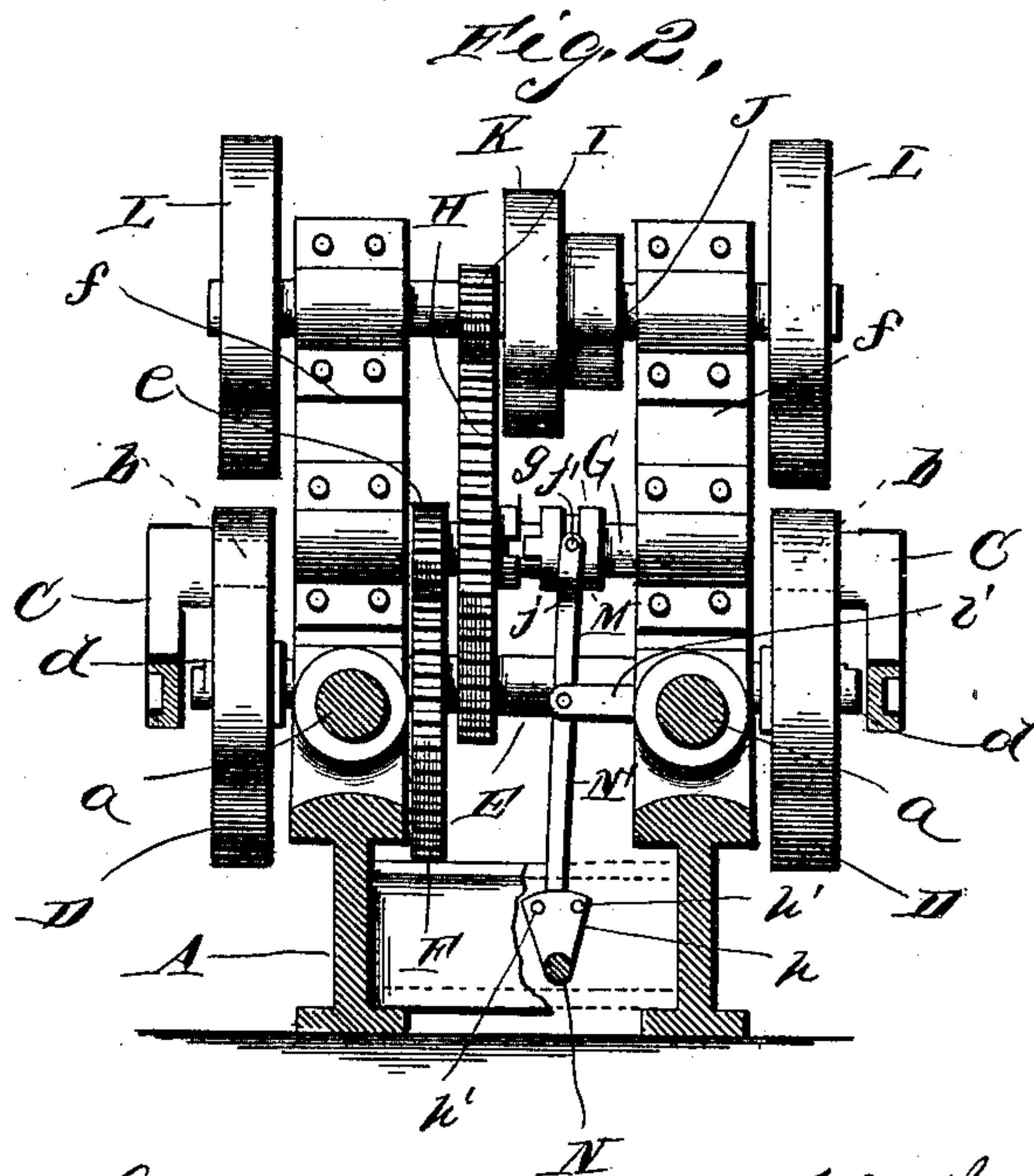
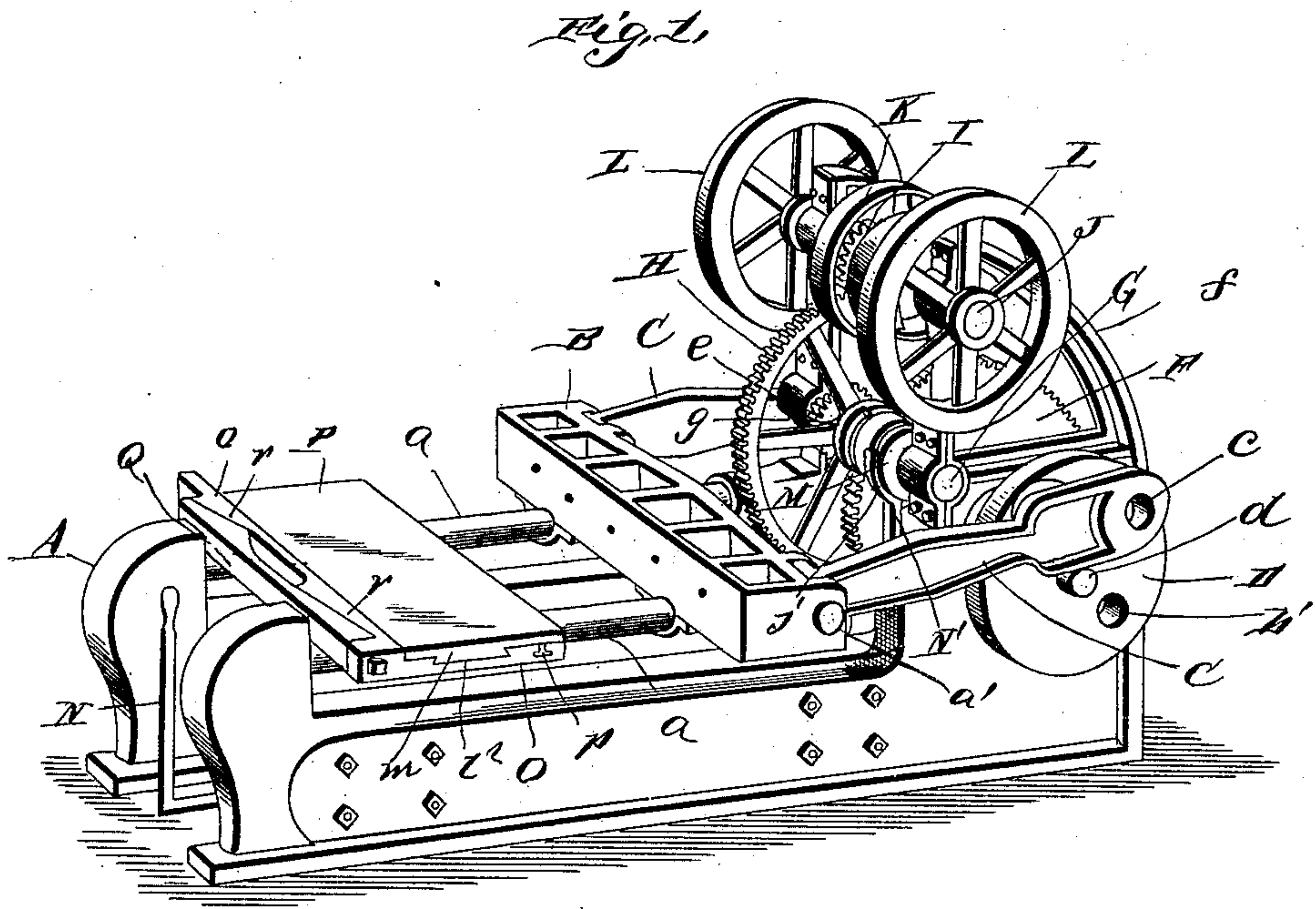
(No Model.)

2 Sheets—Sheet 1.

W. H. JOHNSON.
FORGING MACHINE.

No. 430,029.

Patented June 10, 1890.



Witnesses

C. L. Taylor
P. C. Massi.

Inventor

W. H. Johnson

By his Attorney

E. W. Anderson.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3,

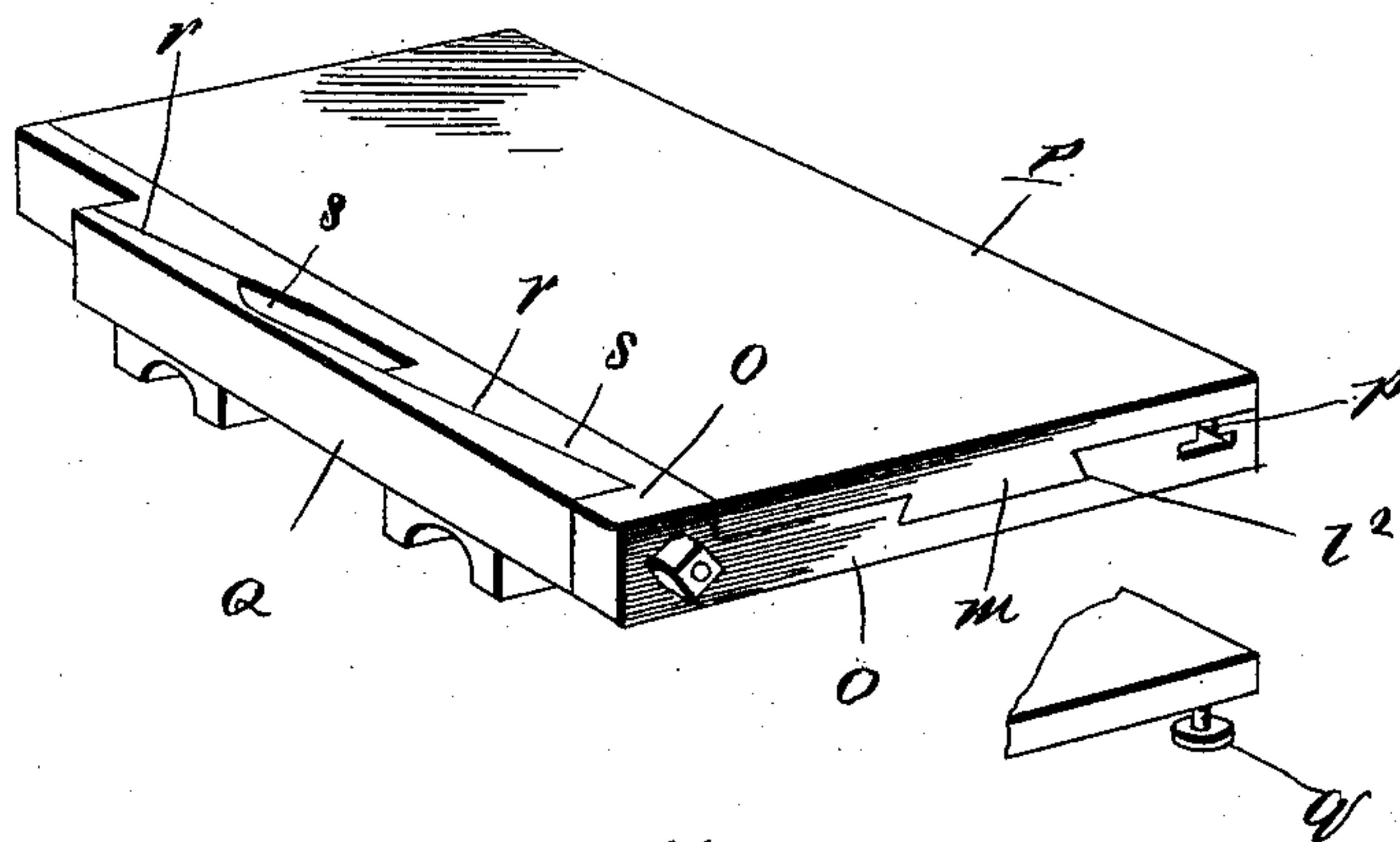


Fig. 4,

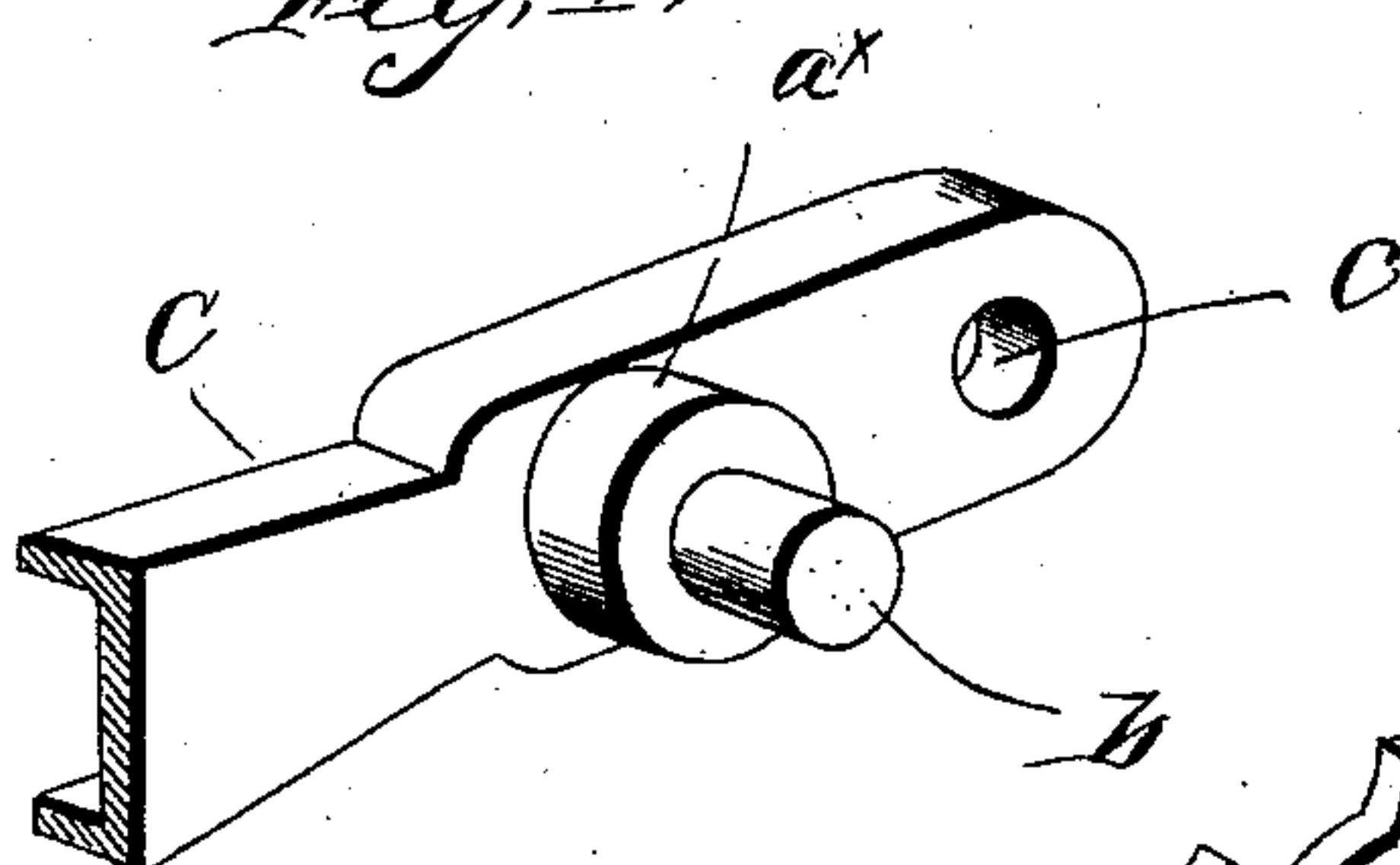


Fig. 5,

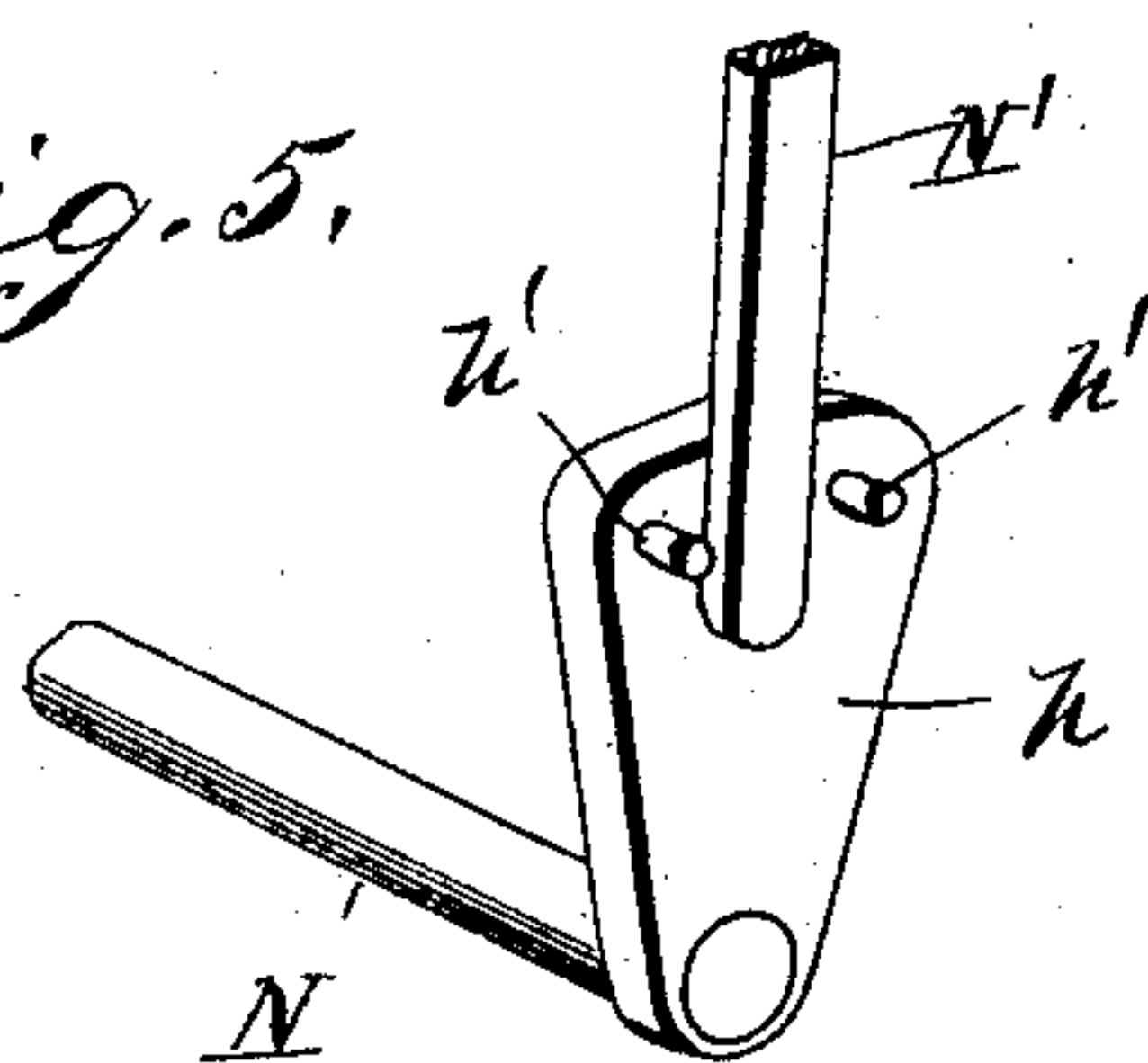
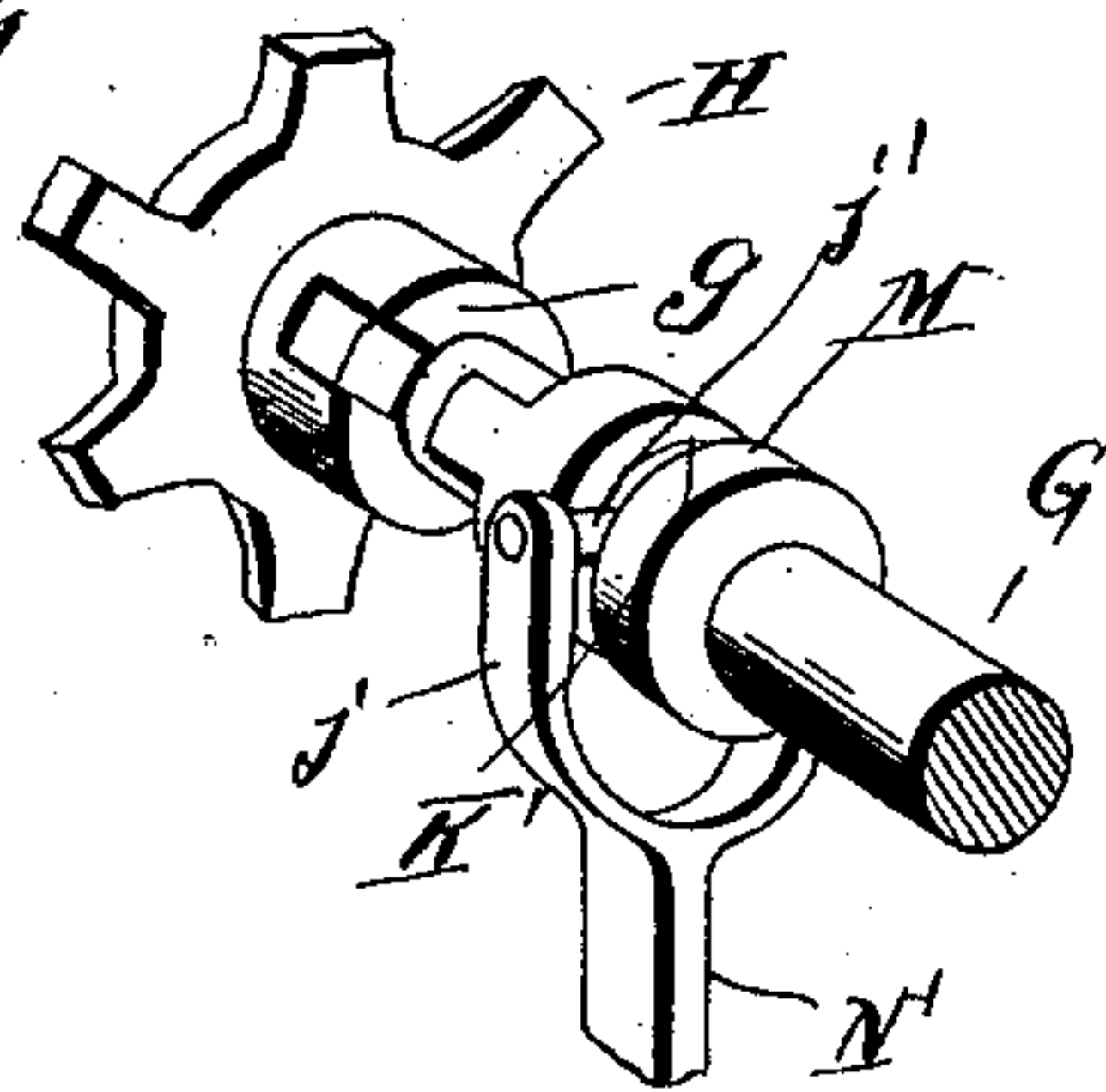


Fig. 6,



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UNITED STATES PATENT OFFICE.

WILLIAM H. JOHNSON, OF RACINE JUNCTION, WISCONSIN.

FORGING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 430,029, dated June 10, 1890.

Application filed October 12, 1889. Serial No. 326,779. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. JOHNSON, a citizen of the United States, and a resident of Racine Junction, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Forging-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a perspective view of this machine. Fig. 2 is a transverse sectional view. Figs. 3, 4, 5, and 6 are details.

This invention pertains to certain improvements in forging-machines, which are also adapted for bending, welding, and punching purposes; and it consists of the novel combination and construction of parts, as will fully appear from the following description and accompanying illustration.

In accordance with my invention I employ a suitable bed-frame or casting A, upon the side pieces of which are arranged the ways a a , upon which travel the box or head B, having the punching and forging implements. The head or box has connected to it by means of bolts a' a' , the inner ends of heavy pitmen C, the opposite ends of said pitmen being adapted for connection to and driven by the disks or wheels D, receiving motion from gearing presently more fully pointed out. The connection between these ends of the pitmen and the disks or wheels D is effected by casting upon the pitmen the wrist-pins b instead of upon the disks or wheels, as heretofore, adding strength to the pitmen, as opposed to taking it away from the latter, as would otherwise be the case in forming the openings in the pitmen to receive the wrist-pins. The wrist-pins proper project from enlargements a^x thereof, cast upon the inner sides of the pitmen, and may engage either one of the two diametrically-opposite openings b' b' in each of the disks or wheels, according to the stroke required to be given. Through this arrangement is obtained a short and quick powerful stroke for doing heavy work, preventing the

transmittal of a great portion of the strain to the gearing, as heretofore experienced. The pitmen are also capable of further adjustment by withdrawing the bolts a' a' connecting them to the box or head B, and withdrawing the wrist-pins or trunnions b from the disks or wheels D and fitting or slipping their ends, each of which is provided with an opening c , upon short eccentric extensions or trunnions d of the disk or wheel-shaft E, the pitmen, however, in that case being reversed side for side. By this connection or adjustment of parts a still more powerful stroke is obtained, adapting the machine more particularly for punching and similar heavy work.

The disk-shaft E is geared by a large cog-wheel F with a small pinion e of a second shaft G, supported in brackets or bearings f , bolted upon the frame A. This shaft G also carries loose large cog or gear wheel H, geared to a smaller similar wheel I on an upper shaft J, also having the driving-pulley K and balance or fly wheels L L, said shaft J also being journaled upon the brackets or bearings f . The wheel H has clutch-shoulders g on its hub, which are adapted to engage corresponding shoulders on a clutch-sleeve M, having a sliding connection with the shaft G to throw the machine in and out of motion.

For the convenient actuation of the clutch-sleeve I provide a right-angle hand-lever N, supported in cross pieces or girts of the frame A, so as to have an axial movement and having at its inner end an upwardly-flared or fan-shaped plate h , which has upon one side lateral studs or projections h' h' , suitably spaced apart, and between which depends the lower end of a lever N' , and which latter is acted upon by said studs, as will be presently seen. This lever N' is suitably pivoted to a bracket i , projecting from the inner side of one of the sides of the frame A. The upper end of said lever has a fork j , the arms of which are provided with studs j' j' , engaging an annular groove K' in the clutch-sleeve M, and whereby it will be seen that as the hand-lever N is manipulated the said sleeve will be shipped into or out of gear with the clutch-shoulders of the wheel H, according as to whether it is desired to put the machine in or out of motion.

O is the die bed or plate, which is adjusted

upon the ways *a a* at the rear end of the frame A, and has in its center a longitudinal depression or recess *l*², which receives a downward extension or projection *m* on the under side of the die P. Said die bed or plate O has at its rear edge an upward extension *o*, which forms a bearing for the rear edge of the die P.

Indenting the die plate or bed O is an inverted-T-shaped longitudinal slot *p*, arranged near the forward edge of said plate, which receives a flat-headed bolt *q* of the die, its head entering the bottom portion of the slot, while its body portion passes through the die, permitting of shifting the position of the die, as may be desired. This construction permits of the use of much smaller and lighter dies than heretofore available for this class of machine.

Q is an adjusting-bar having one side plain or straight and resting against knees or end pieces of the frame A. The opposite side of said bar Q has two separate spaced-apart inclines *r r*, engaging corresponding inclines *s s* on the rear side of the upward extension *o* of the die plate or bed O, and whereby, through the aid of a screw *t* passing through a lateral extension *n* on one end of the die plate or bed and engaging said adjusting-bar, the die plate or bed is adapted to be bodily adjusted upon the ways *a a*, toward or away from the box or head B, as the necessities or demands of the work may call for. This arrangement does away with the use of the ordinary thumb-screws heretofore employed for this purpose.

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

1. The combination of the punch-carrying box or forging appliance, the pitmen, and the disk or wheel, said pitmen each having a

wrist-pin engaging an opening in the disk, substantially as set forth.

2. The combination of the punch-carrying box or forging appliance, the pitmen each having a wrist-pin, and the disk or wheel having diametrically - opposite openings, either of which being engaged by said wrist-pin, substantially as set forth.

3. The combination of the punch-carrying box or forging appliances, the pitmen each having a wrist-pin and an opening near one end, the disk or wheel having an opening and its shaft having an eccentric extension or trunnions to engage the openings of said pitmen, substantially as set forth.

4. The die bed or plate having a depression or recess about centrally thereof and a bearing-shoulder at its rear edge, in combination with the die having upon its under side a downward extension or portion entering said depression or recess in the die-bed, substantially as set forth.

5. The combination, with the die bed or plate having a longitudinal inverted-T-shaped slot, of the die having a flat-headed bolt, its head engaging the bottom of said slot and held to the die, substantially as set forth.

6. The combination, with the die bed or plate having one edge provided with inclines and at one side a lateral extension or projection, of the adjusting-bar having a plain or straight rear side and its opposite side provided with inclines engaging the aforesaid inclines, and the screw passing through said lateral extension or projection and engaging said adjusting-bar, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. JOHNSON.

Witnesses:

WM. KRUEGER,
J. W. DEARSLEY.