J. W. MILLET.

Clothes-Pin Machine.

No. 160,783. Patented March 16, 1875.

Fig. 1

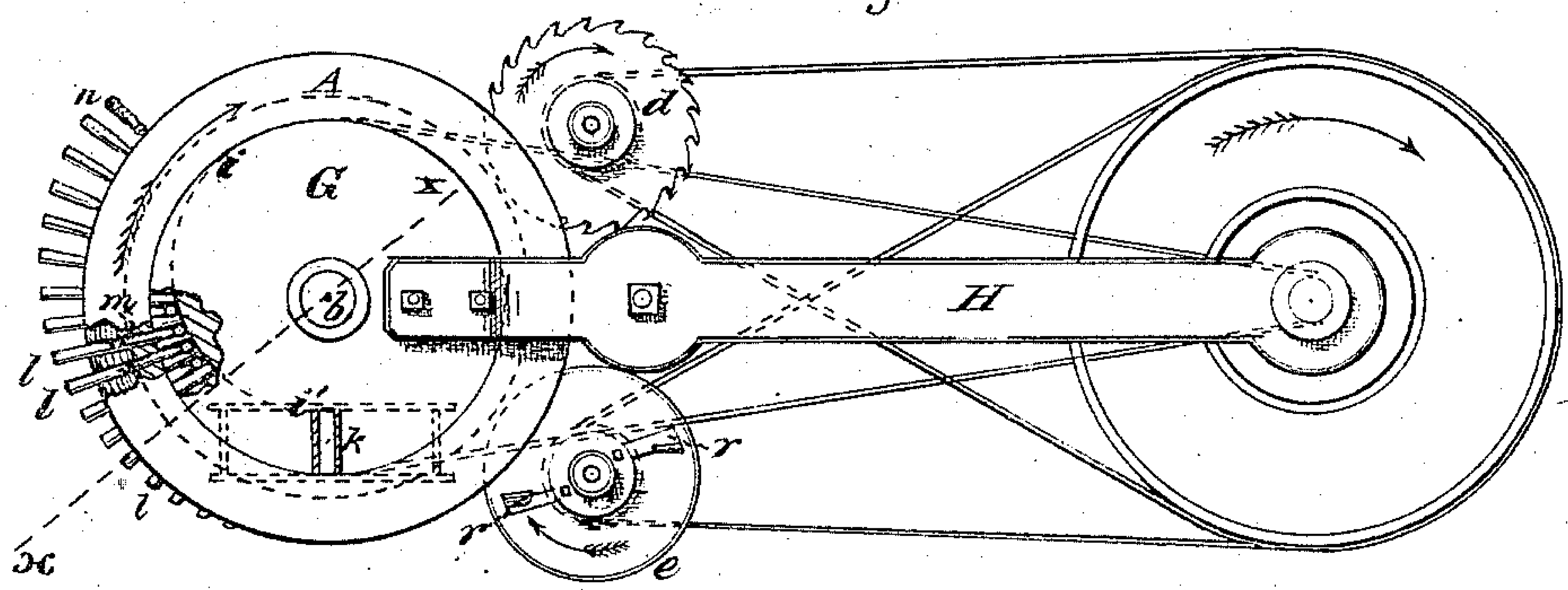


Fig. 2.

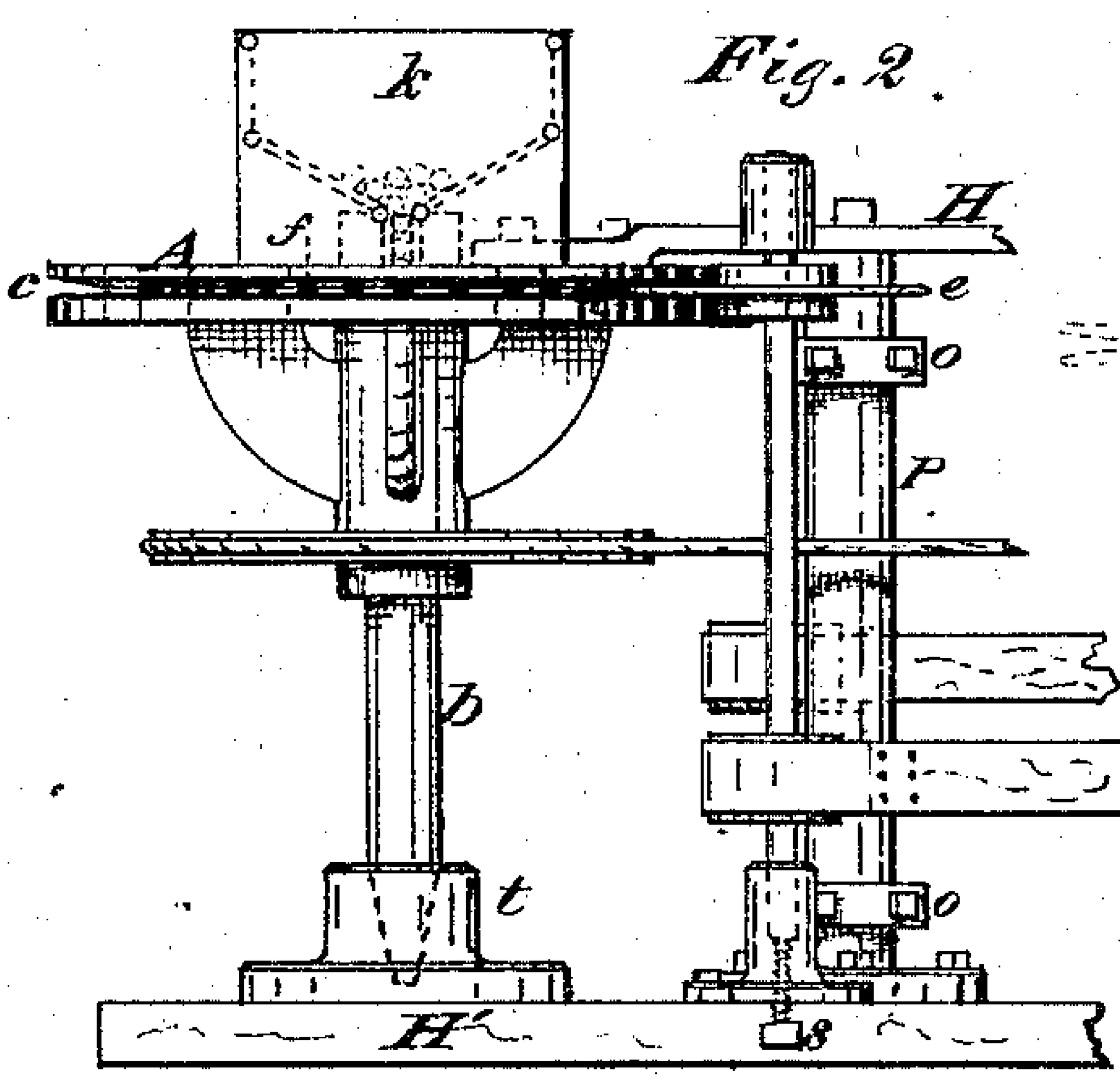


Fig. 3

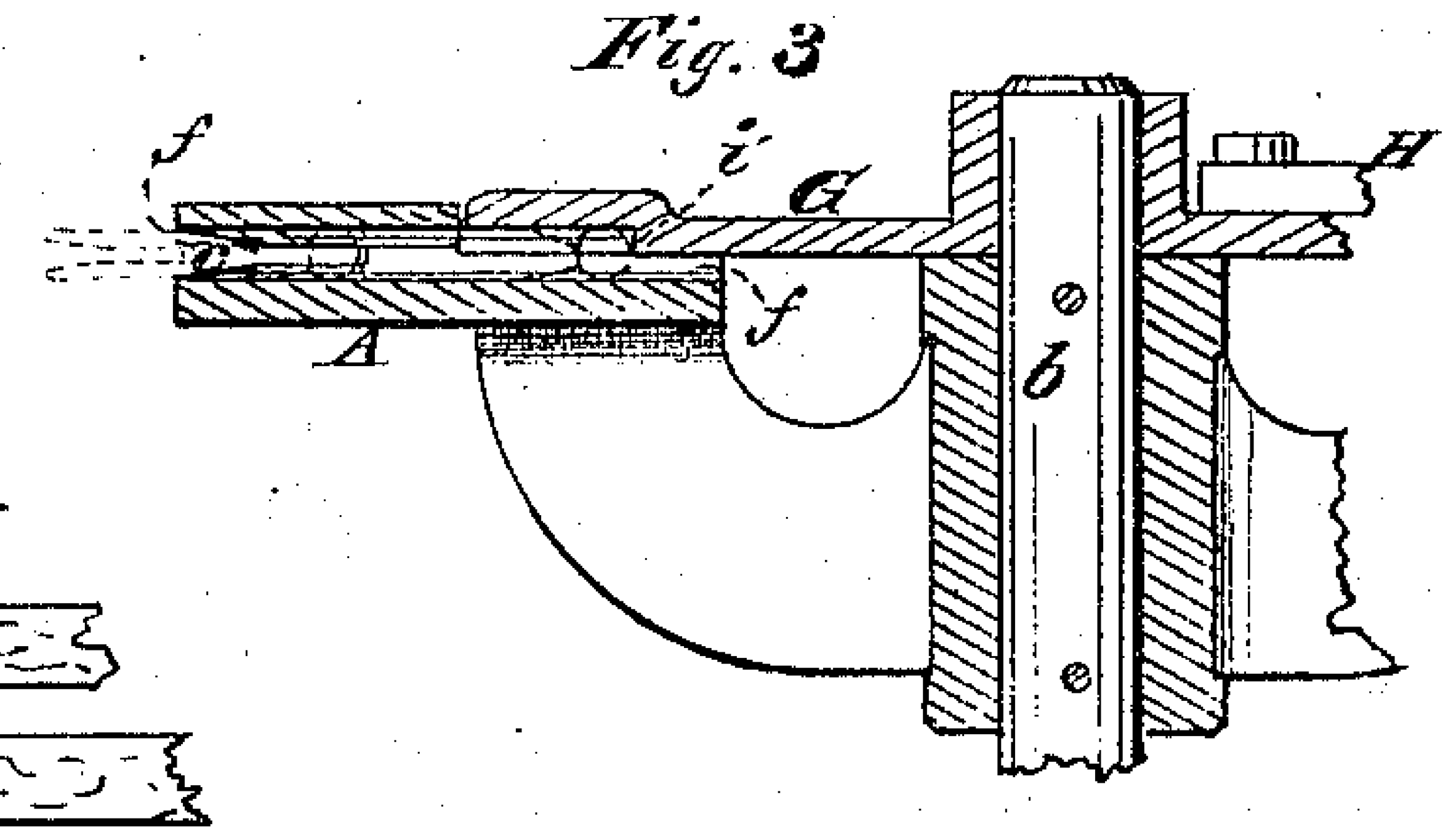
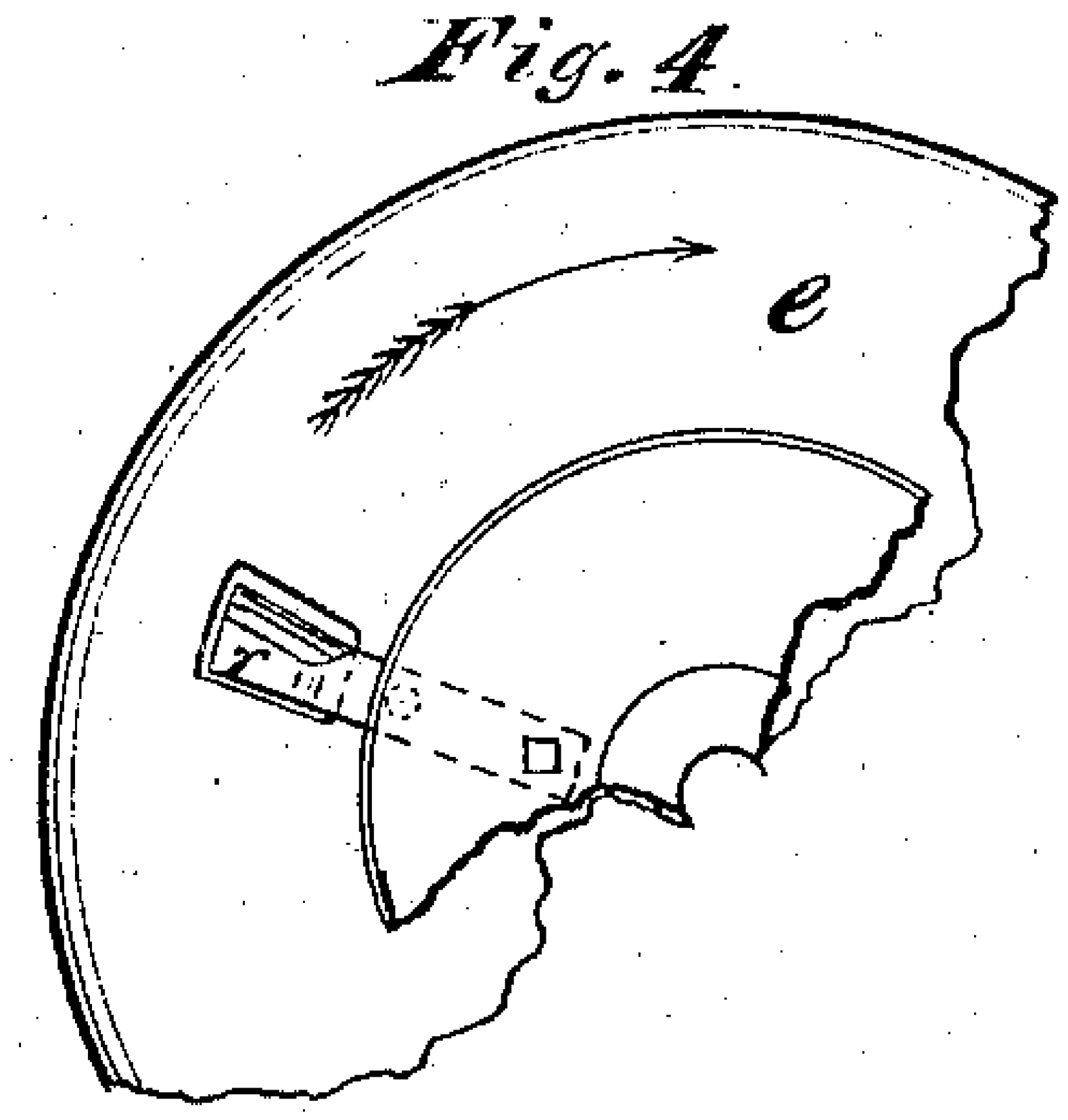


Fig. 4.



Witnesses:—

[illegible]

Henry S. Parker

Inventor:—

John W. Millett,
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UNITED STATES PATENT OFFICE.

JOHN W. MILLET, OF JOHNSTOWN, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO LOUISA BANKS PETTYJOHN, OF SAME PLACE.

IMPROVEMENT IN CLOTHES-PIN MACHINES.

Specification forming part of Letters Patent No. **160,783**, dated March 16, 1875; application filed August 14, 1874.

To all whom it may concern:

Be it known that I, JOHN W. MILLET, of Johnstown, in the county of Fulton and State of New York, have invented a Clothes-Pin Machine, of which the following is a specification:

The object of my invention is to rapidly and perfectly slot clothes-pins—first, by means of a saw without beveling-knives secured thereto; secondly, having the beveling-knives usually employed and secured to the saw secured to an independently-revolving toothless disk fully the thickness of the slot previously sawed, which enters the same and, with the knives aforesaid, bevels the inner side of the clothes-pin at or near the end; thirdly, a rotating disk made of cast-iron, preferably, with radial holes drilled equidistant in the periphery to a depth twice the length of the clothes-pin to be slotted. At half the distance from the periphery said disk is turned out or recessed on its upper side, and parallel to said holes, leaving half of the diameter of said holes exposed.

A circular covering or stationary plate is made to fit loosely within said recess. The under portion of said plate has a cam formed thereon, and at the starting-point, or at the nearest point to the center of the plate, is an opening about seven-eighths of an inch by five and one-fourth inches, cut radially through said plate, sufficiently wide to allow the turned clothes-pins to drop through the same into the half-round recesses or extensions of the radial holes in the revolving disk. The cam, which is stationary, forces the pins out endwise—two at first in each hole, then one when the cam reaches the outer extremity of the semicircular or half-round holes in the revolving disk. The clothes-pins to be slotted are carried round first to the circular slotting-saw, then to the toothless disk, with the beveling-knives secured thereto. This latter mode of beveling obviates the splitting of the clothes-pins, as no space is left between the slot previously sawed and the toothless disk, to allow the two portions or legs of the pin to chatter, as is the case when the saw holds and carries the beveling-knives, as the teeth are set wide enough to clear, and not rub or even touch, the saw-plate in the rear of the teeth of the saw. The saw-arbor, beveling-knife arbor, and rotary carrying-disk shaft are each vertical. The saw and toothless wheel are so arranged as to revolve within a groove in the carrying-disk—say three-eighths of an inch wide and about three inches deep—made through the centers of the radial holes, in which the clothes-pins are made to slide by means of the stationary cam-plate.

Figure 1 is a top view of my invention. Fig. 2 is a side elevation of a portion of the same. Fig. 3 is a vertical central section of the revolving carrying-disk and cam-plate, taken in the line *x x*, Fig. 1, showing the positions of the clothes-pins, the outer ones *l* having already been slotted. Fig. 4 exhibits a broken section of the toothless disk, with beveling-knife.

I am well aware that rotary carrying-wheels have long been used; but in those the clothes-pins to be slotted were held by means of self-adjusting clamps. Said wheels were made to revolve with and on a horizontal shaft, making it more difficult to feed the turned pins to the same. I am also aware that knives have been used independent of, or not secured to, the slotting-saw; but in that case they were also independent of the toothless wheel, so essential to do the work economically and perfectly, as by this means the legs of the pins cannot be drawn in and torn away by the knives.

A is a revolving carrying-disk, secured to a vertical shaft, *b*, Figs. 2 and 3, which is made to rotate slowly by means of belts, gearing, or any suitable device. Said disk is grooved, as shown in Figs. 2 and 3, at *c*, to the depth of three inches, and about three-eighths of an inch in width, or sufficient to allow the saw *d* and toothless wheel *e* to revolve therein without coming in contact therewith. Radial holes *f* are bored through said grooves from the periphery in the carrying-wheel A, about three-fourths of an inch in diameter, or about the size of a clothes-pin to be slotted, and to the depth of about ten inches, or twice the length of said pin. The inner half or five inches of said holes are turned away, leaving half or five inches of said holes exposed to an upward view, as shown in Fig. 3. A circular

covering or plate, G, is made to fit loosely within this exposed recess. Said covering is secured to the frame-work H. The under portion of said plate or covering is provided with a cam, as shown by dotted lines, Fig. 1, at *i i'*. An opening for the reception of the clothes-pins is made through this plate, say seven-eighths of an inch, by five and one-fourth inches in extent, allowing the clothes-pins to drop from the hopper K down into the half-round channels of the inner portion of the disk A. Now the cam *i i'* forces the clothes-pins *l* out butt-end foremost when the disk A is rotated in the direction of the arrow. The motion and direction of the other parts are also indicated by the same sign. The cam *i i'* bears on the upper half of the head end of the pins, as shown in the broken section *m*, carrying or forcing out two sets of pins at a time, one set of which is ahead, having been slotted, which are forced out and drop at the point *n*, leaving one set only of pins from this point round to the hopper K. This tier of pins is, of course, subjected, first, to the slotting-saw *d* and toothless wheel *e*, to slot it complete. A succession of pins takes the place of those previously slotted, and so on *ad infinitum*, or as long as the hopper K remains full, or nearly so. The saw *d* and knife-wheel *e* are vertically adjustable, and the saw *d* radially adjustable, to compensate for the reduction of its diameter by use. This is effected by means of the two stirrups or yokes *o o* encircling the round standard P, said yokes being a portion of the arbor-frame. The knives *r* are secured to the toothless wheel in the same manner and by the same means that they have heretofore been secured to the slotting-saws, as will be seen by reference to Fig. 4. Set-screws *s* are used to adjust vertically the arbor of the saw *d* and the toothless wheel *e*. The shaft *b* turns loosely in the hub of the stationary cam-plate G, and thus forms its upper bearing. The lower end of the shaft *b* turns in a suitable bearing, *t*, secured to the lower bed-frame H'.

It will be observed that the radial holes in disk A pass through the groove *c*, so that the saw *d* and beveling-disk *e* will timely slot the clothes-pins through their centers. The pins are turned to fit their radial holes somewhat closely; still, should the pins pass through the holes loosely, the cutting pressure of the saw and knives will tend to keep said clothes-pins in their proper positions in the groove *c*. Several clothes-pins are presented by the disk A to the slotting devices *d* and *e* at one and the same instant—that is to say, the saw *d* or knives *r* each operate on two or more pins simultaneously.

I claim as my invention—

1. The combination, in a clothes-pin slotter, of the rotary disk A, cam *i i'* on plate G, hopper K, operating with the saw *d*, as set forth.

2. The combination, with the saw *d*, rotary disk A, cam *i i'*, and hopper K, of the beveling-disk *e*, with knives *r*, all constructed and arranged to operate as set forth.

JOHN W. MILLET.

Witnesses:
J. W. LATCHER,
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