

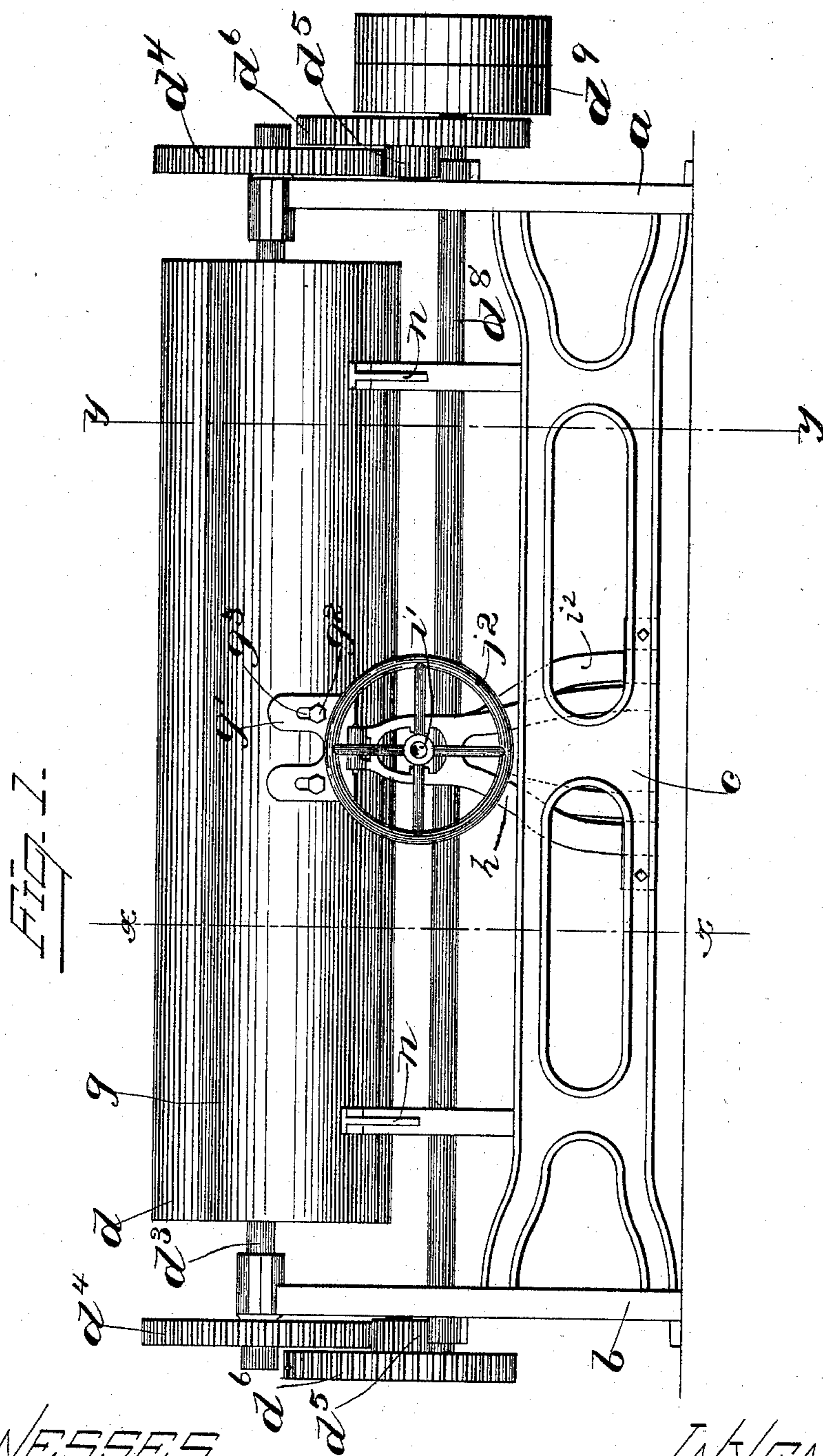
(No Model.)

2 Sheets—Sheet 1.

J. C. POLAND.  
MANGLE.

No. 540,334.

Patented June 4, 1895.



WITNESSES.  
Florence H. Davis  
Charles V. Crocker.

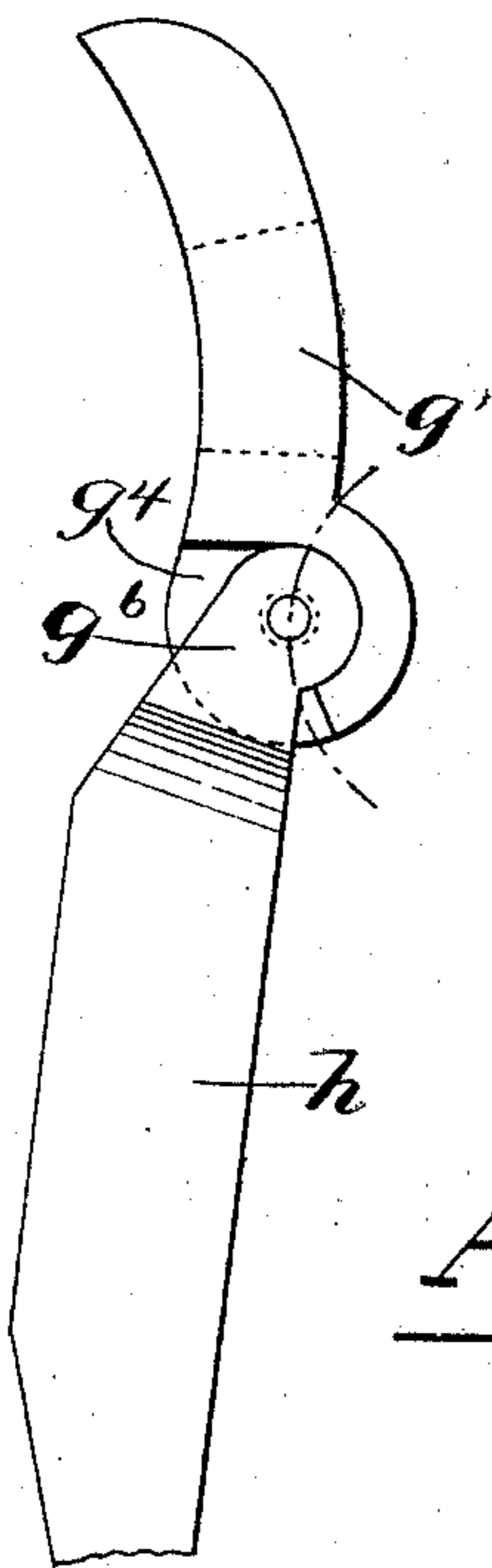
INVENTOR  
John C. Poland  
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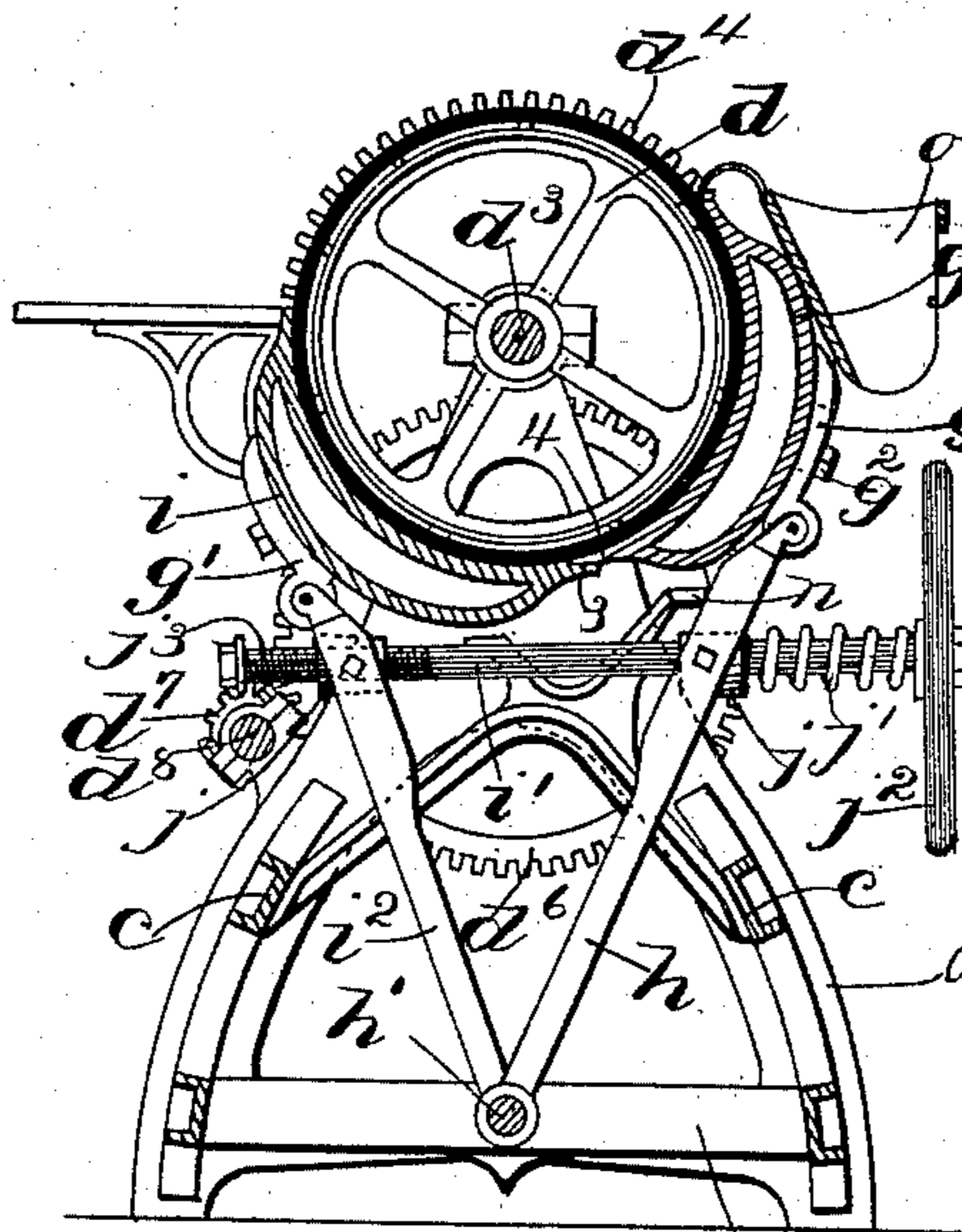
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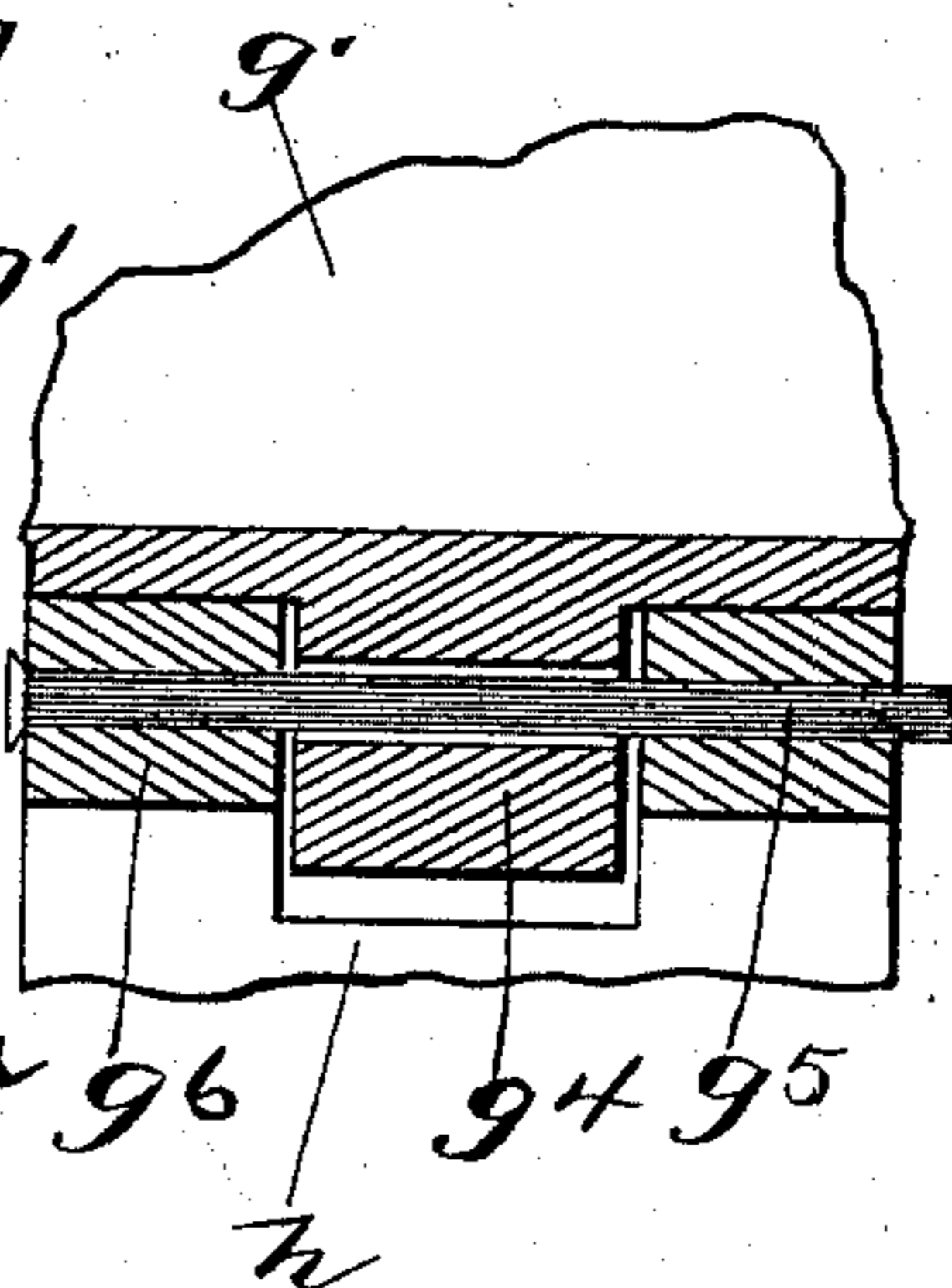
*Fig. 4.*



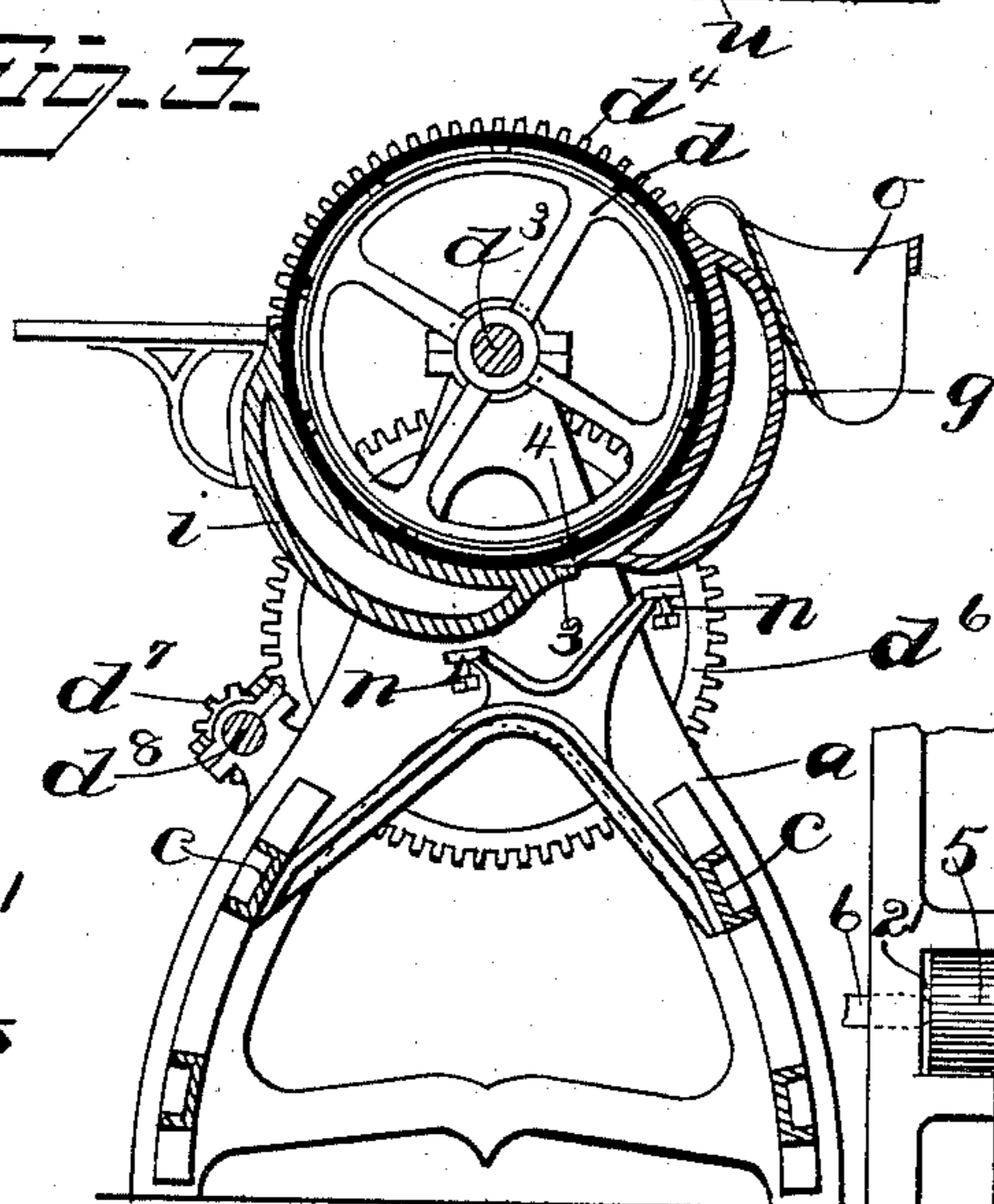
*Fig. 2.*



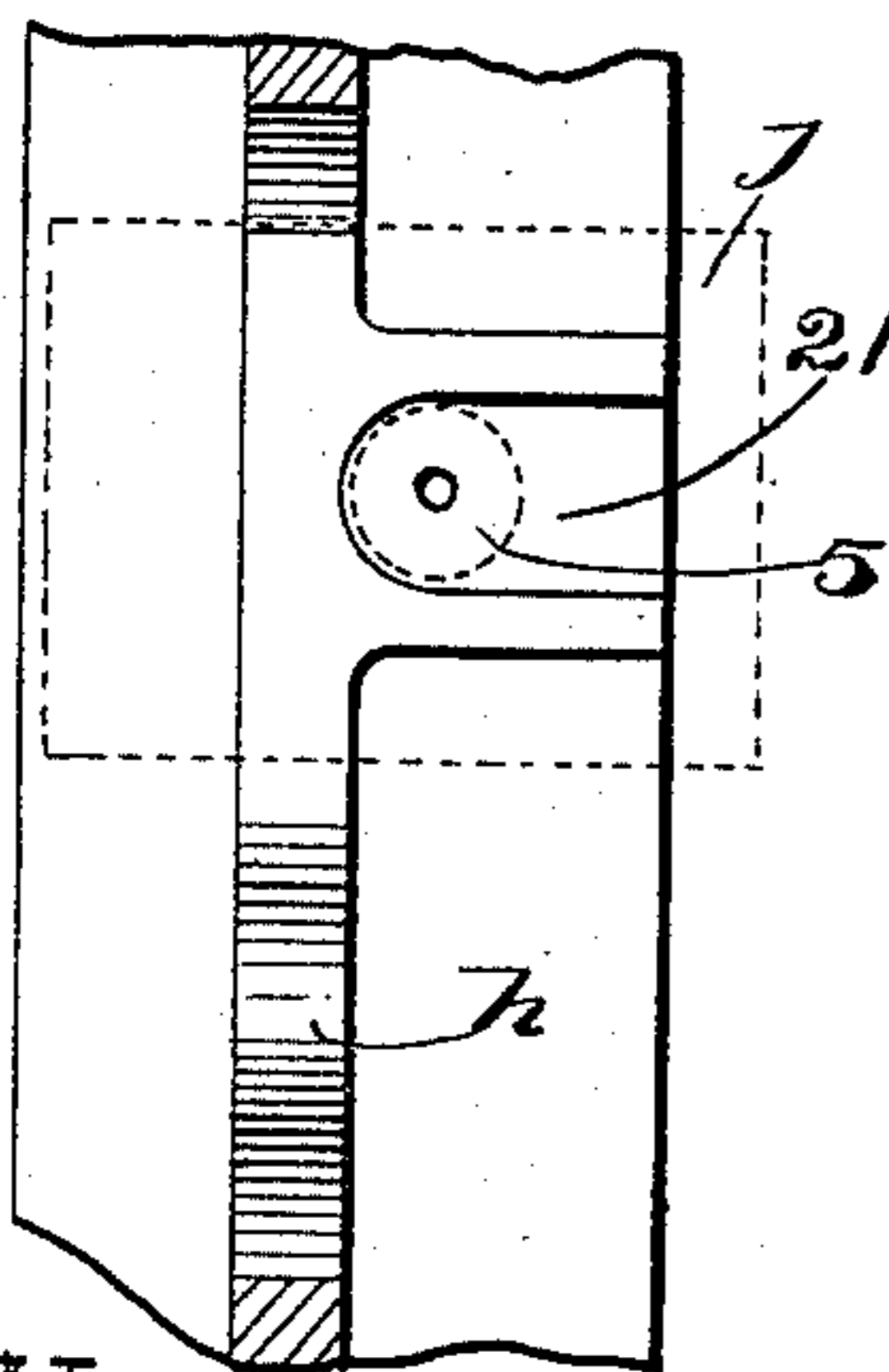
*Fig. 5.*



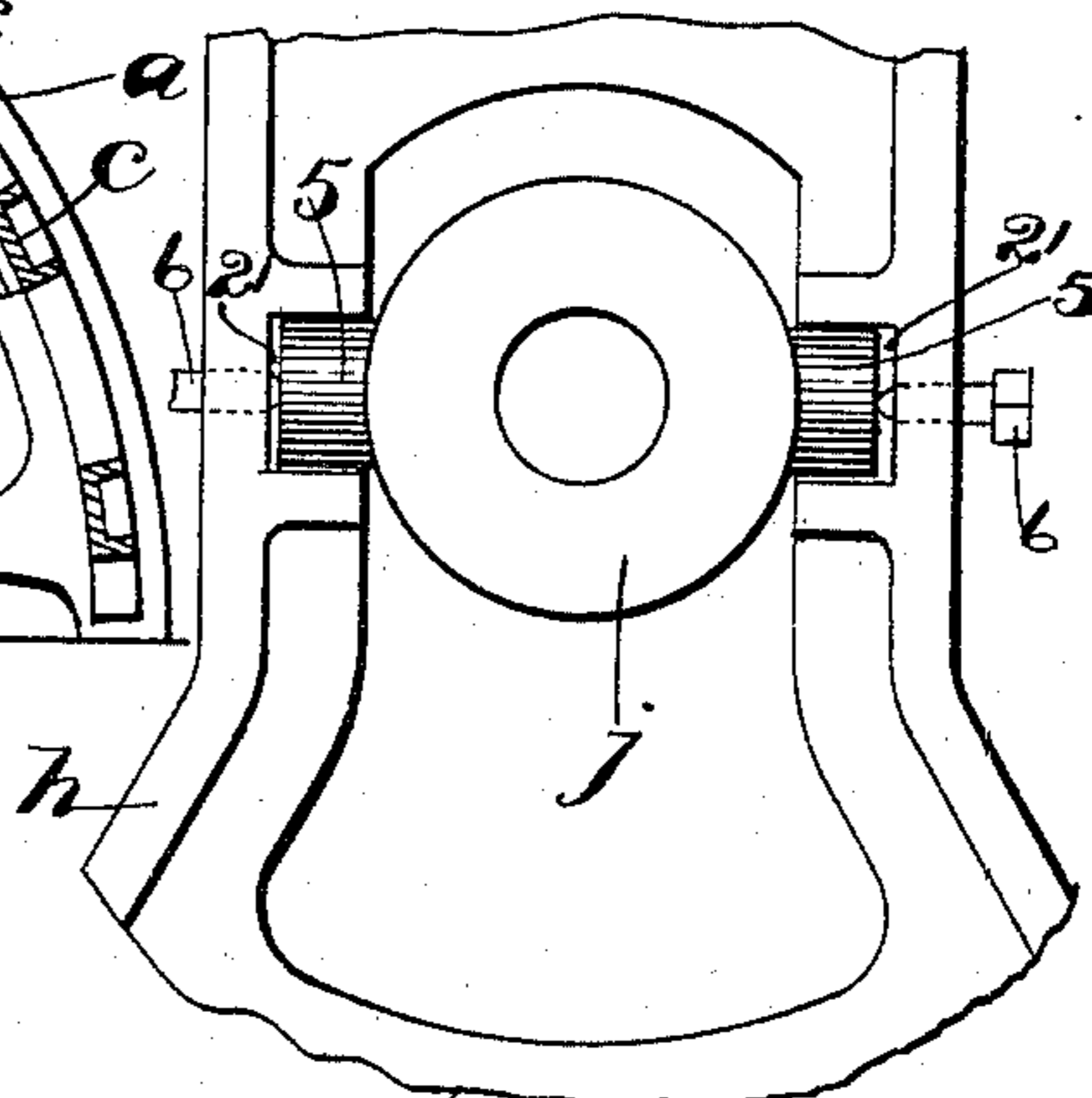
*Fig. 3.*



*Fig. 6.*



*Fig. 7.*



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# UNITED STATES PATENT OFFICE.

JOHN C. POLAND, OF BOSTON, MASSACHUSETTS.

## MANGLE.

SPECIFICATION forming part of Letters Patent No. 540,334, dated June 4, 1895.

Application filed March 22, 1894. Renewed April 26, 1895. Serial No. 547,277. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN C. POLAND, of the city of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in  
5 Mangles, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention has for its object to improve  
10 the construction of mangles, whereby two ironing beds may be employed which co-operate with the ironing cylinder, thereby materially increasing the capacity and efficiency of the machine.

15 In accordance with this invention the usual felted cylinder is journaled in stationary bearings, and means are provided for rotating it, such for instance as a power driven shaft connected at each end by gearing with the cylinder shaft. Two ironing beds, made as steam  
20 boxes, having curved ironing surfaces are placed against or adjacent to the felted cylinder, preferably embracing more than half the circumference thereof, that one may oppose  
25 the pressure exerted by the other, and the lower edges of said ironing beds overlap one another in such manner that the continuity of the ironing surface is not interrupted as the beds are moved independently relatively  
30 to one another by the work which is passing through the machine. The ironing beds are made universally self-adjusting, that is to say, they are so arranged that they are permitted to move universally independently of their  
35 supporting or operating devices, in order that they may accommodate themselves to the cylinder as the work passes through the machine, and as said beds move independently the overlapping ends work one upon the other. Sup-  
40 porting devices are provided for the ironing beds which are so constructed and arranged as to not only support said beds but to move them bodily toward or permit them to move  
45 bodily from the cylinder, holding them however in different adjusted positions to obtain the required pressure, and said supporting devices are preferably so connected together as to be operated simultaneously. Adjusting devices are also preferably provided for adjust-  
50 ing said beds in a circular path around the cylinder, or vertically, to accurately position

them with relation to each other and to the cylinder.

Figure 1 shows a front elevation of a mangle embodying this invention, the basket being  
55 omitted; Fig. 2, a vertical section of the machine shown in Fig. 1, taken on the dotted line  $xx$ , looking toward the right; Fig. 3, a vertical section of the machine shown in Fig. 1, taken on the dotted line  $yy$ , looking toward the right; 60  
Figs. 4 and 5, enlarged details of the main support for the ironing-beds; Figs. 6 and 7, details of the trunnioned block carried by the ironing-bed support.

The main framework consisting of the end  
65 frames  $a$ ,  $b$ , connected by the longitudinal frames  $c$ , is of suitable shape and construction to support the operating parts.

The felted cylinder  $d$  is of usual or suitable size and length, and has its bearings in the  
70 end frames. The cylinder is secured to a shaft  $d^3$ , having its bearings in the end frames  $a$ ,  $b$ , said shaft having secured to it at each end a toothed wheel  $d^4$ , which wheels are engaged and driven by pinions  $d^5$ , secured to  
75 short shafts, to which are also secured toothed wheels  $d^6$  engaged and driven by pinions  $d^7$  secured to the main operating shaft  $d^8$ , provided with suitable driving pulleys  $d^9$ .

An ironing bed  $g$ , made as a steam box, and  
80 having as usual a concaved ironing face has secured to its outer side, at the middle, a plate  $g'$ , by bolts  $g^2$  passing through slots  $g^3$  in said plate, the slots permitting adjustment of the bed in a substantially vertical direction and  
85 said plate has at its lower edge a projection  $g^4$  having a transverse hole through it, which is made large enough to receive loosely a pin  $g^5$ , which passes through ears or projections  
90  $g^6$  at the upper end of a supporting frame or arm  $h$ , so that the bed  $g$  is thus loosely pivoted to the upper end of said support  $h$ , and hence has an independent universal movement.

The ironing bed  $g$  is held up in its proper  
95 position against the felted cylinder, and is movable bodily toward and permitted to move bodily from said cylinder by said support  $h$ , pivoted at its lower end to a rod or bar  $h'$ , supported by cross bars  $u$ , secured to the frames  
100  $c$ , said pivoted support  $h$  being in turn supported by means to be hereinafter described.

Another ironing bed *i* similarly constructed and supported is arranged in continuation of the ironing bed *g*, and to avoid interruption of the ironing surfaces at the meeting point, the inner surface of the bed *i* at such point is cut away on a line substantially tangential to the cylinder, forming a lip 3, and presenting a narrow tapering recess, and a thin lip 4, is formed upon the lower end of the bed *g*, the upper side of which is a continuation of its ironing surface, said lip 4 entering the narrow tapering recess between the lip 3 of the bed *i*, and the cylinder, and terminating adjacent the ironing surface of bed *i*.

The ironing bed *i* like the bed *g* is adjustably connected to a plate *g'* which is pivoted loosely to the upper end of a support *i*<sup>2</sup>, pivoted at its lower end to the rod or bar *h'*, which support serves as a means of moving the bed *i* toward and permitting it to move bodily from the cylinder. This plate is constructed the same as the plate *g'* to which the bed *g* is connected, and the support *i*<sup>2</sup> is constructed substantially the same as the support *h*. Each support *h* and *i*<sup>2</sup>, has formed upon its outer side or face suitable recesses 21, which receive the trunnions 5 of a block *j*, formed one with an internally screw threaded bore and the other with a smooth bore, and a hand operated shaft *i'* having a spring *j'* encircling it at one end, and screw threads *j*<sup>3</sup> formed upon it at the opposite end, passes through said blocks *j*, the spring *j'* bearing at one end against one of said blocks *j*, and at the opposite end against a hand wheel *j*<sup>2</sup>, and the screw threaded portion *j*<sup>3</sup> turning in the other block, so that as said screw rod or shaft *i'* is turned by means of the hand wheel *j*<sup>2</sup> the blocks *j*, *j*, will be drawn toward or permitted to move from each other simultaneously, and consequently moving the supports *h* and *i*<sup>2</sup>, toward or permitting them to recede from each other, and from the cylinder. By means of these simultaneously movable supports the ironing beds *g* and *i*, are held in their proper position relative to the cylinder, being movable bodily toward and from it. Pivot screws 6 are or may be provided for the trunnions 5, to better hold the blocks *j* in place.

Suitable back stops *n*, are provided for the beds *g*, *i*, upon which they rest when permitted to move away from the cylinder, said stops preferably being made as set screws and therefore adjustable.

Owing to the loose connection of the beds *g*, *i*, with their supports they will have a universal self-adjustment, or an adjustment independent of the adjustment obtained by the positive action of the supports *h* and *i*<sup>2</sup>.

Suppose the material to be taken from the basket *o* and to enter between the felted cylinder and the bed *g*, said bed will be moved bodily slightly according to the thickness of the material, which may be at one or the other end or in fact at any convenient point, and as

the material passes by the bed *g* it is brought into contact with the bed *i*, and the process of ironing continued. In view of the fact that the material is introduced at different points of the bed, and oftentimes at several different points at the same time if the articles to be ironed are small, it will be seen that it is necessary that the beds should be made universally movable. It will also be seen that the bed *i*, bearing against the felted cylinder *d* opposes the pressure exerted upon or against said cylinder by the bed *g*, as the material passes between said cylinder and bed *g*, and while the material is passing between the cylinder and bed *i*, the bed *g* will oppose the pressure exerted, and even though there should be material between each bed and the cylinder, the pressure is likewise opposed or equalized. As the lip 4, of the bed *g* overlaps the lip 3 of the bed *i*, on a line substantially tangential to the cylinder, the material will pass from one bed to the other freely, notwithstanding the relative movements of said beds, consequent to their universal self-adjustment. If the overlapping ends 3, 4, of the beds were not made so as to work one upon the other substantially in the manner shown, then the ironing surface would be interrupted, and as a result the articles would be jammed, and more or less injured and would leave the machine in a condition totally unfit for use.

As herein shown the beds are simultaneously movable toward and from the felted cylinder by the supports *h* and *i*<sup>2</sup>, which are connected together by the screw rod or operating shaft *i'*, but so far as this particular feature of my invention is concerned it is obvious that they may be made independently movable, and still possess the important feature of universal self-adjustment, with adjacent overlapping edges or ends 3, 4.

I do not desire to limit my invention to any particular construction of the parts whereby the ironing beds obtain their universal self-adjustment, as it is obvious many specific ways may be employed.

I claim—

1. In a mangle, an ironing cylinder and means for rotating it, combined with two ironing beds, each having a universal self-adjustment, the ironing surface of one of said beds at its lower edge being cut away on a line substantially tangential to the cylinder, presenting a narrow tapering recess next the cylinder, and the lower edge of the other bed having a thin tapering lip entering said tapering recess and terminating adjacent the curved ironing surface of the first named bed, substantially as described.

2. In a mangle, an ironing cylinder and means for rotating it, combined with two ironing beds, *g*, *i*, the adjacent edges of which overlap one another on a line substantially tangential to the cylinder, to maintain the continuity of the ironing surface, pivoted supports *h* and *i*<sup>2</sup> to which said beds are univer-

sally connected, trunnioned blocks *j* carried  
by said supports, and a hand operated ad-  
justing rod *i'* passing through said blocks  
for simultaneously moving the ironing-bed-  
5 supports on their pivots, substantially as de-  
scribed.

In testimony whereof I have signed my

name to this specification in the presence of  
two subscribing witnesses.

JOHN C. POLAND.

Witnesses:

B. J. NOYES,

FLORENCE H. DAVIS.