

(No Model.)

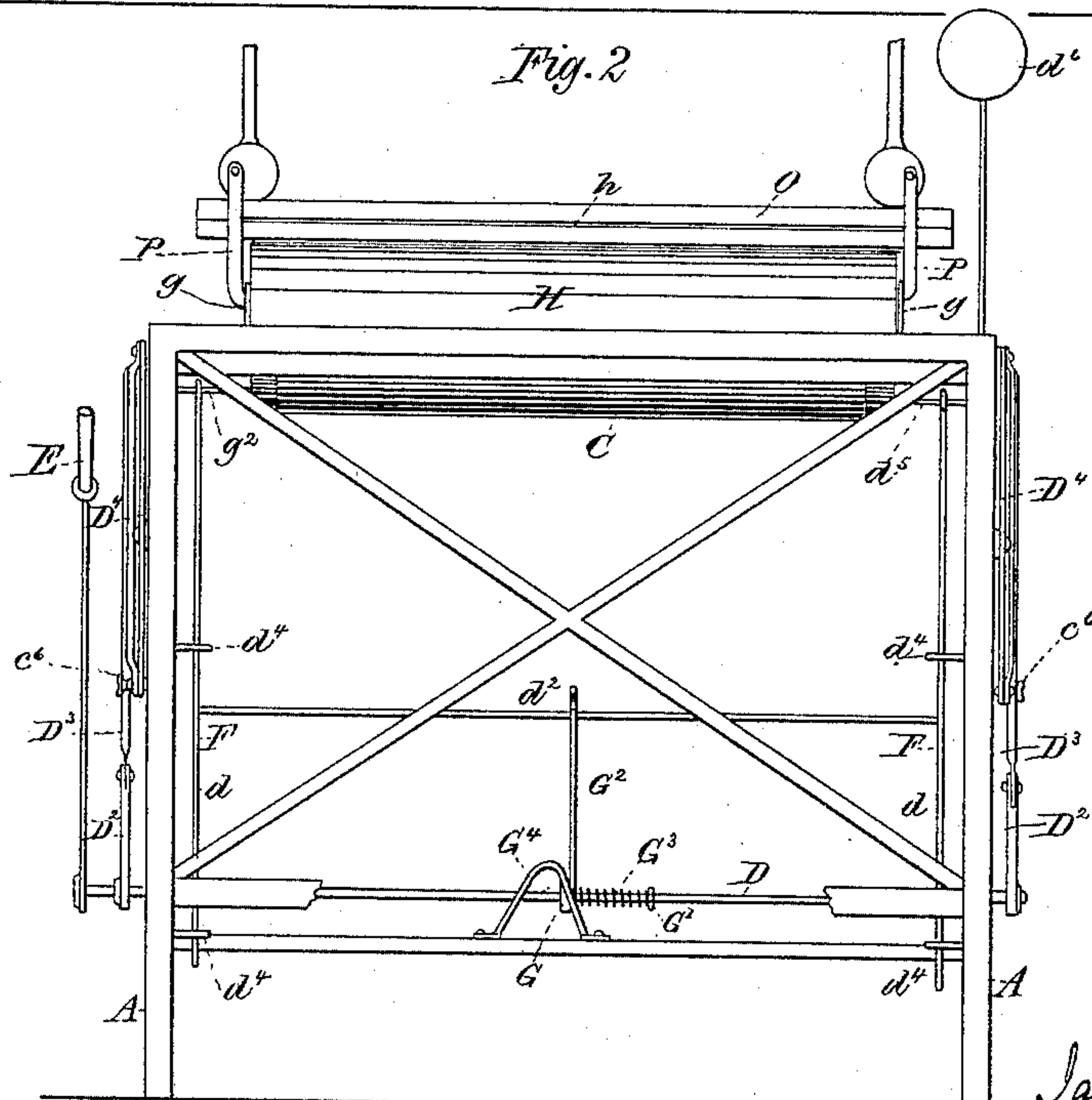
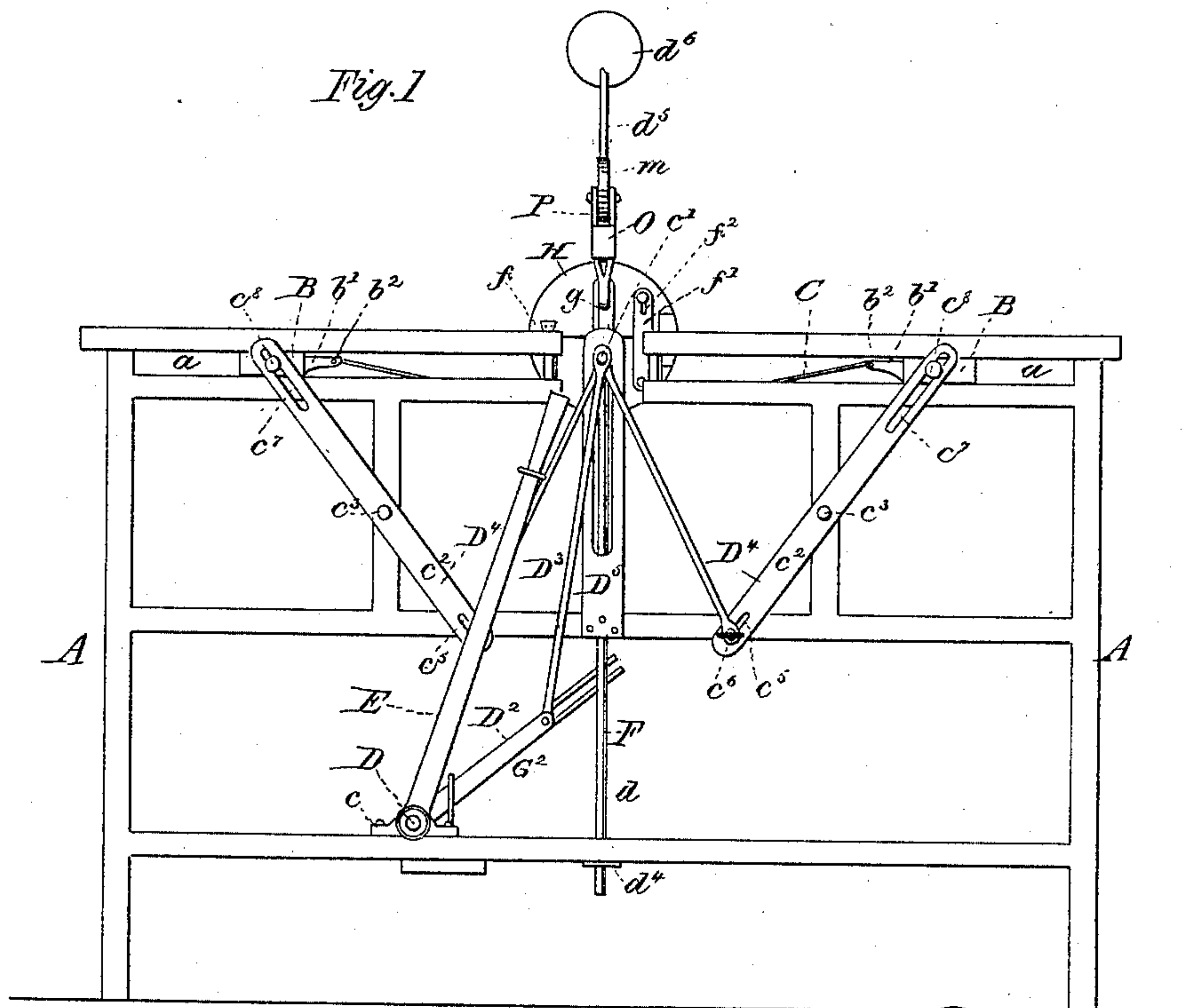
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J. H. CHRISTIE.

MACHINE FOR MANUFACTURING VENEER CYLINDERS.

No. 436,625.

Patented Sept. 16, 1890.



Witnesses:  
Frank H. May.  
H. Buckingham

James H. Christie,  
Inventor  
by Isaac S. Storer,  
his Attorney.

(No Model.)

2 Sheets—Sheet 2.

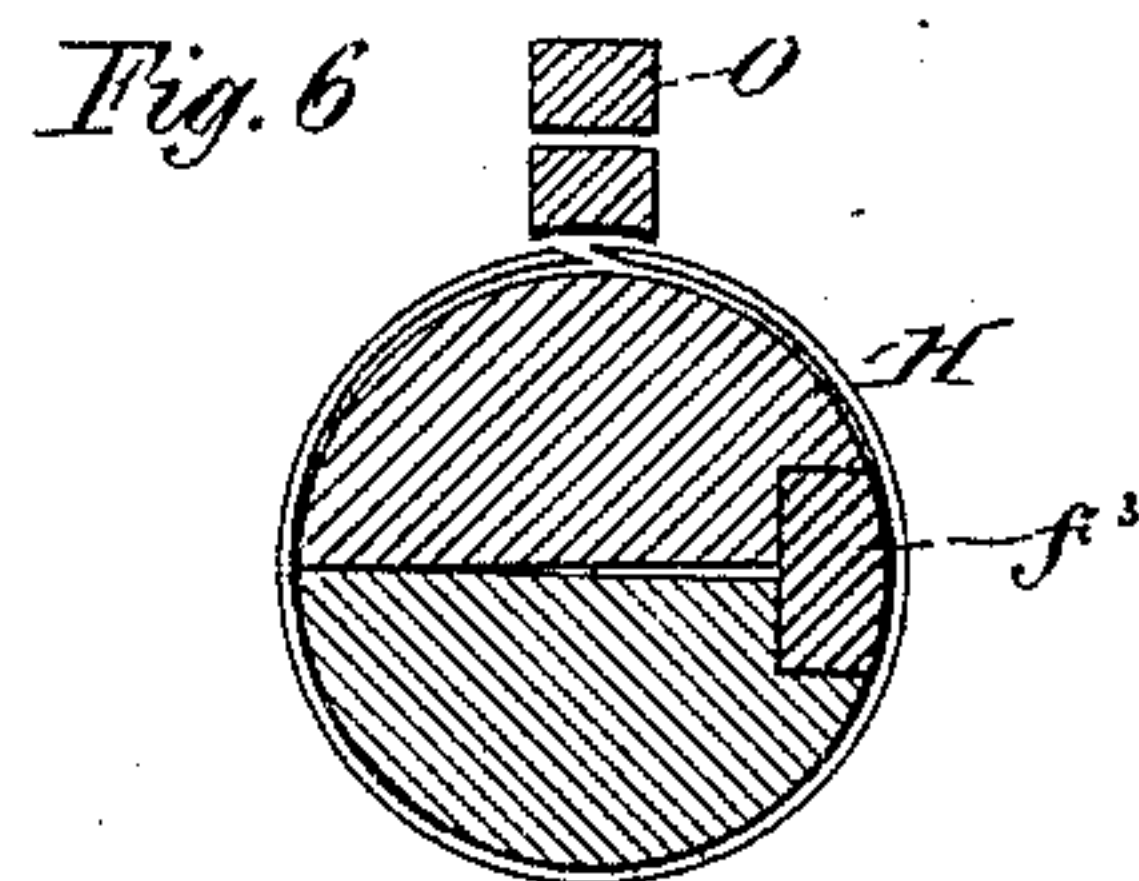
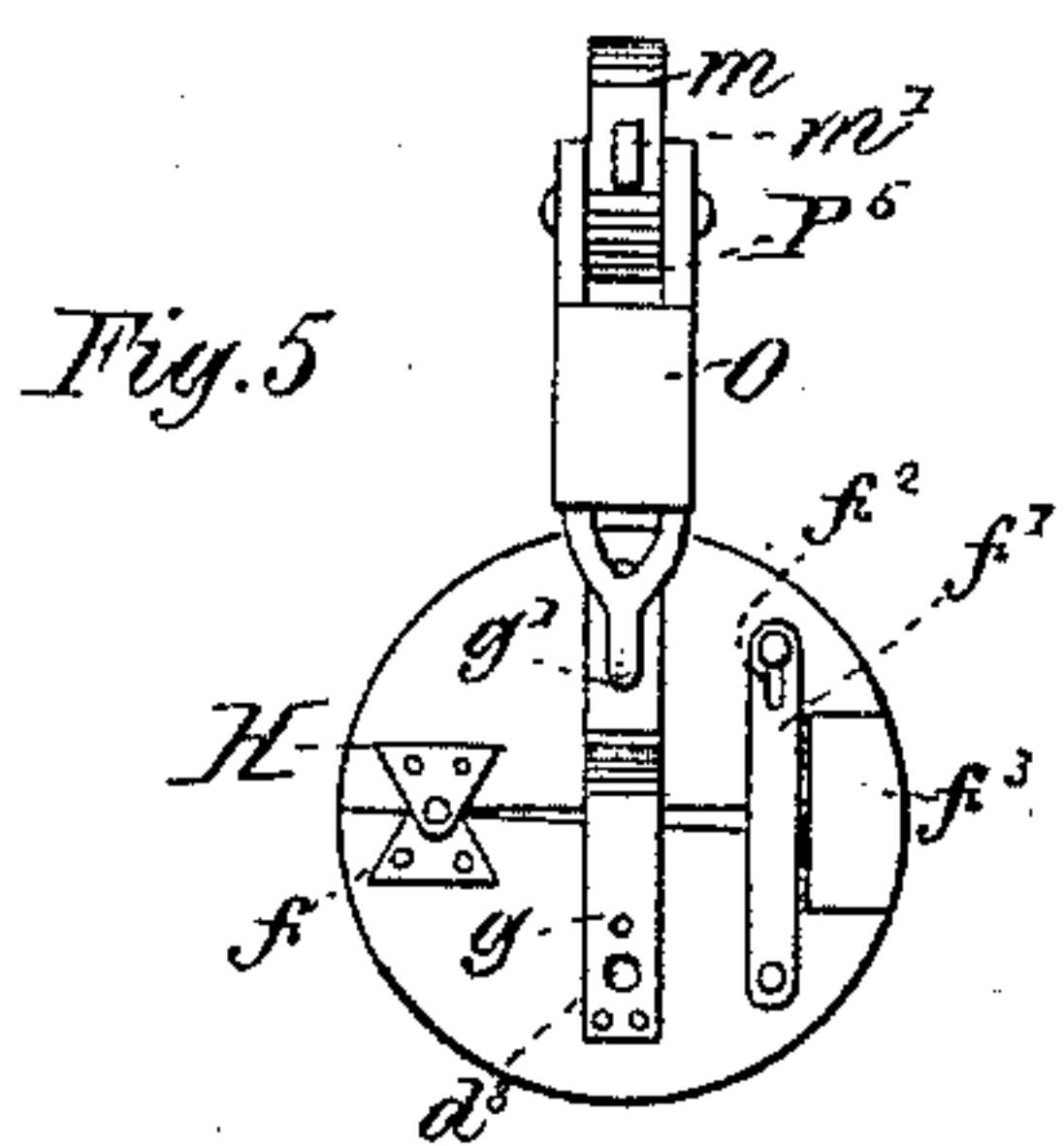
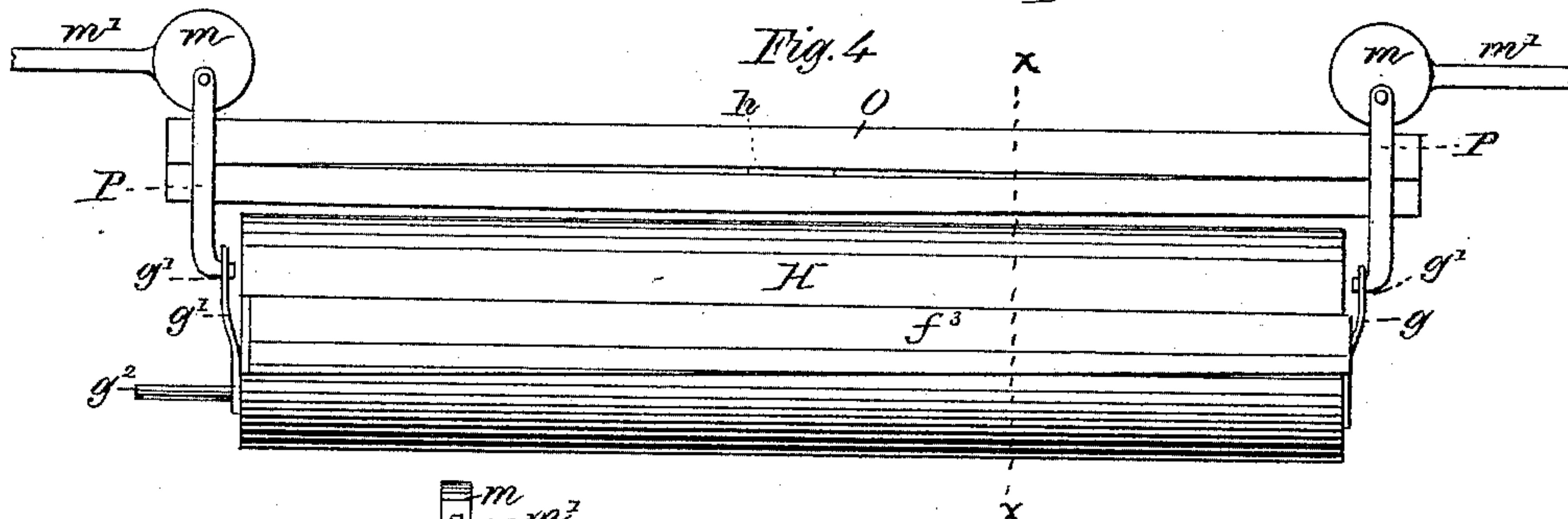
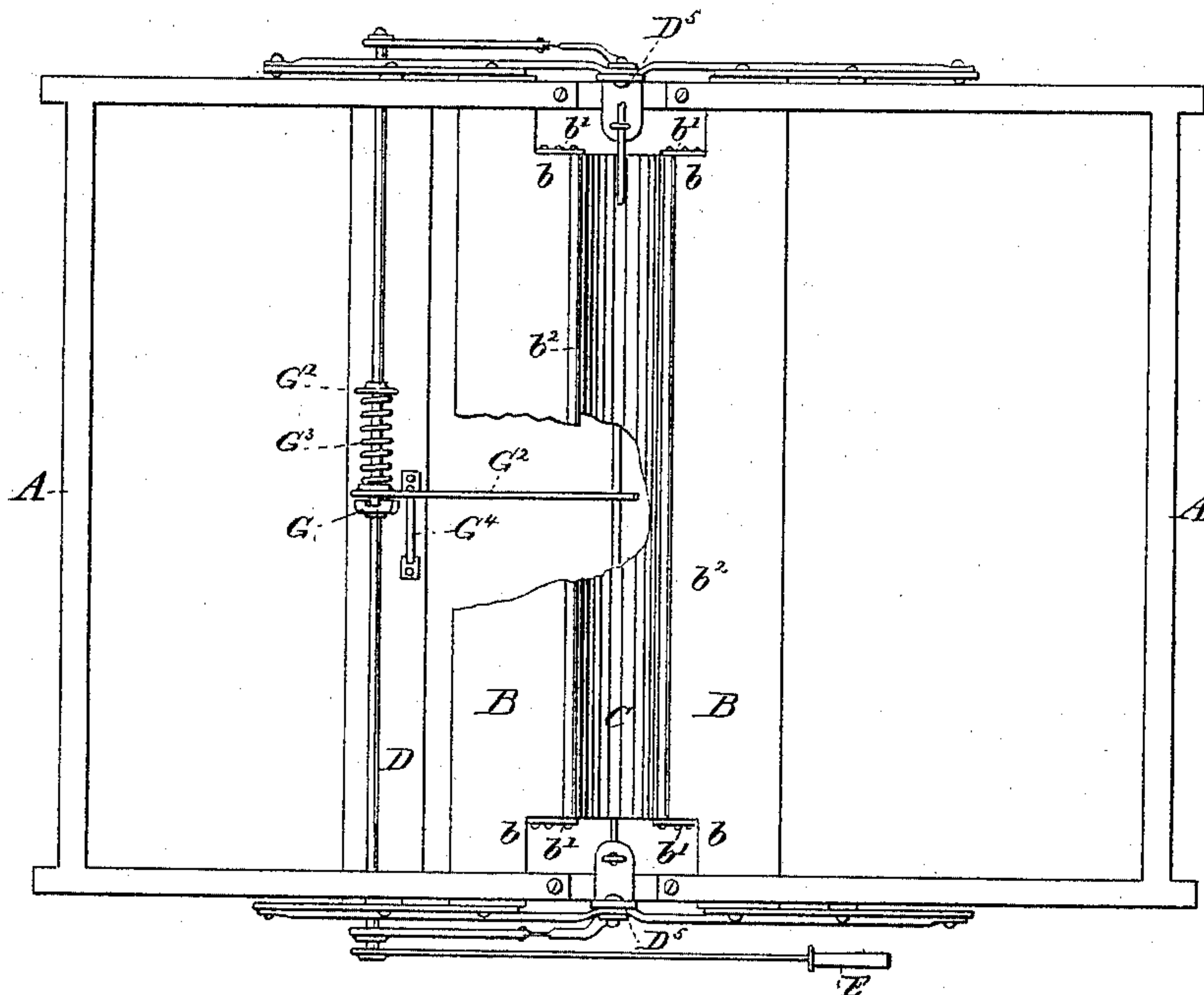
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Fig. 3



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# UNITED STATES PATENT OFFICE.

JAMES H. CHRISTIE, OF BROOKLYN, NEW YORK.

## MACHINE FOR MANUFACTURING VENEER CYLINDERS.

SPECIFICATION forming part of Letters Patent No. 436,625, dated September 16, 1890.

Application filed August 22, 1889. Serial No. 821,645. (No model.)

### *To all whom it may concern:*

Be it known that I, JAMES H. CHRISTIE, of Brooklyn, county of Kings and State of New York, have invented certain new and useful

5 Improvements in Machines for Manufacturing Veneer Cylinders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.  
10 The object of this invention is to provide an improved machine for manufacturing drums or cylinders of veneers or other suitable material, which may subsequently be furnished with one or more heads for use as  
15 bottle-casings, packages for containing groceries, and for other purposes.

The invention embraces a flexible apron for supporting and bending the veneer or other material to be formed into a cylinder, a  
20 forming-cylinder and a clamping-bar of novel construction and arrangement, and novel mechanisms for operating the various parts of the device, all of which will be hereinafter set forth.

25 Reference is to be had to the accompanying drawings, forming part of the specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improved  
30 machine. Fig. 2 is an end elevation of the same. Fig. 3 is a plan view with forming-cylinder and certain other parts removed and parts broken away to exhibit other parts. Fig. 4 is an enlarged side elevation of forming-  
35 cylinder and clamping-bar. Fig. 5 is an end elevation of the same. Fig. 6 is a transverse sectional elevation of the same on line X X, Fig. 4.

40 In the drawings, A represents the machine-frame so constructed that slots or open slides *a* are formed in its sides near the top.

Two bars B B are extended transversely across the frame parallel to each other, with their ends engaged in the slots *a*, so that they  
45 may be easily moved to and from each other. Shoulders *b* are formed near the ends of these bars B, as best seen in Fig. 3, and to these are fastened lugs *b'*, whose free ends, extending slightly beyond the inner edges of the  
50 respective bars, serve as supports for rods *b<sup>2</sup>*, upon which are secured the respective ends

of a flexible apron C that is preferably made of thin sheet metal.

The main shaft D is fixed transversely across the frame A, in suitable journal-boxes 55 *c*, and secured on each end of this shaft D, and at right angles thereto is an arm *D<sup>2</sup>*, and to the extremity of each arm is pivoted an upright rod *D<sup>3</sup>*, connecting it by means of a pin *c'* with a compound lever *D<sup>4</sup>*, whose side 60 members *c<sup>2</sup>* are pivoted on the sides of the frame A, as shown at *c<sup>3</sup>*, Figs. 1 and 2. The pins *c'* are respectively engaged in upright slotted plates *D<sup>5</sup>* *D<sup>5</sup>* that are fastened on the frame sides, as shown, so that they may move 65 only in vertical lines. These side members *c<sup>2</sup>* of the compound levers *D<sup>4</sup>* are pivoted to the frame A, as shown at *c<sup>3</sup>*, and have their lower ends slotted, as shown at *c<sup>5</sup>*, and in these slots are engaged the thumb-screws *c<sup>6</sup>*, 70 that serve to connect therewith the other members of the said levers, so that by adjusting and setting the said thumb-screws up or down in these slots *c<sup>5</sup>* the throw of the levers *D<sup>4</sup>* may be increased or diminished, as 75 may be required. The upper ends of these side members of these levers *D<sup>4</sup>* are also provided with slots *c<sup>7</sup>*, which receive and hold the studs *c<sup>8</sup>* that project from the ends of the bars B B. 80

On moving a lever or handle E, secured on an end of the shaft D, in one direction, the bars B are, through the action of shaft D and compound levers *D<sup>4</sup>*, thrown apart, as shown in Fig. 1, with the apron C stretched between 85 them, and on moving the said lever E in the opposite direction the bars B are brought as closely together as desirable, as best seen in Fig. 3, so that the apron C bellies or hangs down to its fullest extent. 90

Another part of the machine consists of a vertically-movable frame F composed of two upright and one transverse rod *d d' d<sup>2</sup>*, respectively. This frame F is secured in place by entering the rods *d d'* through lugs *d<sup>4</sup>*, that 95 extend inward from the frame A, and in the upper end of the rod *d'* is engaged the end of a counterbalance-rod *d<sup>5</sup>*, which extends upward and carries a weight *d<sup>6</sup>* on its top.

Rigidly fixed on the main shaft D are a 100 clutch G and a collar G', and loosely held thereon is a fork G<sup>2</sup>, whose extending forks



embrace the transverse rod  $d^2$  of the frame F, and a spring  $G^3$  coiled about the shaft D, between the collar  $G^1$  and fork  $G^2$ , holds the latter normally in engagement with the clutch  
 5 G. On a transverse timber of the frame A is secured a stop  $G^4$ , having a sloping face, against which the shank of the fork  $G^2$  is designed to sometimes make contact when the machine is in operation, as will be herein-  
 10 after set forth.

The forming-cylinder H is made in two longitudinal sections hinged together at the ends, as shown at  $f$ , Fig. 5, and end straps  $f' f'$  serve to further secure and hold the sec-  
 15 tions together, slots  $f^2$  in the strap ends permitting a slight separation of the sections from each other, if desirable, and in order to force and hold the said sections slightly apart to expand or increase the diameter of the cyl-  
 20 nder, when desirable, a wedge  $f^3$  is set longitudinally in a corresponding groove in the said cylinder and may be driven farther in for that purpose. On each end of this cylinder H is secured a spring-plate  $g$ , each one hav-  
 25 ing a perforation  $g^1$  in its free end, as indicated in Figs. 4 and 5, and a pin  $g^2$  protrudes from one end of said cylinder, the functions of which will be hereinafter set forth.

The clamping-bar O is preferably com-  
 30 posed of two pieces of plank or timber set longitudinally atop of each other and firmly clamped together at the ends, and these two sections of the bar are slightly forced apart centrally by a wedge  $h$ , that may be adjusted  
 35 as desired, so that said bar shall for its whole length bear upon the lap or seam of the veneer cylinder in process of manufacture, and the under face of said bar is slightly grooved longitudinally, as indicated in Fig. 6, to con-  
 40 form with the curve of the cylinder H.

Forked clamps P (best seen in Figs. 4 and 5) are loosely fitted in the grooves made around the ends of the bar O, so that said bar may be moved up and down in them, and  
 45 between the upright forks of these clamps are pivoted eccentric-cams  $m$ , provided with handles  $m'$ , by which latter the eccentrics may be turned to press the said bar down or to release it, as the case may be, and the lower  
 50 ends of these clamps are hooked to enter corresponding holes in the ends of the spring-plates  $g$  on the cylinder ends.

The parts being in position shown in Fig. 1, with the apron C open or extended and the  
 55 frame F thrown up to its highest point, a piece of veneer or other material designed to be formed into a containing cylinder or drum is laid on the apron C. A forming-cylinder H, with the clamping-bar O in place thereon,  
 60 (the cams  $m$  being turned to permit the bar O to be withdrawn or raised as far as possible from the cylinder H,) as shown in Figs. 1 and 2, is then put in position on the sheet of veneer, with its pin  $g^2$  engaged in the hooked  
 65 upper end of the rod  $d$ , and with the horizontal end of the counterbalance-rod  $d^5$  engaged in a corresponding hole (best shown at

$d^8$ , Fig. 5) in the opposite end of said cylinder. Power is then applied to the lever or handle E, with the effect of simultaneously approach- 70  
 ing the bars B toward each other, thereby bellying the apron C and pulling down the forming-cylinder H and holding it firmly upon the sheet of veneer. As the bars B are  
 75 approached to each other, the apron C draws the sheet of veneer taut around the cylinder H, which latter is still being pulled down. The ends of the veneer sheet, previously coated  
 80 with glue where they are designed to lap, are by the action of the apron then bent over the cylinder, so that they enter between the top of said cylinder and the clamping-bar O, which latter is then forced and held down to  
 85 clamp upon the lapping seam of the veneer-drum by properly turning the cams  $m$ . As the apron C exerts its pressure first upon the central longitudinal point of the sheet of  
 90 veneer being operated upon, which pressure gradually extends therefrom equally up toward both ends of said sheet, it is evident that the veneer cylinder or drum when com-  
 95 plete will have a surface free from wrinkles or blisters. Just prior, however, to the completed movement of the bars B, as soon as they have reached points perpendicular to  
 100 the periphery of the cylinder H, the shank of the fork  $G^2$  in turning down makes contact with the inclined plane of the stop  $G^4$ , and is thereby thrown out of engagement with the clutch G, so that the continued revo-  
 105 lution of the main shaft, which causes the bars B to more nearly approach each other, ceases to pull down the cylinder H through the medium of the frame F, for it is obviously requisite that the downward movement of the cylin-  
 110 der H should cease before the formation of the veneer-drum is completed. When a veneer-drum or cylinder is thus formed and firmly clamped to a cylinder H by a bar O, the operator reverses the lever E, and thus separates  
 115 the bars B to their fullest extent. Then he disengages the cylinder-pin  $g^2$  from the rod  $d$ , and as soon as this end of said cylinder is thus freed the counterbalance-rod and weight  $d^5 d^6$  operate to tilt up the freed end of said  
 120 cylinder. Then the operator withdraws said cylinder, clamping-bar, and veneer-drum together from the end of the rod  $d^5$  and puts them aside for the glue on the drum to harden, and then puts another sheet of veneer upon  
 125 the apron and secures another cylinder H and clamping-bar, with auxiliaries, in position for the formation of another drum.

Having thus described my invention, I claim as new and desire to secure by Letters 125  
 Patent—

1. A machine for manufacturing veneer cylinders, constructed substantially as herein shown and described, containing the following elements: A flexible apron held by and be- 130  
 tween two horizontally-movable bars, a forming-cylinder, containing an expanding wedge, formed of two half-round sections hinged together, a clamping-bar arranged and adapted



to be vertically expanded, mechanisms for holding the clamping-bar to the forming-cylinder and for adjusting the former in relation to the latter, all arranged and operated substantially as set forth.

2. The combination, with the forming-cylinder H, provided with end spring-plates *g* and with split clamping-bar O, of hooked clamps P, and cams *m*, substantially as and for the purpose described.

3. The combination, with main shaft D and frame F, of clutch G, collar G', fork G<sup>2</sup>, spring G<sup>3</sup>, and stop G<sup>4</sup>, all arranged and operating substantially as and for the purpose described.

4. In a machine for manufacturing veneer cylinders, the combination, with a flexible apron and apron-supporting bars, of main shaft D, arms D<sup>2</sup>, rods D<sup>3</sup>, pins *c'*, adjustable compound levers D<sup>4</sup>, plates D<sup>5</sup>, and thumb-screws *c*<sup>6</sup>, all arranged and operated substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand, in the presence of two witnesses, this 5th day of June, 1889.

JAMES H. CHRISTIE.

Witnesses:

GEO. W. HALSTEAD,  
THOS J. KEEBAN.