

No. 638,664.

Patented Dec. 5, 1899.

C. H. FOGG.
HEEL COMPRESSING MACHINE.

(Application filed Jan. 18, 1897.)

(No Model.)

4 Sheets—Sheet 1.

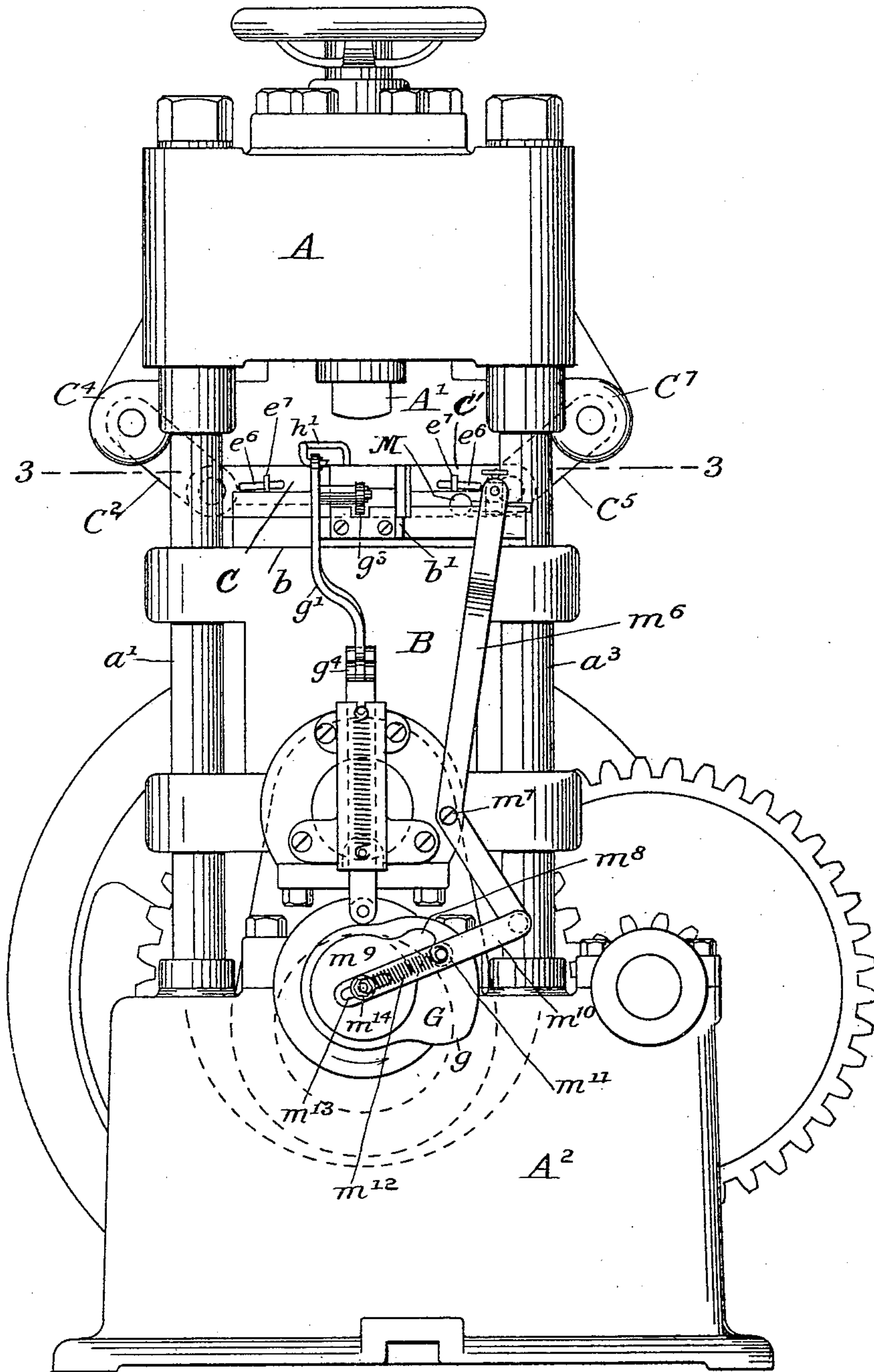


Fig. 1.

Witnesses.

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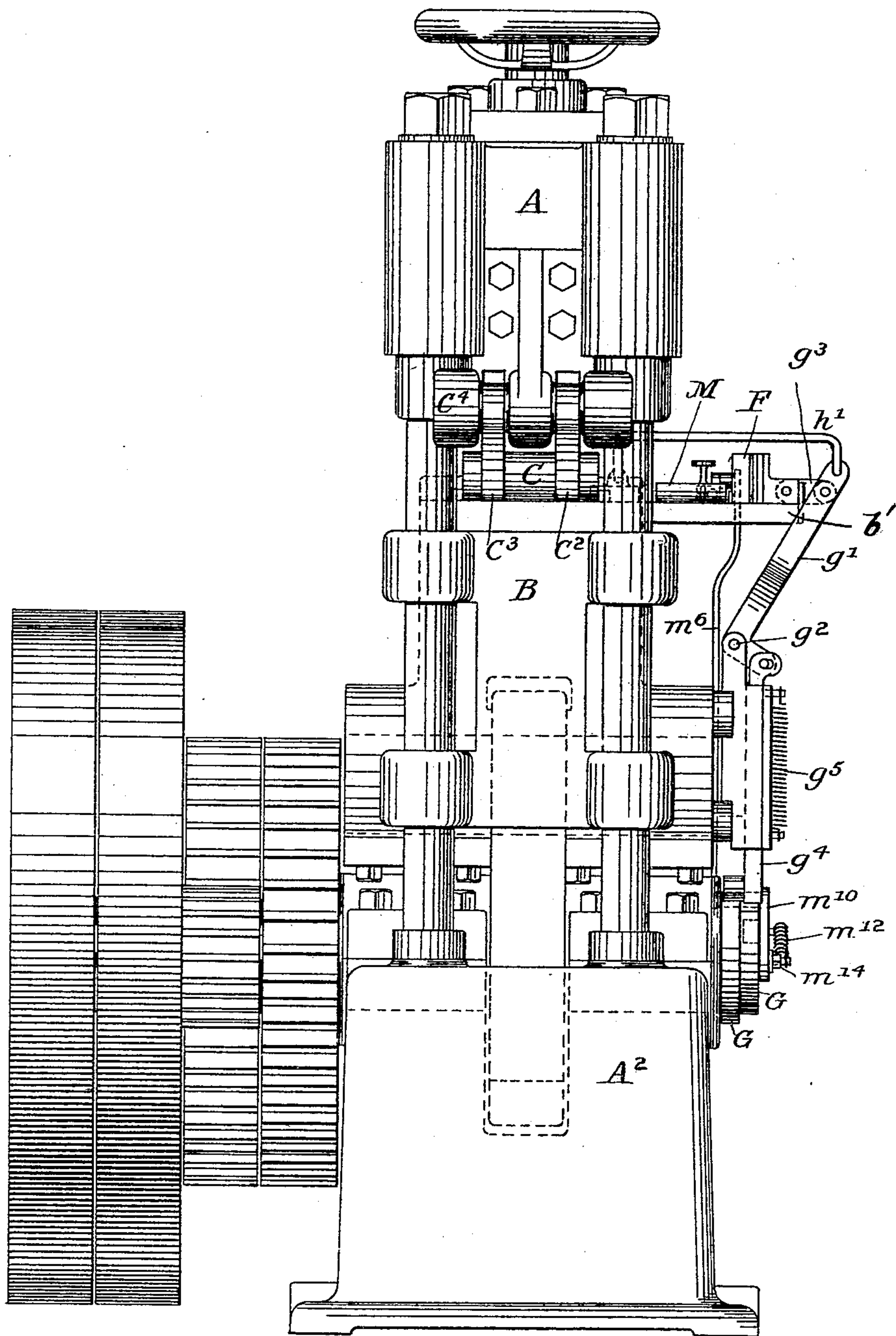


Fig. 2.

Witnesses.
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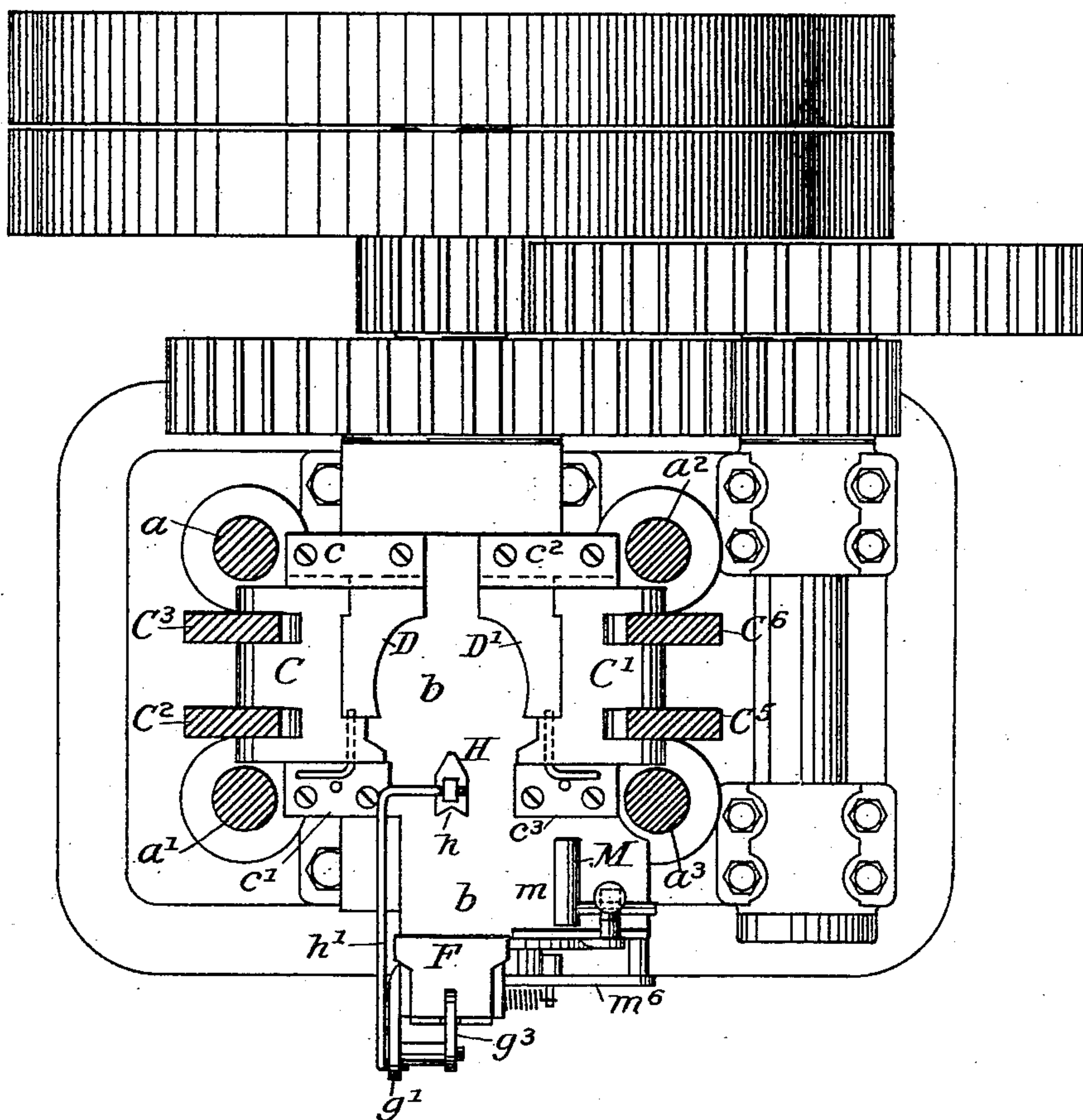


Fig. 3.

Witnesses.

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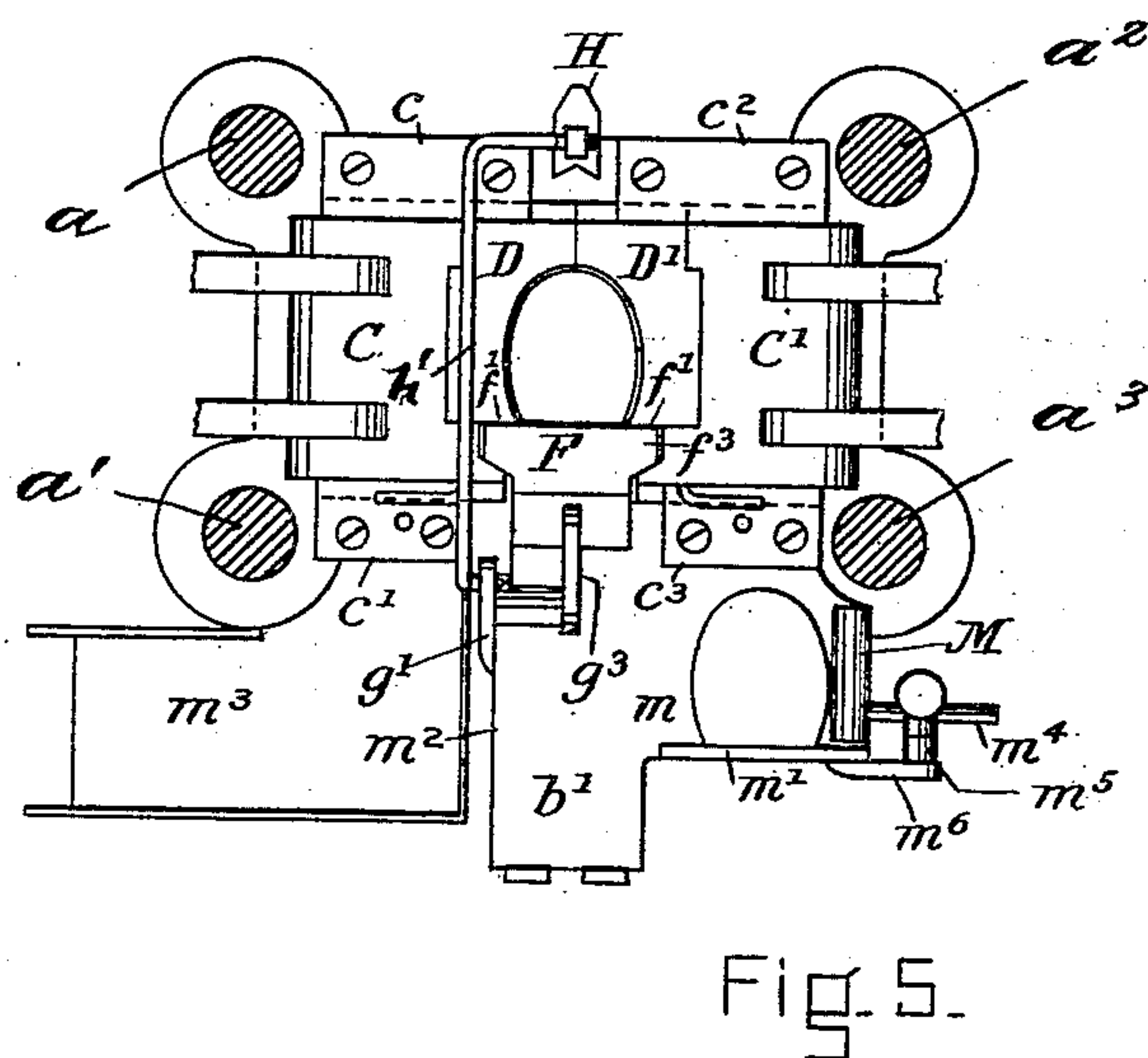
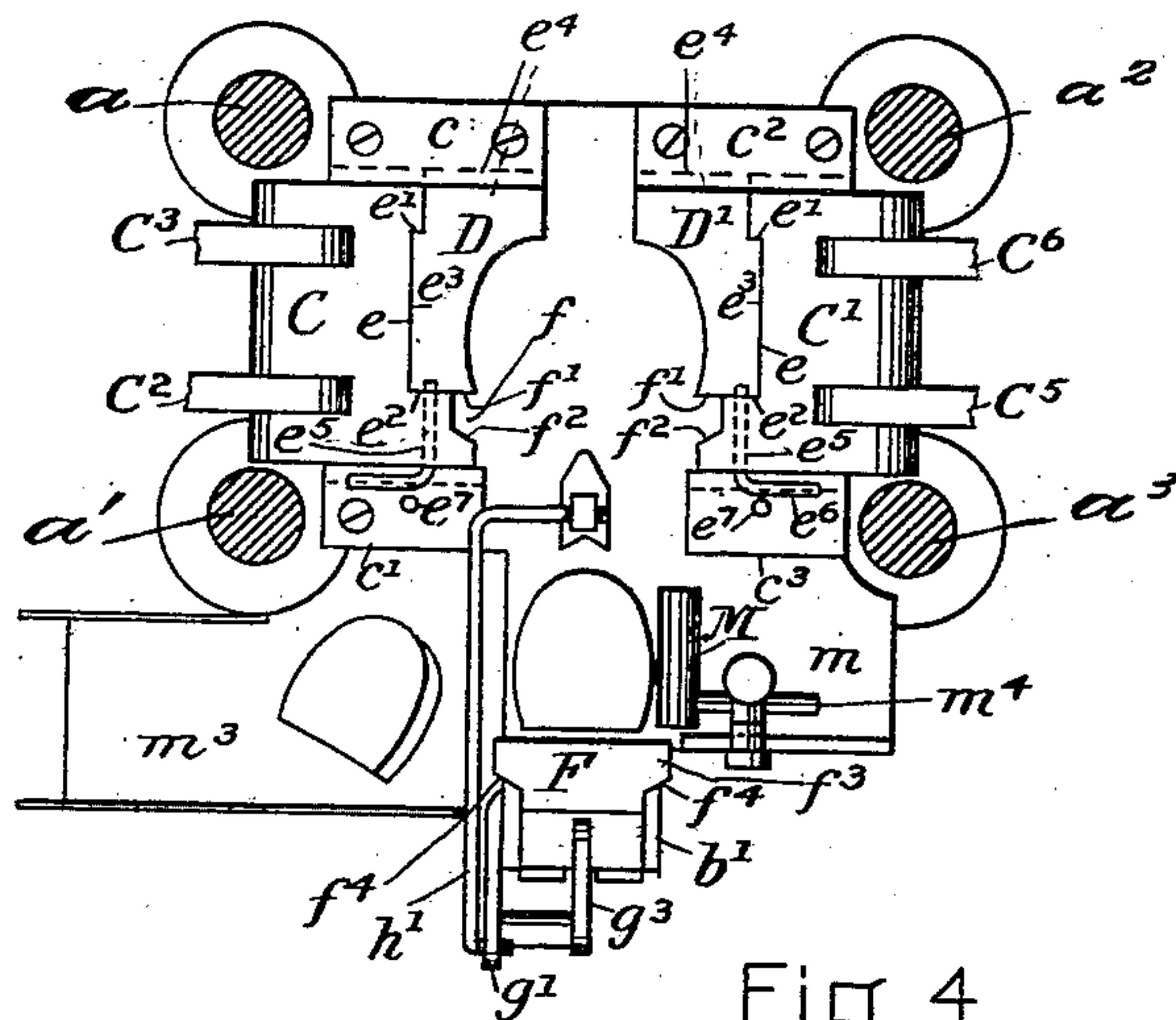
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Witnesses.

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J. W. Dolan

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UNITED STATES PATENT OFFICE.

CHARLES H. FOGG, OF HYDE PARK, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE MCKAY SHOE MACHINERY COMPANY, OF MAINE.

HEEL-COMPRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 638,664, dated December 5, 1899.

Application filed January 18, 1897. Serial No. 619,548. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. FOGG, a citizen of the United States, residing at Hyde Park, in the county of Norfolk and State of Massachusetts, have invented a new and useful Improvement in Heel-Compressing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention is an improvement upon that described in the patent of Freeborn F. Raymond, 2d, and myself, dated January 12, 1897, No. 575,040; and it relates first to means whereby a heel-compressing machine having many of the features of the machine of said application is provided with separable side dies and means for opening and closing the same and also means for feeding the heel-blank to the said separable dies and for removing it from the same.

In the drawings, Figure 1 is a view in front elevation of a heel-compressing machine having the features of my invention. Fig. 2 is a view in side elevation thereof at the left side of the front. Fig. 3 is a view in horizontal section upon the dotted line 3 3 of Fig. 1 and in plan of parts below said line. Figs. 4 and 5 are views practically upon the same section, illustrating different positions of the dies and heel-blank-feeding mechanism.

The stationary head A, the heel-seat former A', carried thereby, adjustable vertically thereon, and removable therefrom, the manner of connecting the said head with the base A² by the rods *a a'* *a² a³*, the movable pressure-head B, movable upon the said rods, and the means for moving it are substantially like those described in the said joint application, the principal difference being the employment upon the main shaft of an eccentric (connected by a link with the pressure-head B) for moving it vertically instead of a pressure-cam. The upper surface *b* of the pressure-head B is made flat and has projecting therefrom a forward extension *b'*, having a flat surface in continuation of the surface *b*. This result may be obtained by means of a separate flat plate having the forward extension fastened to the upper surface of the pressure-head B. Upon this flat surface there are ar-

ranged two slides C C', which are movable toward and from each other and which are attached to the pressure-head by cap-plates, the slide C having the cap-plates *c c'*, (see Fig. 4,) and the slide C' having the cap-plates *c² c³*. These slides operate the die-sections D D', being the sections which compress the sides and back of the heel-blank. The slide C operates the die-section D, and the slide C' the die-section D', and they are movable with said slides toward and from each other and are made removable therefrom that others having die-cavities of different sizes and shapes may be substituted. The slides C C' are moved inward upon the upward movement of the pressure-head B by means of links, the lower or inner ends of which are pivoted to the outer ends of the slides and the upper or outer ends to stationary brackets extending downward from the stationary head A and either integral therewith or bolted thereto.

C² C³ are the links connecting the slide C with the bracket C⁴, and C⁵ C⁶ are the links connecting the slide C' with the bracket C⁷. These links upon one side extend outward between the rods *a' a* and upon the other side between the pair of rods *a³ a²*. Upon the upward movement of the pressure-head B the links are straightened and force the slides C C', and consequently the die-sections which they carry, toward each other, and upon the upper surface of the pressure-head and upon the downward movement of the pressure-head the links act to move the slides outwardly upon the upper surface of the pressure-head, separating the die-sections and opening the die-cavity. This opening extends upward from the upper surface of the pressure-head, or, in other words, the upper surface of the pressure-head or of the plate attached thereto forms the under surface of the die-cavity, for all its sizes.

Each of the sections D D' is represented as secured to its operating-slide C C' in a manner to permit it to be removed therefrom, and I prefer the construction represented in Fig. 4, in which each slide is provided with a recess *e*, having near its rear end the shoulder *e'* and at its front end the shoulder *e²*.

The die has a section *e³*, which fits the re-

cess of the slide between the shoulders e' e^2 , and a rearward-extending section e^4 , which closes under the rear cap. A pin e^5 extends through the slide from its forward face into the die, and the pin is held in place by its bent end e^6 , which is adapted to be turned down behind the stud e^7 , the stud serving to prevent the pin from working outward. To remove the die, the end e^6 of the pin is moved upward and withdrawn from the die, and the forward end of the die may then be lifted from the slide and its rear end drawn from under the cap-plate. Each of the die-sections D D' is thus shaped and held.

Each of the slides C C' has a recess f between the forward end f' of the die and the incline f^2 upon the slide, and the breast-block F of the die has at each end the section f^3 of very nearly the shape of the said recess f —that is, it has a surface in continuation of the breast-block which is adapted to be brought against the ends f' of the dies—and it also has the inclines f^4 , against which the inclines f^2 of the slides close. The closing of the said inclines f^2 upon them causes the breast-block to be pushed inward by the closing of the side dies a slight distance and a practically tight joint to be obtained between the face of the breast-block and the front ends of the die-sections D D'.

The breast-block is movable upon the upper surface of the extension b' inward and outward in respect to the side dies D D'. This movement is represented as imparted to it by means of the edge cam g on the cam-disk G, fast to the main shaft of the machine, and the lever g' , pivoted at g^2 , the long arm of which is connected by means of the link g^3 with the said breast-block F and the short arm of which is connected to the upper end of a slide g^4 , the lower end of which rests against the cam g . A spring g^5 coöperates with the cam and acts to hold the lower edge of the slide g^4 in contact with the cam. The said cam is constructed to move the breast-block inward during the beginning of the upward movement of the pressure-head and before the slides C C' have closed appreciably, and the spring withdraws it during the downward movement of the pressure-head after the slides C C' have been opened sufficiently to permit the ends of the breast-block to pass by them. The breast-section F is moved outward and inward upon the extension b' , and it serves to feed a heel-blank placed upon said section b' in front of the breast-block, or moved to such a position as hereinafter described in Fig. 4, to a position between the dies, and while they are wide open or practically wide open (see Fig. 3) and after the breast-block and heel have so been moved the side dies close upon both, forcing the breast-block toward the forward ends of the dies and against the breast of the heel by the inclines f^2 and compressing the sides of the heel, in conjunction with the former A',

with which the side dies and bottom plate have been brought into operative relation by the upward movement of the pressure-head during the closing movement of the dies. The compressed heel-blank is removed from the side dies by the block or remover H, preferably having a V-shaped forward end h , (see Fig. 4,) and which is connected with the lever g' , which moves the breast-block F by means of a long link h' . The side dies are opened sufficiently to permit this block or remover to be moved inward, with the uncompressed heel-blank, between them and beyond them, or to the position represented in Fig. 5, and to permit it to be moved in a reverse direction, and thereby remove the compressed heel from the dies and move it forward upon the plate b' to a position from which it may be taken or knocked off by hand or by an uncompressed heel-blank previously placed at one side thereof. (See Figs. 4 and 5.) When the compressed heel-blank is thus dislodged or removed from said plate b' , the said plate is provided with a lateral extension m , having a breast-guide m' , adapted to receive an uncompressed heel-blank, which is moved thereon by hand or by a feeder M to a position in front of the breast-block, and in so doing the compressed heel is moved laterally upon the said plate b' from in front of the breast-block over the edge m^2 of the plate into trough m^3 or other receptacle. The feeder M comprises a piece of about the width and height of a heel, preferably of metal, carried at the forward end of an arm m^4 , attached to the upper end m^5 of a lever m^6 . This lever is pivoted at m^7 and is moved at the required intervals by an edge cam m^8 on arm or disk m^9 , fastened to the main shaft, and a link m^{10} , having a cam-roll m^{11} , which is held against the edge of said cam by a spring m^{12} . The link is connected with the lower end of the said lever m^6 , and at the lower end it has a slot m^{13} , through which passes a headed stud m^{14} , securing it to the center of the cam in a position to permit it to slide thereon. The feeder is thus provided with a movement across the plate m , whereby it feeds an uncompressed heel-blank from said plate in front of the breast-block, and in so doing causes the uncompressed heel so fed to remove from in front of the breast-block a previously-compressed heel.

In operation the heel-blank is placed either directly in front of the breast-block when in its outermost position or in front of the feeder M, and it is fed by the breast-block between the side dies and compressed as specified and returned to be removed by hand or by the feeding of the uncompressed heel by the feeder M.

I would say that I do not confine myself to the especial devices herein described for moving the breast-block and the feeder, but may employ in lieu thereof any mechanical equivalent.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a heel-compressing machine, the combination with the slide C having shoulders e' , e'' , of a removable die-section D having a portion fitting between said shoulders and a front section extending beyond said shoulders, and a cap-plate beneath which an end of said die-section D extends.

2. The combination of the slide C having a hole, the removable die-section D also having a hole, and the die-holding pin adapted to extend through said hole in the slide into said hole in the die, said pin having its outer end bent and being adapted to be turned, and a locking-stud e' for locking the pin in position.

3. The combination of the slides C C', the die-sections D D' carried thereby, the slides having the recesses f provided and the inclines f'' , with the breast-section F having the inclines f' and adapted by the inclines of the slide to be moved inward slightly and its face to be brought into contact with the front ends of the die.

4. The combination of the pressure-head having the slides C C', the die-sections D D' operated by said slides, locking projections in the slides in front of said die-sections, and a breast-block having side extensions adapted to be engaged by said locking projections of said slides, substantially as described.

5. The combination of the pressure-head, dies D D' mounted thereon and provided with closing and opening movements, with the plate b forming the bottom of the die having an extension b' a breast-block F movable upon said extension and plate and adapted to feed a heel-blank upon said extension and plate to a position between the side dies and to hold the said heel-blank in such position during the closing of said dies.

6. The combination of a pressure-head, the

opening and closing dies D D', a breast-block F movable toward the said dies to feed an uncompressed heel-blank thereto, and a heel-remover to move the compressed heel-blank from the dies in a forward direction, as and for the purposes set forth.

7. The combination of the pressure-head, the dies D D' mounted thereon and having a closing and opening movement, the movable breast-block F and the heel-remover H connected together, the former of which is adapted to feed the heel-blank upon a level with the bottom of the die into a position between the open dies, the heel-remover being moved between the dies and beyond them at the same time, and the heel-remover being adapted upon the opening of the dies and its return movement to move the compressed heel-blank forward from the dies to its original position, as and for the purposes described.

8. The combination of the side dies D D', the movable breast-block F, the remover H both movable in relation to the said side dies as specified, and a heel-rest m at one side of the extension b' adapted to receive and hold an uncompressed heel, as and for the purposes described.

9. The combination in a heel-compressing machine of the side dies D D', the plate forming a bottom of the die and having the extension b' , the heel rest or support m at one side of said extension b' , the movable breast-block F and heel-remover H connected together to be movable toward and from said dies upon the extension b' and plate b and the heel-feeder M adapted to move an uncompressed heel upon the support m in front of the breast F, thereby causing the uncompressed heel-blank to push a compressed heel-blank from the front of said breast into a trough or receptacle.

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Witnesses:

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J. M. DOLAN.