

(No Model.)

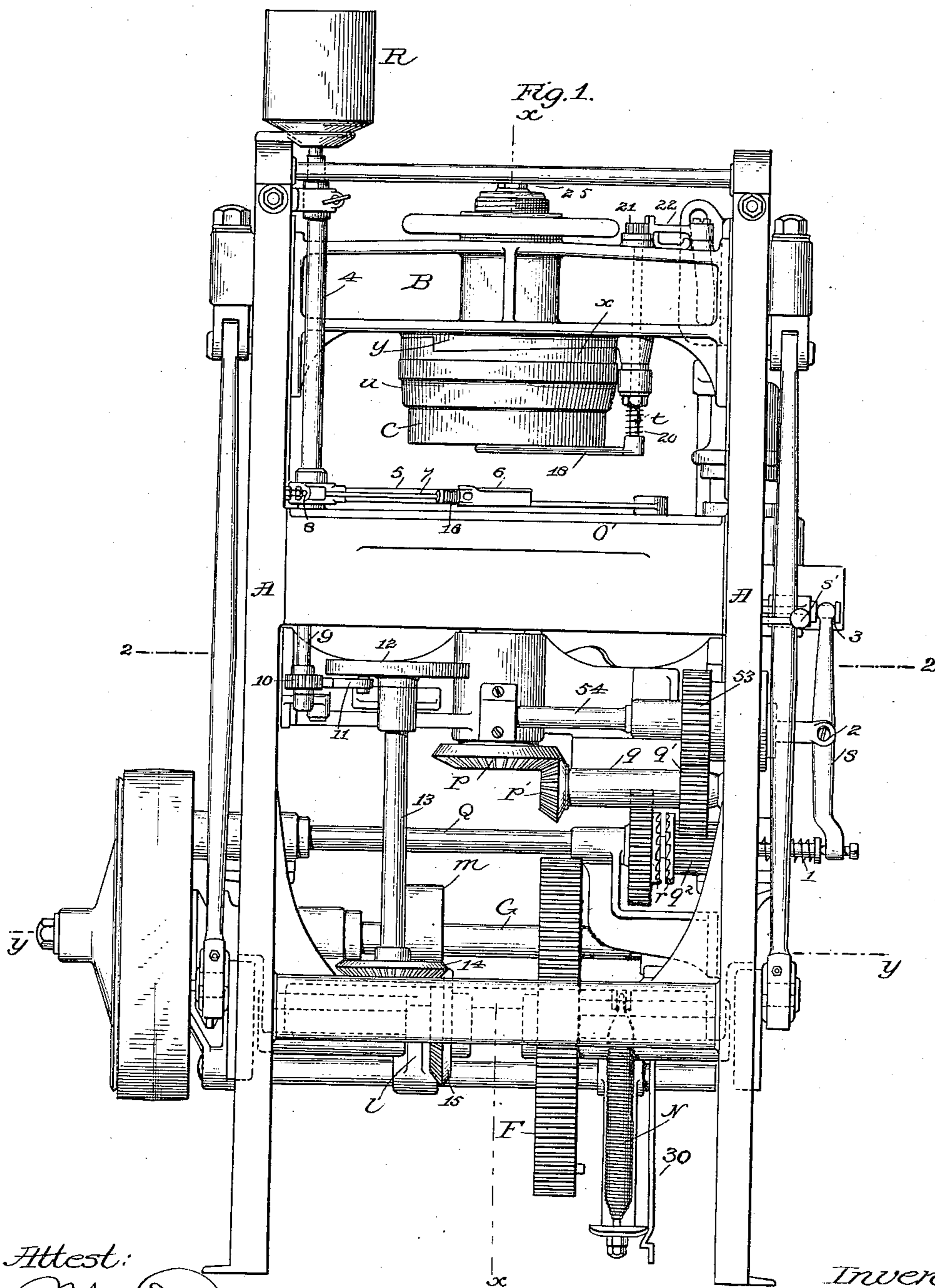
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E. H. PARKS.

HEEL MACHINE.

No. 297,437.

Patented Apr. 22, 1884.



Attest:

Walter Donaldson

J. L. Middleton

Inventor

Edward H. Parks

by J. C. Spear

Attys.

(No Model.)

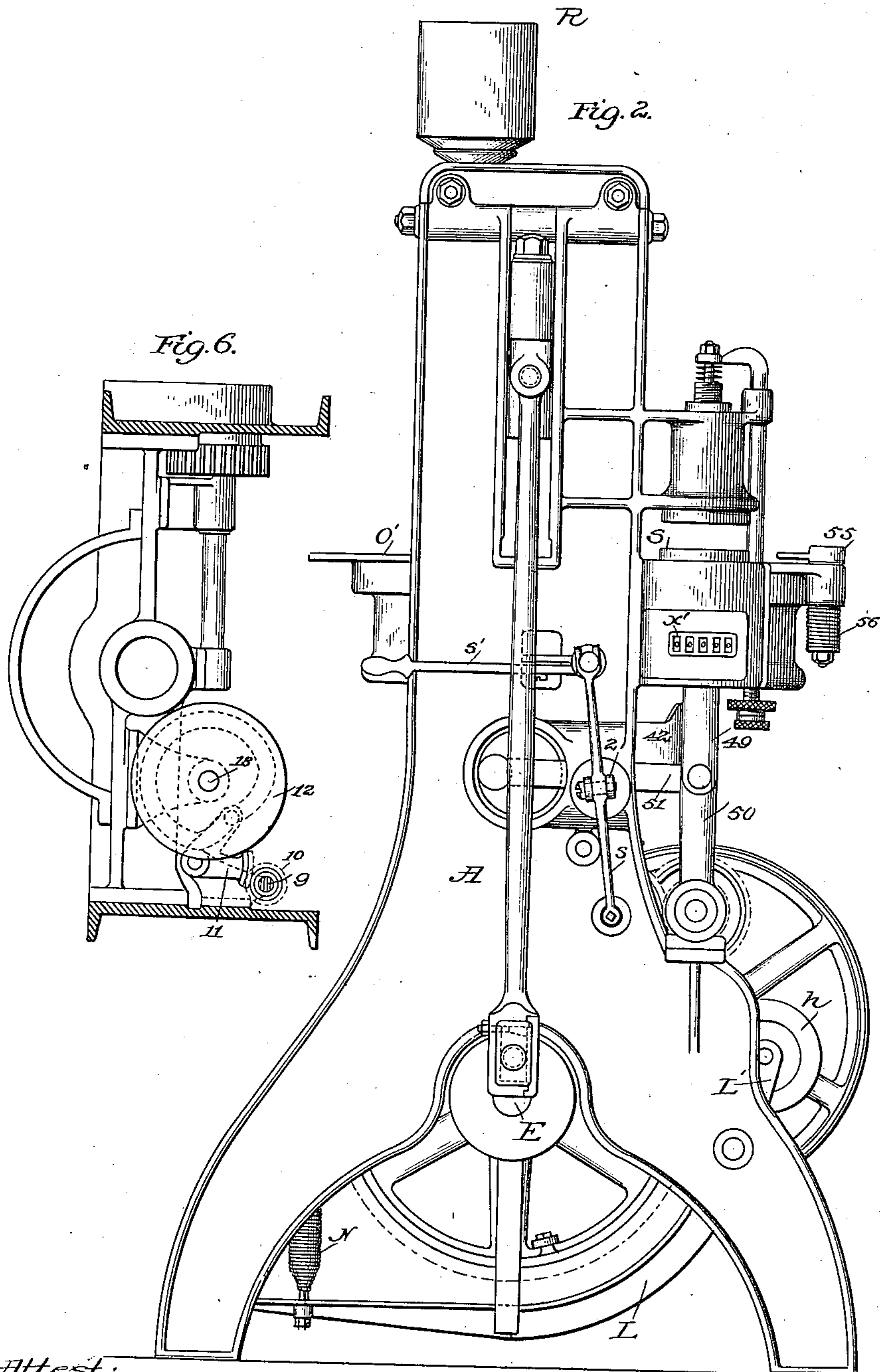
E. H. PARKS.

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(No Model.)

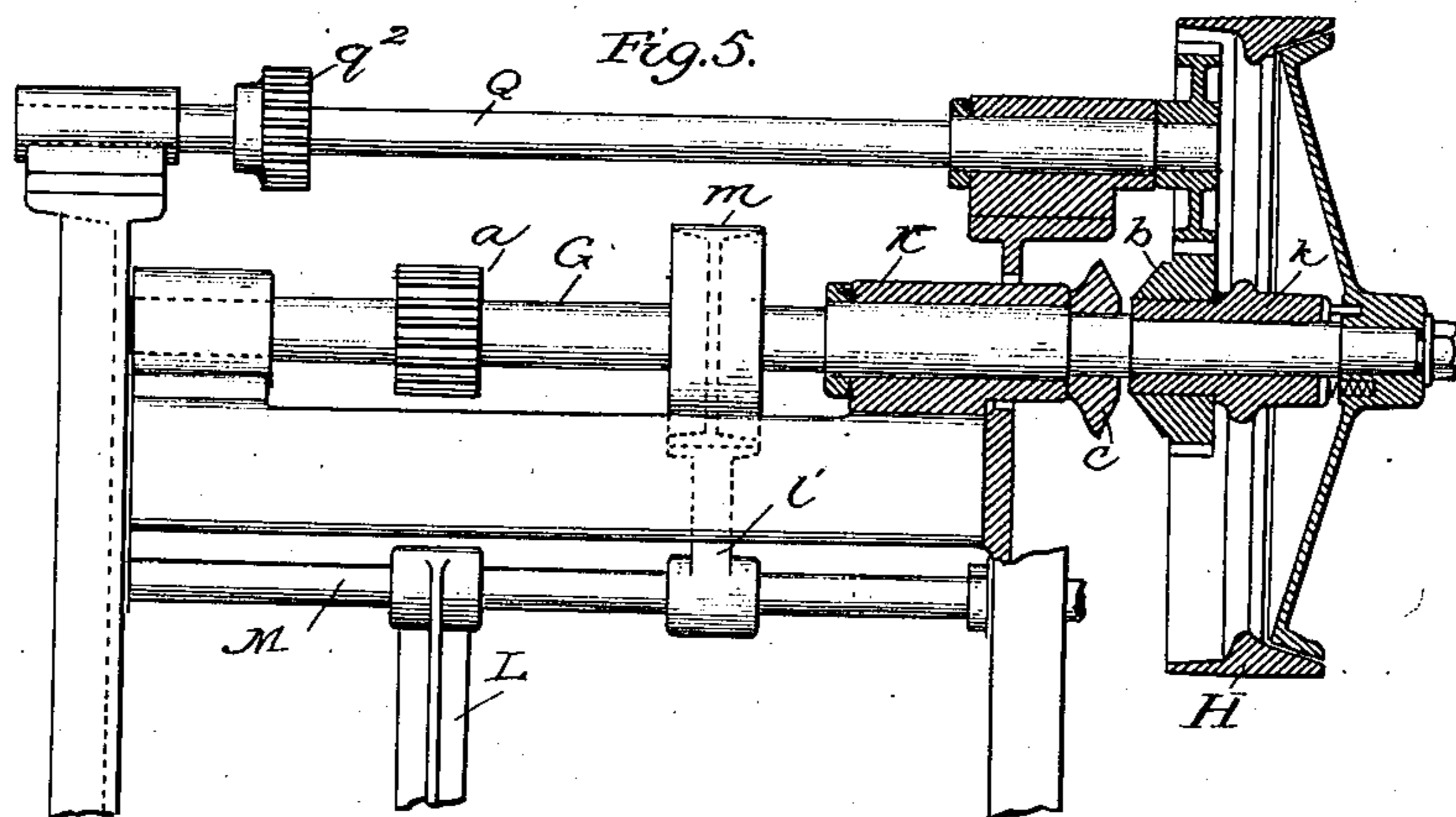
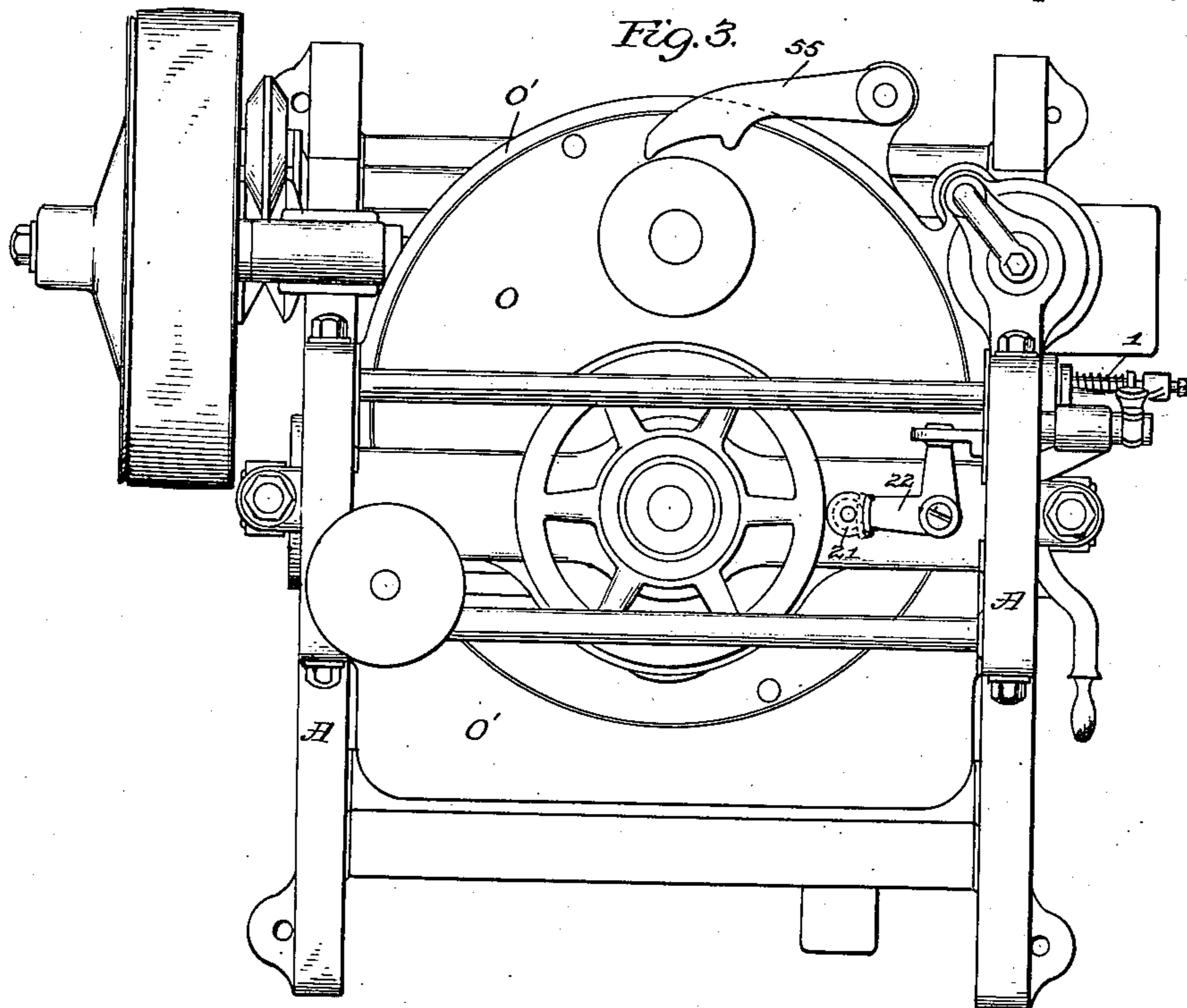
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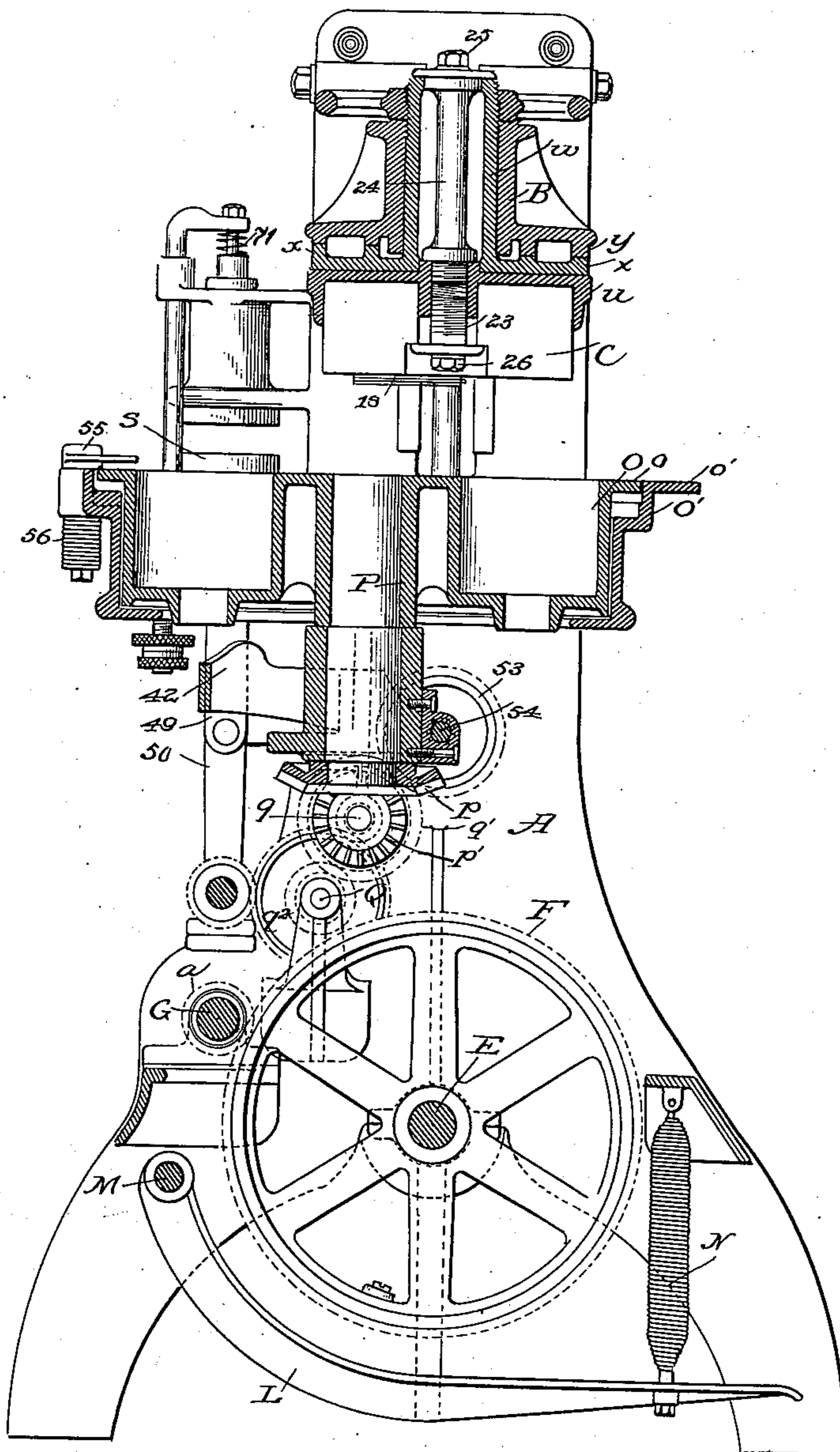
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Fig. 4.



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(No Model.)

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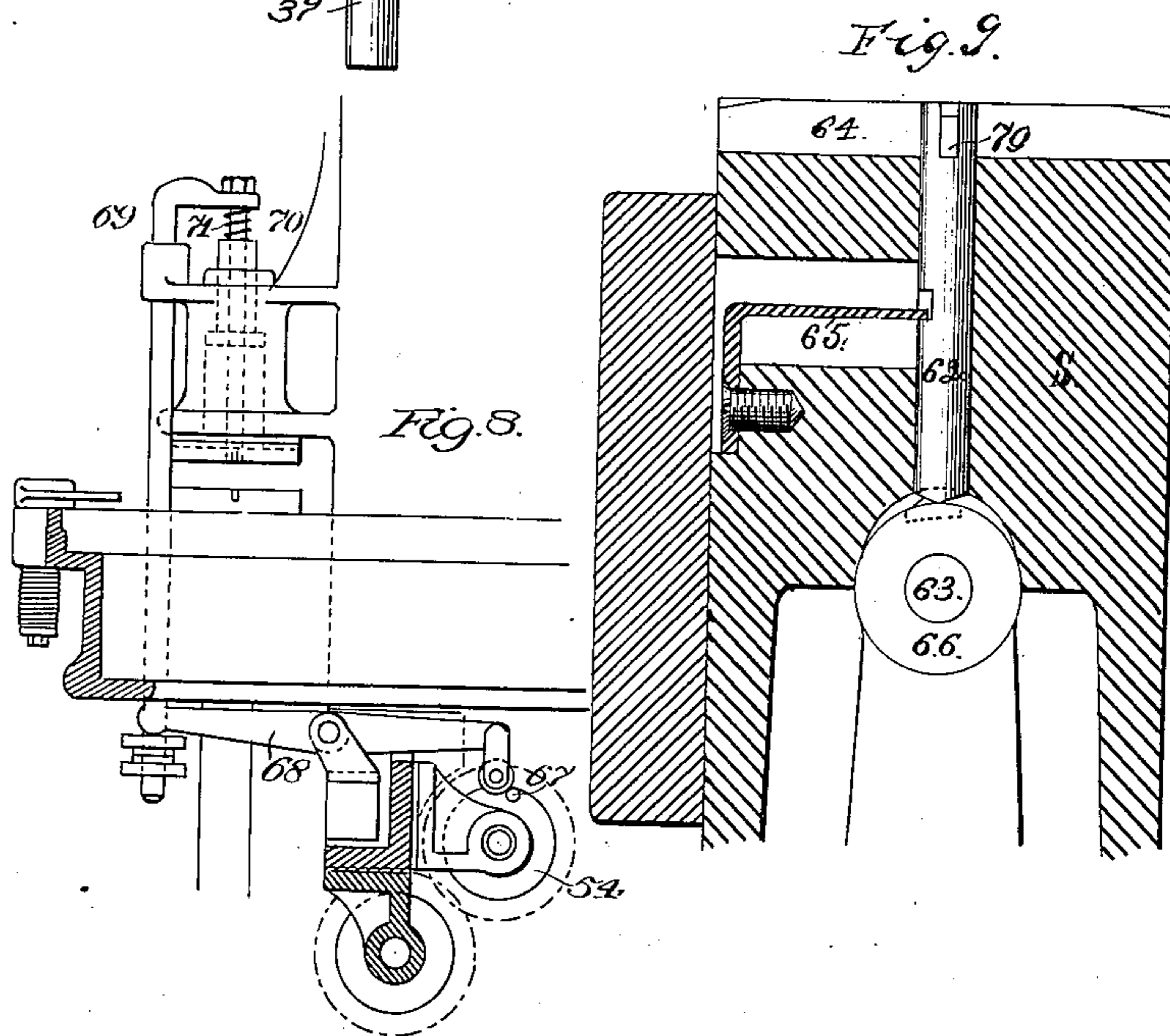
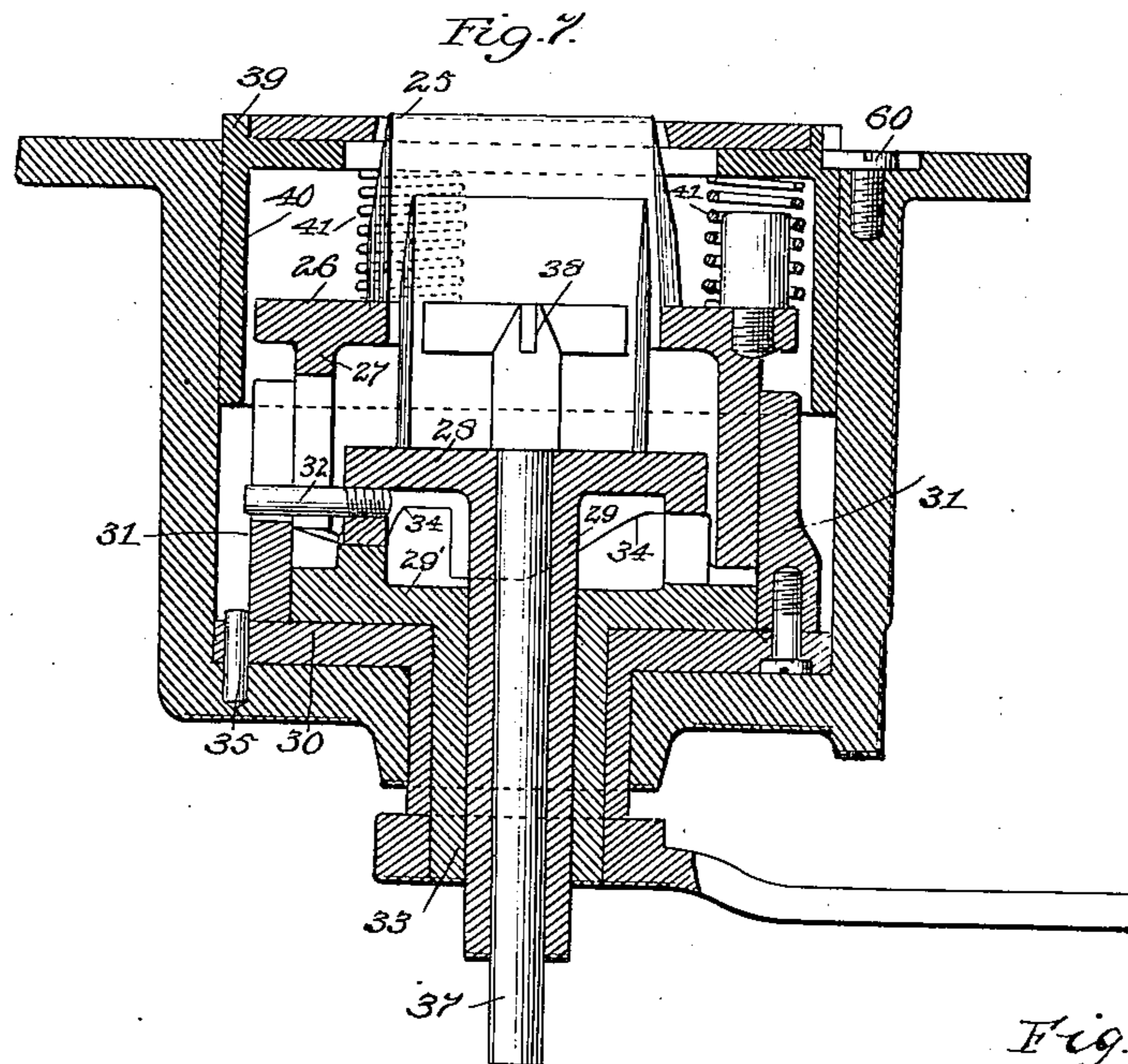
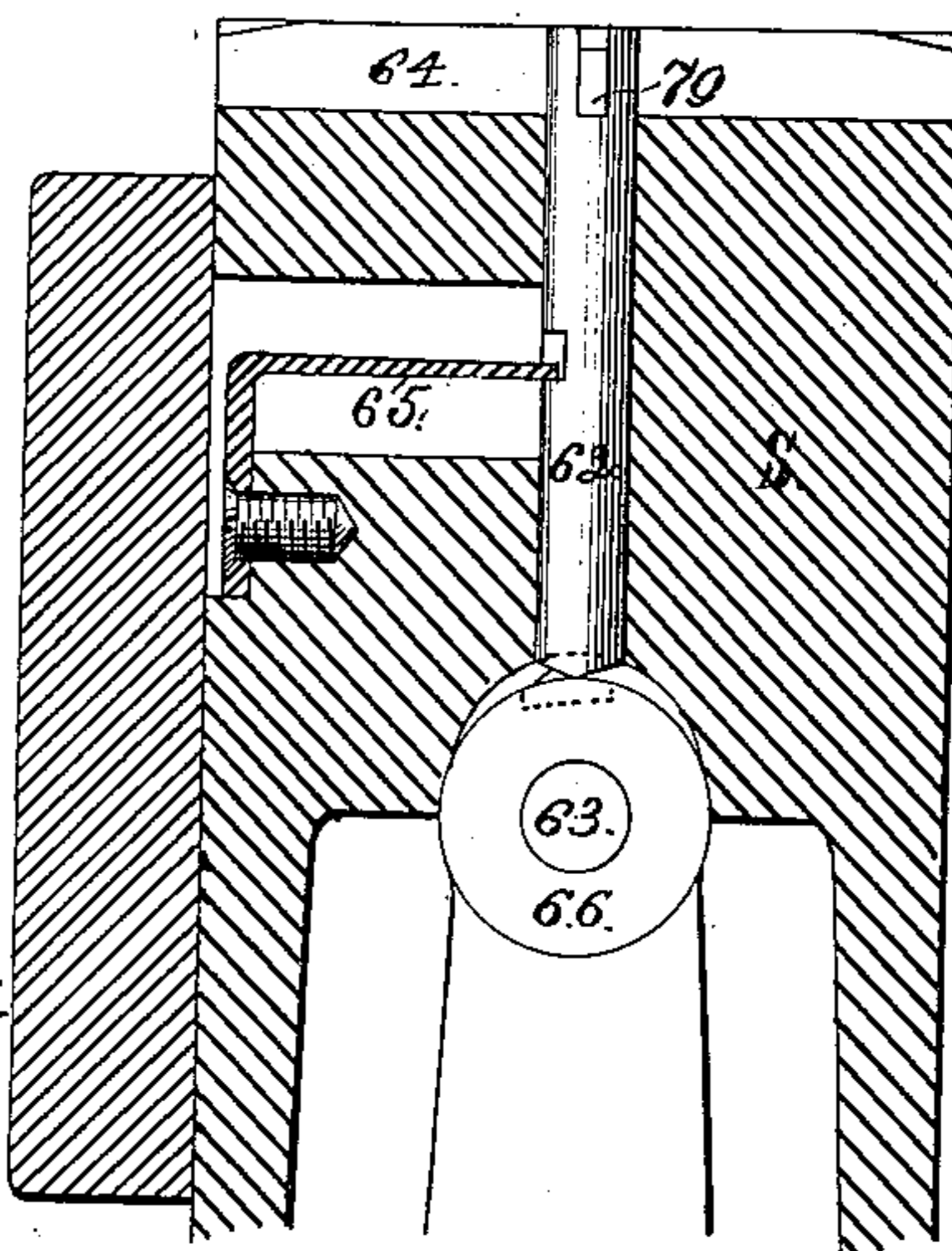


Fig. 9.



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Edward H. Parks
By J. C. Cooper

Attest.

UNITED STATES PATENT OFFICE.

EDWARD H. PARKS, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE
MANSELL HEEL MACHINE COMPANY.

HEEL-MACHINE.

SPECIFICATION forming part of Letters Patent No. 297,437, dated April 22, 1884.

Application filed July 17, 1883. Renewed March 19, 1884. (No model.)

To all whom it may concern:

Be it known that I, EDWARD H. PARKS, of Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Heel-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improvement upon the heel-making machine for which Letters Patent of the United States were granted to E. S. Mansell, and numbered, respectively, 262,902 and 263,293.

The specific features of the invention include a rotary table carrying the cutting-dies underneath the reciprocating die-block; an intermittent movement of this rotary table, whereby it is caused to remain at rest while forming the heel, and to move so as to carry the filled die to the discharging-point; placing the movement of this under the control of the operator, so that the table may be made to move at the instant the die is filled; the combination of a rotary shifting device for the inner and outer dies; the combination of a cutting-die held stationary during the formation of a heel-blank therein, with a movable pasting device acting alternately with the cutting-block; a movable protecting arm or guard; a press combined in the machine with a cutting mechanism; an automatic transferring mechanism, whereby heel-blank is transferred to the press; and details of construction, whereby these main features are practically embodied in the machine.

In the accompanying drawings, Figure 1 represents a front elevation of the machine. Fig. 2 shows an elevation of the right-hand side of the machine. Fig. 3 is a top view. Fig. 4 shows a section on line *xx* of Fig. 1. Fig. 5 is a section on line *yy* of Fig. 1. Fig. 6 shows a section on line 2 2 of Fig. 1. Fig. 7 shows a central transverse section of the cutting-dies and their adjusting mechanisms. Fig. 8 shows in side elevation the discharging device for the upper presser-die. Fig. 9 shows discharging devices for the lower.

In these figures, the sides A of the main frame are substantially like those in the patent referred to. In slots in their upper ends

are the ends of the cross-head B, which carries the block C. These ends project through the sides, and are connected by pitmen to wrist-pins on the shaft E, which has its bearings in the side pieces. A gear-wheel, F, on this shaft meshes with a pinion, *a*, on the main driving-shaft G. This shaft is driven by the pulley H through friction-gears. The hub K of the pulley is loose on the shaft and rotates constantly. The pinion *b* is fixed on the shaft G, and next the bearing K is a beveled friction-wheel twin to the bevel face of the wheel *b*. An idle V friction-wheel, *h*, is carried on the rear upturned end of a treadle-lever, L L', and when said lever is depressed the idle-gear is pressed between the beveled edges of the wheels *b* and *c*, thus communicating the motion of the hub to the friction-gear *c* and to its shaft, thus causing the cross-head B and block C to reciprocate until the pressure is removed from the treadle. The treadle-lever is in two parts fixed to a shaft, M. An arm, L', on the same shaft carries a brake-shoe, which bears on a brake-wheel, *m*, on the shaft G. This is so adjusted in relation to the position of the arm L' that when the idle-gear is in connection the brake is off, and vice versa. A spring, N, tends constantly to hold the brake on and keep the block at rest.

The revolving table O is shown in plan in Fig. 3 and in section in Fig. 4. It turns within a fixed table or case, O', being inclosed within its cavity, and having its flanges *o* flush with the flanges *o'* of the fixed table. Its hollow shaft P is supported in bearings on the frame, and is provided with a bevel-gear, *p*, driven by a gear, *p'*, on the shaft *q*. This pinion gears with an elongated pinion, *q*², loose on the shaft Q, Fig. 5. This shaft receives constant motion from the main shaft, but communicates its motion to *q* only when *q*² is moved longitudinally to bring the clutch parts *r* together. This is accomplished by means of clutch and locking levers *s* and *s'*, the latter being moved by hand. The clutch is held out of gear by means of a spring, 1, and is thrown into gear by movement inward of handle of the locking-lever *s'*. The clutch-lever is pivoted on a stand, 2, and its

forked head embraces the neck of the locking-pin 3. This pin is placed in a suitable stand and passes through the frame, so as to enter holes in the periphery of the table O. These
5 holes in the side of the table are placed midway between the positions of the cutting-dies, so that when the table is locked these two dies are on a central front to rear line. The same spring, 1, which releases the clutch to disconnect the driving-power from the table forces
10 home the bolt to lock the table, so that both the clutch and the locking-bolt are under the control of the operator by means of the locking-lever s'. The table being once started by
15 means of throwing the clutch into gear and withdrawal of the bolt, the end of the bolt (preferably hardened) rides on the periphery of the table and holds the clutch in engagement without further attention on the part of
20 the operator. When the table has made a half-revolution, the pin drops into its hole, thus permitting the spring 1 to act and release the clutch.

All that is required of the operator to start
25 the machine when the die is filled is to give the lever s' a slight movement toward the machine. When the dies are thus shifted and the unfilled die is in place, the operator presses down the treadle and starts the block,
30 which may continue in motion till the die is filled. In order to relieve the operator, a spring-detent, 30, is provided to hold down the treadle during the operation described. A roll may be fixed to the periphery of the
35 main wheel gear to release the detent upon the arrival of the bar or cross-head B at its highest point.

In this machine, it will be observed, the cutting-die does not change its position during
40 the process of forming a heel-blank. The pasting mechanism has been correspondingly modified. The paste-reservoir R is located on the top of the machine-frame. A tube, 4, leads down therefrom and communicates with
45 a horizontal tube, 5, on the end of which is a delivery-box, 6. The paste is delivered from the reservoir to this box, which has holes in the bottom for the passage of the paste to the lift. Continuous with the tube 4 is a shaft,
50 9, stepped in suitable bearing at its lower end, which is provided with a pinion, 10. Into this meshes the segment-gear of a bell-crank lever, 11. Motion is imparted to the bell-crank lever by means of a cam-wheel, 12, on the
55 upper end of a shaft, 13. The lower end of this shaft has a bevel-gear, 14, which meshes into another bevel-gear, 15, on the shaft E.

The parts are so constructed and timed that the tube 5 will swing to bring the box 6 over
60 the cutting-die while the block is rising, and will swing back to remove the box from the path of the block when the latter is coming down. A valve in the bottom of the box is connected to a stem, 7, sliding in guides, and
65 held to close the parts by a spring, 16. When the box has reached its extreme front limit and is directly over the die, the valve is open,

having been moved by the end 8 of the stem coming in contact with an adjustable stud on the frame. The pressure of the column of
70 paste will be ordinarily sufficient to force it forward; but any ordinary means may be used to render its discharge more certain. As the paste-applying mechanism is driven from the shaft which directly moves the cross-head at-
75 tachments, it always maintains its just relation to the block, and applies the paste upon each lift after it has been cut.

In order that the hand of the operator may not be cut or crushed by being caught under
80 the block, I have provided a guard, 18, connected by a spring, 20, to a shaft, t, having its bearings in the cross-head B. It is rocked by means of a pinion, 21, on its upper end, and the segment-rack of a bell-crank lever, 22.
85 The end of this lever projects into an inclined slot in a plate on the frame, so that the shaft is rocked as the cross-head rises and falls, and the arm is thus swung out as the block moves down, and back when it rises.
90

The wood block C is attached to the cross-bar in such a manner that its height may be varied. It is set directly into a shell, u, and held therein by means of a threaded bolt, 23. The shell is connected to a sleeve, w, by means
95 of a bolt, 24, and nut 25. The sleeve w has a flange, x, formed with inclined faces, which rest against corresponding faces on a flange, y, on the cross-head. By loosening the nut 26 the flange x may be turned to adjust the
100 block up or down. The nut 26, when turned down, hold the parts securely together. The cutting-dies are shown in section in Fig. 7. Their action is the same as that described in
105 Letters Patent granted E. S. Mansell on the 22d day of August, 1882. They are designed to cut "deck-heels," and the inner die is raised first and filled, and then the outer.

To reduce the size and facilitate the operation of the moving parts, I have substituted
110 rotary for reciprocating inclines in the die-holders. These die-holders occupy the pockets of the revolving table. The outer die, 25, is fixed on a holder formed of an annular plate, 26, and a cylindrical flange, 27. The inner
115 die is fixed upon a similar flanged plate, 28, on a sleeve, 29, extending down centrally through the bottom of the tube. Both these flanged die-holders rest on rings or inclined flanges of a circular plate, 29', which in turn rests on a
120 plate, 30, which forms the bottom of the structure. A ring, 31, attached to the bottom, incloses and guides the holders. A pin, 32, set in the inner holder, extends through a slot in the outer holder and the guide, and prevents
125 the holders from turning. The plate 29' is provided with a sleeve, 33, which extends below the base of the table, and has a handle affixed thereto and extending to the front, so as to be in easy reach of the operator.
130

The flanges or rims of the plate 29 are formed with reversed inclines corresponding to those of the holders. These inclines are shown in part in the dotted and full lines 34 34 of Fig.

7. All the inclines terminate at their upper and lower ends in plain faces, on which they rest. The plate 30 is held by a pin, 35. The plate 29 is turned back and forth, and as it turns in one direction causes the inner die to rise and the outer to fall. Turned in the opposite direction, the motion of the die is reversed. Within the sleeve of the inner-die support is a rod, 37, which projects below the sleeve and carries on its upper end an ejector, 38. This is caused to operate when the table, in turning, brings the full die near its rear point, when the lower end of the rod rides upon an incline, 42, on the frame, and is thereby lifted. The ejector 38 is preferably of cross shape; but this is not material. An annular plate, 39, having a cylindrical flange, 40, is placed in the upper end of the cavity or pocket, and rests upon springs 41 41. This forms the plate on which the leather is laid to be cut.

The heel-blanks formed by the cutting and pasting in the dies require sometimes additional pressure in order to render them compact and firm. To do this immediately, while the paste is still undried, and also to lessen the labor of handling, I have combined a press with the table of the cutting apparatus.

In the rear of the machine, and a little toward one side, is the press-piston S. It works vertically in suitable bearings in the frame, and is operated by the toggles 49 50 and the bar 51, which is connected by a wrist-pin to a face-plate of the shaft 54. This is driven by means of pinion 53 from the pinion q' . Thus it is made to operate every time the table moves. It is timed in its movement to act in proper relation to the conveyer-arm 55 and the movement of the table. The press-piston bears against a solid die or block, 61, above, preferably cast with the frame, Fig. 8.

In order to prevent the blank from adhering to the press-piston, I provide a plunger, 62, within the press-piston S. The plunger 62 is hardened at its lower end, which is beveled, as shown in Fig. 9, and bears upon the upper rounded end of the toggle. This is provided with a hardened steel piece, 66, adapted in shape and position to raise the plunger when the toggle is moved to lower the press-plunger. To the upper end of the plunger is fixed a steel cross-piece, 79, which lies in a suitable cavity in the piston-face. At the commencement of the movement of the table which carries the die the toggle-joint is moved, the plunger with the steel cross-piece is held up, when the press-piston descends, and is thus held for an instant in contact with the blank, while the piston is drawn away and separated from it. A steel spring, 65, returns the plunger to its place.

Fig. 8 shows the device for the upper or fixed die. It consists of a plunger, 70, and cross-piece similar to the clearing device for the press-piston below. It is operated by means of a bent arm, 69, and spring 71, which raises the plunger and holds it up. The plun-

ger is drawn down to clear the blank from the die by means of a lever, 68, which bears upon a nut on the lower end of the arm 69. The lever is operated by means of a pin, 67, in wheel 54 acting on a steel roller on the end of the lever. The parts are adjusted so that the clearer is brought into action just before the admission of a new blank to the press, each blank pushing aside its predecessor. The arm which pushes the blanks to the press is pivoted on an offset of the stationary part of the table, and is thrown and held back in the position shown in Fig. 3 by means of a spring, 56. (Shown in Figs. 4 and 8.) It is thrown forward when the table has brought the filled die to its rear or discharge position, and is consequently within the sweep of this arm. The movement is accomplished by means of pins 60 in the revolving table, which are lifted into position to press against the edge of conveyer-arms 55 by an incline (not shown) fixed inside of case O', over which the pin moves during the revolution of revolving table O.

It will be observed that the cutting-dies may be removed from the cavities in the table by taking out screws 60, and single dies may be substituted for the double dies shown in the drawings.

The paster may be taken off, and the machine may be used to cut lifts of any kind, proper dies of course being used for the purpose.

A registering device of ordinary construction is indicated at x' . It may be operated by the presser-plunger, and register the number of heels formed.

I claim—

1. A horizontal rotary table carrying cutting-dies, in combination with mechanism for holding the table in a fixed position, and mechanism for starting it at the will of the operator, and with a vertically-reciprocating block acting in conjunction with the dies, substantially as described.

2. A horizontal rotary table having two cutting-dies or sets of dies, a vertically-reciprocating block acting in conjunction with the die, mechanism for rotating the table, automatic arresting mechanism, and starting mechanism, substantially as described.

3. A cutting-die, a vertically-reciprocating block acting in connection therewith, and a reciprocating pasting mechanism adapted to move under the block and deposit or apply paste after the cutting of each lift, substantially as described.

4. A revolving table carrying cutting-dies or sets of dies, automatic stopping mechanism, starting mechanism, a vertically-reciprocating block, reciprocating pasting mechanism, and discharging mechanism, substantially as described.

5. A revolving table carrying cutting-dies or sets of dies, automatic stopping mechanism, starting mechanism, reciprocating pasting device, blank-discharging devices, a press, and an arm adapted to move the blank from

the position of the die to the said press, substantially as described.

6. The inner and outer dies, in combination with their respective die-holders, and annular
5 flanges or rings having inclines reversed in position to inclines on the die-holders, substantially as described.

7. In combination with the reciprocating block and dies, the guard-arm and mechanism
10 for moving the same in the described relation to said block, substantially as set forth.

8. The revolving table carrying dies in the described relation to a reciprocating block, and provided with holes to receive a locking-
15 pin, in combination with said locking-pin, con-

nected by levers to a spring-clutch forming connection between the driving-power and the table, all substantially as set forth.

9. The press-piston, in combination with the clearing-plunger, the toggle-joint having pro- 20
jection 66, and the spring, all substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD H. PARKS.

Witnesses:

RICHMOND VIALL,
KARL J. SUNSTROM.