

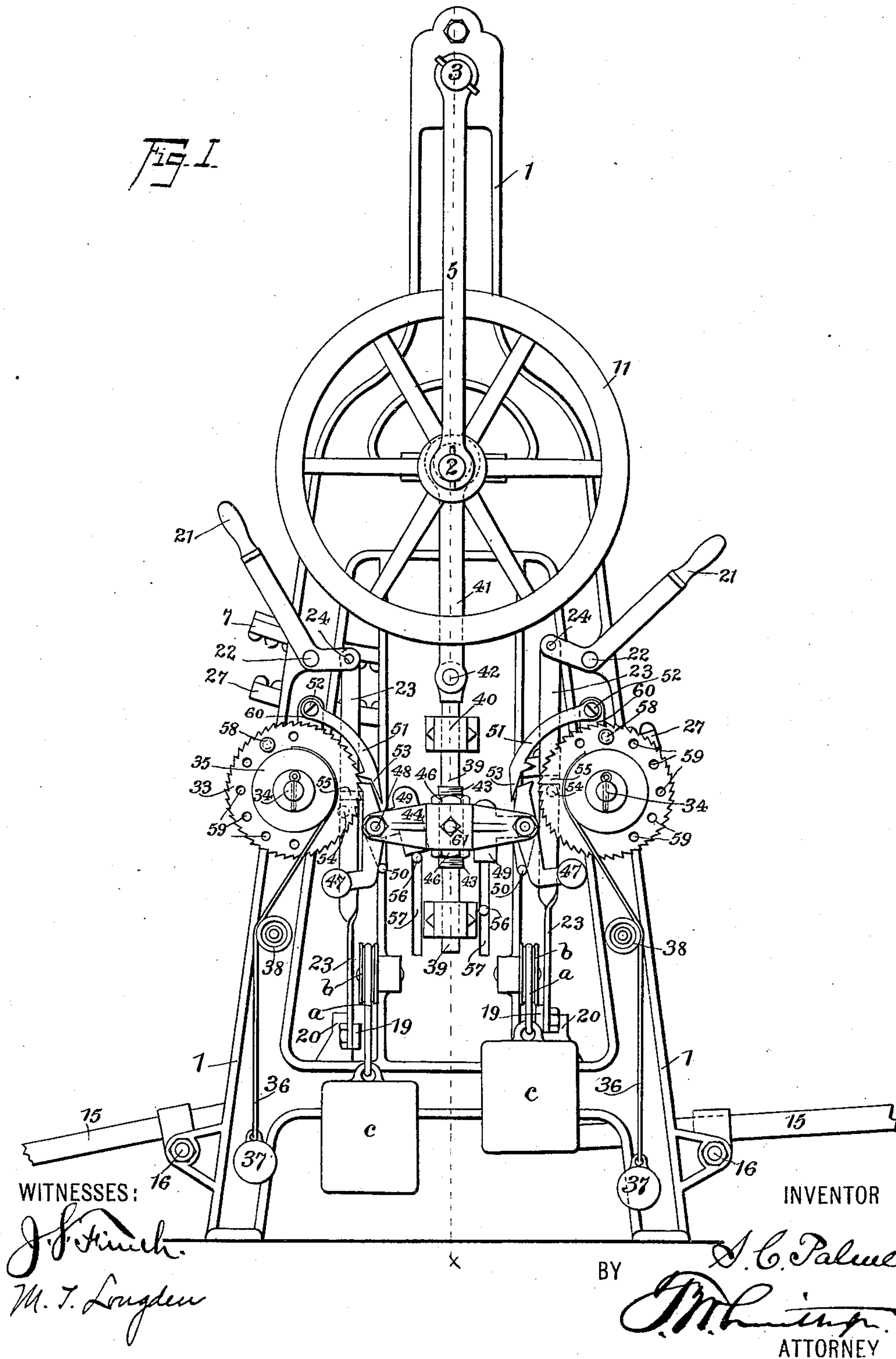
(No Model.)

2 Sheets—Sheet 1.

S. C. PALMER.
HAT SIZING MACHINE.

No. 565,498.

Patented Aug. 11, 1896.



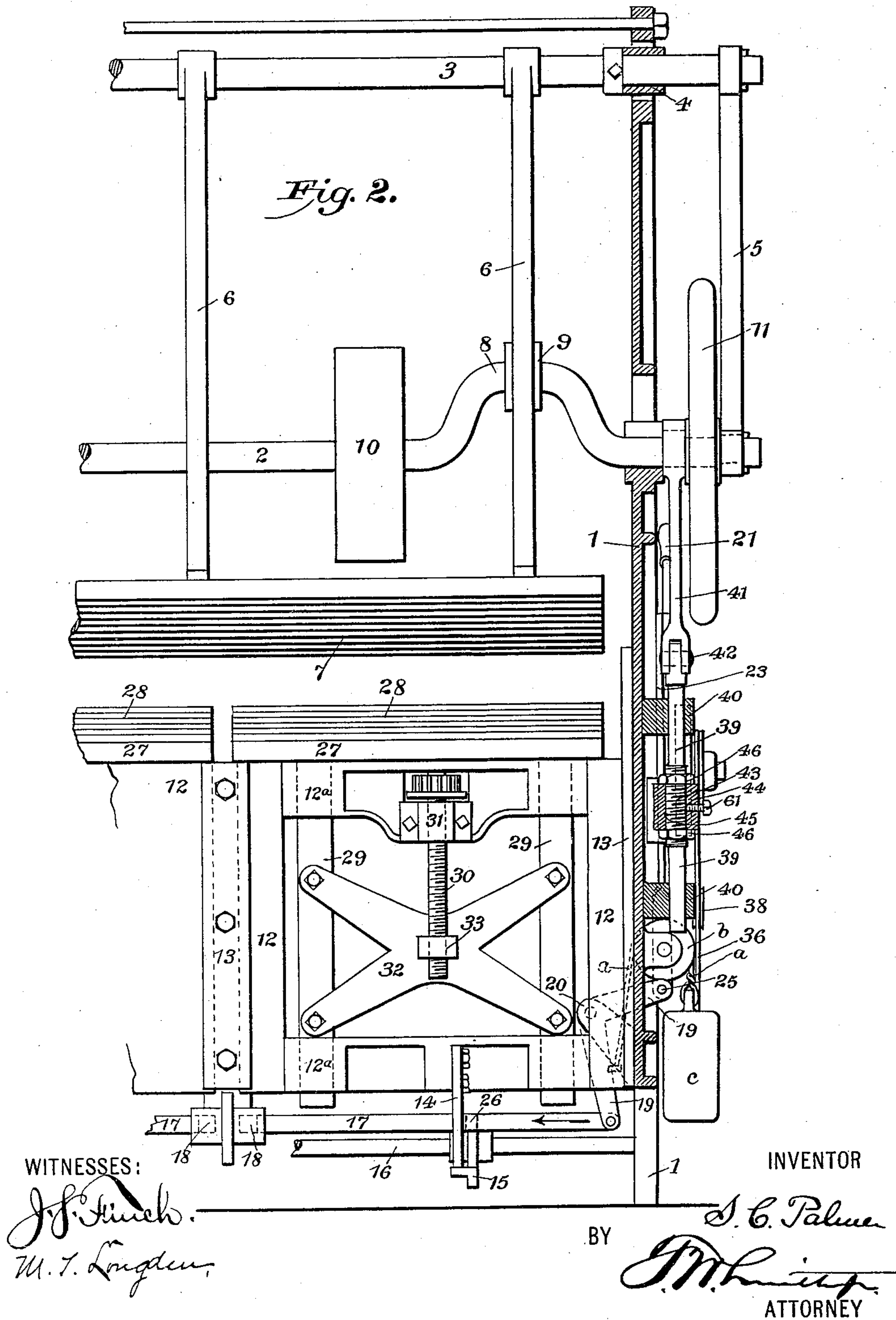
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UNITED STATES PATENT OFFICE.

SEYMOUR C. PALMER, OF SOUTH NORWALK, CONNECTICUT, ASSIGNOR TO
ELLEN M. PALMER, OF SAME PLACE.

HAT-SIZING MACHINE.

SPECIFICATION forming part of Letters Patent No. 565,498, dated August 11, 1896.

Application filed August 29, 1895. Serial No. 560,915. (No model.)

To all whom it may concern:

Be it known that I, SEYMOUR C. PALMER, a citizen of the United States, residing at South Norwalk, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Hat-Sizing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in hat-sizing machines, such as shown in Letters Patent of the United States No. 365,852, granted to me July 5, 1887, and has for its object the improving of the automatic trip mechanism shown therein.

Heretofore great difficulty has been experienced in properly fitting and adjusting the actuating-pawls which cause the rotation of the ratchet-wheels shown in the above-mentioned Letters Patent, owing to the peculiar sliding and rocking movement of the part which carries said pawls, and when these parts had become worn by usage it not infrequently occurred that the trip mechanism was rendered inoperative, necessitating repairs which were always more or less expensive. In my present invention I have improved the construction of these elements, so that they may be quickly and easily adjusted when the machine is first set up, and also all wear consequent upon long usage may be compensated for without removing any of the parts.

With these ends in view my invention consists in the details of construction and combination of elements, as will be hereinafter fully described, and particularly designated in the claim.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a side elevation of my machine, illustrating the automatic trip mechanism in both its engaged and disengaged positions; and Fig. 2, a vertical sectional elevation on the line *x x* of Fig. 1.

As there are four vertically-sliding tables precisely alike on which the hats to be sized are placed and separated trip mechanisms for each table, a description of one of such

mechanisms will be understood as applying to all four.

Similar numerals and letters denote like parts in both figures of the drawings.

1 is the frame, and 2 the power-shaft journaled therein.

3 is a rock-shaft journaled in boxes 4 at the upper part of the frame and capable of a vertical sliding motion. Said rock-shaft is supported by vertical connecting-bars 5, which are eccentrically connected to the power-shaft, so as to impart a slight vertical sliding motion to the rock-shaft 3.

6 are oscillating hangers secured to the rock-shaft and depending below the power-shaft, and 7 is the roughened upper sizing-surface, which is formed of slabs of wood secured to the lower rounded surface of said hangers, so as to connect the same and cause them to move in harmony.

8 is a crank formed on the power-shaft 2, and 9 is a sliding box fitting within a vertical guideway (not shown) in one of the hangers 6.

10 is a belt-pulley rigid on the power-shaft, and 11 is a fly-wheel also rigid on said shaft.

It will be evident from the foregoing that when the power-shaft is rotated an oscillating motion will be imparted to the upper sizing-surface, while at the same time a slight independent vertical sliding movement will be given said surface, as explained in the Letters Patent above referred to.

12 is a gate capable of sliding within ways 13 in the frame.

14 is a plate bolted to the gate and depending below the bottom of the same.

15 is a foot-lever pivoted around a cross-bar 16 rigid with the frame. When this lever is depressed, the inner end of the same is adapted to engage the lower edge of the plate 14 and raise the gate to an elevated position.

17 is a sliding latch-bar, one end of which is loosely fitted within a recess 18 in the frame, (shown in dotted lines in Fig. 2,) while the other end is pivoted to a bell-crank lever 19, pivoted to a bracket 20, rigid with said frame.

21 is a hand-lever pivoted to the frame at 22, and 23 is a vertical rod or link pivoted to said hand-lever at 24 and to the upper arm of the bell-crank lever 19 at 25. The weight of this vertical rod or link 23 and the upper

arm of the bell-crank 19 is such as to cause the latch-bar 17 to slide in the direction of the arrow, as shown in Fig. 2. A lug 26 (shown in dotted lines in Fig. 2) is formed in the latch-bar 17, and when the gate 12 is elevated until the lower edge of the plate 14 is above the plane of the latch-bar said latch-bar will slide in the direction indicated by the arrow thereon and bring the lug 26 beneath said plate, so as to hold the gate 12 in its elevated position. To return the gate to its normal position, it is only necessary to pull on the hand-lever 21, when the lug 26 will be withdrawn from under the plate 14, and said gate will drop by gravity.

27 is a table having a roughened sizing-surface 28, and 29 are vertical slide-bars, to which said table is rigidly secured. The bars 29 pass through openings (not shown) in the cross-pieces 12^a of the gate 12 and are guided vertically within said openings.

30 is a screw journaled in a boxing 31 and rigid with the gate 12 as to any independent lengthwise movement, but capable of a free rotary movement.

32 is an X-shaped cross-piece bolted to the bars 29, and 33 is a nut rigid with said cross-piece 32, into which the threads of the screw 30 take. It will thus be seen that by manipulating the screw 30 the table 27 may be brought nearer to or farther away from the oscillating upper sizing-surface, so that a greater or lesser pressure may be exerted upon the hats during sizing, as the character of the work to be performed may demand.

a is a cord which passes over a pulley b, journaled on the frame, one end of said cord being attached to the gate 12, while the other end has suspended therefrom a weight c, the object of which is to partly retrieve the shock attendant upon the lowering of the table and also to assist the operator in elevating the same.

To relieve the operator of the necessity of giving his attention to the hat-roll during the time it is being operated upon by the sizing-surfaces, I provide automatic mechanism for tripping the table and allowing it to fall without the field of operation of the upper oscillating sizing-surface at any predetermined time.

33 is a ratchet-wheel journaled loosely on a short shaft 34, extending from the frame.

35 is a pulley formed integral with the ratchet-wheel, and 36 is a cord attached to the periphery of said pulley, from the end of which a weight 37 is suspended.

38 is an idle pulley over which the cord 36 passes, so as to bring the weight 37 without the field of operation of other parts of the machine.

39 is a slide which works in bearings 40, bolted to the frame.

41 is a pitman pivoted to the slide 39 at 42 and eccentrically connected to the power-shaft 2, as is shown in dotted lines in the drawings. The slide 39 is at its central por-

tion threaded, as shown at 43, and 44 is an arm having an opening 45, through which the threaded portion of the slide 39 passes loosely, said arm being held in proper position by nuts 46, which take on the screw-thread of the slide 39 and secures said arm and slide rigidly together.

47 is a weighted pawl pivoted at 48 to the outer end of the arm 44. The weighted lower end of this pawl exerts a tendency to keep the upper end thereof in engagement with the teeth of the ratchet-wheel 33.

49 is a weighted dog also pivoted at 48 and carrying a pin 50.

51 is a retaining-pawl pivoted at 52 to the frame, and having a finger 53, which extends down and rests upon the back of the pawl 47 when the latter is out of engagement with the ratchet. Projecting from the inner face of the ratchet-wheel is a pin 54. (Shown in dotted lines in Fig. 1.) The object of this pin is to lift the vertical rod 23 by striking against a lug 55, (shown in dotted lines in Fig. 1,) which projects from said rod within the field of rotation of said pin, and thereby trip the lower sizing-table in the same manner as described in connection with the hand-lever. This is accomplished by a step-by-step movement of the ratchet-wheel when the pawl is thrown into engagement therewith, which is brought about by the elevation of the weighted dog 49 out of contact with the pawl 47 by means of a pin 56, projecting from the gate 12 out through a slot 57 in the frame. Thus it will be seen that when the gate 12 is elevated, as described, the pin 56, carried thereby, will relieve the pawl 47 of the weight of the dog 49 and allow said pawl, together with the retaining-pawl 51, to go into engagement with the ratchet-wheel 33 by their weight. Now as the ratchet-wheel is actuated one tooth at each oscillation of the upper sizing-surface, it follows that the hat will be operated upon as many times as there are ratchet-teeth between the pin 54 on the ratchet-wheel and the lug 55 on the vertical rod 23 before the table is dropped, and as their relative position between said pin and lug may be varied by changing the stop-pin 58 to either of the holes 59 it will be seen that the desired extent of operation upon the hat-roll in its several stages may be controlled automatically and without the care of the operator. When the bed is dropped by the withdrawal of the lug 26 from under the plate 14, as previously described, the lowering of the pin 56 will permit the weighted dog 49 to exert its force upon the back of the pawl 47 and thus disengage the latter, as well as the retaining-pawl 51, from the ratchet-wheel, as seen by the position of parts at the right hand of Fig. 1. This frees the ratchet and allows it to return, on account of the weight 37, to its normal position, which latter is determined by the stop-pin 58 striking against the abutment 60. The several parts are now in the position necessary for a repetition of these

movements upon the subsequent raising of the bed.

61 is a set-screw tapped in the arm 44, so as to bear against the slide 39, the object of which is to prevent any turning of the arm upon said slide.

The general features of the machine above described are shown in the Letters Patent previously cited, and I therefore do not wish to be understood as seeking to claim them at this time; but

What I do claim as new, and desire to secure by Letters Patent, is—

In a hat-sizing machine, the power-shaft, eccentric, and pitman, the slide connected to

said pitman and moving vertically in guides on the frame, the cross-arm connected to said slide by nuts engaging the cross-arm above and below, and the pawl carried by said arm and engaging the ratchet-wheel which controls the tripping-rod, all combined with the ratchet-wheel and its operative connections substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

SEYMOUR C. PALMER.

Witnesses:

JACOB M. LAYTON,
JAMES PAUL.