



No. 702,098.

Patented June 10, 1902.

B. C. HEMMING.  
AUTOMATIC GLAZING MACHINE.

(Application filed July 10, 1901.)

(No Model.)

3 Sheets—Sheet 2.

Fig. 2.

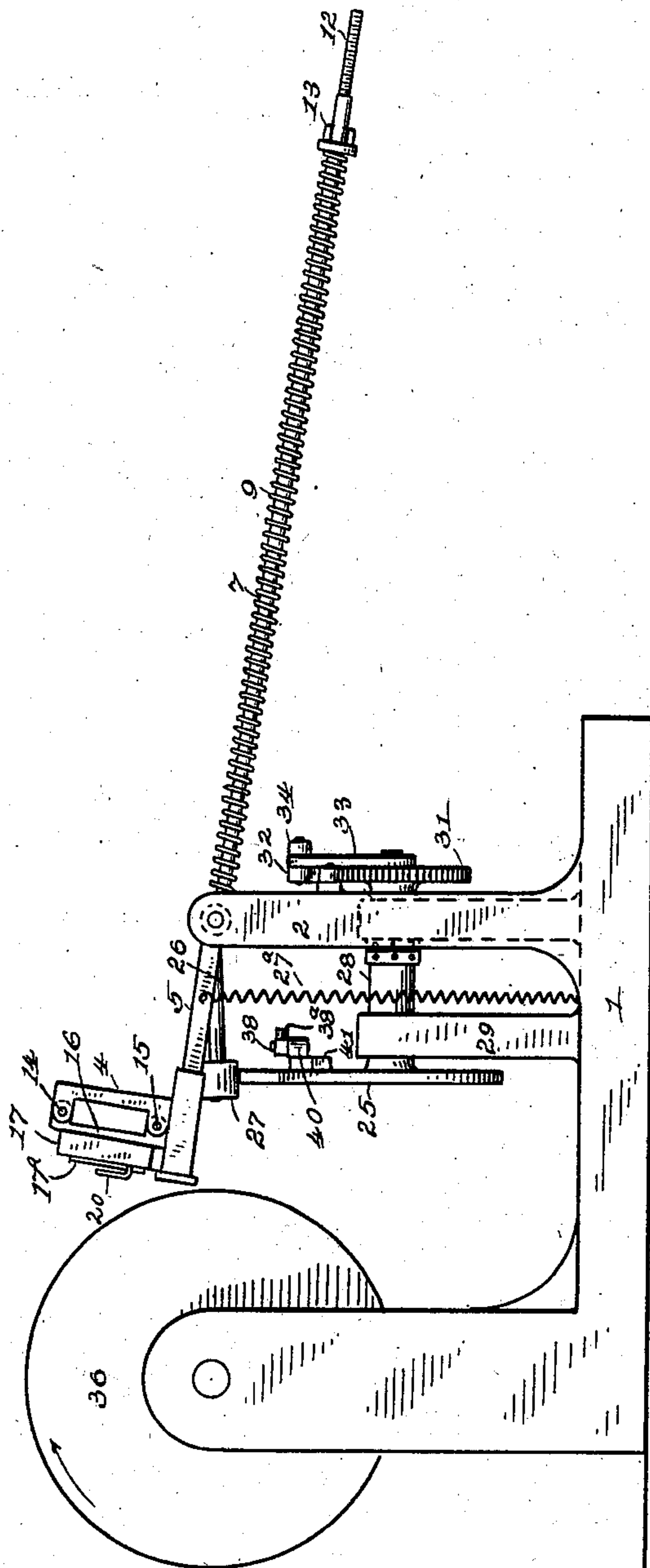
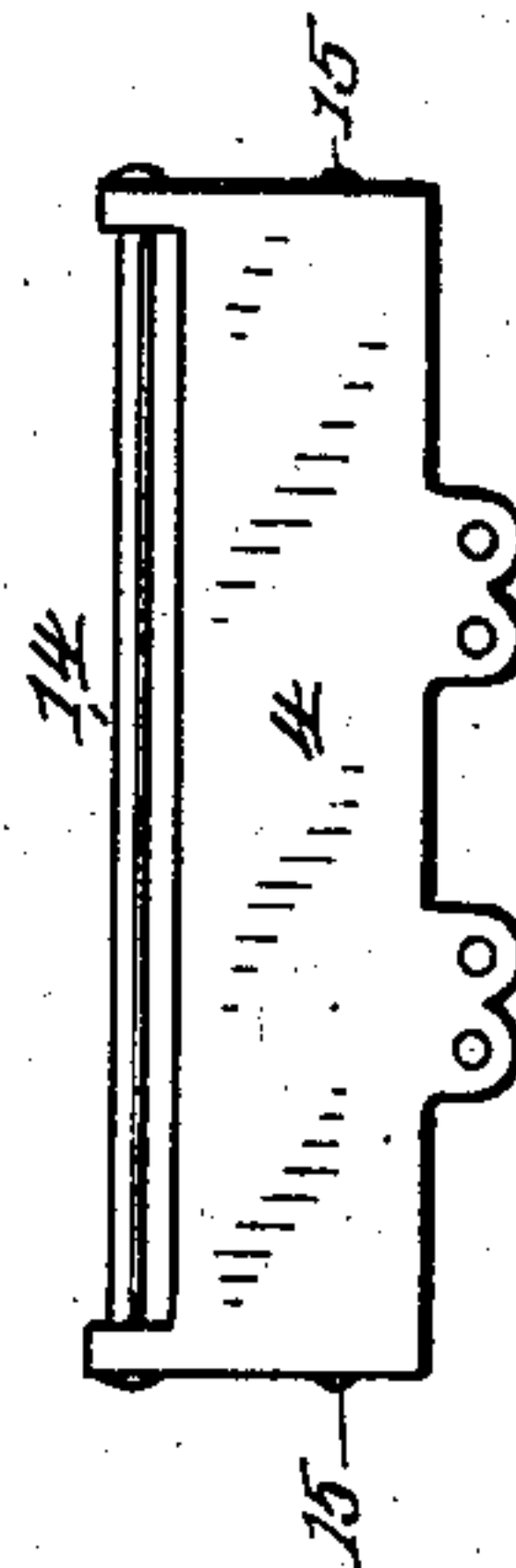


Fig. 6.



WITNESSES.

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Fig. 3.

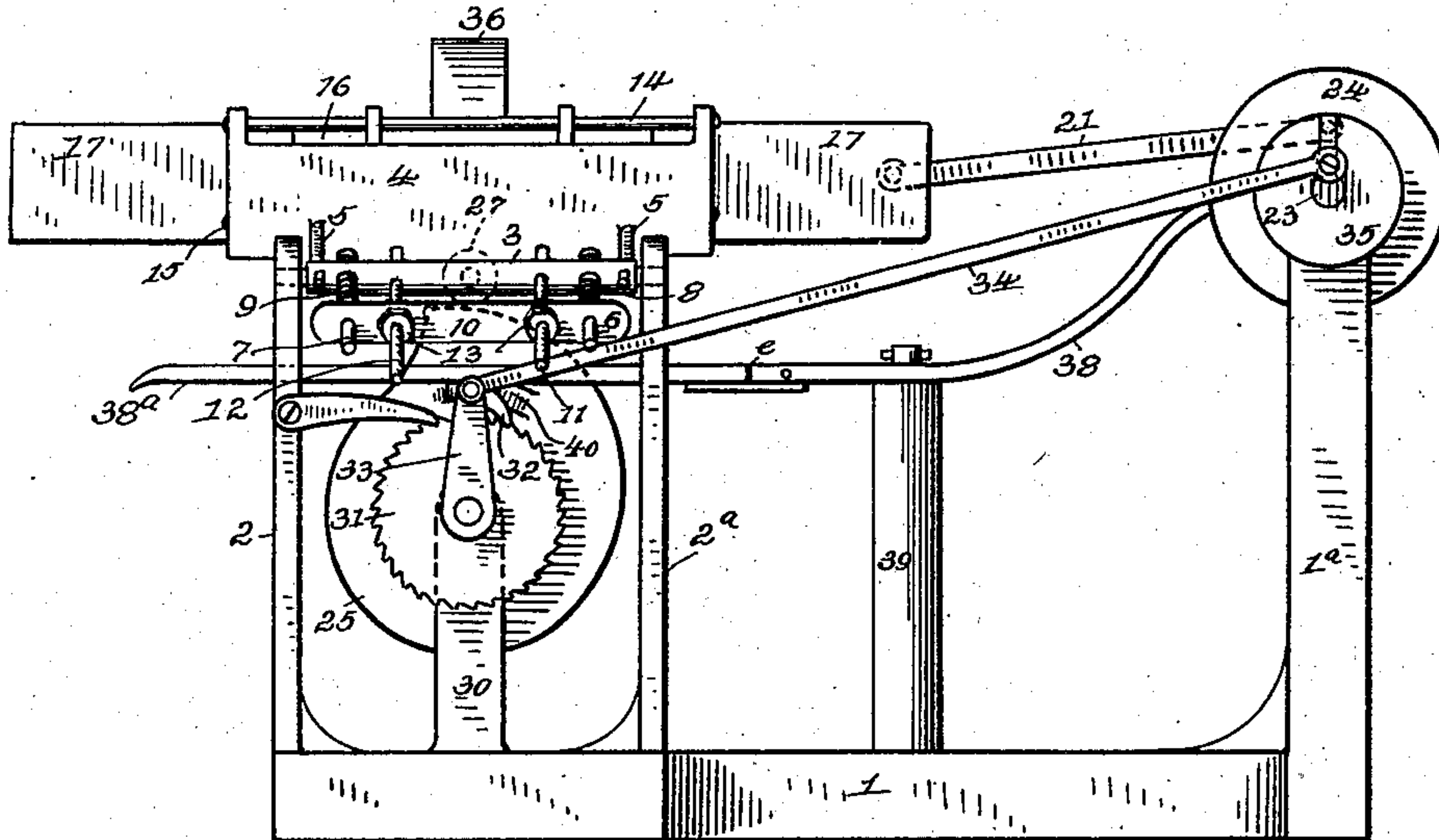
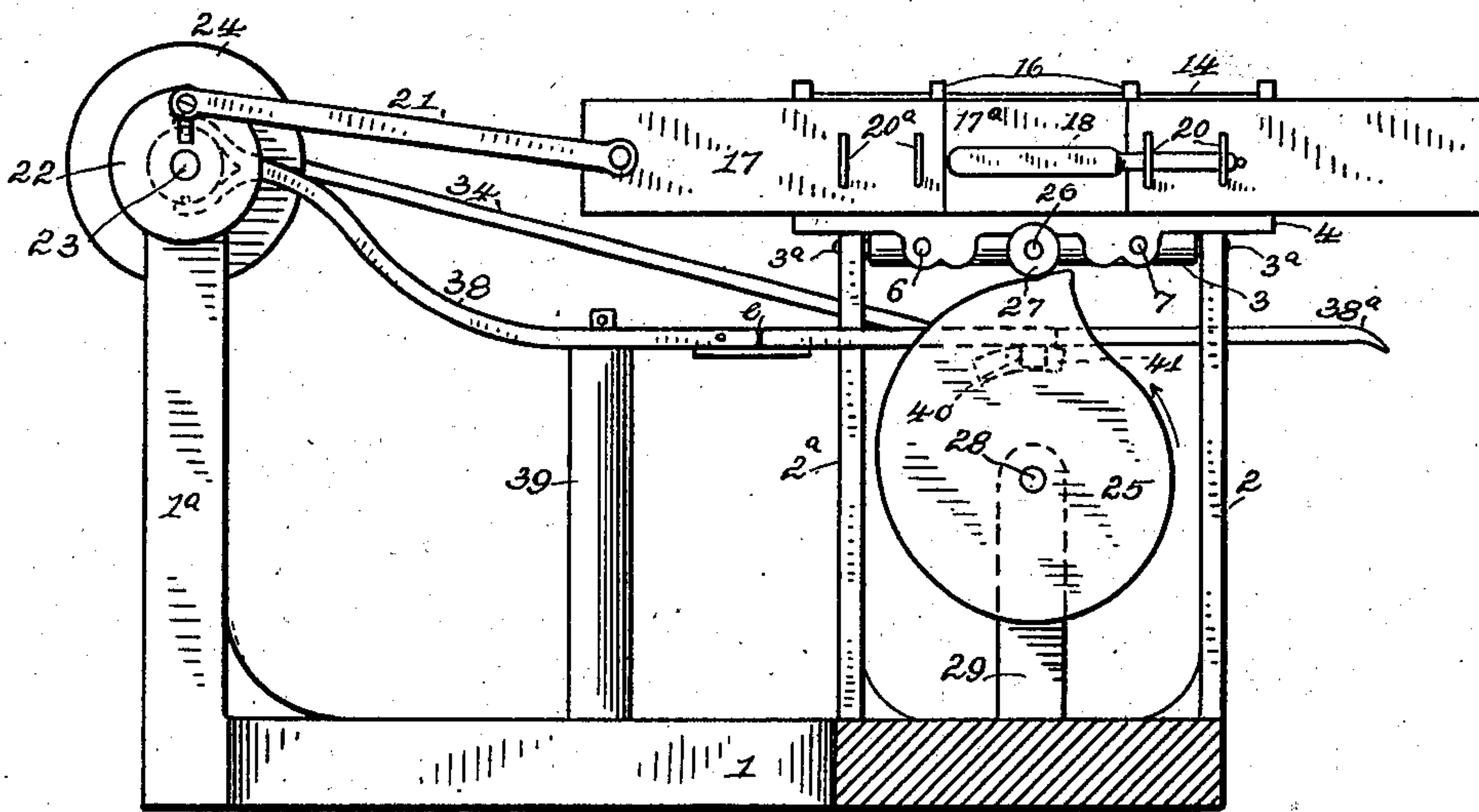


Fig. 4.



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# UNITED STATES PATENT OFFICE.

BENJAMIN C. HEMMING, OF NEW HAVEN, CONNECTICUT.

## AUTOMATIC GLAZING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 702,098, dated June 10, 1902.

Application filed July 10, 1901. Serial No. 67,784. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN C. HEMMING, a citizen of the United States, and a resident of New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Automatic Glazing-Machines, of which the following is a specification.

My invention relates to an automatic machine to take the place of hand labor in performing the operation of "glazing," which operation consists in giving to cutlery that smooth polished or glazed surface preparatory to the operation of plating.

To enable others to understand my invention, reference is had to the accompanying drawings, in which—

Figure 1 represents an upper plan view of the machine. Fig. 2 is a side elevation looking in the direction of arrow *a* of Fig. 1, with the driving mechanism on the opposite side of the machine removed to avoid confusion. Fig. 3 is a rear elevation looking in the direction of arrow *b* of Fig. 1. Fig. 4 is a front elevation looking in the direction of arrow *c* of Fig. 1 and sectional view of the bed of the machine through line *c c*. Fig. 5 is a detail view of the cam and broken view of the lever connected with the power clutch mechanism. Fig. 6 is a detail view of the reciprocating slide adapted to carry the article to be glazed.

Its construction and operation are as follows:

1 represents the bed of the machine. 2 2<sup>a</sup> are standards rising therefrom, and they support the cutlery-carrying frame presently to be described. This frame is composed of the rocking bar 3, having the journals 3<sup>a</sup>, adapted to be supported in the standards 2 and 2<sup>a</sup>.

4 is the head, which is partially supported to the rocking bar 3 by the rods 5, secured to said head and passing freely through said bar.

6 and 7 are spring-supporting rods carrying the tension-springs 8 and 9. The forward ends of these rods are also anchored in the head 4 and, together with their springs, pass freely through rocking bar 3. Said rods also pass freely through the rear plate 10. 11 and 12 are two adjusting-rods which are anchored to the bar 3. These rods also pass

freely through the plate 10 and are threaded a portion of their length and carry the tension-nuts 13, for the purpose presently to be described.

The head 4, Fig. 2, carries the two rods 14 and 15, and on these rods the slide 16 is adapted to reciprocate.

17 is the cutlery-supporting bar, secured to the slide 16.

18, Fig. 4, is a table-knife in position to be polished or glazed, its blade resting against the raised portion 17<sup>a</sup> of said bar, while the handle portion of said knife rests in the hook-supports 20. The reciprocating movement of the slide 16 and the bar 17 attached thereto is brought about through the medium of the connecting-rod 21, one end of which rod is attached to said bar, while the other end is adjustably secured to the plate 22, mounted on the outer end of the shaft 23. This shaft is supported in the standards 1<sup>a</sup> and carries the driving-pulley 24.

25 is a lifting cam-plate adapted to give a tilting or rocking movement to the frame carrying the cutlery-supporting mechanism.

26 is a short shaft anchored by one end to the rocking bar 3, while the forward or free end of this rod carries the roll 27, adapted to rest on the periphery of the cam 25, and is kept in contact therewith by means of the spring 27<sup>a</sup>. This cam-plate is mounted on the forward end of the shaft 28, supported in the standards 29 and 30. On the opposite end of shaft 28 is mounted the toothed wheel 31, Fig. 3, which wheel is actuated to turn said shaft by means of the pawl 32, pivotally supported to the upper end of the crank-arm 33 of said shaft. 34 is a connecting-rod, also connected by one end to said crank-arm, while the other end of said rod is adjustably secured to the plate 35, mounted on the driving-shaft 23.

36 is the glazing-wheel.

The hub of the driving-pulley 24, Fig. 1, has the clutch-face 24<sup>a</sup>, adapted to be engaged by the clutch-face of the collar 37, slidably mounted on the driving-shaft.

38 is a lever pivotally supported on the standard 39 and has a forked end adapted to engage with said collar. The opposite end of this lever carries the roll 40, Fig. 5, adapted to be engaged by the cam-lug 41 on the inner



face of the large cam-plate 25. The engagement of this cam-lug and roll will operate at the proper time, presently to be mentioned, to break the clutch engagement of the driving-pulley and collar 37 and stop the machine.

37<sup>a</sup> is a coiled spring on the driving-shaft 23 to bring about the reengagement of collar 37 and pulley 24.

10 The lever 38 is jointed at *e*, so that its forward or free end 38<sup>a</sup> may be raised sufficient to clear the roll 40 from the cam-lug 41, and thus allow the spring 37<sup>a</sup> to bring about such reengagement.

15 The operation is as follows: The knife is placed in position shown at Fig. 4, with the cutting edge down, and while the forward end of the frame is elevated. When, therefore, the cam-plate 25 has been turned to bring  
20 the roll 27 on the lowest point of said cam-plate, the back of the knife-blade will be just below the center of the glazing-wheel, and when the machine is started the blade is reciprocated rapidly across the face of the wheel,  
25 while at the same time the knife-supporting end of the frame is being gradually raised by the cam-plate 25, and when the said cam-plate is in the position shown at Fig. 4 the edge of the knife-blade will have been raised  
30 above the center of the glazing-wheel and the operation of glazing on that side of the blade will have been completed. In the meantime the cam-plate will still continue to lift the forward end of the frame and carry the  
35 blade above the glazing-wheel until the highest point of the cam-plate has been reached, when the engagement of the roll 40 of the cam-lug will stop the machine. The knife is then reversed by placing the handle in the  
40 hook-supports 20<sup>a</sup>, so as to glaze the opposite side of the blade. The forward end 38<sup>a</sup> of the lever 38 is then raised to disengage its roll 40 from the cam-lug 41, and thereby, as before mentioned, restart the machine. As  
45 the cam is at this time at its highest point, the first impulse of said cam in its rotative movement will be to cause the roll 27 to drop from the highest to the lowest point of the cam. This drop will bring the knife-blade  
50 again into operative position with respect to the glazing-wheel, and the side of the blade nearest to said wheel will be finished by the two motions above mentioned—viz., the reciprocating and elevating. The pressure of  
55 the blade against the wheel is regulated by the nuts 13. Compressing the tension-springs 8 and 9 lightens the pressure, while elongation of said springs increases the pressure.

It will be observed (see Fig. 1) that the reciprocating bar 17 is thinned down at the point 17<sup>b</sup> immediately under the knife-blade. This is done to give a little spring of the bar at that point.

While I describe the machine as a "glazing-machine," it will be understood that by simply changing the wheel it is applicable for grinding knife-blades.

From the foregoing description it will readily be seen that the machine, being automatic in its operations, will give a more uniform and perfect finish than can be done by hand. The blade of a cutlery or table knife is slightly convex on its sides, and in hand-grinding the blade, beginning at the back, is drawn backward and forward across the face of the wheel, and at the same time the blade is gradually rolled toward the edge, thus preserving this convex surface. In my improved machine this convexity is preserved by the circular movement of the frame oscillating on the bar 3.

It will readily be seen that the adjusting-rods 11 and 12 could be dispensed with, and the spring-rods 8 and 9 could be threaded a portion of their length sufficient to effect the necessary adjustment of the head 4 to and from the bar 3.

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

1. In a machine of the character described, comprising, in combination with a polishing-wheel, an oscillating frame, adapted to be automatically operated, a support therefor, an automatically-reciprocating knife-supporting slide mounted on said head, means for gradually elevating the knife-carrying end of said frame while the reciprocating knife-support is in action, for the purpose set forth.

2. The combination, in a machine of the character described, of a reciprocating knife-support, a supporting-head therefor, on which said knife-support is adapted to reciprocate, means for gradually elevating said head while the knife-support is in action, for the purpose set forth.

3. In a machine of the character described, comprising, in combination, with a polishing-wheel, a pivotally-supported frame carrying a fixed head at its free end, an automatically-operating knife-supporting slide mounted on such head, said frame adapted to have an oscillating movement through the medium of an automatically-operating cam adjacent thereto, means whereby the machine is brought to a standstill when the polishing is completed with the cam at or near its highest point so as to leave the head of said frame in an elevated position for a readjustment of the work.

4. The combination, in a machine of the character described, adapted to be used in connection with a polishing-wheel, of an oscillating frame carrying a reciprocating knife-support, means whereby an adjustable spring tension is maintained between said knife-support and the polishing-wheel, a cam adapted to elevate the knife-carrying end of said frame during the reciprocal action of said knife-support, means for automatically stopping the machine when the polishing operation is completed, for the purpose set forth.

5. The combination, in a machine of the character described, adapted to be used in connection with a polishing-wheel, of an os-



5 cillating frame carrying a reciprocating knife-support, means for supporting a knife thereon so that both sides thereof may be finished, means whereby an adjustable spring tension is maintained between said knife-support and the polishing-wheel, a cam for gradually elevating the knife-carrying end of said frame during the reciprocal action of said knife-support, means for rotating said cam, for the purpose set forth.

10 6. The combination, in a machine of the character described, of a reciprocating slide

carrying a knife-support, a knife adapted to rest on one side of said support, the opposite side of said support cut away sufficient to form a yielding bed for the knife, for the purpose set forth.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 9th day of July, A. D. 1901.

BENJAMIN C. HEMMING.

Witnesses:

JOHN B. CLAPP,  
S. J. CHAFFEE.