No. 610,586. Patented Sept. 13, 1898.

C. C. HARTUNG.

MACHINE FOR ROLLING WIRE GLASS.

(Application filed Aug. 6, 1897.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

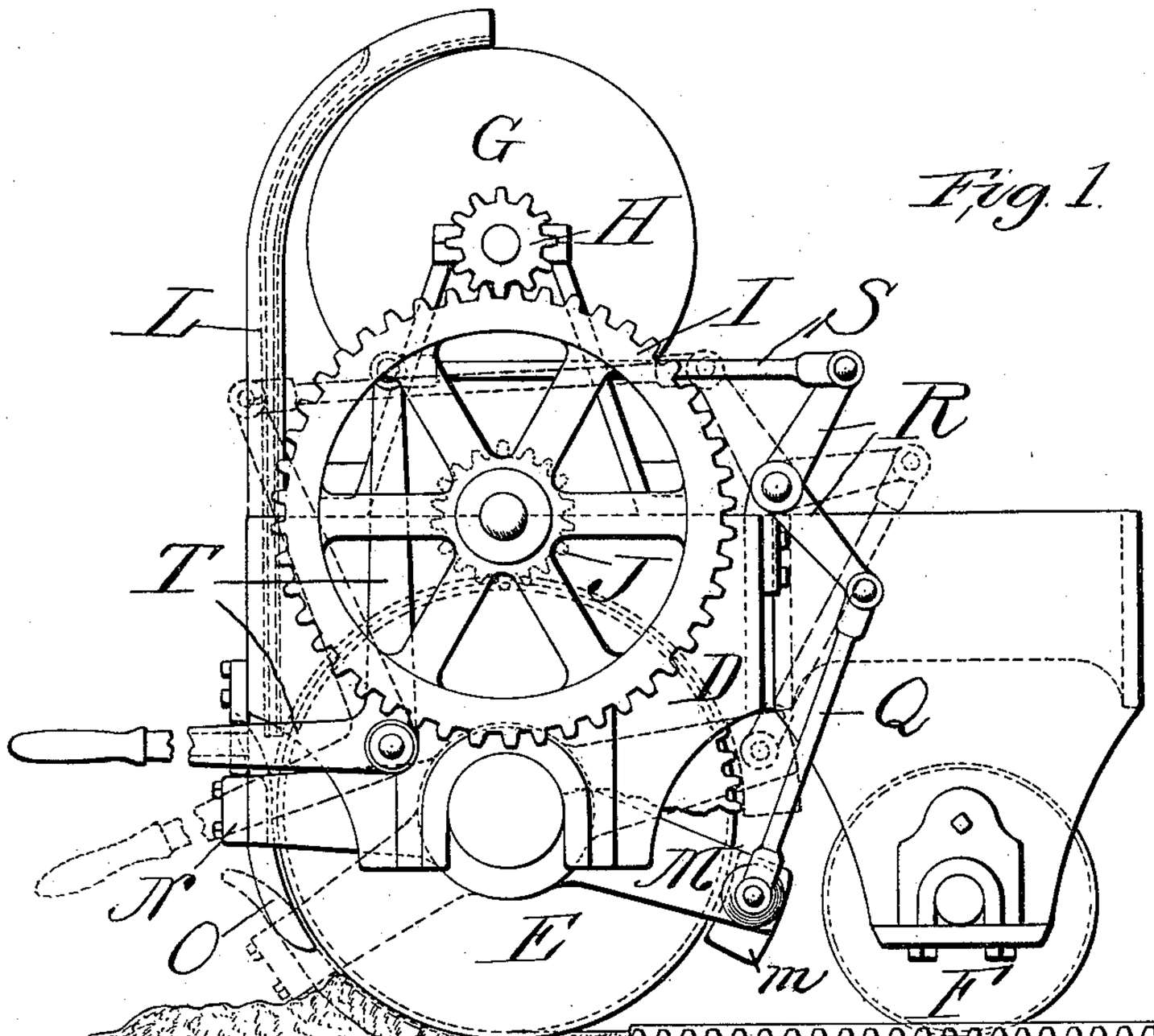

Fig. 2.

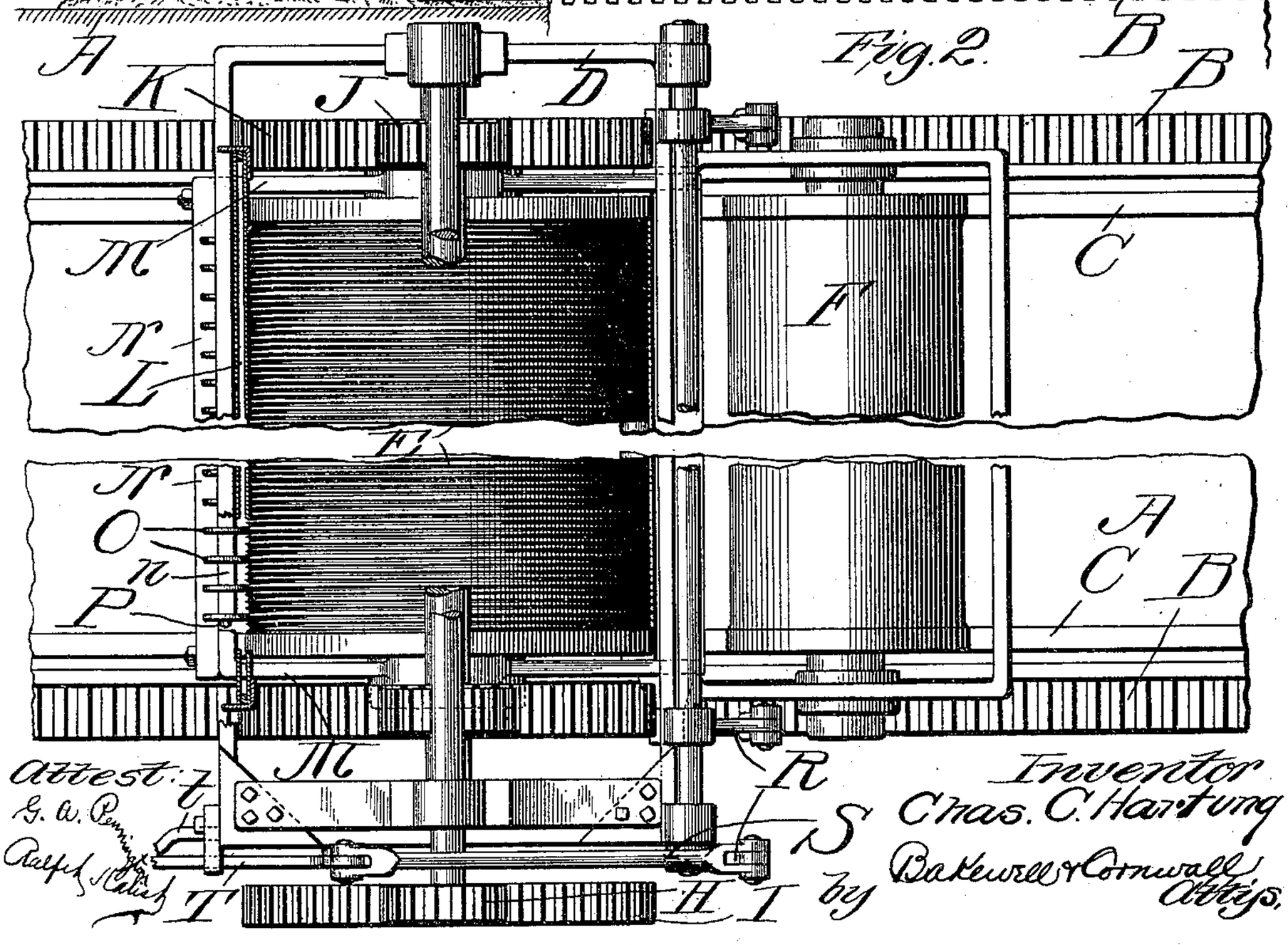

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Fig. 2.

Fig. 5.

Fig. 8.

Fig. 1.

Fig. 6.

Fig. 4.

Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES C. HARTUNG, OF ST. LOUIS, MISSOURI, ASSIGNOR TO EDWARD WALSH, JR., OF SAME PLACE.

MACHINE FOR ROLLING WIRE-GLASS.

SPECIFICATION forming part of Letters Patent No. 610,586, dated September 13, 1898.

Application filed August 6, 1897. Serial No. 647,289. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. HARTUNG, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Machines for Rolling Wired Glass, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevational view of my improved machine. Fig. 2 is a top plan view of the same, being shortened somewhat by breaking away the middle thereof. Fig. 3 is a front elevational view of the knife-bar and a few of the embedding-knives. Fig. 4 is a detailed sectional view through the knife-bar which carries the embedding-knives. Fig. 5 is a front elevational view showing a few of the embedding-knives and the wire mesh in a position to be embedded by said knives. Fig. 6 is a top plan view of the lever for operating the embedding-knives. Fig. 7 is a top plan view of the knife-bar and three of the embedding-knives. Fig. 8 is a plan view of a piece of glass in which wire mesh has been embedded, and Fig. 9 is a sectional view through said piece of glass.

This invention relates to a new and useful improvement in machines for embedding wire mesh in plate-glass while the same is being rolled; and it consists more particularly in the means for initially embedding one end of the wire mesh in the molten glass to fix the same in position properly for its embedment by the roller or rollers. The means for accomplishing this is illustrated in the drawings as comprising a series of knives. These knives are dipped into the molten glass, carrying one end of the wire mesh and fixing the same into the glass, after which the knives are withdrawn, the embedment of the wire mesh being continued by the embedding roller or rollers.

In the drawings I have shown a well-known form of machine to which my invention is applied; but it is obvious that there may be other machines for embedding wire mesh into glass to which my invention could be applied and be capable of accomplishing the results obtained here.

A indicates a casting-table; B, the rack along the sides thereof; C, the fillet for determining the thickness of the glass; D, the frame of a carriage in which the embedding-rollers are mounted; E, the advance corrugated embedding-roller, and F the following smooth-finishing roller. The carriage shown in the drawings is propelled by an electric motor G, having a pinion H on its armature-shaft meshing with a gear I on a counter-shaft, said counter-shaft carrying a pinion J, meshing with a gear K, conjoined to the advance corrugated roller E. L indicates a chute or way in which a panel of wire mesh is placed preparatory to being embedded into the molten glass.

So far as the above parts are concerned they illustrate a well-known form of machine, and I do not claim the same as my invention.

M indicates two rocking levers pivotally mounted on opposite sides of the embedding-roller E and on the axle thereof. N indicates a knife-bar formed as part of or secured to the front ends of said rocking levers M. This knife-bar is more clearly shown in Figs. 3 and 4, where it will be seen to be provided with a series of spacing-blocks *n*, between which the knives O are placed, said knives being held in position by through-bolts P, which also pass through the spacing-blocks. These knives preferably curve outwardly at their upper ends, the inner faces of their lower ends being concentric with the periphery of the embedding-roller E. The rear ends of the rocking levers M are preferably connected and carry a weight *m*, acting as a counterbalance for the knife-bar and knives.

Q indicates a link secured to the rear end of one of the levers M and to a bell-crank lever R, pivotally mounted on the carriage-frame D. S indicates a link connecting the other end of said bell-crank lever R to a bell-crank operating-lever T, pivotally mounted on the framing D. One of the members of this bell-crank lever T is formed as an operating-handle and is preferably provided with a latch-dog *t* for holding the knives in their raised position.

The operation of the machine is obvious.

Assuming a panel of wire mesh to be placed in the chute L, the same passes down until it is supported by the knives O, which, affording a curved path to the panel of wire mesh, will prevent said wire mesh from following the embedding-roller. When it is desired to introduce one end of the panel of wire mesh into the molten glass, the handle T is depressed, which depresses the knives O, said knives carrying the lower end of the panel of wire mesh down through the molten mass of glass in advance of the embedding-roller and under the embedding-roller, which now takes hold of the same and embeds said wire mesh in the plate of glass being formed. The knives are immediately withdrawn from the mass of molten glass, the panel of wire mesh feeding itself afterward without further manipulation of the knives. The handle T and the knives are held in their raised position by the engagement of the latch *t* with a projection on the frame D, as shown in Figs. 5 and 6. When the panel is introduced between the knives and embedding-roller, as shown in Figs. 4 and 5, the curvature which it is forced to assume creates sufficient friction to sustain the weight of the panel. When the machine is started, the friction of the corrugations of the embedding-roller E tends to draw the panel of wire downward, but is not sufficient for this purpose. However, when the knife-blades O are depressed their friction on the panel, together with the friction of the rotating embedding-roller, is sufficient to carry the panel of wire mesh down and under the roller E to embed one end of said mesh into the molten glass, after which the knives may be withdrawn, as above described, because the glass filling the spaces between the strands of wire composing the mesh holds said wire mesh in place.

I am aware that many minor changes in the construction, arrangement, and combination of the several parts of my machine can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

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

1. In a machine for rolling plate-glass, the combination with the embedding-roller, of a support for the panel of wire mesh, and means for operating said support to forcibly introduce one end of the panel of wire mesh into the sheet of molten glass; said means, also, operating to withdraw said support after the end of the panel is introduced into the molten glass substantially as described.

2. In a machine for embedding wire mesh in plate-glass, the combination with the embedding-roller, of a support for the panel of wire mesh, said support being located close to the periphery of said embedding-roller, and means for dipping said support to force one end of the panel of wire mesh through the mass of molten glass in front of the embedding-roller and partially under said embedding-roller; said means, also, operating to withdraw said support from the mass of molten glass after the end of the panel of wire mesh is introduced into the molten glass substantially as described.

3. In a machine for embedding wire mesh into glass, the combination with the embedding-roller, of a series of knife-blades arranged in juxtaposition to the periphery of said embedding-roller, and means for operating said knife-blades to introduce a panel of wire mesh into the molten glass, which panel of wire mesh is supported by said knife-blades substantially as described.

4. In a machine for embedding wire mesh in plate-glass, the combination with the embedding-roller, of rocking levers, a knife-bar and knives carried by said rocking levers, and means for rocking said levers; substantially as described.

5. In a machine for embedding wire mesh into plate-glass, the combination with the embedding-roller, of a rocking knife-bar, a lever for rocking said knife-bar, and means for locking said lever in one of its positions; substantially as described.

6. In a machine for embedding wire mesh in plate-glass, the combination with the embedding-roller, of rocking levers mounted on each side of said embedding-roller and on the axis of said embedding-roller, a knife-bar and knives carried on the front ends of said rocking levers, a handle, means for locking said handle in one of its positions, and connected mechanism between said handle and one end of the rocking levers; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 29th day of July, 1897.

CHARLES C. HARTUNG.

Witnesses:
F. R. CORNWALL,
HUGH K. WAGNER.