

A. SHUMAN.
MACHINE FOR MANUFACTURE OF WIRE GLASS.
APPLICATION FILED FEB. 26, 1906.

945,054.

Patented Jan. 4, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

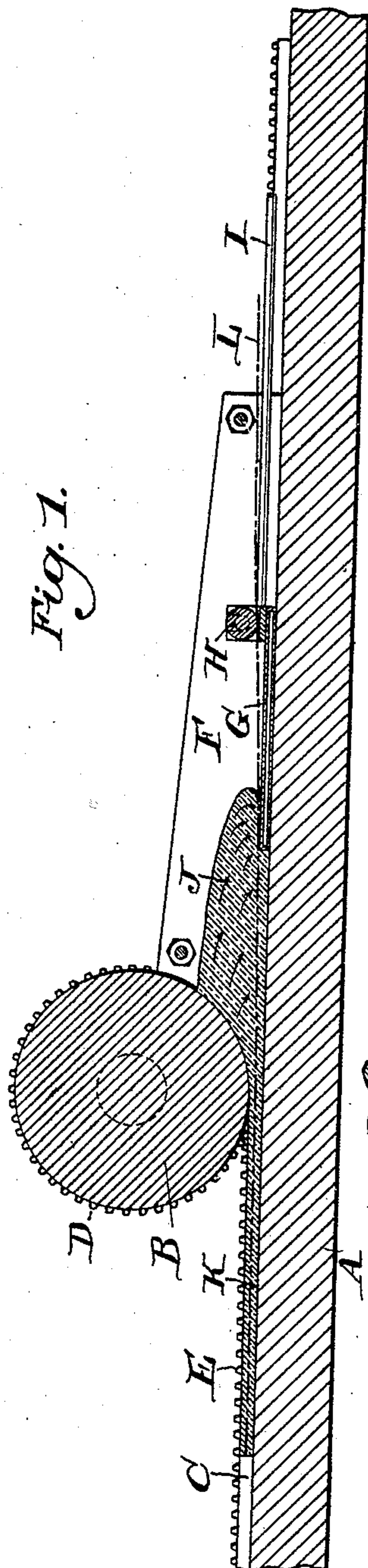
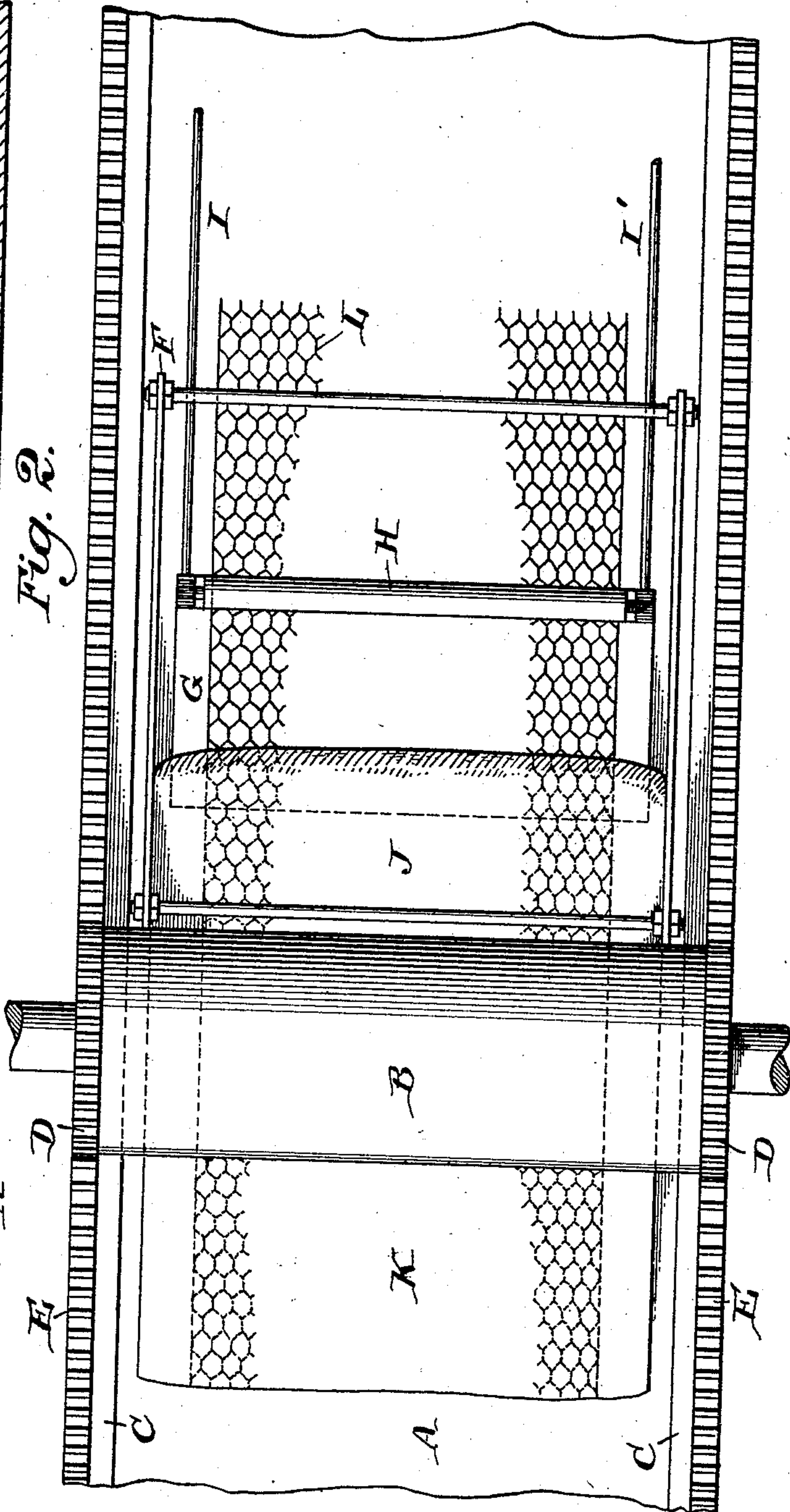


Fig. 2.



Witnesses:

Henry Drury
Wm. E. Rooney

Inventor:

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By his atty

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Fig. 3.

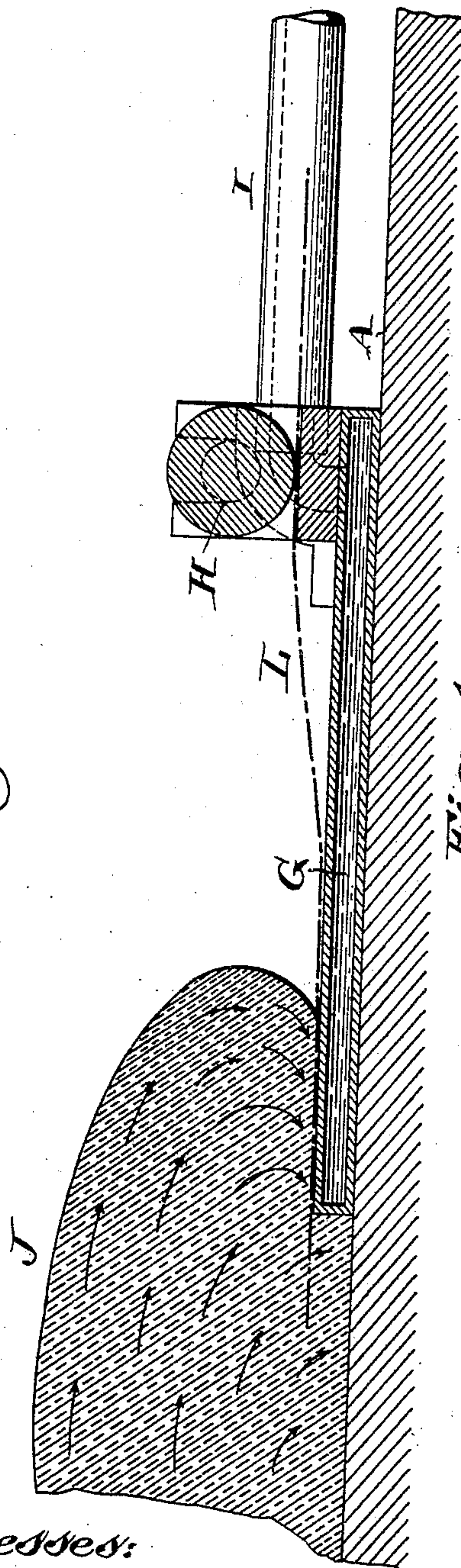
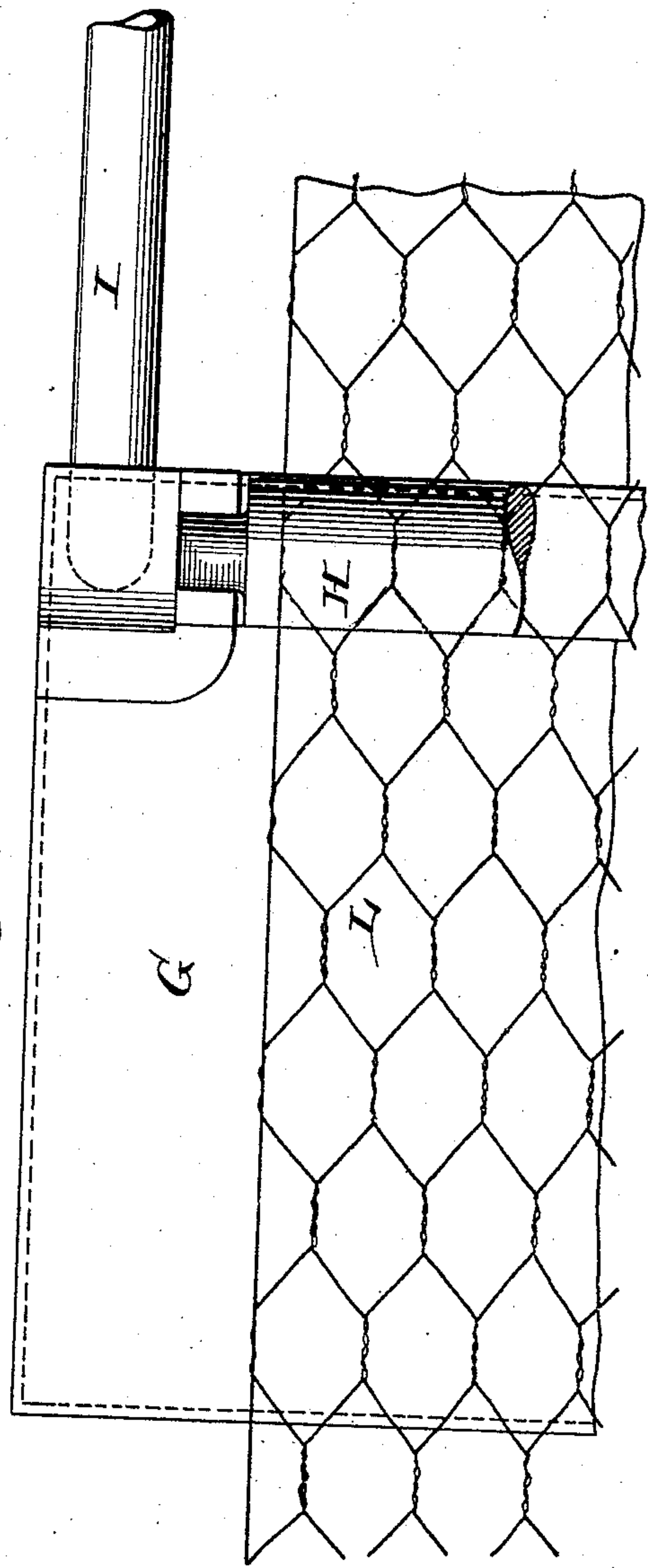


Fig. 4.



Witnesses:
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Wm. H. Rooney.

Inventor:
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UNITED STATES PATENT OFFICE.

ARNO SHUMAN, OF CONNELLSVILLE, PENNSYLVANIA, ASSIGNOR TO THE CONTINUOUS GLASS PRESS COMPANY, A CORPORATION OF NEW JERSEY.

MACHINE FOR MANUFACTURE OF WIRE-GLASS.

945,054.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed February 26, 1906. Serial No. 302,910.

To all whom it may concern:

Be it known that I, ARNO SHUMAN, of Connellsville, county of Fayette, and State of Pennsylvania, have invented an Improvement in Machines for Manufacture of Wire-Glass, of which the following is a specification.

My invention has reference to machines for manufacture of wire glass and consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings which form a part thereof.

The object of my invention is to provide means for introducing the wire mesh into the molten glass in such manner that it will have a proper definite position between the two surfaces of the finished sheet, so as to be completely covered throughout; and my object is further, to secure these desirable results in an inexpensive and positive manner.

My invention consists in combining the table, flattening roller and gun as usually employed in glass rolling, with a water cooled plate preferably of flat form adapted to be moved over the table in advance of the roller and at different speed with relation thereto, said plate acting as a guide for the wire mesh or netting which is to be embedded in the molten glass. In my preferred form of guide plate, it is made hollow and water is forced through it under high pressure so as to prevent the formation of steam within the plate during the glass rolling operation.

My invention also comprehends details of construction which, together with the features above specified, will be better understood by reference to the drawings, in which: Figure 1 is a longitudinal sectional elevation of a wire glass rolling machine embodying my improvements; Fig. 2 is a plan view of same; Fig. 3 is an enlarged view of a portion of Fig. 1; and Fig. 4 is an enlarged view of a portion of Fig. 2.

A is the table and is provided with the usual trangs C and racks E.

B is the flattening roller and runs upon the trangs, and is also provided with gears D meshing with the racks E of the table. This roller is rotated by hand or otherwise.

F is the gun and is pushed forward over the table by the roller B.

Arranged on the table and in front of the roller B, is the hollow flat guide plate G

over which the wire mesh or netting L is fed. This hollow flat guide plate G is provided at its sides with two pipes, namely pipe I at one side by which water or other cooling fluid is supplied to the plate under high pressure and pipe I at the other side by which it may escape after having cooled the plate. The plate at its forward end is also provided with a tension roller H under which the wire netting L passes, said roller causing a slight tension which helps to keep the netting in shape.

In operating the invention, a wire netting L is laid on the water cooled plate G beneath the small roller H, and allowed to project about two inches beyond the plate as shown in Fig. 3 of the drawing. The glass is dumped on the table in front of the flattening roller B, and this plate G with the wire netting is then shoved in front of the glass so as to preferably allow the glass to slightly run upon the edge of the water cooled plate as shown. The motion of the plate G is then forward, but at a speed such that as the mass of glass becomes smaller, the plate G will get closer to the flattening roller B and thus at all times hold the wire up in position close to the molten glass so as to cause the glass to pass through and under it.

It will thus be seen that the speed of travel of the roller B and gun F is greater than that of the water cooled guide plate G, the difference being commensurate with the reduction of the mass of glass in front of the roller B.

By employing the flat guide plate, the wire netting is not bent out of shape and by cooling it with water or other medium the wire netting is kept cool and bright and the glass cannot stick to the guide plate. It is preferable that the rear edge of the plate G shall be slightly under the forward edge of the glass so that the glass is permitted to flow through the netting close to its place of support by the plate and hence cannot bend it downward or out of proper position.

It is not necessary that the plate G shall actually touch the glass, or that the glass should run upon the plate, as the wire netting would be supported sufficiently to sustain the downward pressure of the glass if the latter were within $\frac{1}{8}$ of an inch of the plate.

It is evident that while it is customary to

have the table stationary and move the flattening roller and gun over it, this relative mode of action may be reversed, but in all cases the wire netting guide G must have
5 capacity for movement toward the flattening roller.

It is also to be understood that while I prefer to make the guide G in the form of a flat plate with a tension roller H, the shape
10 of the guide may be modified, but in all cases the guide must be movable independently of the flattening roller.

While I prefer the construction shown as being excellently adapted to the commercial use of my invention, I do not confine myself
15 to the details, as these may be modified without departing from the spirit of the invention.

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

1. In a machine for making wire glass, the table and flattening roller, combined with a hollow guide for the wire netting
25 arranged at a distance in front of the flattening roller approximately equal to the space occupied by the molten glass and movable toward the flattening roller as the rolling of the sheet progresses, and means for supplying the hollow guide with a cooling
30 medium.

2. In a machine for making wire glass, the table and flattening roller, combined with a flat hollow guide plate for the wire netting
35 arranged at a distance in front of the flattening roller approximately equal to the space occupied by the molten glass and movable toward the flattening roller as the rolling of the sheet progresses, and means for supplying the hollow guide with a cooling
40 medium.

3. In a machine for making wire glass, the table and flattening roller, combined with a hollow guide for the wire netting arranged
45 at a distance in front of the flattening roller approximately equal to the space occupied by the molten glass and movable toward the flattening roller as the rolling of the sheet progresses, a tension roller loosely supported
50 by the hollow guide for putting a tension upon the wire netting when the guide is moved under it, and means for supplying the hollow guide with a cooling medium.

4. In a machine for making wire glass the table, flattening roller and gun, combined
55 with a hollow guide for the wire netting arranged upon the table and independently movable with respect to the gun and flattening roller, and means for supplying a cooling medium to the hollow guide. 60

5. In a machine for making wire glass, the table, flattening roller, and gun moved by the roller, combined with a flat hollow guide for the wire netting arranged upon the table and independently movable with respect to the
65 gun and flattening roller, and pipes for supplying a cooling medium to the hollow guide.

6. A wire netting guide for a wire glass machine, consisting of a hollow flat plate G having pipes I, I' for circulating water or
70 other cooling fluid to the hollow plate, and a weighted tension device movable to or from the guide to control the wire netting while passing over the guide.

7. In a machine for making wire glass, the
75 table, flattening roller and gun, combined with a wire netting guide supported by the table and independently movable relatively to the gun and flattening roller whereby it may be gradually moved toward the flatten-
80 ing roller as the rolling of the glass proceeds.

8. In a machine for making wire glass, the table, flattening roller and gun, combined with a fluid cooled wire netting guide sup-
85 ported by the table and independently movable relatively to the gun and flattening roller whereby it may be gradually moved toward the flattening roller as the rolling of the glass proceeds. 90

9. In a wire glass machine, the combination of a table, a roller to roll the glass on the table, a hollow water cooled wire netting guide resting upon the table and having a
95 handle for moving it over the table, and an adjustable weighted portion carried by the guide for resting upon the wire netting for putting a tension upon it when the hollow guide is moved under said netting.

In testimony of which invention, I here-
100 unto set my hand.

ARNO SHUMAN.

Witnesses:

C. L. HIGHBERGER,
M. D. WILLIAMS.