

No. 708,917.

Patented Sept. 9, 1902.

R. M. PAXTON.

PLANT FOR THE MANUFACTURE OF GLASSWARE.

(Application filed May 24, 1901.)

(No Model.)

3 Sheets—Sheet 1.

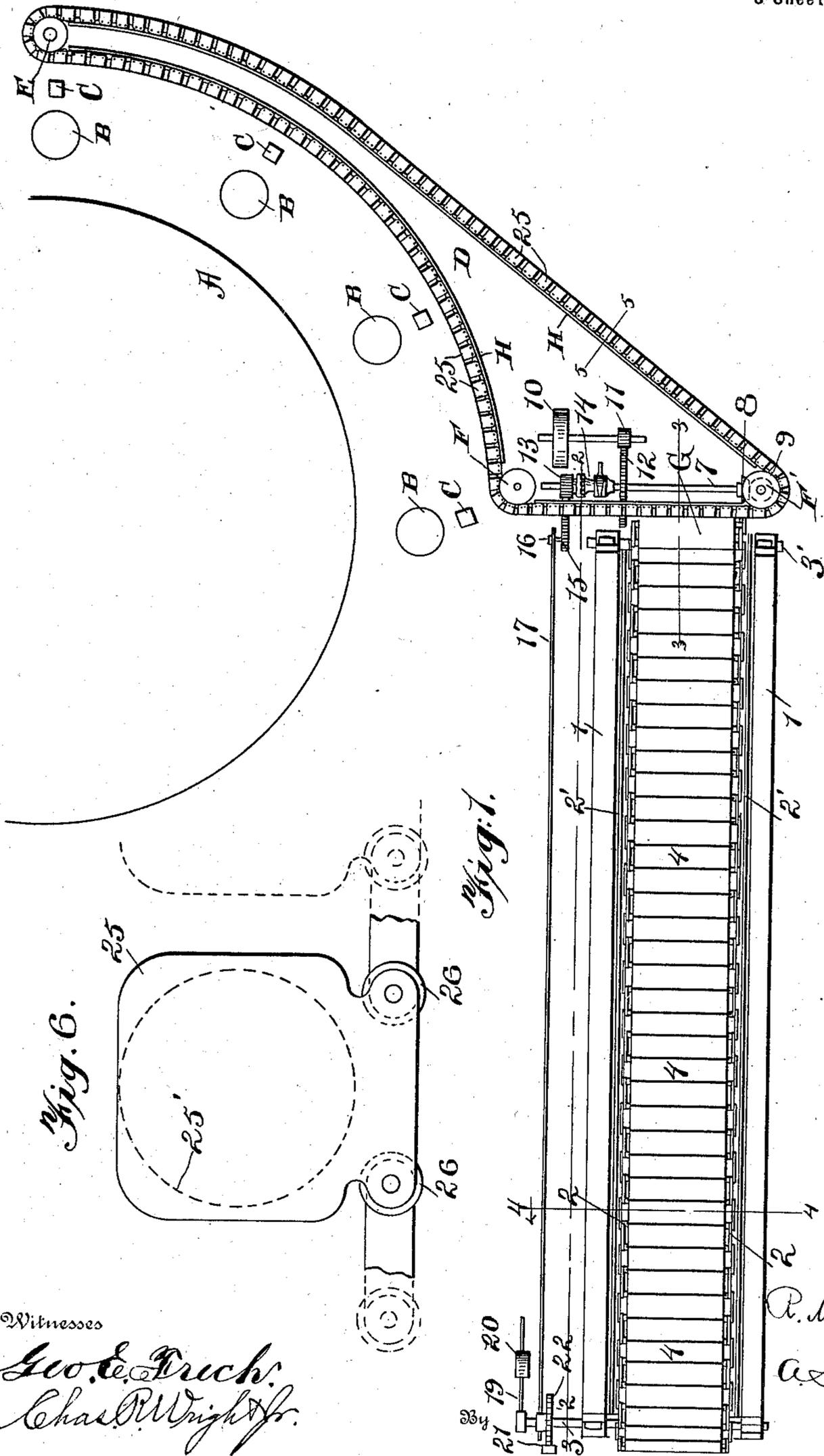


Fig. 6.

Fig. 7.

Witnesses

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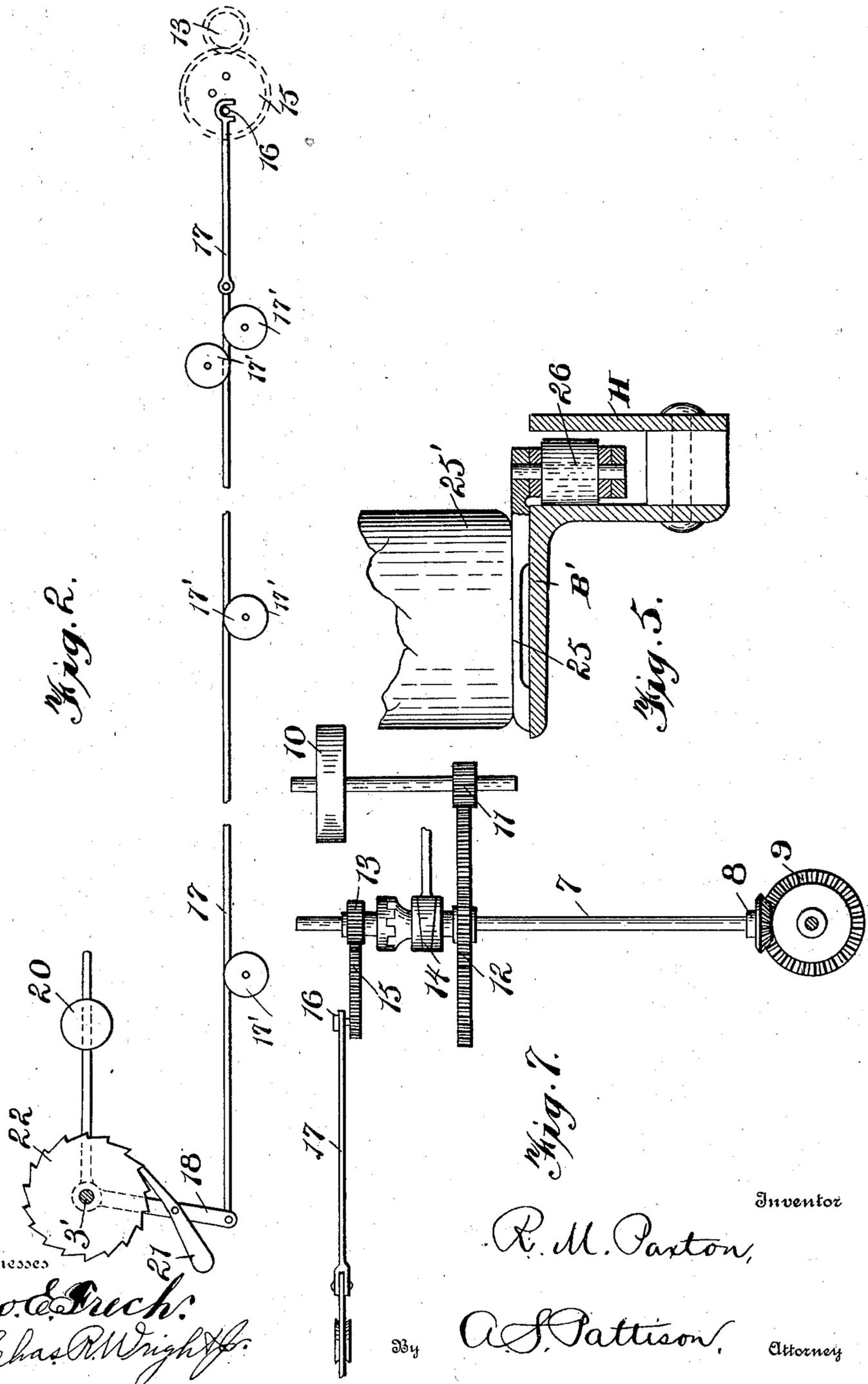
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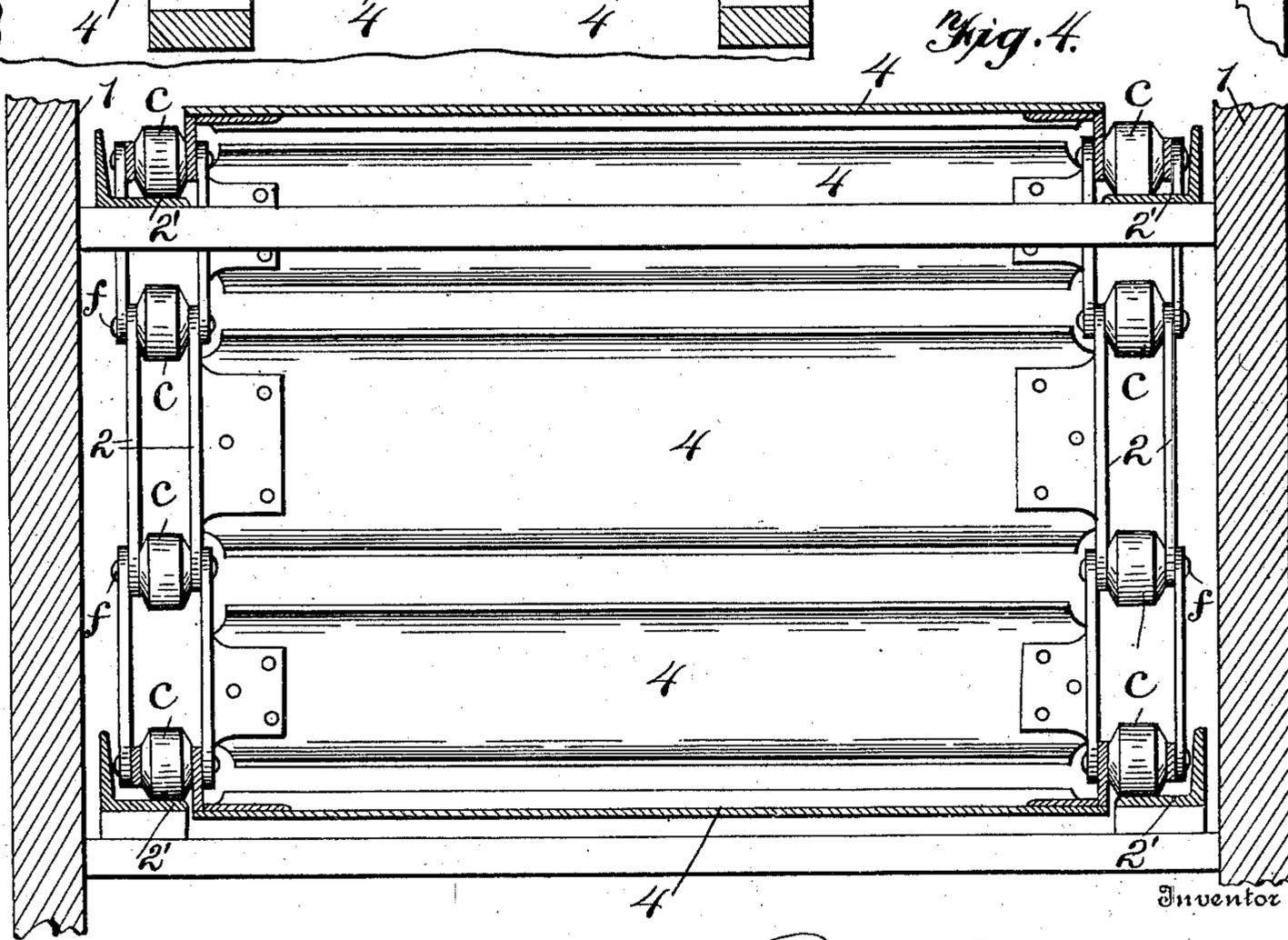
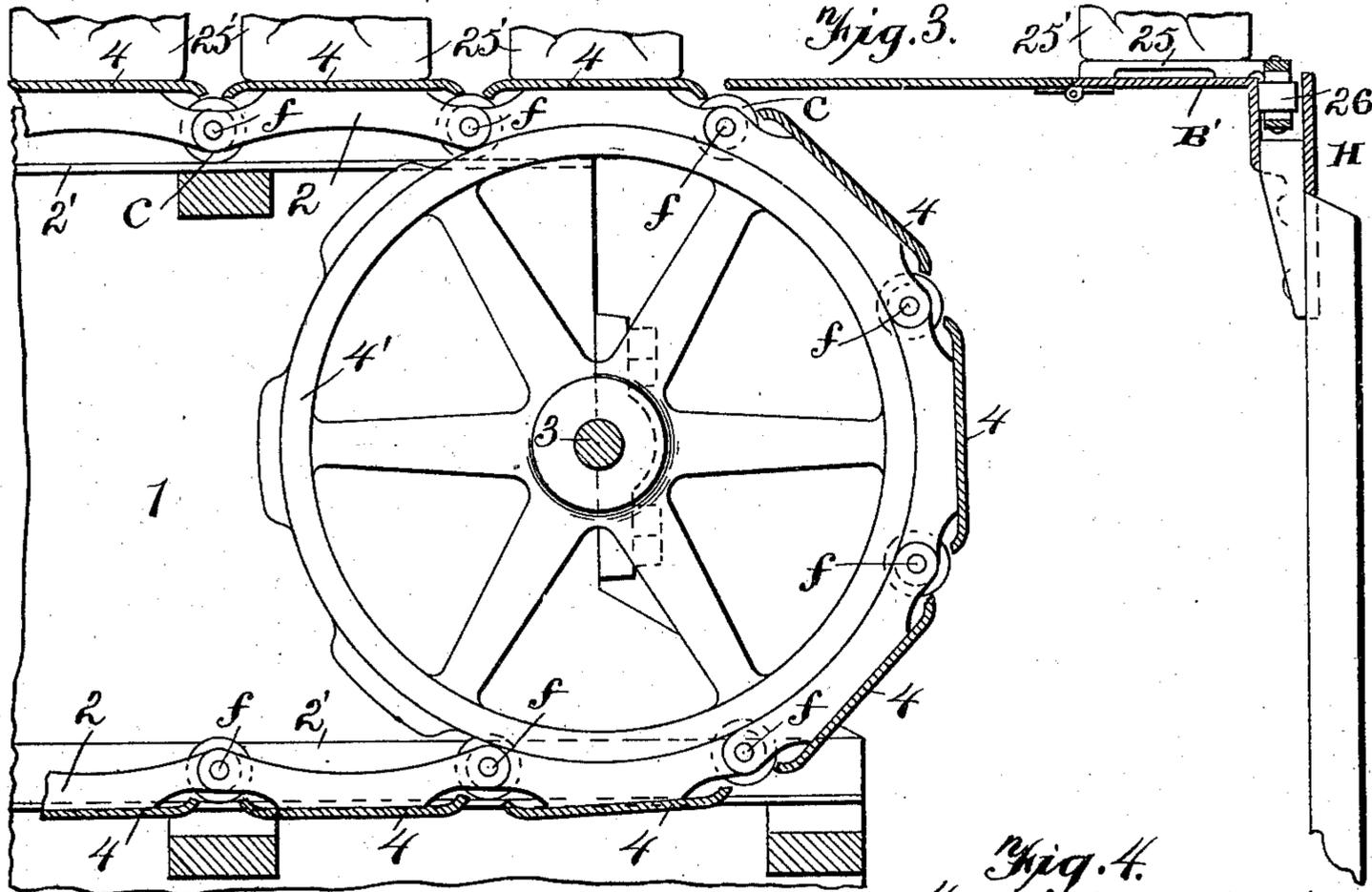
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3 Sheets—Sheet 3.



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PLANT FOR THE MANUFACTURE OF GLASSWARE.

SPECIFICATION forming part of Letters Patent No. 708,917, dated September 9, 1902.

Application filed May 24, 1901. Serial No. 61,776. (No model.)

To all whom it may concern:

Be it known that I, RICHARD M. PAXTON, a citizen of the United States, residing at Washington, in the county of Washington and State of Pennsylvania, have invented new and useful Improvements in Plants for the Manufacture of Glassware, of which the following is a specification.

My invention relates to improvements in plants for the manufacture of glassware, in which means is provided for receiving the glassware from the point of manufacture and delivering it to and carrying it through the leer to be tempered.

The present method of manufacturing glassware in factories which needs tempering necessitates the service of a number of persons to convey the ware from the point of manufacture to the leer to be tempered. This service is found in practice to be very objectionable, in addition to the consequent expense for such service.

The object of my invention is to do away with this annoyance and also the expense thereof by providing a plant so relatively arranged and constructed that this service is accomplished by mechanical means.

In my present invention I provide the leer with a movable platform or carrier and a separate carrier adapted to receive the ware at the point of manufacture and deliver it to the leer-carrier to be tempered.

Though the specific mechanism employed to carry out this invention may vary without departing from the spirit and scope of my invention, the particular form here shown includes a ware-carrier adapted to travel in a direction transverse the leer-carrier. The mechanism is so constructed that the leer-carrier and the ware-carrier are automatically operated by an engine or motor common to both carriers.

Referring now to the accompanying drawings, Figure 1 is a plan view with the top of the leer removed. Fig. 2 is a vertical central longitudinal sectional view on the line 2 2 of Fig. 1. Fig. 3 is an enlarged sectional view on the line 3 3 of Fig. 1. Fig. 4 is a transverse sectional view through the leer on the line 4 4, Fig. 1. Fig. 5 is an enlarged transverse sectional view of the ware-carrier on the line 5 5 of Fig. 1. Fig. 6 is an enlarged de-

tached plan view of one of the supporting-platforms of the carrier. Fig. 7 is an enlarged detached plan view of the operative mechanism, which is located just outside of the receiving end of the leer.

In the accompanying drawings like letters and numerals of reference in the several views indicate the same part, and in which—

1 indicates the wall of the leer, and 2 the endless leer-carrier. Supported in suitable journals at opposite ends of the leer are the horizontal shafts 3 and 3', carrying suitable sprocket-wheels 4', around which and by which the endless leer-carrier 2 passes and is supported.

A is the glass-furnace, and B indicates the plurality of presses or blow-shops, suitably arranged around and adjacent the furnace.

D is a ware-carrier which is arranged to travel past and adjacent the presses or blow-shops and is adapted to receive the ware and to convey it to the leer-carrier. As here shown, this carrier has a continuous movement. If desired, a plurality of tables C, located adjacent the presses or blow-shops, may be provided to receive the manufactured ware before it is placed upon the carrier D. The endless ware-carrier D passes around a suitable wheel E at the outer limit of the said carrier, and its inner end passes around the two wheels F and F', which are located, respectively, at opposite sides and slightly beyond the inlet end of the leer. These two wheels F and F' being so located cause the ware-carrier to travel by and transverse the receiving end of the ware-carrier 2 for a purpose to be presently explained. A suitable motor 10, of any form, is provided, the shaft of which has a pinion or gear 11 in engagement with a gear 12, fast to a shaft 7. One end of this shaft 7 is provided with a bevel-gear 8 in engagement with a bevel-gear 9, fast to the shaft of the wheel F'. The carrier D is here shown as having a constant motion, though it can be given an intermittent motion by controlling the motor 10 if for any reason such motion should be desired. Placed loosely upon the shaft 7 is a pinion 13 in engagement with a gear-wheel 15, and the loose pinion 13 is adapted to be locked to the shaft 7 through the medium of a suitable clutch or other connecting and disconnecting device 14.

The gear 15 is provided with a wrist-pin 16, and to this wrist-pin one end of a suitable connecting-rod 17 is attached, the opposite end of the rod being connected with one end of a bell-crank lever 18. This bell-crank lever 18 is pivotally supported intermediate its ends to the shaft 3', and the opposite end of the bell-crank lever carries a suitable weight 20. A pawl 21 is carried by the lever 18 and adapted to engage a ratchet-wheel 22, which is fast upon the shaft 3'. The operation of this part of the invention will be explained hereinafter.

Referring now to the ware-carrier and its specific construction, it will be noticed by reference to Figs. 5 and 6 that the carrier consists of a plurality of links carrying ware-supporting platforms 25, which are of a size, preferably though not necessarily, to receive the individual pieces of ware 25'. The pivotal point or connections of the links are provided with vertically-arranged guiding-wheels 26, preferably situated thereunder, and these guiding-wheels run in a suitable track H, having the parallel vertical walls *h* and *h'*, constituting a groove, the contour of which corresponds to the line of travel of the endless carrier D. The outer wall *h'* of this track H is provided with a flange or shelf B' for the purpose of supporting the ware-carrying platform 25 as the carrier moves along.

By referring to Fig. 3, which is an enlarged sectional view of a portion of the leer-carrier, it will be seen that this carrier consists of chains adapted to engage the sprocket-wheels upon the shafts 3 and 3', there being a chain at either side of the leer, and these chains are connected through the medium of transversely-arranged platforms 4, which receive the ware to be tempered and convey it through the leer. The pivotal points or connections of the links constituting the chain are provided with outwardly-extending roller-bearings *f*, upon which are journaled the vertically-arranged supporting rollers or wheels *c*, and these wheels *c* engage suitable longitudinally-arranged rails 2', located within the leer. These rails are arranged as shown in Fig. 4—that is, two at each side of the leer, one above the other, the upper set of rails adapted to support the upper portion of the carrier as it passes through the leer and the lower set of rails adapted to support the lower portion of the carrier.

Through the medium of the clutch or disconnecting device 14 the movement of the leer-carrier can at any moment be interrupted for any purpose, as will be readily understood from the mechanism here shown and described.

For the purpose of supporting the connecting-rod 17 a suitable number of supporting grooved wheels 17' are provided at the outer side of the leer, as illustrated.

By means of a plant substantially as herein described the annoyance of persons conveying the manufactured ware from the point of

manufacture is done away with and the cost of such services is also avoided. The plant is not only economical, but convenient and a saving of time on the part of the operators.

As here shown, the ware-carrier extends only around one side of the furnace A; but when desired (as will be readily understood) the ware-carrier can be extended around the opposite side of the furnace or to any other point desired which may be necessary to reach the point at which the ware is to be received.

In the operation of the construction herein shown and described the motor 10 is set in motion and the ware-conveyer D is moved forward at the desired speed. The manufactured ware is placed upon the carrier by turning-out boys of the presses or by some one else, if desired, and they are arranged upon this narrow ware-carrier in a longitudinal row. They are conveyed by the transversely-arranged portion G across and transverse the leer-carrier 2. When the row of ware reaches across the leer-carrier, the ware is moved in any desired way from the ware-carrier to and upon one shelf or platform 4 of the leer-carrier, which will at that period be in the position shown in Fig. 3 to receive the ware. The leer-carrier then is automatically moved forward equal to the width of the platform or shelf 4, thus bringing the next succeeding platform or shelf forward in position to receive the succeeding row of ware from the ware-carrier. In this manner the ware is received by the leer-carrier and advanced step by step into the leer, and when it has reached the opposite end of the leer it has been tempered and is removed therefrom. This operation is accomplished automatically through the medium of the motor and the driving mechanism between the motor. The ware-carrier D and the ratchet mechanism for intermittently moving the leer-carrier are so timed that the leer-carrier is moved one shelf or platform automatically when the ware-carrier has moved a distance equal to the length of the platform 4, or, in other words, equal to the width of the leer-carrier.

Having thus explained the nature of the invention and described the way of constructing and using the same, but without attempting to set forth all the forms in which it may be made or used, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a leer, of a carrier located therein and traveling longitudinally of the leer, and a ware-carrier located outside of the leer and having a delivery portion traveling across the receiving-opening of the leer and across the receiving end of the leer-carrier, and transverse the direction of travel of the carrier located within the leer.

2. The combination with a leer, of an intermittently-movable carrier located within the leer, a continuously-movable carrier located outside of the leer and having a delivery portion extending transverse the leer-carrier, a

motor operatively connected with said carriers, and means interposed between the motor and said intermittently-movable carrier for moving the latter intermittently.

5 3. The combination with a leer, of a carrier located therein, a ware-carrier located outside the leer and having a delivery portion extending transverse of the leer and a curved extended receiving portion.

10 4. The combination with a leer, of an intermittently-movable carrier therein, and a continuously-movable ware-carrier located outside the leer to receive the ware at the point of manufacture and deliver it to leer and op-
15 erative connections between said carriers.

20 5. The combination with a leer, of a carrier therein traveling longitudinally of the leer and provided with transversely-arranged shelves to receive a plurality of articles in a row transverse the leer, and a ware-carrier
25 located outside the leer and composed of small shelves to receive each a single article, said ware-carrier having a delivery portion extending transverse the leer to deliver the articles singly but in rows to said transverse shelf of the carrier in the leer.

6. The combination with a leer, of a carrier therein, carrier-wheels located outside and at opposite sides of the receiving end of the leer,

a carrier-wheel located at a distance there- 30 from, and a carrier passing around said wheels, thus constituting a delivery portion transverse the leer, and an elongated extended receiving portion.

7. A plant of the nature described includ- 35 ing a leer, and a ware-carrier having a curved receiving portion and a straight delivery portion extending transverse of and adjacent the receiving end of the leer.

8. A plant of the nature described includ- 40 ing a leer, a carrier therein, a ware-carrier having its delivery end adjacent the receiving end of the leer-carrier, means for driving the ware-carrier, and a ratchet mechanism driven by the ware-carrier and propelling the
45 leer-carrier.

9. A plant of the nature described compris- 50 ing a leer, a carrier therein, a ware-carrier, said carriers operatively connected, and an interposed disconnecting device.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

RICHARD M. PAXTON.

Witnesses:

A. B. PAXTON,
CLYDE CRIST.