

**No. 708,113.**

**Patented Sept. 2, 1902.**

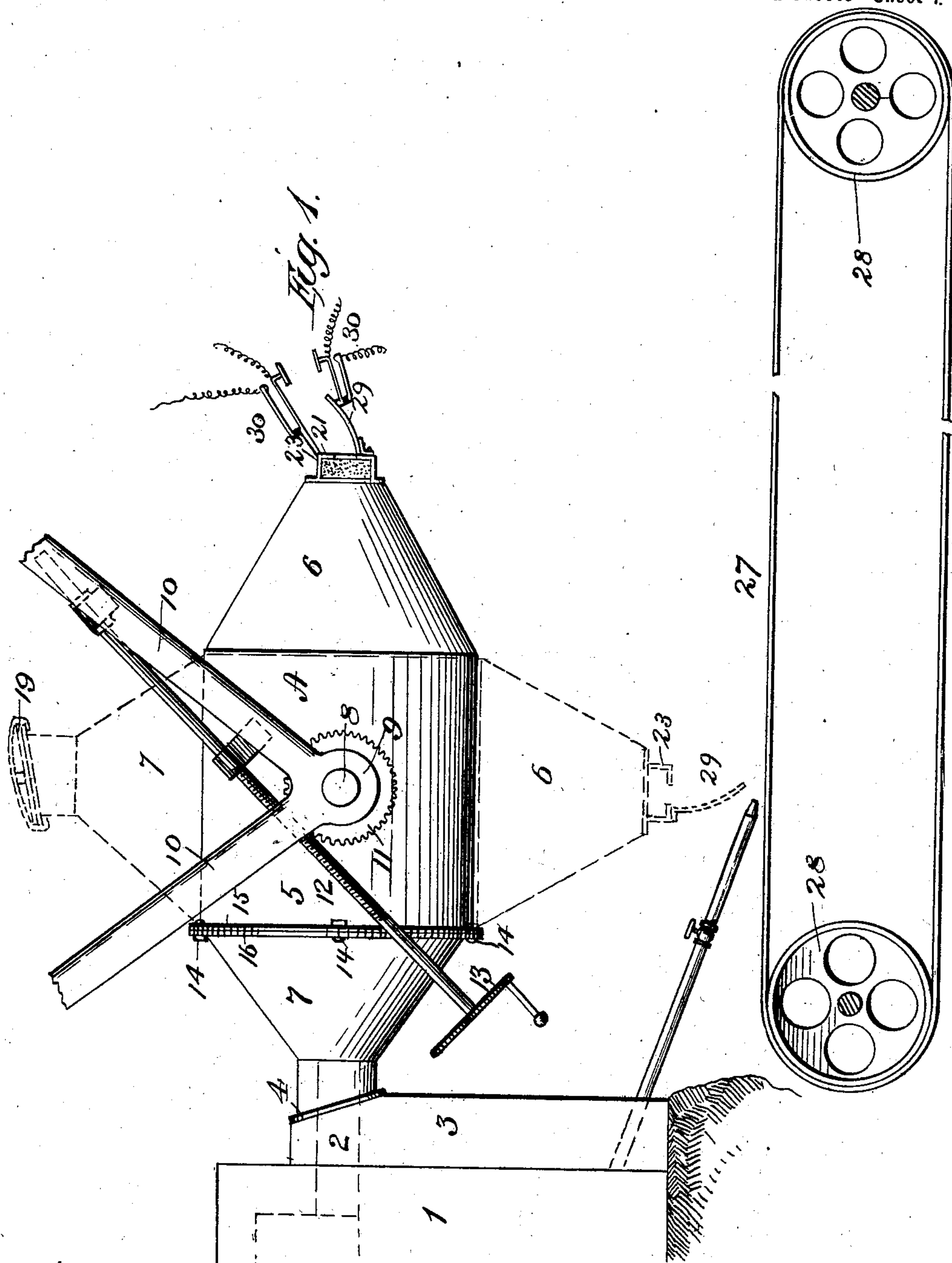
E. N. BALDWIN & I. M. SCHELLINGER.

**GLASS LADLE.**

(Application filed Feb. 11, 1902.)

(No Model.)

**2 Sheets—Sheet 1.**



Witnesses:  
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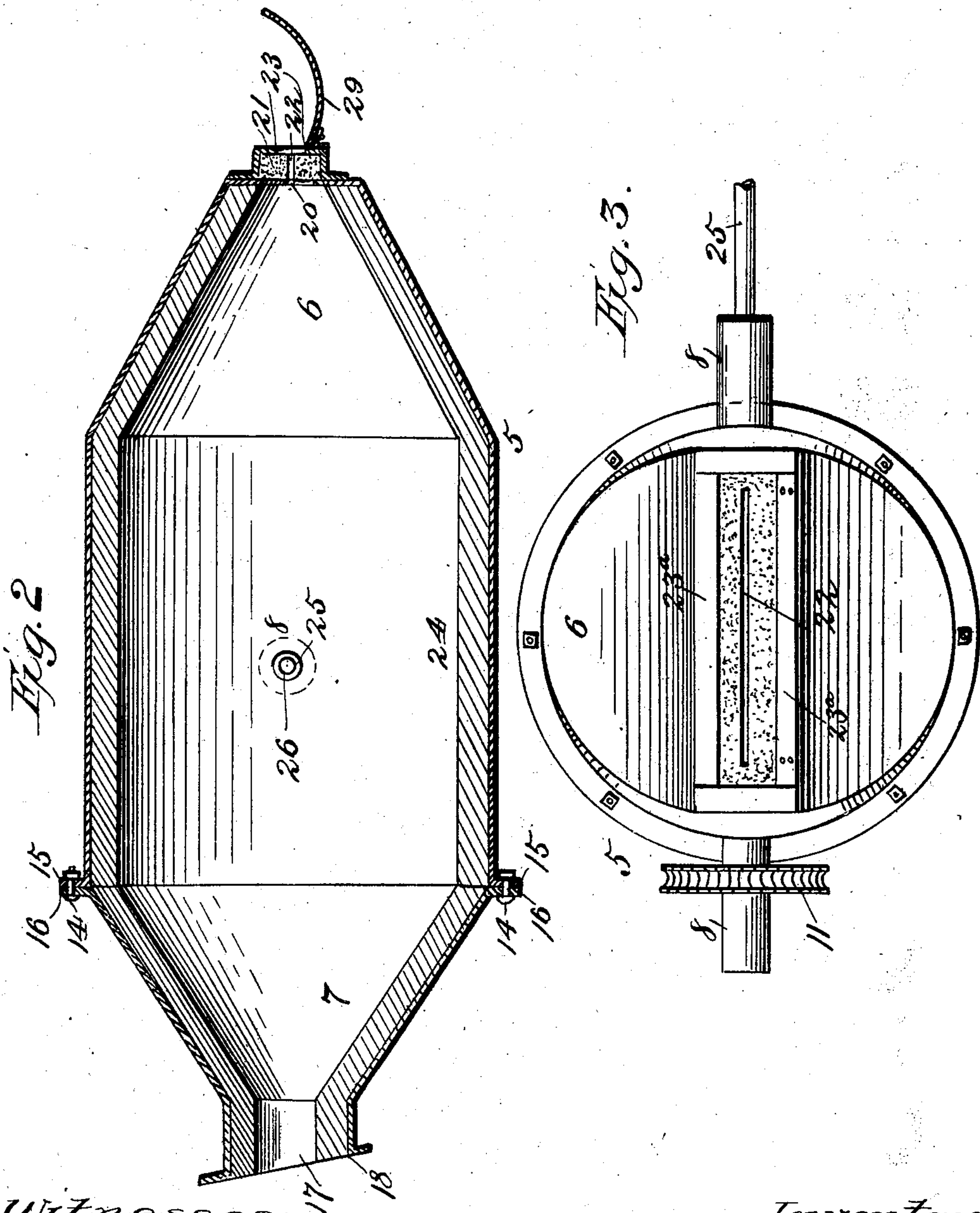
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# UNITED STATES PATENT OFFICE.

EUGENE N. BALDWIN AND ISAAC M. SCHELLINGER, OF ROYERSFORD,  
PENNSYLVANIA.

## GLASS-LADLE.

SPECIFICATION forming part of Letters Patent No. 708,113, dated September 2, 1902.

Application filed February 11, 1902. Serial No. 93,625. (No model.)

*To all whom it may concern:*

Be it known that we, EUGENE N. BALDWIN and ISAAC M. SCHELLINGER, citizens of the United States, residing at Royersford, in the county of Montgomery and State of Pennsylvania, have invented new and useful Improvements in Glass-Ladles, of which the following is a specification.

Our invention relates to glass-ladles; and the object of the same is to construct a device of this character by means of which molten glass can be readily drawn from a furnace and cast in sheets.

The novel construction used by us in carrying out our invention is fully described in this specification and claimed and illustrated in the accompanying drawings, forming a part thereof, in which—

Figure 1 is a side elevation of our ladle. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a bottom plan of the same.

Like characters of reference designate like parts in the different views of the drawings.

The numeral 1 designates a furnace for melting material to form glass. This furnace 1 has an opening 2 in its walls 3 at a point near the bottom, which opening affords an outlet for the molten glass and can be closed by a plug in the usual manner. At the mouth of the opening 2 the outer face of the wall is inclined downwardly and forwardly to form an inclined plane 4 for a purpose which will appear. Our ladle is located adjacent to the furnace 1 and designated A. It consists of a cylindrical body 5, having a hopper-shaped bottom 6, formed integral with the body 5, and a removable frusto-conical cover 7. The body 5 is provided with trunnions 8, which are journaled in boxes 9, carried by rigid hangers 10, securely bolted to the overhead girders. One of the trunnions 8 has a gear 11 keyed thereon, which meshes with a screw 12, rigidly mounted on the hangers 10 and provided with a hand-wheel 13, constructed to be operated to revolve the ladle A on its trunnions.

The removable cover 7 is secured to the body 5 by means of bolts 14, fitting apertures in flanges 15 and 16, formed on the body 5 and cover 7, respectively. An apertured neck 17 is formed integral with the top of the

cover. The end of the neck 17 is beveled at 18 to conform with the inclination of the face 4 on the furnace, which thereby serves as a stop to limit the downward swing of the neck and to insure a tight connection between the furnace and the ladle A. When the ladle is turned up in casting, a cap 19, which fits snugly the neck, is clamped thereon to retain the heat and the air-pressure, as will appear.

The hopper-shaped bottom 6 has an aperture 20 therein, which is closed by a block 21 of graphite or other refractory material and having a longitudinal slot 22 therein. The block 21 is mounted to slide in parallel guides 23, having flanges 23<sup>a</sup> thereon, and is therefore readily detachable and can be replaced by another. The length of the slot is as great as the width of the sheet it is desired to cast; but the width of the slot is small and is varied according to the viscosity of the molten mass.

The interior of the ladle A is provided with a lining 24 of fire-brick or other suitable material.

To provide means for actuating the flow of the glass in casting, hot air under pressure is introduced through a pipe 25, passing through an aperture 26 in one of the trunnions 8 and extending into the ladle.

Located just below our ladle A is an endless asbestos belt 27, mounted on drums 28, to be driven from source of electric power. This belt 27 is placed about a foot from the ladle when in its upright position.

A concave guide 29 is secured to the bottom 6 of the ladle adjacent to the slot 20 to serve as a guide for the outflowing glass. In order to regulate the speed of the belt 27 to conform to the velocity of flow of the glass, contact-pieces 30 are mounted one on each side of the slot and arranged to be operated by the stream of glass so as to be closed to operate an electric governor which controls the driving means for the conveyer-belt.

In operation the ladle is set in its horizontal position, with the neck 17 in alinement with the opening 2 in the furnace. The molten glass will then be allowed to flow into the ladle until it is half full. The screw 12 is then operated and the ladle swung up into the upright position. (Shown in dotted lines in Fig. 1.)



The cap 19 is put over the neck and secured in place, the belt 27 started, and the hot air under pressure turned into the pipe 25. The pressure of the air will cause the flow of glass when once started to continue. The outflowing glass will be caught by the belt 27, which is run just fast enough to keep the glass from piling up. This speed of the belt can be regulated by an attendant or by means of the contact-pieces 30, which control a governing mechanism. The flow of the glass may also be regulated by means of the air-pressure. If desired, combustible gas may be mixed with the air and admitted through the pipe 25 and the contents of the ladle kept hot during the casting.

We do not wish to be limited as to details of construction, as these may be modified in many particulars without departing from the spirit of our invention.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination with a ladle constructed to contain molten glass and having an aperture in the bottom thereof, guides mounted adjacent to said aperture, and a block of refractory material mounted in said guides and

having a slot therein to permit the outflow of glass, substantially as described. 30

2. The combination with a ladle constructed to hold molten glass and having a narrow slot thereon for the outflow of glass, contact-pieces mounted on said ladle and located to be operated by the issuing glass to close a circuit, substantially as described. 35

3. The combination with a furnace having an inclined plane face thereon with an aperture therein for the outflow of glass, a ladle mounted to turn about a horizontal axis and provided with an elongated reduced neck having an inclined plane face, said face being located to come in contact with the said inclined face on said furnace when the bore of said neck is in alinement with the said aperture in said furnace, to prevent the entrance of air and limit the movement of the ladle, substantially as described. 45

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses. 50

EUGENE N. BALDWIN.

ISAAC M. SCHELLINGER.

Witnesses:

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