No. 698,565. Patented Apr. 29, 1902.

C. W. SHERMAN.

BOTTOM POURING LADLE.

(Application filed Mar. 19, 1901.)

(No Model.)

Fig. 2.

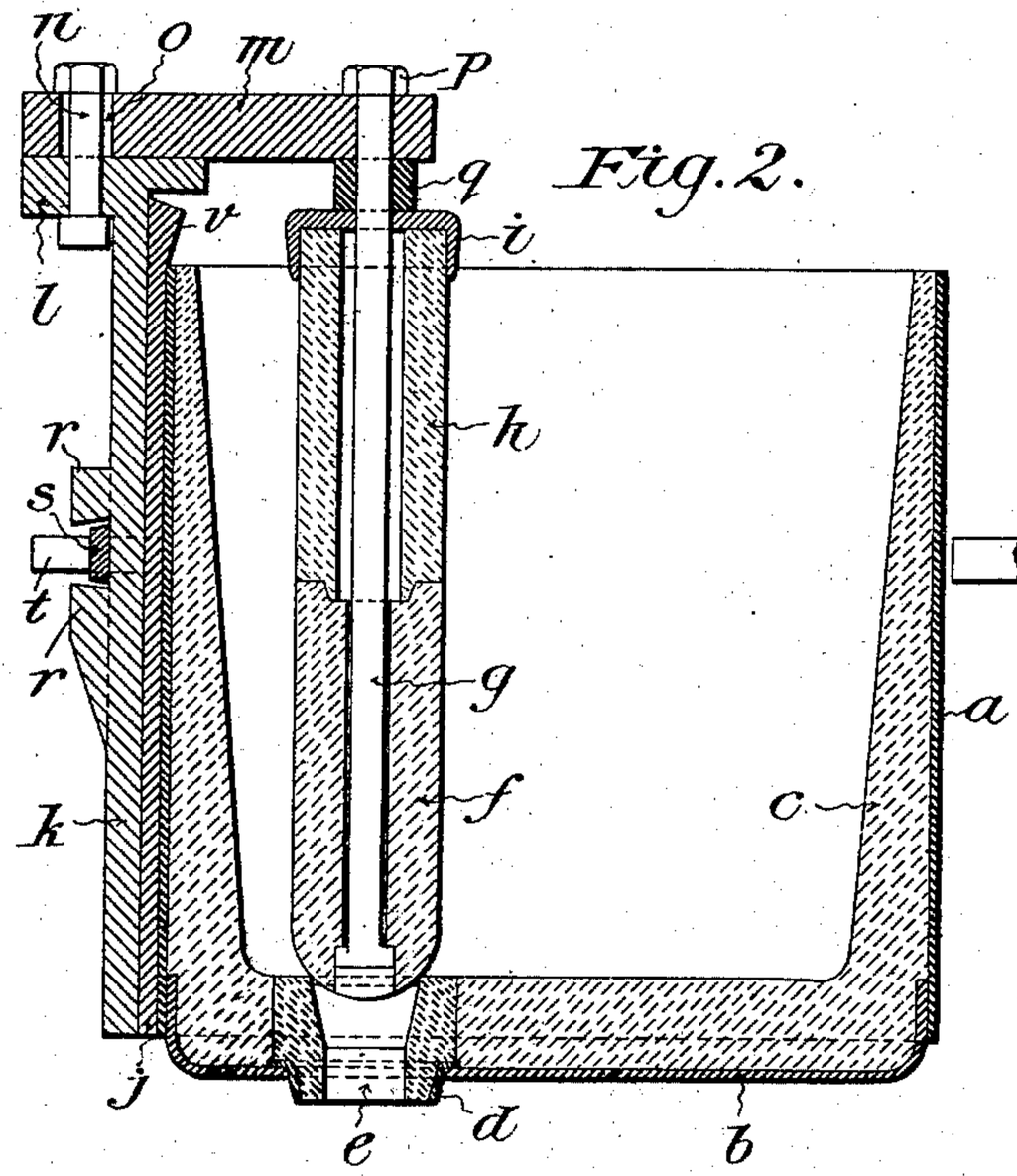


Fig. 1.

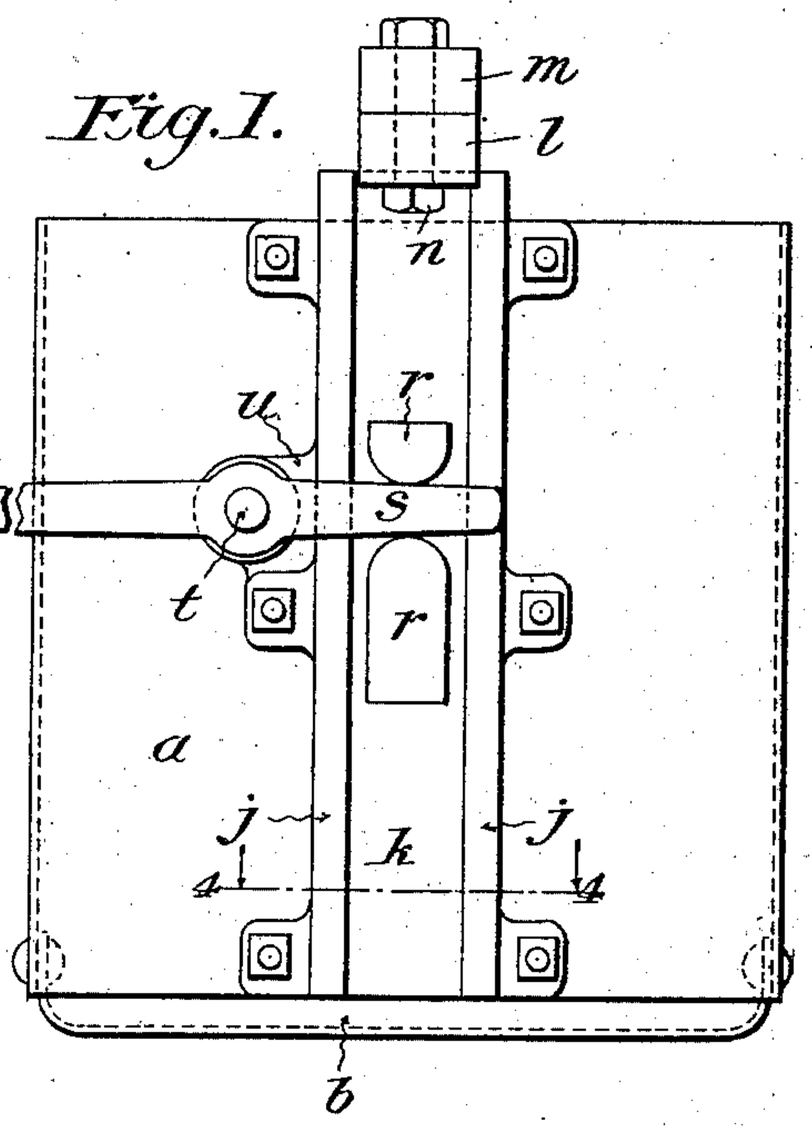


Fig. 3.

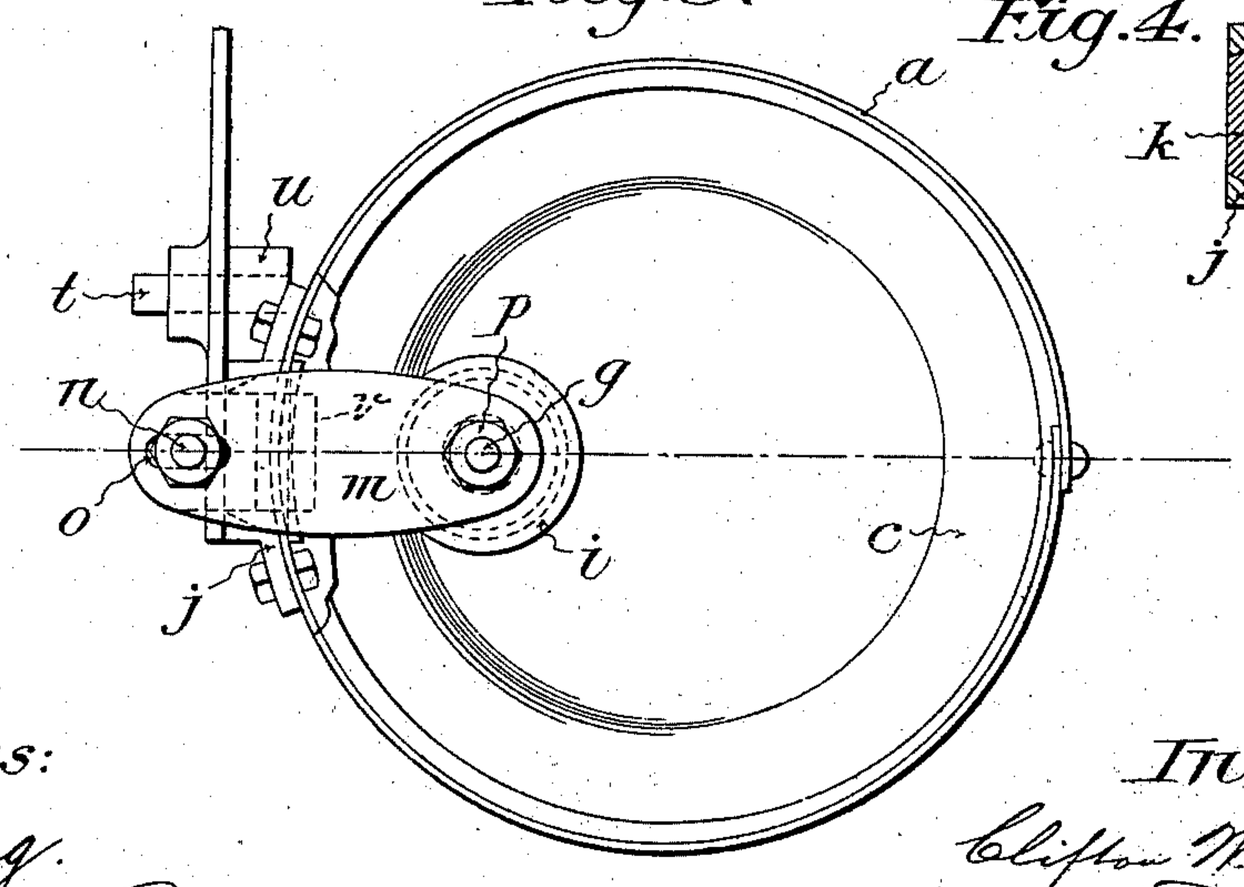
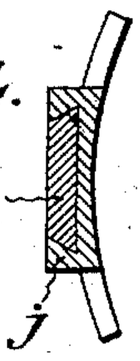


Fig. 4.



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Atty.

UNITED STATES PATENT OFFICE.

CLIFTON W. SHERMAN, OF BELLEVUE, PENNSYLVANIA, ASSIGNOR TO PENNSYLVANIA CAR WHEEL COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

BOTTOM-POURING LADLE.

SPECIFICATION forming part of Letters Patent No. 698,565, dated April 29, 1902.

Application filed March 19, 1901. Serial No. 51,916. (No model.)

To all whom it may concern:

Be it known that I, CLIFTON W. SHERMAN, a citizen of the United States, residing at Bellevue, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Bottom-Pouring Ladles, of which the following is a full, clear, and exact description.

This invention relates to ladles for pouring molten metals into molds for casting objects, especially car-wheels.

It has been found in casting car-wheels that a better product is obtained if the molten metal be introduced into the mold in an even stream from the bottom of the ladle, and several bottom-pouring ladles designed for this purpose have been patented. The present invention embraces improvements in the construction and arrangements of parts of such bottom-pouring ladles whereby the outflow may be easily regulated.

Having thus stated the object and principle of my invention, I will proceed to describe the best mode in which I have contemplated applying that principle and then will particularly point out and distinctly claim the part, improvement, or combination which I claim as my invention.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation, Fig. 2 is a vertical section, and Fig. 3 a top plan view; and Fig. 4 is a cross-section of the guideway and slide, taken substantially in the plane of line 4 4 of Fig. 1 and looking down, there being omitted from the drawings all details of means for lifting and transporting the ladle, which may be of usual or any approved construction.

The ladle comprises a steel or other shell *a*, open at top, with or without a pouring-lip, and having the bottom *b*. This shell is provided with a refractory lining *c*. The bottom has a metallic thimble *d*, surrounding a pouring-opening therein, adjacent to which is an opening in the lining, and this opening is provided with a specially-prepared bushing *e*, which is formed with a seat for the plug for regulating the outflow of the contents of the ladle. This plug comprises a cylinder *f*, of graphite or other highly-refractory material, arranged upon a metal rod *g*, having its head countersunk and protected within the lower end of said cylinder. Above the cylinder *f* is a cylinder *h*, of fire-brick or other refractory material, also supported upon the rod *g*, and this cylinder *h* is provided with a cap *i*, fitted to it and to the rod. One side of the ladle is provided with a guideway *j*, bolted thereto, in which is a longitudinally-movable slide *k*, having a horizontally-arranged flange *l*, to which is adjustably secured a yoke *m*, as by a bolt *n* and slot *o*, and this yoke *m* projects over the mouth of the ladle and receives the upper end of the rod *g*, which is rigidly secured thereto by a nut *p* or other suitable fastening. A packing-washer *q* is interposed between the cap *i* and the under side of the yoke *m*, around the rod *g*, and assists in effecting the rigid union of the plug and yoke. Any necessary adjustment of the plug is obtainable by means of the bolt *n* and slot *o*. The slide *k* is provided with lugs *r r*, between which enters one end of a lever *s*, which is pivoted upon a stud *t* of a boss *u* on the guideway *j* with its handle end projecting beyond the ladle sufficiently to enable a workman to vibrate it to move the slide longitudinally, and thus raise and lower the plug to open and close the opening in the bottom of the ladle to discharge and restrain the outflow of its contents. The guideway *j* has its upper end extending above the shell and there provided with an inwardly-inclined projection *v*, which serves to deflect the molten metal from splashing on the slide and into the guideway when the ladle is being filled, or when in use, or when carelessly handled. Thus a very simple and efficient bottom-pouring ladle is provided, free from complex operating mechanism, with all parts readily accessible for renewal and repair, and easily operated and cared for.

I have omitted showing the details of riveting and other features not immediately involving novelty.

What I claim is—

A bottom-pouring ladle, having a plug, a yoke from which it is rigidly suspended, an operating-slide to which the yoke is rigidly applied, a guideway for said slide having an inwardly-inclined projection arranged above the ladle and next the slide, and means to reciprocate the slide, substantially as described.

In testimony whereof I have hereunto set my hand this 16th day of March, A. D. 1901.

CLIFTON W. SHERMAN.

Witnesses:
CHAS. F. CHUBB,
F. S. GUTHRIE.