J. R. ROGERS.

LINE CASTING MACHINE.

APPLICATION FILED DEC. 14, 1903.

925,843.

Patented June 22, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

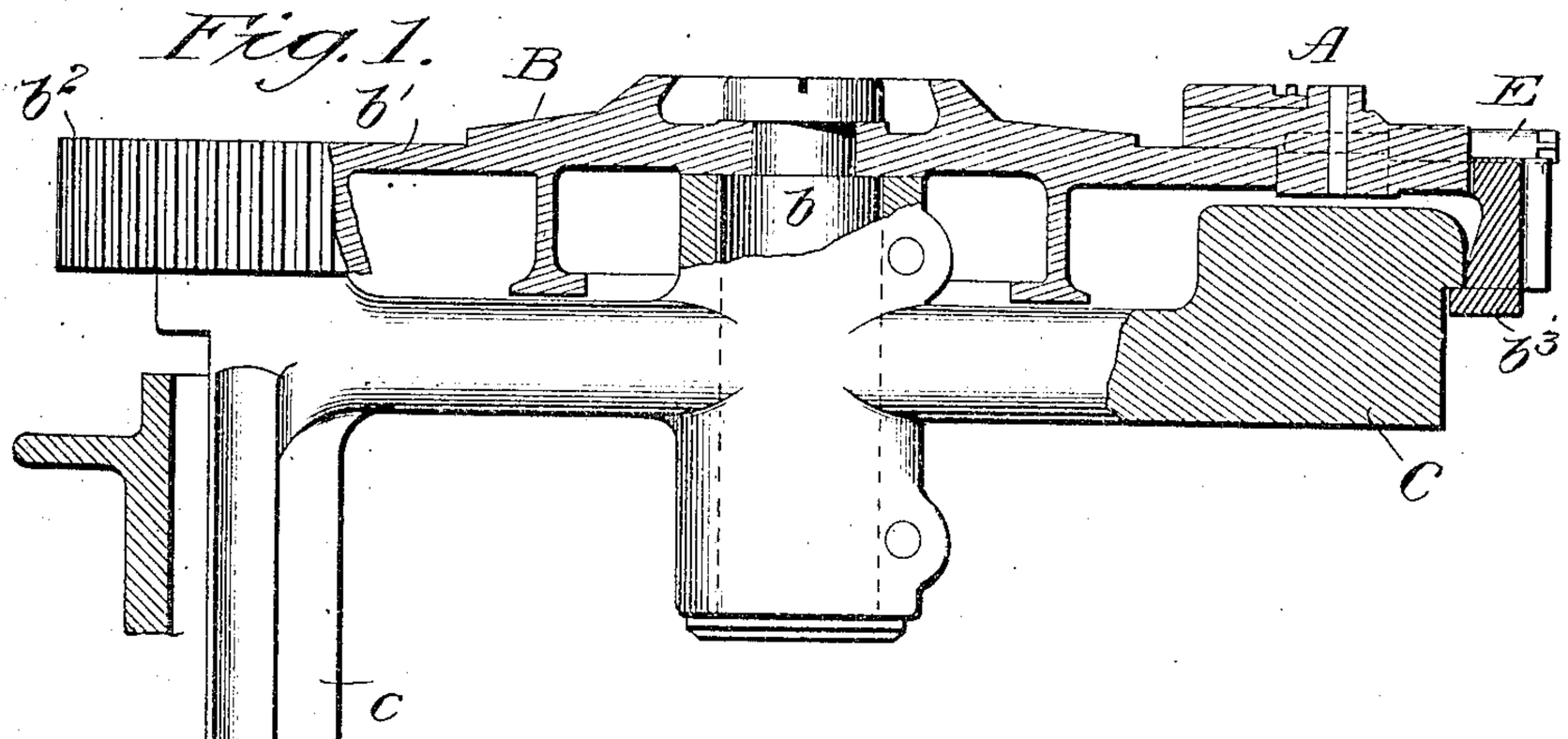


Fig. 2.

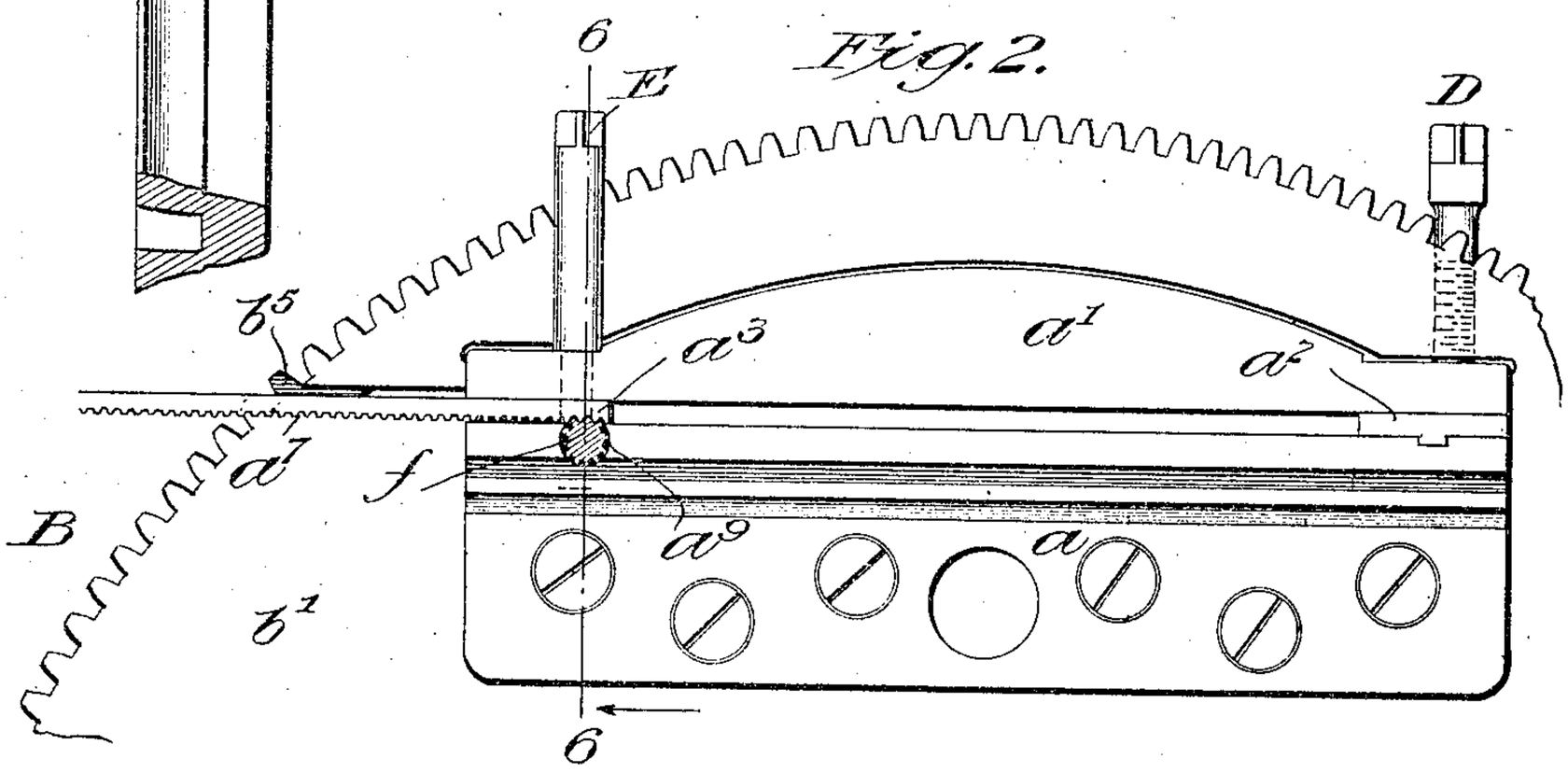
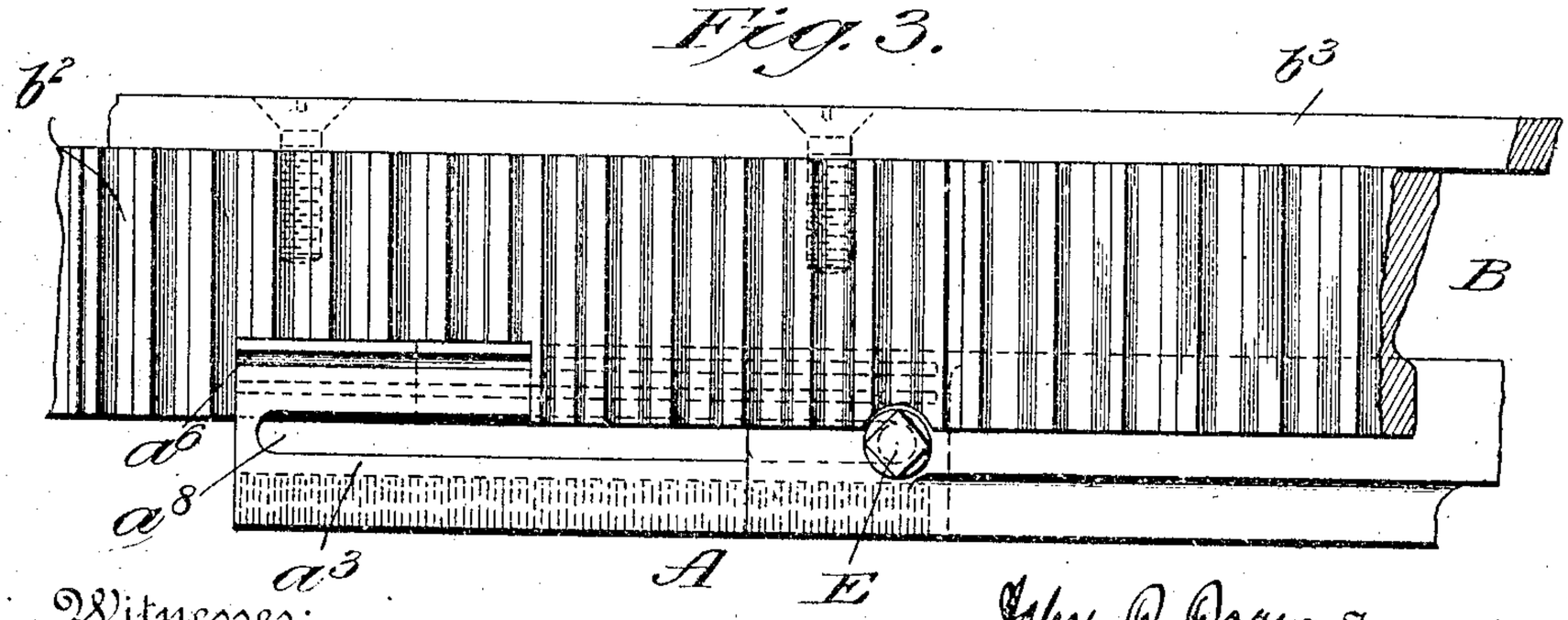


Fig. 3.



Witnesses:

T. A. Mockett

L. E. Morrison

John R. Rogers, Inventor

By his Attorney P. F. Dodge

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2 SHEETS—SHEET 2.

Fig. 4.

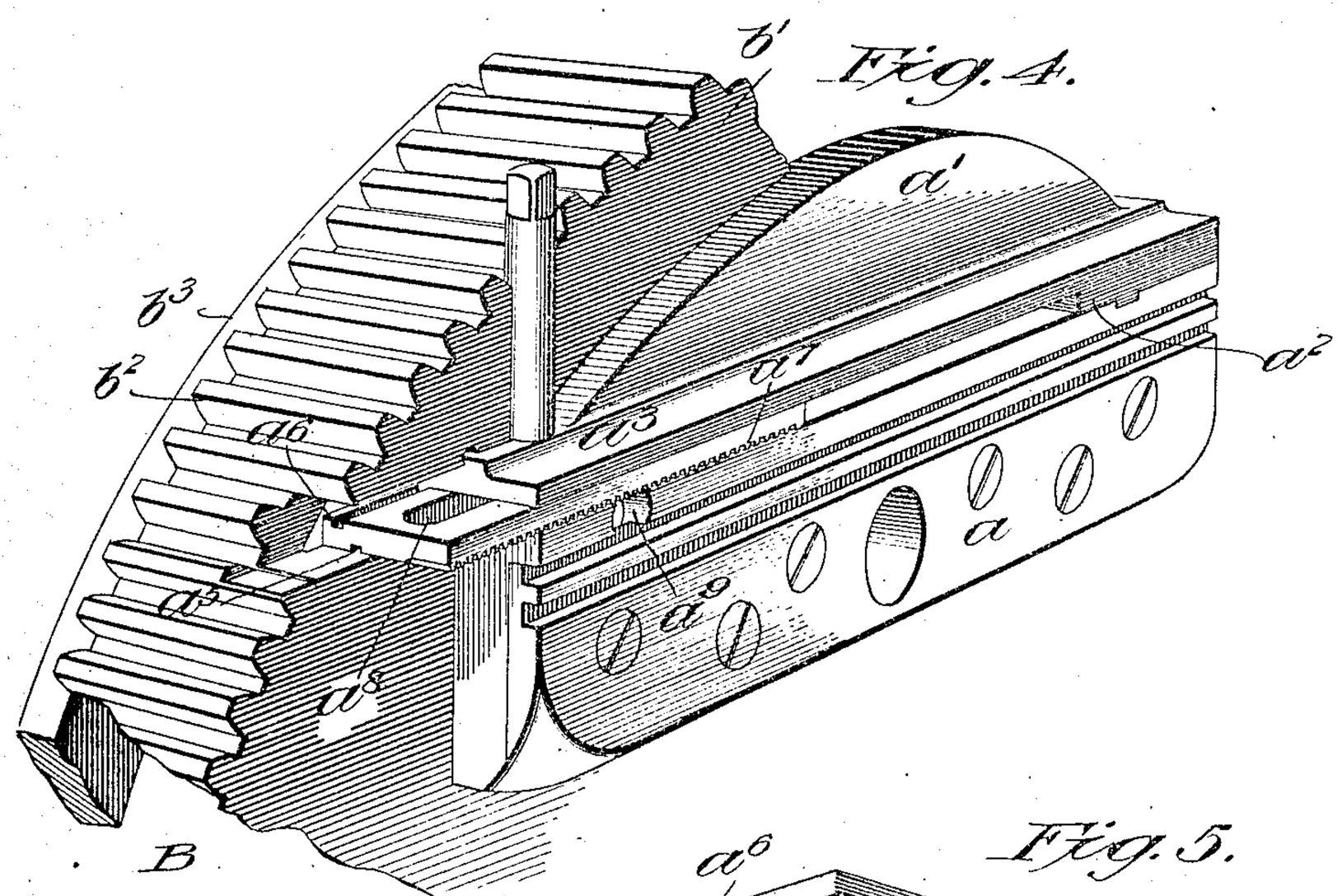


Fig. 5.

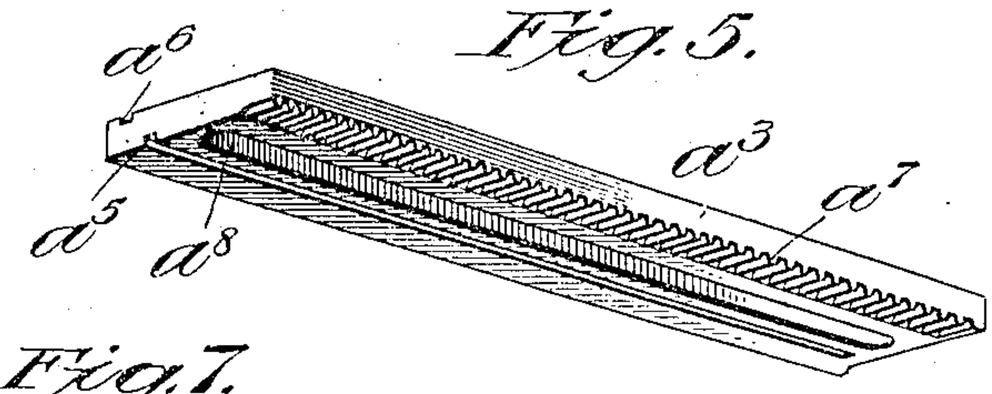


Fig. 6.

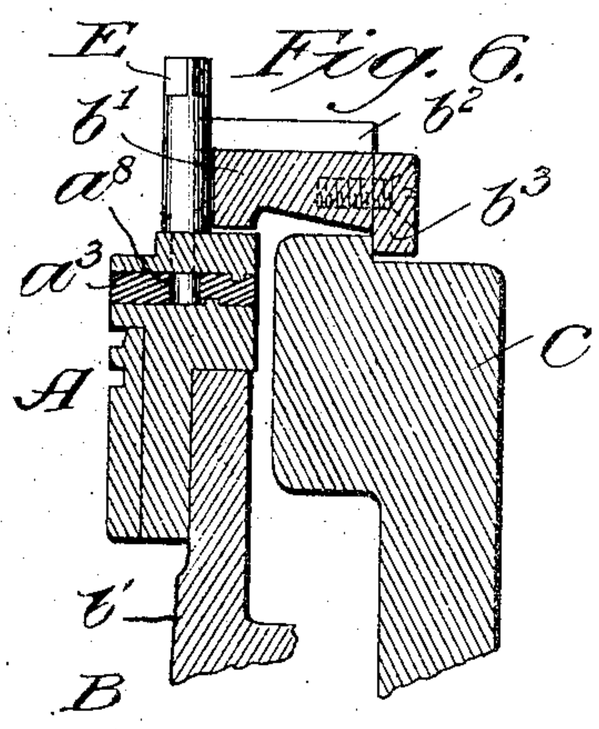


Fig. 7.

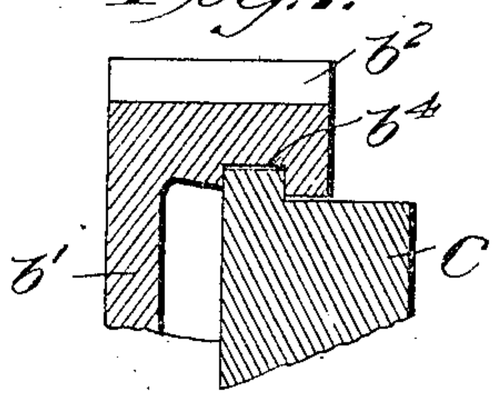


Fig. 8.

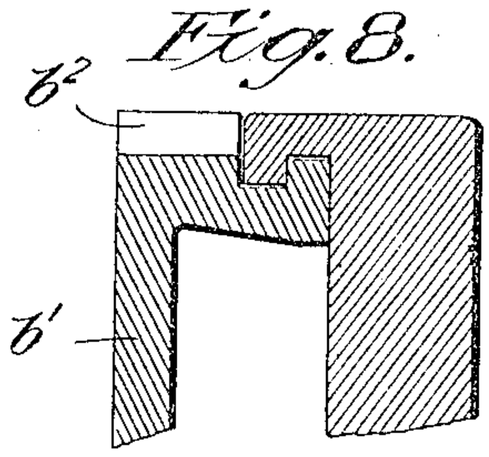
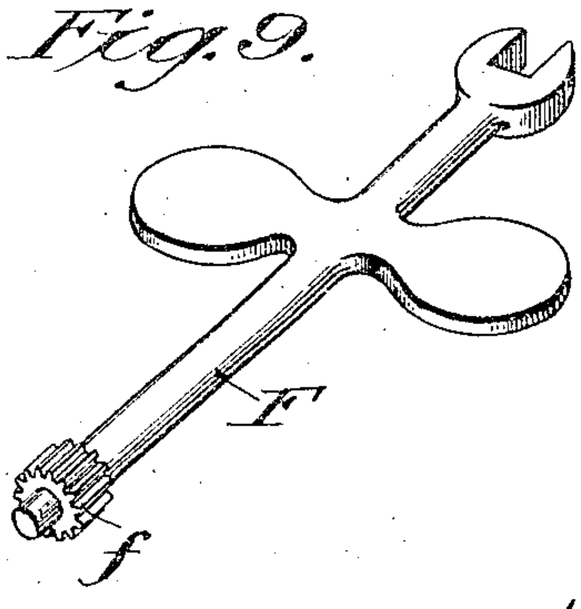


Fig. 9.



Witnesses:

T. L. Macleod

L. E. Morrison

Inventor

John R Rogers

By his Attorney

Philip T. Dodge

UNITED STATES PATENT OFFICE.

JOHN R. ROGERS, OF BROOKLYN, NEW YORK, ASSIGNOR TO MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

LINE-CASTING MACHINE.

No. 925,843. Specification of Letters Patent. Patented June 22, 1909.

Application filed December 14, 1908. Serial No. 467,434.

To all whom it may concern:

Be it known that I, JOHN R. ROGERS, of the borough of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Line-Casting Machines, of which the following is a specification.

My invention has reference more particularly to Mergenthaler line-casting machines, wherein the slugs or linotypes are cast in a slotted mold mounted in a vertical disk which is given an intermitting rotation.

The primary object of the invention is to provide for instantaneous change in the length of the mold slot and of the slugs produced therein, and at the same time to give the mold proper support and guidance, so that it may not be sprung facewise out of position by the action of the usual slug trimming knife or the ejector at the rear. To this end I provide a mold having in one end a sliding liner to control the length of the slot. This liner, seated between the cap and body of the mold, is preferably provided with teeth, to be engaged by teeth on a wrench or pinion for effecting the longitudinal adjustment. The liner is also connected to the top and bottom members of the mold by longitudinal tongues and grooves, whereby the two parts of the mold are kept in line facewise without the employment of the usual connecting posts at the ends.

The two parts of the mold are connected and drawn together upon the sliding liner by a screw seated in the mold outside of the disk, so that the latter is relieved from the strain to which it is subjected when the confining screw is threaded into the disk.

Instead of using in connection with the disk a stationary front support against which it bears to prevent it from springing forward as the slug is carried with the mold past the rear trimming knife, I now provide the disk with an annular flange or groove adapted to be engaged by a rear supporting arm, so that there is no interference with the mold-tightening screw above referred to. This arrangement leaves the entire face of the mold disk and mold exposed or uncovered, so that the projecting end of the mold liner and the mold tightening screws will meet with no obstruction as the wheel revolves.

With the exception of the parts specifically described herein the various parts may be of the ordinary construction.

In the drawings: Figure 1 is a horizontal section of the mold disk, the mold slide and the disk supporting slide, with my improvements incorporated therein. Fig. 2 is a front elevation of the disk with the improved mold therein. Fig. 3 is a top plan view of the mold disk and one end of the mold. Fig. 4 is a perspective view of a portion of the mold disk and one end of the mold with the sliding liner therein. Fig. 5 is a perspective view of the sliding liner. Fig. 6 is a section on the line 6—6 of Fig. 2. Figs. 7 and 8 are similar sections showing alternative or equivalent forms of the rear support or guide for the mold disk. Fig. 9 is a perspective view of the removable wrench or key for operating the liner clamping screw and for adjusting the liner.

Referring to the drawings, A represents the mold, B the vertical disk on which the mold is permanently secured, C the slide mounted to move horizontally in the main frame, and provided with a laterally extending arm *c* which receives and supports the hub or journal *b* of the mold disk, B, the arrangement being such that the disk may rotate about its axis and also be carried forward and backward by the movement of the slide in order to carry the face of the mold, A, to and from the line of matrices with which it coöperates, the general action of these parts being the same as in existing machines.

The disk B is constructed as usual with an annular peripheral flange, b', extending rearwardly, and provided with external teeth, b^2, which engage the driving pinion in the usual manner.

Heretofore it has been customary to use, in the main frame, near the front of the disk, a stationary support or banking piece bearing against the front face of the disk in order to prevent it from being sprung forward by the action of the stationary knife which trims the rear edge of the slug contained in the mold slot and carried past the knife by the rotation of the disk and mold. This front support would stand in the path of the improved parts hereinafter described, and I therefore dispense with the same and provide the disk on the rear side with a ring of steel or other suitable material, b^3, secured to its

rear face and extending inward beyond the flange b', so that it may engage the outer end of the arm c formed on the mold slide for the purpose, as shown in Fig. 1. This rigid arm, bearing closely against the front face of the ring, b^3, serves as an effectual support to prevent the disk from springing forward. The ring, b^3, may be cast integral with the wheel, but as an applied ring may be made of harder material and of greater strength than the cast iron disk, its use is preferred.

Instead of having the ring b^3 extend inward beyond the annular flange b' the latter may be widened and formed with a groove, b^4, to receive the outer end of the arm c as shown in Fig. 7; or the flange may be formed in the manner shown in Fig. 8, in which the flange of the disk is extended rearwardly, grooved in the outer side, and adapted to receive the supporting arm. In short, the only requirement is that the disk shall have at the rear side an annular surface to engage a rigid arm or guide.

I believe it to be wholly new to support a mold disk against forward movement by a support at the rear, and this I claim broadly in any form the equivalent of that herein shown.

Passing now to the construction of the mold A, a represents the body portion secured rigidly to the mold disk, a' the cap portion overlying the body and separated therefrom by the fixed intermediate liner, a^2, and the sliding liner a^3.

The cap is held down in place to confine the liners in position by two screws D and E. By loosening these screws the cap may be released to permit the longitudinal movement of the liner a^3, or the removal of both liners when others of different thickness are to be introduced for the purpose of changing the vertical height of the slot and the thickness of the slugs produced therein.

The screw E has its lower end reduced or necked down, leaving a shoulder to bear on top of the cap, through which it passes loosely, while the lower extremity is threaded into the body portion. The screw passes through a longitudinal slot, a^8 in the liner a^3. When this screw is tightened the cap and body portion are drawn together upon the intermediate liners without subjecting the rim or flange of the disk to strain. In this class of device as heretofore constructed it was the common practice to thread the cap confining screw into the rim or flange, with the result that the latter was frequently fractured when the screw was tightened.

The screw D at the opposite end of the mold may be threaded into the rim of the wheel and seated upon the cap as shown, or it may be inserted through the cap into the body in the same manner as the screw E.

The sliding liner a^3, by which the length of the mold slot is varied is provided on the upper and lower sides with longitudinal grooves, a^5 and a^6, to receive corresponding ribs formed on the cap and body near the outer end. This construction serves to guide the liner accurately and also to hold the faces of the cap, liner and body in line vertically, in other words, to keep them flush at the front and rear. If desired the tongues or ribs may be formed on the liner, and the grooves formed in the cap and body. In either construction the tongues and grooves take the place of the vertical posts or guides commonly employed in this class of molds to connect the cap and body portion and keep them in line.

The longitudinal adjustment of the liner may be effected in any convenient manner. I prefer, however, to provide it along one edge with transverse teeth, a^7, and to adjust it by means of a pinion, f, formed on one end of a removable wrench or handle, F, such as shown in Fig. 9. The hole a^9 is formed in the body of the mold beneath the liner, so that the pinion may be inserted and guided therein during rotation to cause the movement of the liner.

When extreme adjustment of the mold slot is required the liner will be of such length that its outer end would encounter the flange of the disk. To avoid this the disk is provided with a slot, b^5, through which the end of the liner may be projected, as shown in Figs. 2 and 4. The fact that these parts project beyond the forward face of the disk is immaterial in view of the fact that the disk supports are transferred from the front to the rear as already explained. Because of this transfer there exists in front of the disk a free or unopposed path through which the mold, liner, and mold adjusting screws may pass.

Change in the measure or length of the line may be effected by releasing the screw E, moving the liner a^3 to the required position, and thereafter tightening the screw. If change in the thickness of the slug produced is demanded both the screws, D and E, are loosened to permit the removal of the liner a^2, which is of the common form, in an edgewise direction; the screw E is removed in order to permit the removal of the liner a^3 in an endwise direction; and the two liners are replaced by others of greater or less thickness as required.

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

1. In a machine of the class described, the mold disk having an annular surface, in combination with a rear support engaging said surface to prevent the disk from springing face wise, the face of the disk being wholly uncovered as described.

2. In combination, the mold disk having the annular flange b^3 and the disk sustaining

slide having the arm *c* engaged with the flange.

3. The mold carrying disk for a line casting machine having an annular flange or ring b^3 substantially as described.

4. The mold carrying disk for a line casting machine having an annular flange b^3 secured to its rear side.

5. In combination with the disk having an annular flange and the mold body fastened thereto, the mold cap, the slotted sliding liner connected to the cap and the body by longitudinal ribs and grooves, and the confining screw bearing on the cap and threaded into the body, and the disk support engaging the flange from the rear; whereby a clean path is afforded for the travel of the screw as the disk is rotated.

6. In combination, the mold disk and the mold cap and body, the intermediate liner connected thereto by longitudinal tongues and grooves, and the confining screw, extended beyond the disk.

In testimony whereof I hereunto set my hand this tenth day of November, 1908, in the presence of two attesting witnesses.

JOHN R. ROGERS.

Witnesses:

DAVID S. KENNEDY,

LUCY E. SMITH.