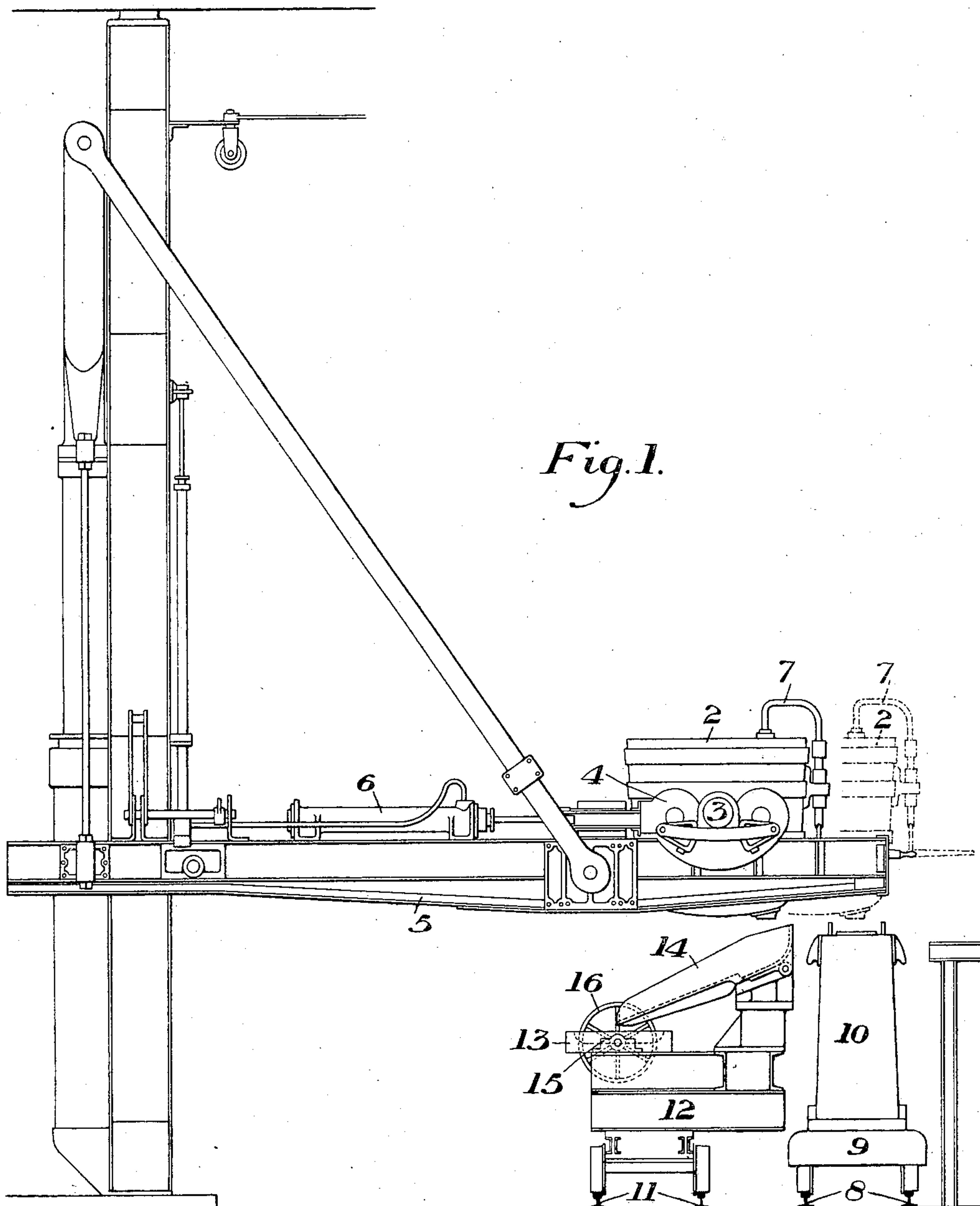


No. 862,364.

PATENTED AUG. 6, 1907.

I. R. WILLIAMS.  
CASTING APPARATUS.  
APPLICATION FILED FEB. 6, 1907.

2 SHEETS—SHEET 1.



WITNESSES

W. W. Swartz  
R. A. Balderson

INVENTOR

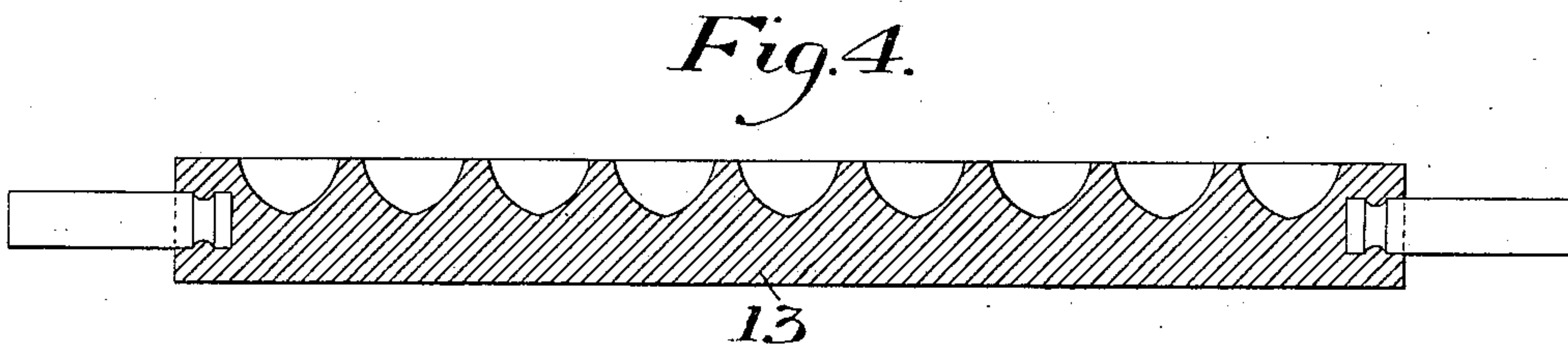
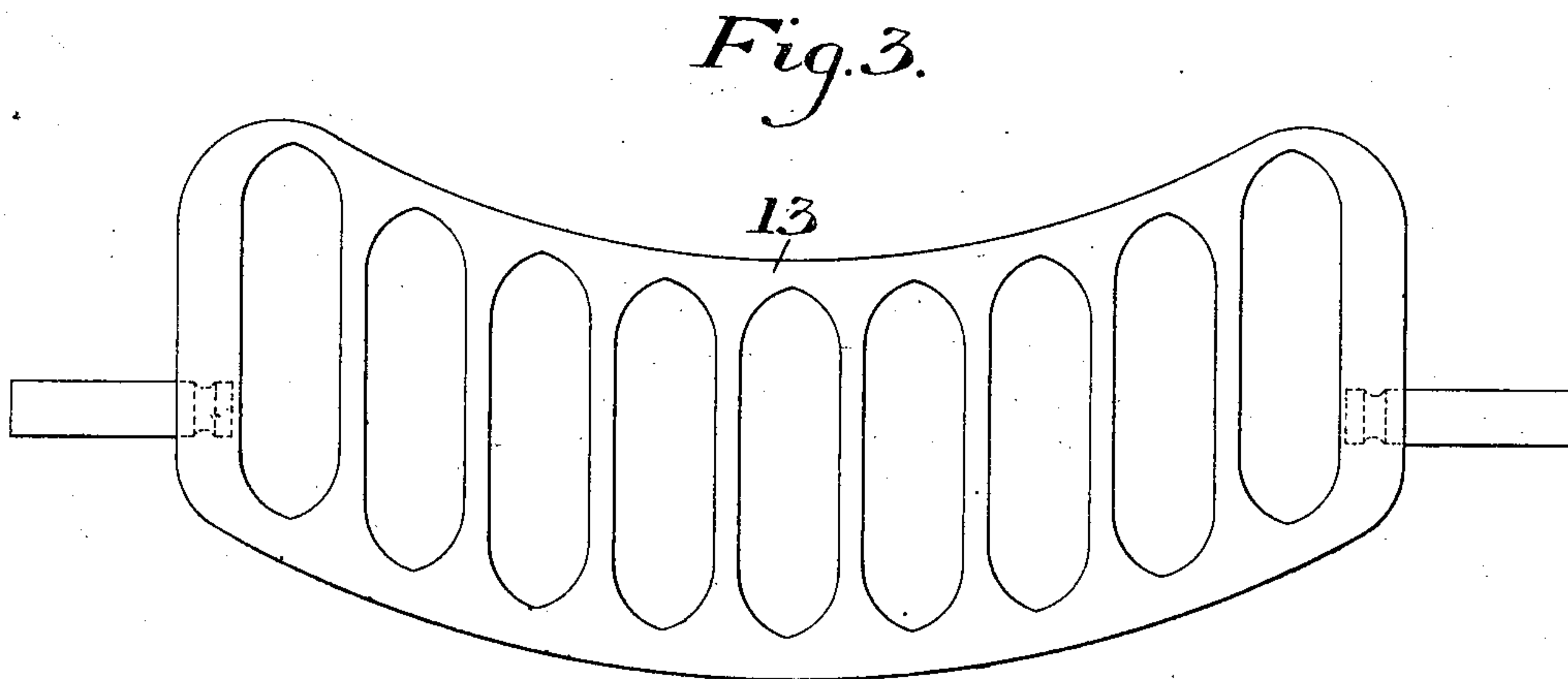
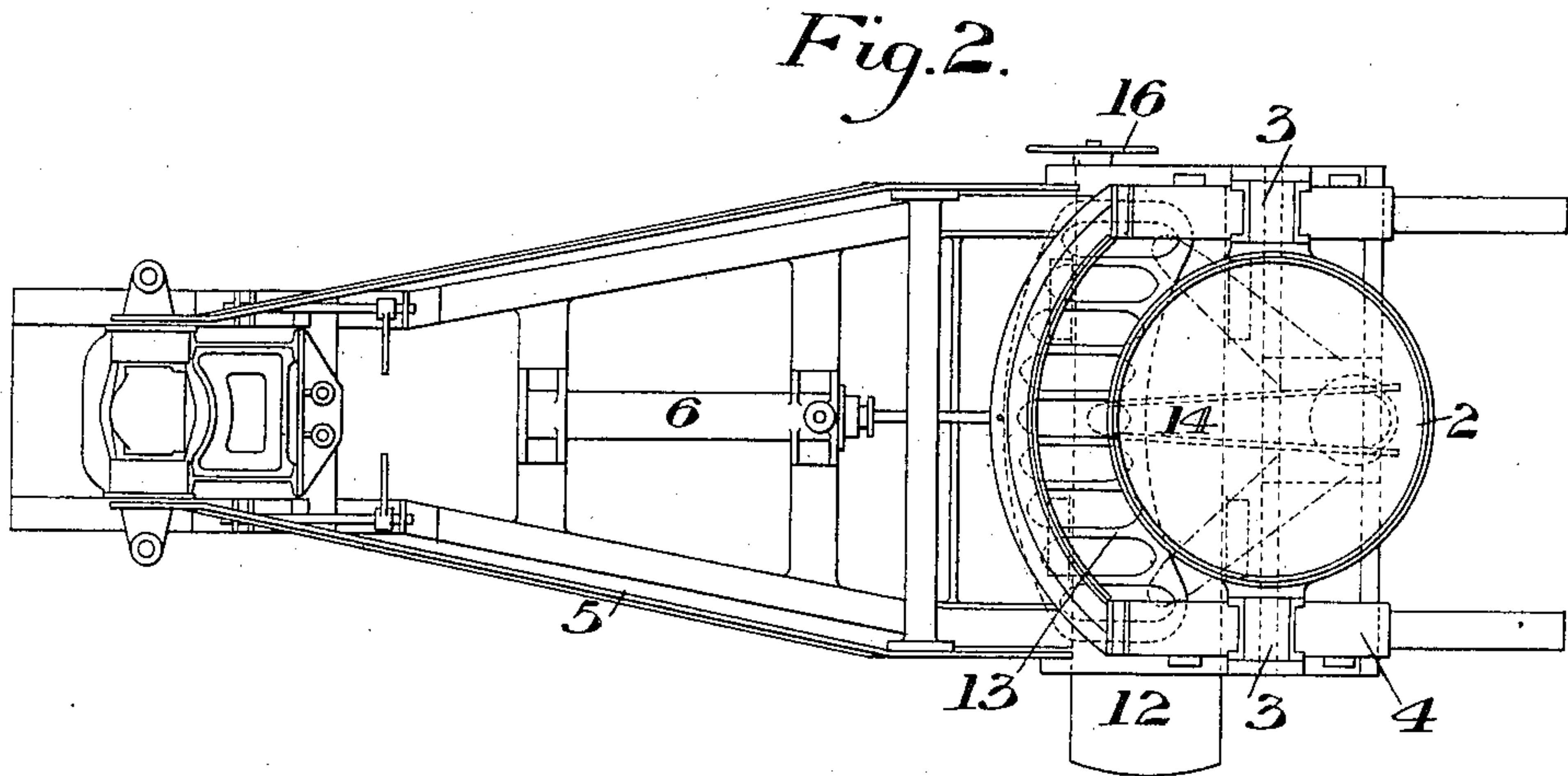
I. R. Williams,  
by Bohewell & Byrnes,  
his attys.

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WITNESSES

*W. W. Swartz*  
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INVENTOR

*J. R. Williams*  
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# UNITED STATES PATENT OFFICE.

IDRIS R. WILLIAMS, OF LORAIN, OHIO, ASSIGNOR TO NATIONAL TUBE COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

## CASTING APPARATUS.

No. 862,364.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed February 6, 1907. Serial No. 356,024.

*To all whom it may concern:*

Be it known that I, IDRIS R. WILLIAMS, of Lorain, Lorain county, Ohio, have invented a new and useful Improvement in Casting Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation showing my improved apparatus in position beneath the casting ladle of a ladle crane; Fig. 2 is a plan view of the same; and Figs. 3 and 4 are detail views on a larger scale showing the pockets in the mold used in connection with my invention.

The invention relates to apparatus employed in casting molten steel into ingots and the object of the invention is to provide improved means for easily and quickly disposing of any surplus steel which remains in the ladle after the ingot molds have been filled, and means by which this surplus metal is cast in suitable shape to again be charged into the converter or cupola.

In the drawings, 2 represents the casting ladle which is carried by its trunnions 3 on the trolley 4. The trolley 4 is longitudinally movable on the jib 5 of the ladle crane, the trolley being actuated by means of the hydraulic cylinder 6. The ladle 2 is of the usual bottom pouring type and is provided with the usual hand-operated stopper mechanism 7 by means of which the flow of metal in casting is controlled by the operator. Beneath the crane jib 5 is a pouring track 8 having mold cars 9 which carry the ingot molds 10. A second track 11 parallels the track 8 and on this track is a car 12 having mounted thereon a dumping mold 13 and swinging spout 14.

In casting steel into ingots it frequently occurs that surplus metal remains in the ladle after the molds have all been filled. Heretofore it has been the usual practice to swing the ladle crane sidewise and lower it until the bottom of the ladle is close to the floor and then to dispose of this surplus metal by allowing it to flow out into the sand covering the floor. The scrap metal resulting from this practice is unsuitable to be remelted, owing to the sand which adheres to it and it is also necessary that this scrap be broken up into pieces of such size as can be easily handled in removing it from the floor. This results in a loss of time in the casting or pouring operation, owing to the time necessary in swinging and lowering the crane into and out of its position over the casting tracks.

In the operation of my improved apparatus, the ladle 2 having been filled with metal is moved on the crane-jib 5 into the position shown dotted in Fig. 1 and the ingot molds 10 on the mold cars 9 are then filled. The ladle 2 is then moved by means of the cylinder 6 into the position shown by full lines in Fig. 1. This brings

the ladle in position above the swinging spout 14 which is pivoted on the car 12. The surplus metal is then allowed to flow from the ladle into the spout and the metal successively fills the pockets in the mold 13, the spout 14 being moved on its pivot so as to bring the outer end of the spout above and successively in line with the empty pockets in the mold 13. After the pockets in the mold have been filled and the surplus steel has been emptied from the ladle 2, the mold 13 which is pivoted in bearings 15 on the car 12 is then revolved by means of the hand wheel 16, allowing the pigs of cast metal to drop out of the pockets on the ground. The cast pigs are then removed and the apparatus is in readiness to again repeat the above described operations. By coating the mold with slurry or clay-wash before filling the pockets in the mold with metal, sticking of the cast pigs to the mold is prevented.

The advantages of my invention will be apparent to those skilled in the art. The surplus metal remaining in the ladle is disposed of without the necessity of shifting the position of the ladle crane. The metal is cast into pigs of suitable size and shape to be easily handled and quickly removed. The apparatus is simple and easily kept in repair, the cost of disposing of surplus metal remaining in the ladle and the time necessary to remove this metal is lessened, resulting in a longer time for pouring ingots and an increased production for the plant.

I claim:

1. In apparatus for casting metal, the combination with a casting ladle and a track beneath said ladle, of a car on said track, a mold rotatably mounted on said car and having a plurality of pockets therein and a pouring spout, pivotally mounted on said car and adapted to be swung on its pivot to bring the end of the spout above the pockets in said mold; substantially as described.

2. In apparatus for casting metal, the combination with a casting ladle and a track beneath said ladle, of a car on said track, a mold rotatably mounted on said car and having a plurality of pockets therein, a pouring spout pivotally mounted on said car adapted to be swung on its pivot to bring the end of the spout above the pockets in said mold, and means for rotating said mold to empty said pockets; substantially as described.

3. In apparatus for casting metal, the combination with a casting ladle and a track beneath said ladle, of a car on said track, a mold rotatably mounted on said car and having a plurality of pockets therein, a pouring spout pivotally mounted on said car and adapted to be swung on its pivot to bring the end of the spout above the pockets in said mold, and a hand wheel for rotating said mold to empty said pockets; substantially as described.

4. In apparatus for casting metal, the combination with a casting ladle and a track beneath said ladle, of a car on said track, a mold rotatably mounted on said car and having a plurality of pockets therein, a pouring spout pivotally mounted on said car and means by which said spout is rotated on its pivot to bring its end in alignment with each pocket in said mold; substantially as described.

5. In casting apparatus, the combination with a casting

5 ladle, a casting track beneath the ladle and cars having  
ingot molds on said track, of a second track beneath the  
casting ladle, a car thereon, a mold having pockets therein  
on the car and a swinging spout pivotally mounted on the  
car and adapted to be moved so as to bring its end in  
alinement with the pockets in said mold; substantially as  
described.

10 6. In casting apparatus, the combination with a casting  
ladle, a casting track beneath the ladle and cars having  
ingot molds on said track, of a second track beneath the  
casting ladle, a car thereon, a dumping mold having

pockets therein on the car and a swinging spout pivotally  
mounted on the car and adapted to be moved so as to bring  
its end in alinement with the pockets in said mold and  
means for dumping said mold to empty the pockets; sub- 15  
stantially as described.

In testimony whereof, I have hereunto set my hand.

IDRIS R. WILLIAMS.

Witnesses:

ED. DOUGLAS,  
R. OSGOOD.