

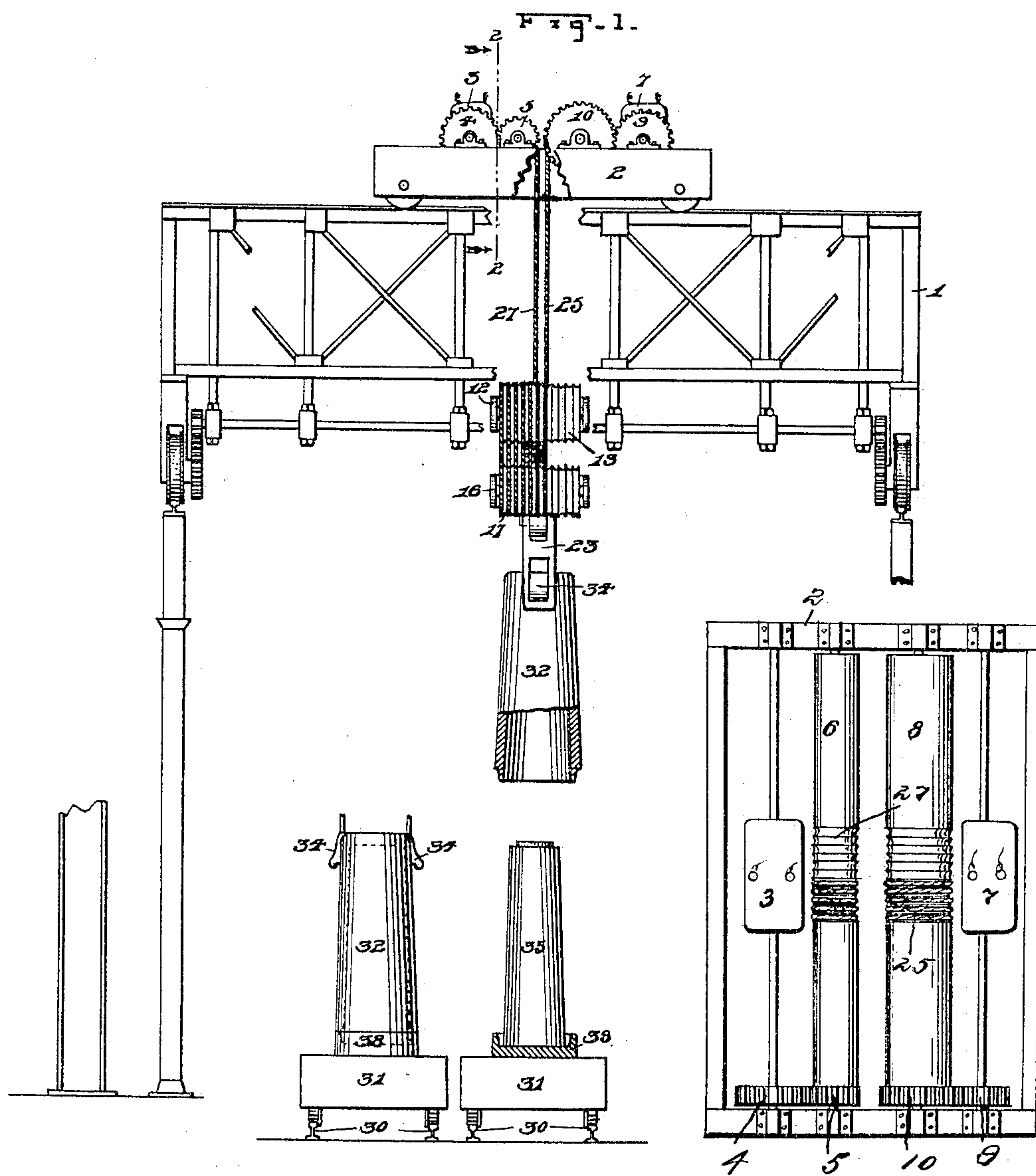
No. 781,708.

PATENTED FEB. 7, 1905.

W. H. BALTZELL.  
INGOT STRIPPER.

APPLICATION FILED SEPT. 2, 1903.

2 SHEETS—SHEET 1.



WITNESSES:

*J. P. Appleman,*

*F. N. Barber*

FIG. 5.

INVENTOR

*Willie H. Baltzell*

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2 SHEETS—SHEET 2.

Fig. II.

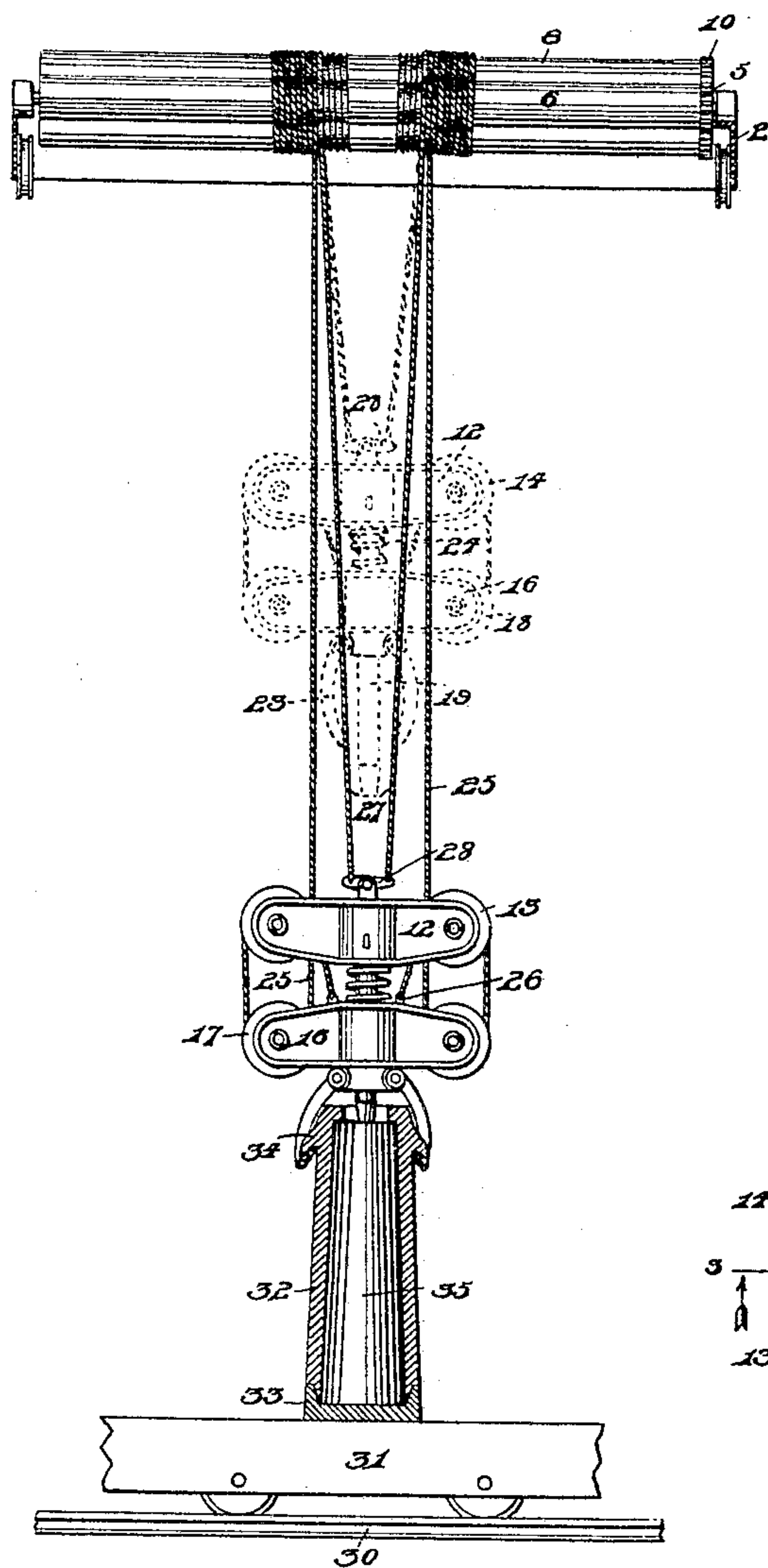


Fig. III.

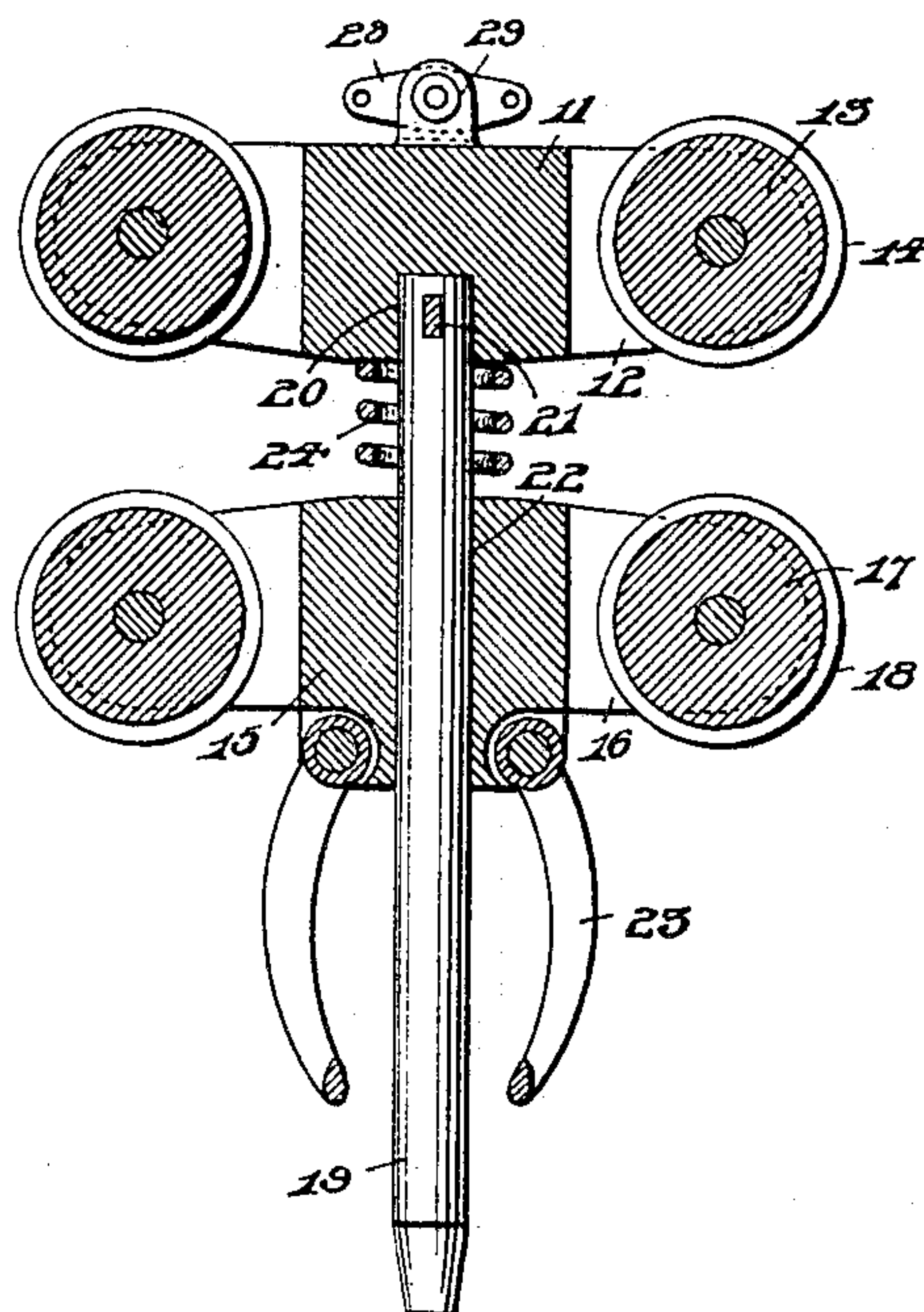
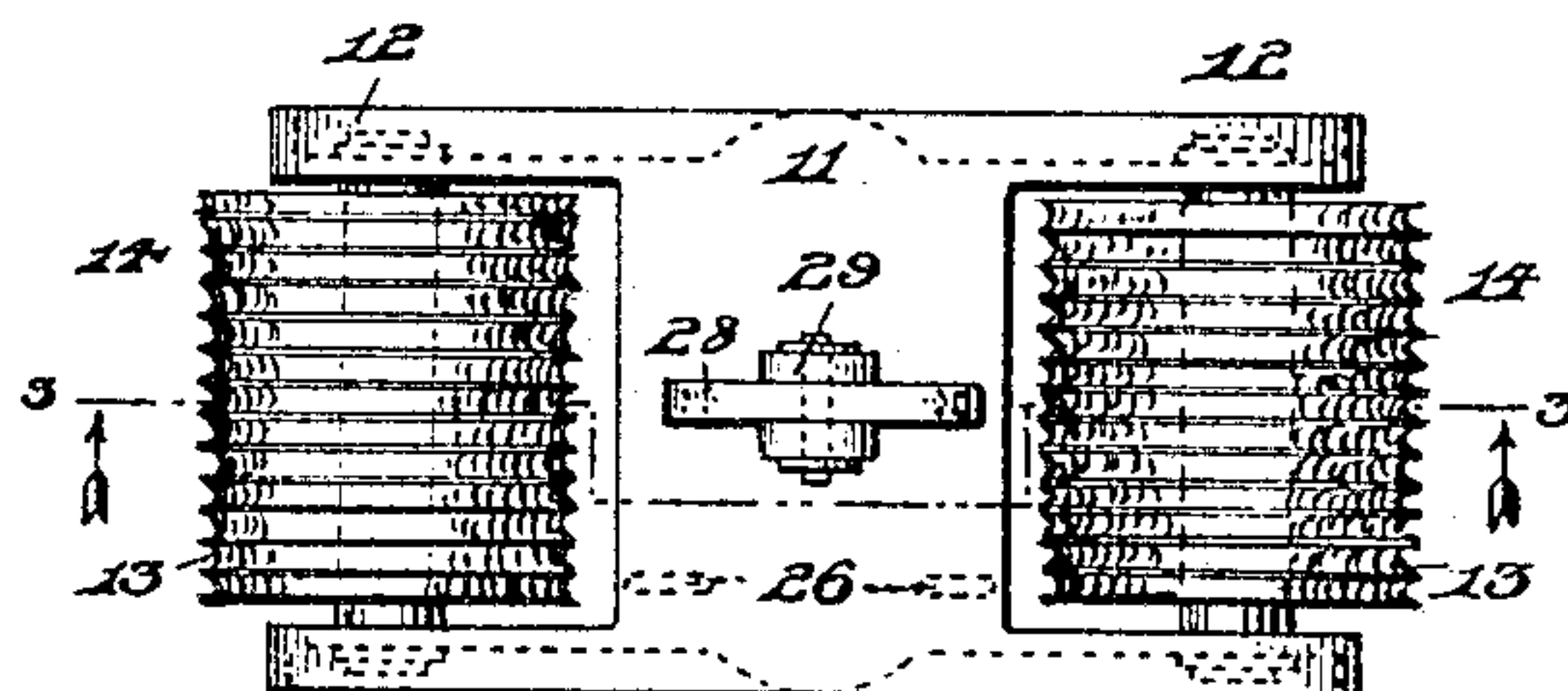


Fig. IV.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIE H. BALTZELL, OF PITTSBURG, PENNSYLVANIA.

## INGOT-STRIPPER.

SPECIFICATION forming part of Letters Patent No. 781,708, dated February 7, 1905.

Application filed September 2, 1903. Serial No. 171,627.

*To all whom it may concern:*

Be it known that I, WILLIE H. BALTZELL, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered new and useful Improvements in Ingot-Strippers, of which the following is a specification.

My invention relates to mechanism for stripping ingots from molds.

It is the object of my invention to strip the molds from ingots by the simplest mechanism possible, doing away with all screws and hydraulic mechanism.

Referring to the drawings forming part of this specification, Figure I is an end elevation showing one form which my invention may assume; Fig. II, a vertical section of the same, taken on the line 2 2 of Fig. I, the parts of the crane, except the trolley, being omitted; Fig. III, a vertical section through that portion of the stripping mechanism which is directly associated with the ingot and the mold in the stripping operation, this figure taken on the line 3 3 of Fig. IV; Fig. IV, a plan view of Fig. III, and Fig. V a plan of the trolley.

1 represents the bridge of an overhead traveling crane, and 2 the trolley, mounted thereon so as to travel transversely of the movement of the bridge. Mounted on the trolley 2 is the electric motor 3, connected through gears 4 and 5 to the winding-drum 6, also on the trolley. A second electric motor 7 and winding-drum 8 are carried by the trolley. The motor 7 drives the drum 8 by means of the gears 9 and 10.

11 is a cross-head having at each end pairs of arms 12, between which are mounted the sheaves 13, having on their surfaces the grooves 14. A second cross-head 15 is beneath the cross-head 11 and has the arms 16, between pairs of which the sheaves 17, having the grooves 18, are mounted. The ingot stop or plunger 19 is secured in the socket 20 in the under side of the cross-head 11 by means of the cross-key 21. The stop 19 passes down through the hole 22 in the lower cross-head and projects therefrom, as shown in Figs. II and III. Pivoted to the under side

of the cross-head 15 are the bails or tongs 23, one on each side of the stop or plunger 19.

24 is a spiral spring encircling the plunger 19 between the two cross-heads to cause the latter to maintain a certain degree of separation and to sustain any forcible movement of the cross-heads toward each other, as hereinafter explained.

A pair of cables or chains 25 are attached to the lower cross-head 15 at the places marked 26, from which places they pass one over one set of sheaves 13 and 17 several times and the other over the other set of sheaves 13 and 17 several times, both then passing to the drum 8, to which they are attached.

Attached to the top of the cross-head 11 is one end of a pair of cables or chains 27, whose other ends are secured to the drum 6. The cables 27 are secured to opposite ends of an even-balance lever 28, pivoted to ears 29 on the cross-head 11.

Located below the crane are the tracks 30, on which travel cars 31. The tracks will be so arranged that the cars can be run onto them from the parts of the mill where the ingots are cast. The ingot-molds 32, provided with a separable bottom 33, stand on the cars by which the molds may be transferred to the proper position for casting the ingots or stripping the molds. The molds are provided near their tops with opposite stripping ears or lugs 34, whose under portions the bails or tongs 23 may engage, as shown in Figs. I and II.

35 designates the ingot.

The operation is as follows: A car 31, having thereon a mold 32 and an inclosed ingot, and the crane are so positioned that the ingot-stop 19 shall be over the ingot. The cables 27 are lowered until the stop engages the top of the ingot, and the tongs pass beneath the lugs 34, as shown in Fig. II. The motor 7, having during the lowering of cables 27 lowered the cables 25 or permitted them to be lowered, is then started, whereby the cables 25 commence to wind on the drum 8. This movement of the cables transmits a lifting force to the points 26 on the lower cross-head, which tends to raise the mold 32. As long as the ingot sticks in the mold the latter cannot



be raised, because the force which tends to raise the ingot also forces the stop 19 down upon the ingot. The weight of the cross-heads and sheaves, together with the weight  
5 of the ingot and mold, must be such as to overcome the force by which the mold and the ingot stick together, since otherwise the mold and ingot would be both raised. The mold is pulled upwardly by the action of the two  
10 cross-heads in their movement toward each other, caused by cables being wrapped over the sheaves, as described, the power being the weight of the apparatus suspended on the cables, including that of the mold and ingot, as  
15 is clear. The weight of the suspended apparatus and the number of times the cables are wrapped about the sets of sheaves will depend upon the conditions to be met and will be readily determined by competent construc-  
20 tors. As soon as the mold has become loose from the ingot the cross-heads will move toward each other with considerable force; but the shock will be taken up by the spring 24. At this time also the motor 3 will be started  
25 in order to lift the mold above the ingot, as

shown in Fig. I, the motor 7 being operated also, so as to cause the cables 25 to move up as fast as the cables 27.

I do not desire to be restricted to the precise details shown and described, but intend to  
30 include within my invention all such changes as may fairly fall within the scope thereof.

Having described my invention, I claim—

1. In an ingot-stripper, a mold-engaging device, a carrier therefor, an ingot-stop, a  
35 carrier therefor, sheaves supported by the carriers, a flexible device on the sheaves, and means for operating the flexible device.

2. In an ingot-stripper, a cross-head carrying a mold-engaging device, a cross-head car-  
40 rying an ingot-stop, sheaves carried by said cross-heads, chains or cables on the sheaves, and means for operating chains or cables.

Signed at Pittsburgh this 31st day of August, 1903.

WILLIE H. BALTZELL.

Witnesses:

F. N. BARBER,  
A. M. STEEN.