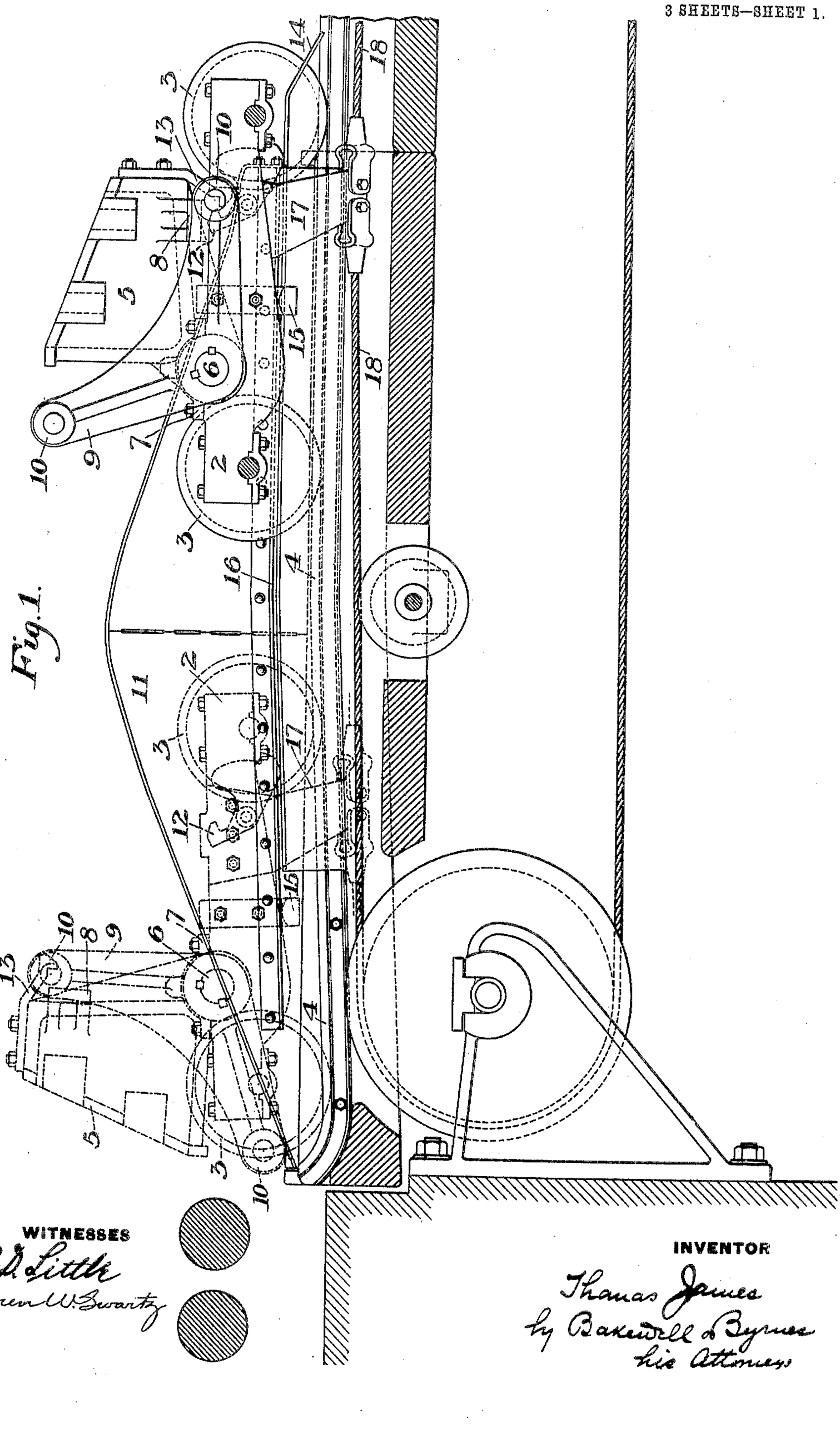
No. 793,877. PATENTED JULY 4, 1905.

T. JAMES.

INGOT DELIVERY CAR.

APPLICATION FILED APR. 18, 1904.

3 SHEETS—SHEET 1.



WITNESSES

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Warren W. Swartz

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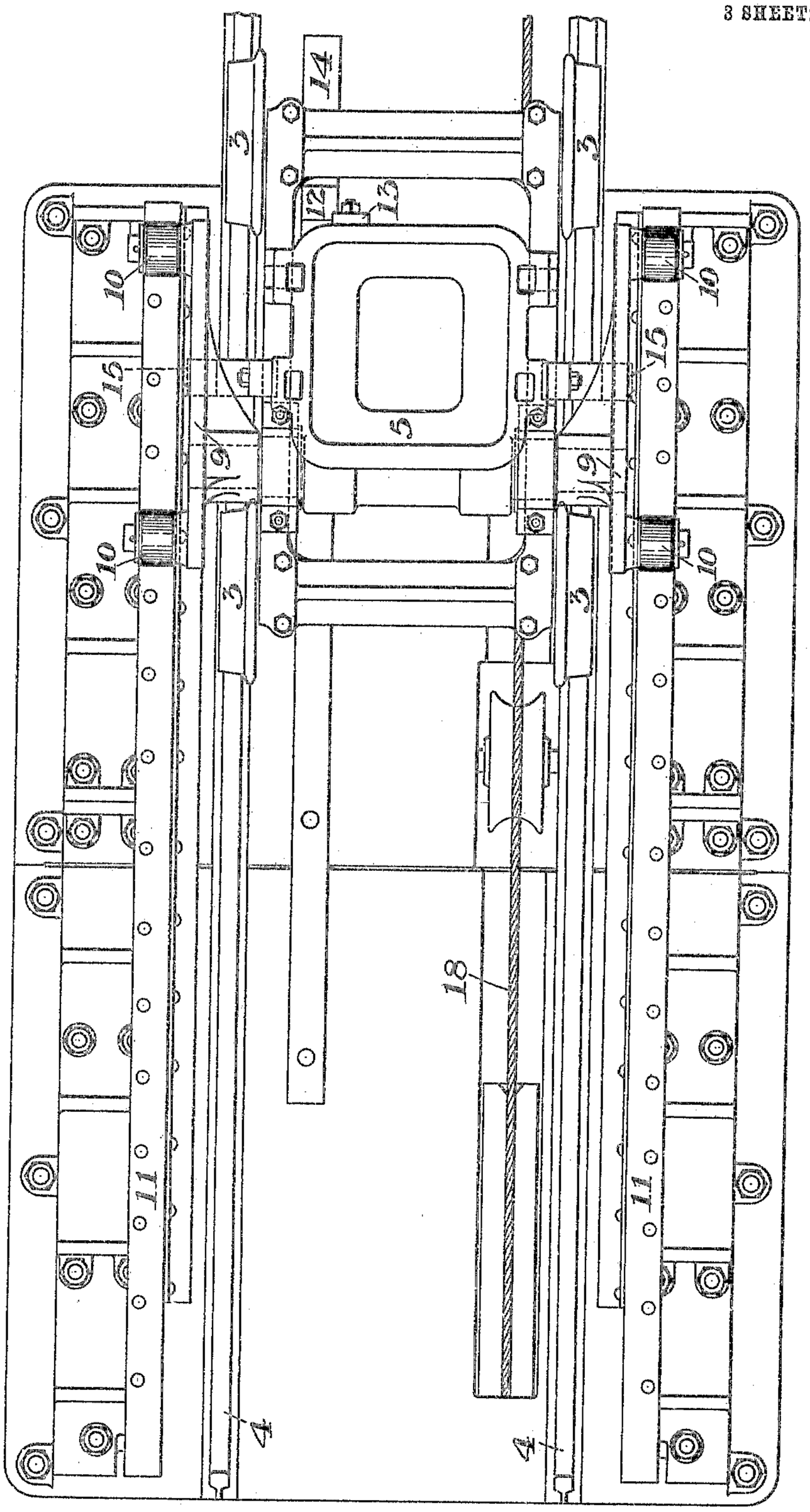
3 SHEETS—SHEET 2.

Fig. 2.



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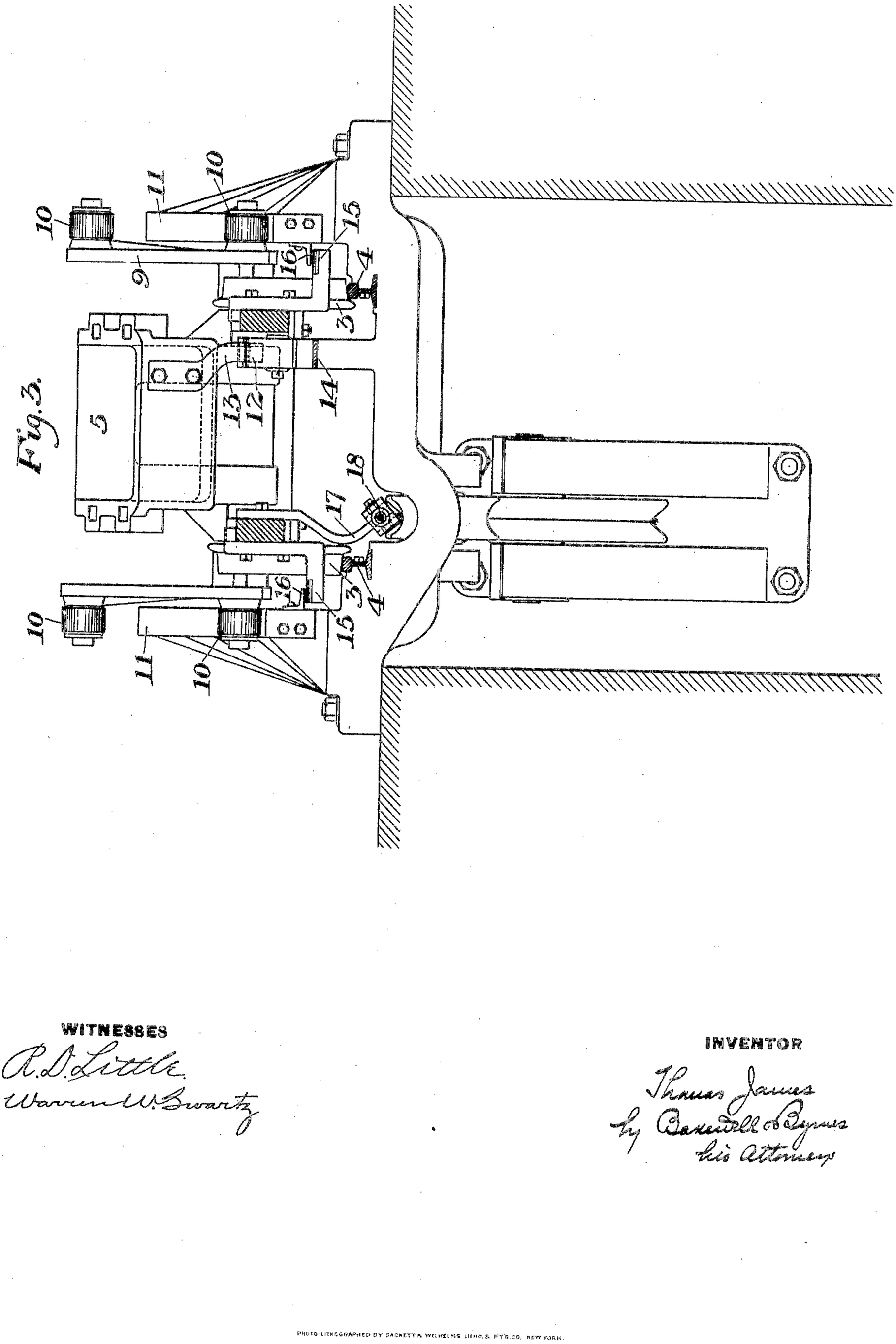
3 SHEETS—SHEET 3.

Fig. 3.



WITNESSES

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No. 793,877. Patented July 4, 1905.

UNITED STATES PATENT OFFICE.

THOMAS JAMES, OF BRADDOCK, PENNSYLVANIA.

INGOT-DELIVERY CAR.

SPECIFICATION forming part of Letters Patent No. 793,877, dated July 4, 1905.

Application filed April 18, 1904. Serial No. 203,635.

To all whom it may concern:

Be it known that I, THOMAS JAMES, of Braddock, Allegheny county, Pennsylvania, have invented a new and useful Improvement in Ingot-Delivery Cars, 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 sectional side elevation of my improved apparatus, showing the car in position about to tilt the ingot-holder and deposit the ingot on the feed-table, the extreme tilted position being shown in dotted lines. Fig. 2 is a top plan view of the car and tilting mechanism. Fig. 3 is a sectional end elevation showing the manner in which the car is held on the track while the holder is being tilted.

My invention relates to cars in which ingots are delivered to and placed on a rolling-mill or other feed-table, and is designed to provide simple and efficient mechanism for tilting the ingot-holder on the car, and thus to discharge the ingot.

It comprises a wheeled car, a tilting holder and mechanism by which the holder is automatically tilted and the ingot deposited on the feed-table and by which the holder is returned to its normal upright position in readiness to receive another ingot, and it also is provided with means by which the car is prevented from being lifted from the track while the ingot-holder is being tilted.

It also comprises a locking device by which the holder is locked in its upright position on the car while the ingot is being placed into the ingot-holder and while the car is being moved along its track between the point at which the holder receives the ingot and the point at which it is tilted and the ingot deposited on the feed-table and mechanism by which the locking device is automatically operated.

In the drawings, in which is shown the preferred form of my invention, 2 represents a car-frame having wheels 3 3, which rest on track-rails 4. The tilting holder 5 is mounted on the car-frame, its front end being carried by the pivot-shaft 6 in the bearings 7 and the rear end by projecting lugs 8, which rest on the car-frame 2 and limit the downward travel of the swinging or rear end of the holder. On each end of the pivot-shaft 6 is a double arm 9, having a friction-roller 10 at each end.

11 11 are holder-tilting guides, the double inclined faces of which tilt the holder 5 through the arms 9 and pivot-shaft 6. By means of the swinging latch 12, which engages with the catch 13 on the rear of the holder 5, the holder is locked, and tilting of the holder on the car-frame is prevented until the holder is automatically released by the engagement and tripping of the latch by the stationary stop 14, located between the tilting guides 10 10.

On each side of the car-frame is a stop 15, which engages with guard-rails 16 on the sides of the tilting guides 10 and keep the car on the track-rails while the ingot-holder is being tilted.

The car is connected by the plate 17 with the driving-rope 18, which is operated by a suitable driving-motor. (Not shown.)

In the operation of my improved tilting car the ingot is placed in the holder and the car moved along the track toward the feed-table. When the car reaches the relative position with the tilting guides shown in Fig. 1, the locking device is released by engagement of the latch with stop 14, and the friction-rollers on the tilting arms then come into contact with the double inclined faces of the tilting guides, which during the balance of the forward travel of the car tilts the ingot-holder forward, so as to discharge the ingot on the feed-table rollers, as is shown by dotted lines in Fig. 1. By means of the stops on the car-frame which engage with the guard-rails on the sides of the tilting guides the possibility of the car being lifted from the track-rails while the holder is being tilted is avoided, and on reversing the direction of the travel of the car the holder is returned to its upright position on the car by the positive action of the tilting arms, and the holder is automatically locked in this position until again released by the forward travel of the car.

Damage to the feed-table which might result from the shock of the ingots falling forward from a nearly perpendicular position is avoided by the use of the double tilting arms, which insure a gradual tilting motion, the front arms serving to restrain the holder from falling forward suddenly.

The advantages of my invention arise from the simple construction of the car and tilting mechanism. All the parts are above the car-track and are easy of access when being renewed or repaired. The possibility of the holder tipping and spilling the ingot out of the holder while being transferred to the feed-table is avoided by the use of the automatic locking device. The holder is returned to its upright position on the car by the positive action of the double arms on the faces of the double inclined tilting guides.

By the use of the double inclined tilting guides and double tilting arms the holder and ingot are under the control of the operator throughout the tilting operation. The car is easily operated and not liable to get out of order. The car may be applied to other uses than the delivery of ingots or delivering to a rolling-mill feed-table, and variations in the construction of the car and tipping mechanism may be made without departing from my invention, since

What I claim is—

1. The combination of a feed-table, a delivery-car having a tilting holder, means for drawing the car to and from the table, and means for positively tilting the holder into horizontal position to discharge an article upon the table and for moving it back positively into upright position; substantially as described.

2. A delivery-car having a tilting holder, arms on the holder and inclined guides engaging the arms, positively tilting the holder forward on the car, and returning it to normal position; substantially as described.

3. A delivery-car having a tilting holder, mechanism for positively tilting the holder forward on the car and automatically-operating mechanism adapted to prevent the car being lifted from its track while the holder is being tilted; substantially as described.

4. A delivery-car having a tilting holder, a locking device for the holder, means for operating the locking device and mechanism for gradually tilting the holder on the car; substantially as described.

5. An ingot-delivery car having a tilting holder, a locking device adapted to lock the holder on the car, means for automatically operating the locking device, and guides by which the holder is tilted forward on and returned to its normal position on the car, and a retaining device for retaining the car on its track while the holder is being tilted; substantially as described.

6. An ingot-delivery car having a tilting holder, a locking device adapted to lock the holder on the car, means for automatically operating the locking device, and means by which the holder is gradually tilted on the car and the ingot deposited on the feed-table; substantially as described.

7. A track, a car movable thereon, a holder pivoted on the car, double arms on the car, a double inclined guide arranged to contact with the arms and cause the tilting of the holder, and means for holding the car on its track while tilting the holder; substantially as described.

8. A track, a car movable thereon, a holder pivoted on the car, double arms on the car, a double inclined guide arranged to contact with the arms and cause the tilting of the holder; substantially as described.

9. A car having a holder pivotally mounted thereon, tilting arms on the pivot-shaft, a guide arranged to tilt the holder in both directions, a locking device to lock the holder on the car and means for automatically operating the locking device; substantially as described.

In testimony whereof I have hereunto set my hand April 18, 1904.

THOMAS JAMES.

Witnesses:

THOMAS W. BAKEWELL,

RICHARD D. LITTLE.