

No. 740,103.

PATENTED SEPT. 29, 1903.

A. J. DIESCHER.
MECHANISM FOR RABBLING MATERIALS.

APPLICATION FILED NOV. 1, 1902.

NO MODEL.

4 SHEETS—SHEET 1.

FIG. 1.

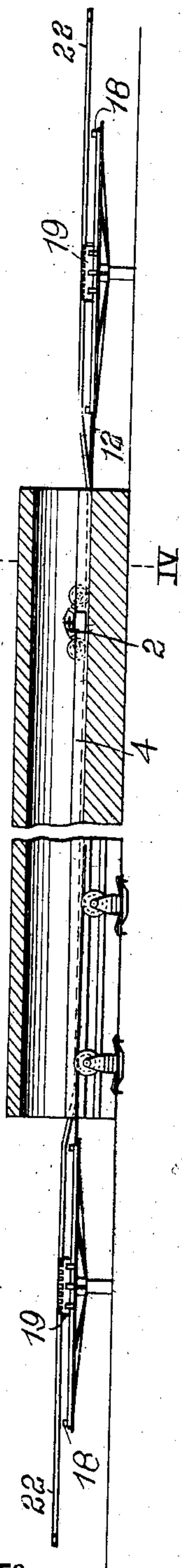
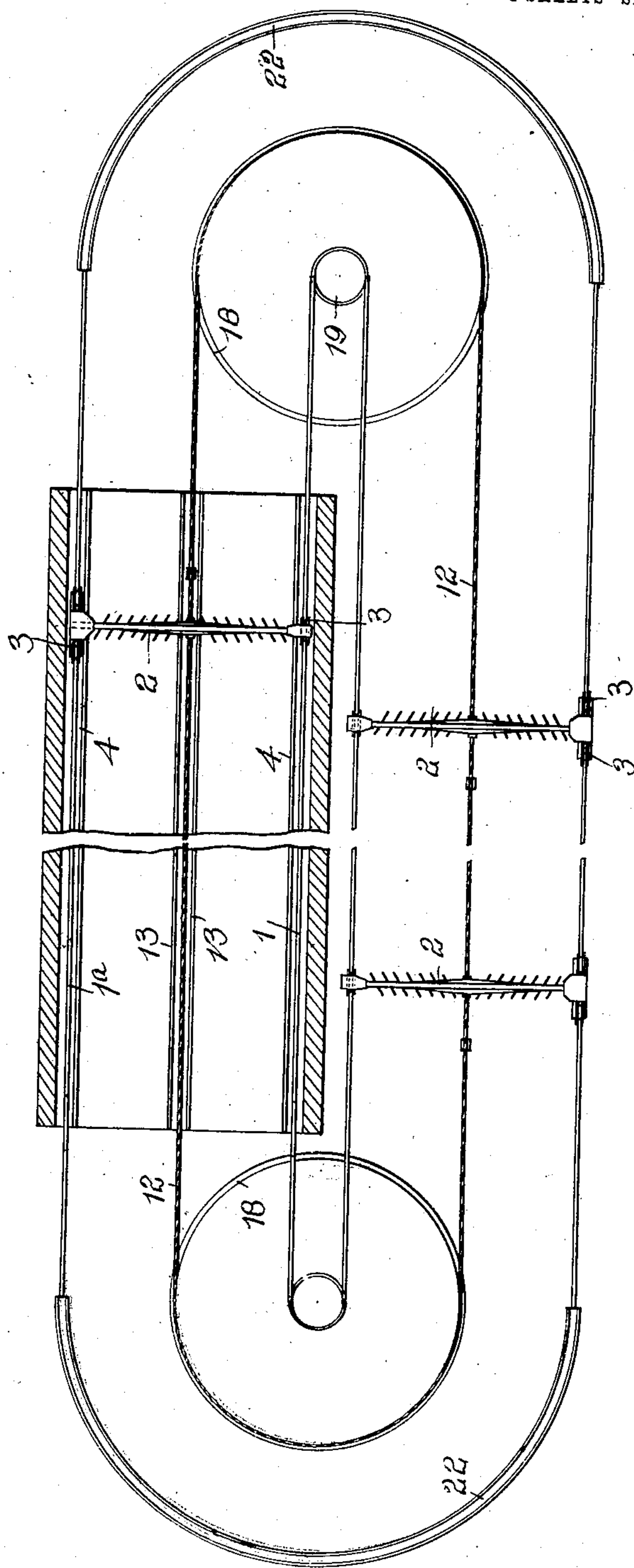


FIG. 2.



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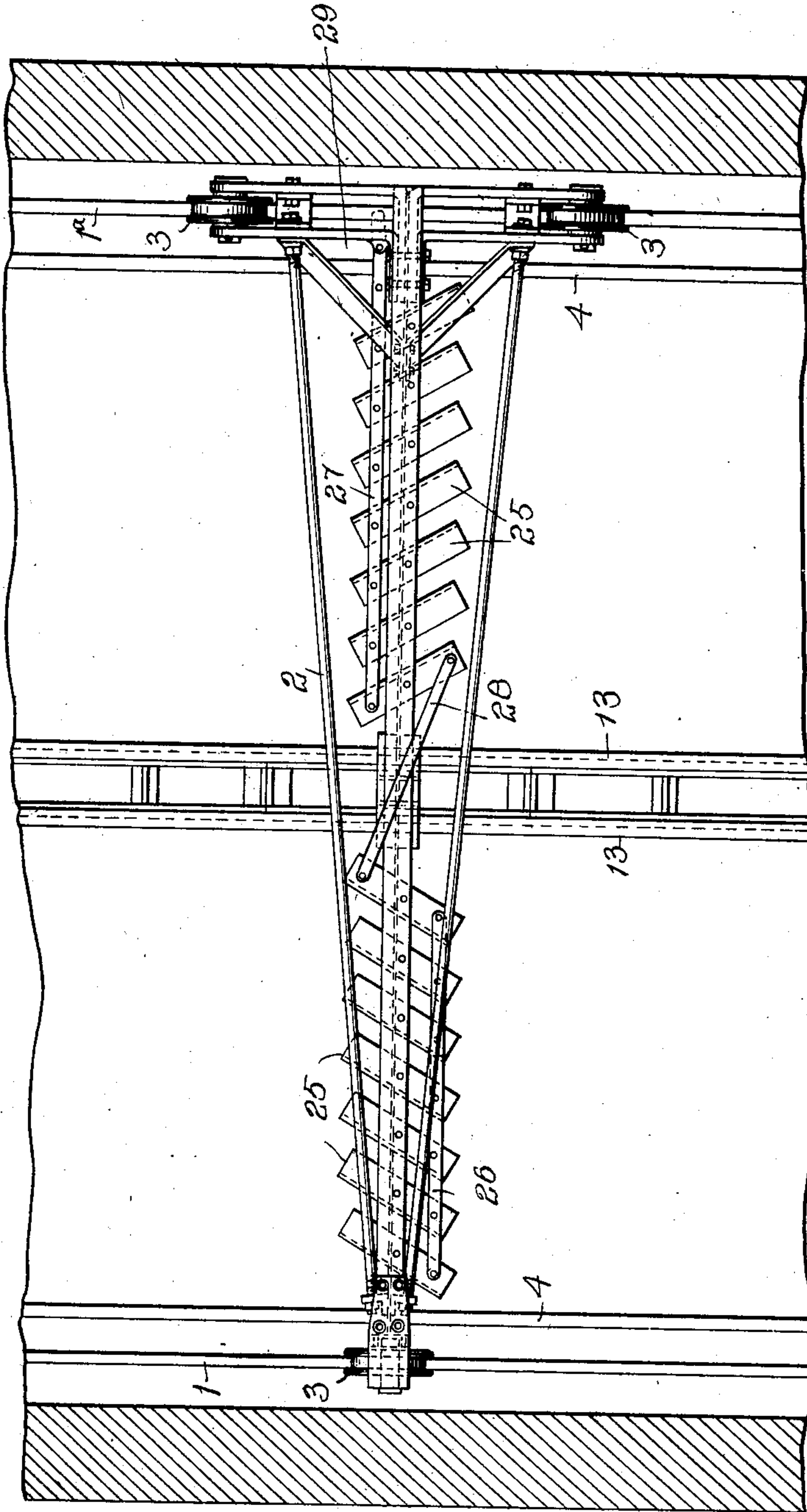
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4 SHEETS—SHEET 2.

FIG. 3.



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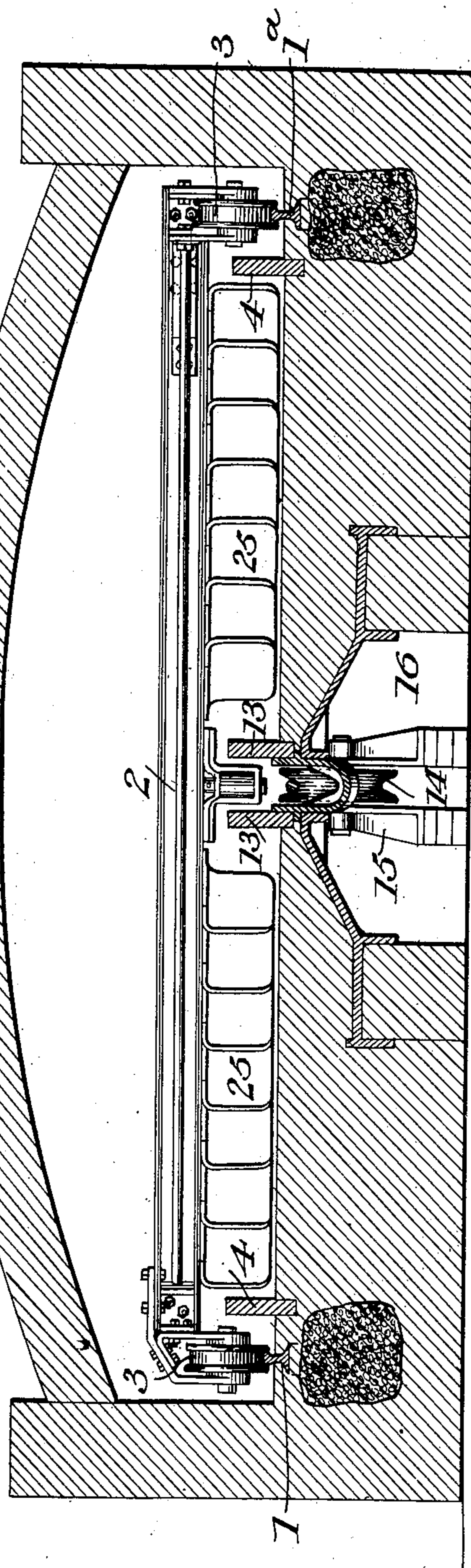
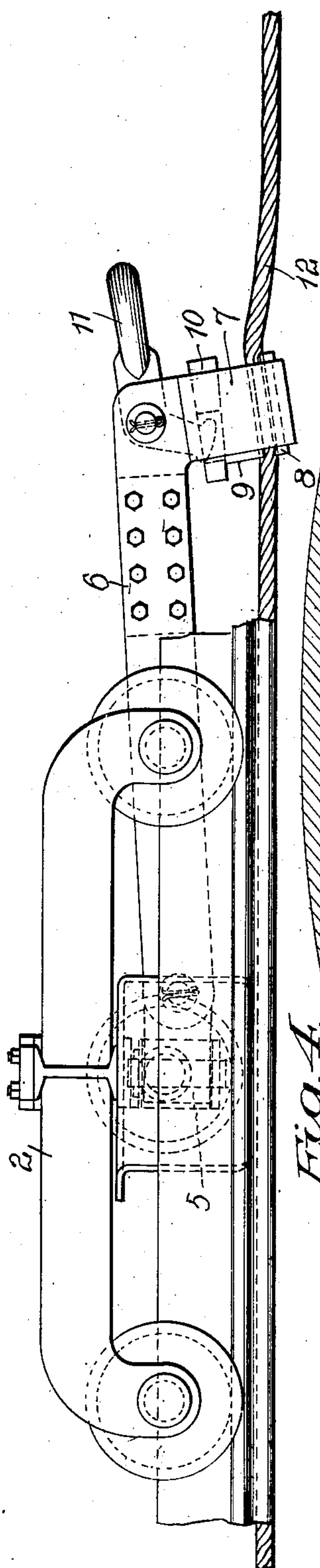
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4 SHEETS—SHEET 3.



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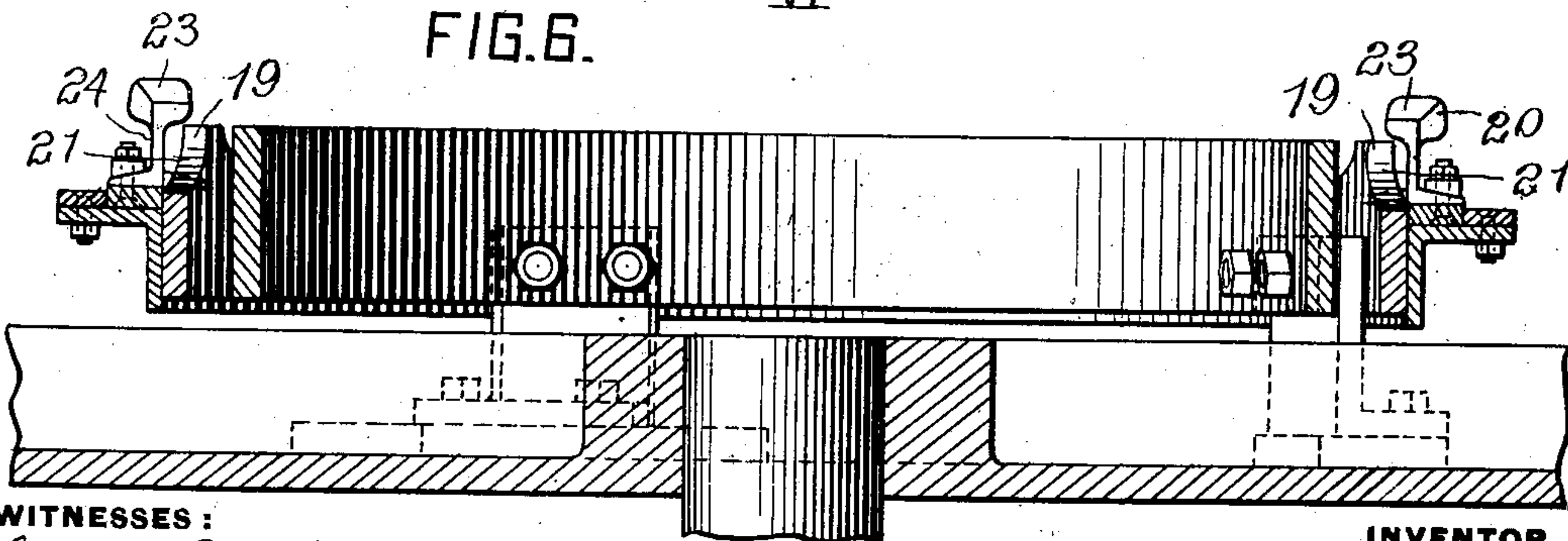
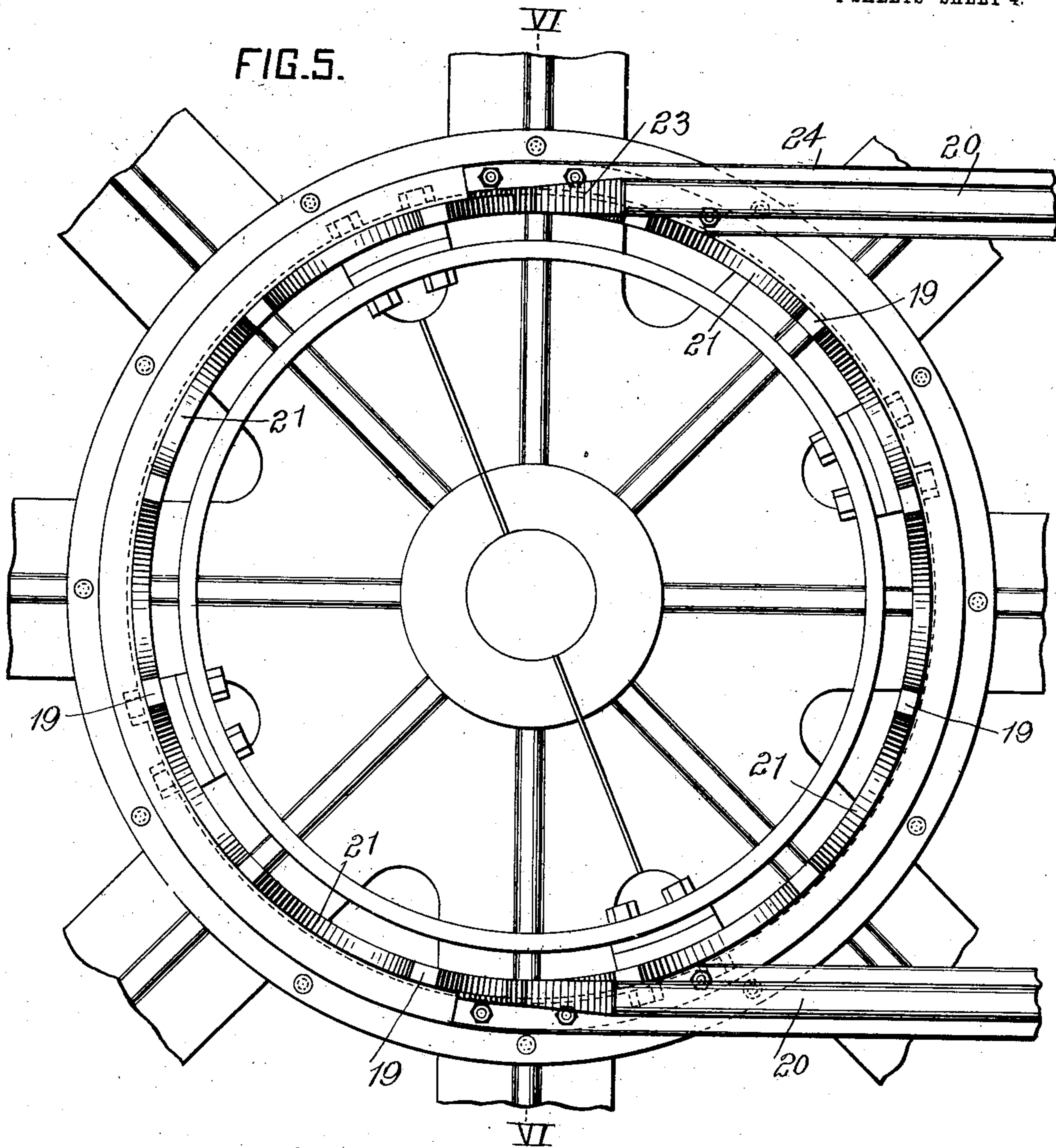
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

ALFRED J. DIESCHER, OF PITTSBURG, PENNSYLVANIA.

MECHANISM FOR RABBLING MATERIALS.

SPECIFICATION forming part of Letters Patent No. 740,103, dated September 29, 1903.

Application filed November 1, 1902. Serial No. 129,699. (No model.)

To all whom it may concern:

Be it known that I, ALFRED J. DIESCHER, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Mechanism for Rabbling Materials, of which improvements the following is a specification.

The invention described herein relates to certain improvements in furnaces for roasting ores, &c., and in mechanism for rabbling the material and causing a gradual progressive movement of the material through the furnace.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a sectional elevation of a roasting-furnace having my improvements applied thereto. Fig. 2 is a sectional plan of the same. Fig. 3 is a sectional plan of a portion of the furnace on an enlarged scale, showing the rabble. Fig. 4 is a sectional elevation on a plane indicated by the line IV IV, Fig. 1. Fig. 5 is a plan view of the central portion of the rabble-carrying wheel. Fig. 6 is a sectional elevation of the same on a plane indicated by the line VI VI, Fig. 5; and Fig. 7 is a detail view, on an enlarged scale, illustrating the manner of connecting the rabble to the draft-rope.

In the practice of my invention rails 1 and 1^a are arranged in the furnace contiguous to the side walls for supporting the frame 2 of the rabble. The frame is provided at its ends with wheels 3, adapted to move along the rails. As shown in Fig. 2, it is preferred that the end of the frame moving along the outer or larger circle should have two supporting-wheels to prevent tipping of the frame, while the opposite or inner end is provided with only one wheel. The use of only one wheel at the inner end is not essential, but only convenient as regards the connection of the frame with the carrying-wheel, as hereinafter described.

In order to prevent the material from interfering with the movement of the wheels on the rails, retaining-walls 4 are arranged inside of the rails to prevent the lateral spreading of the material.

The rabble-frame is detachably connected

to the rope by a mechanism consisting of a block 5, pivotally connected to the frame, and a bar 6, pivotally connected to the block. These pivotal connections are so constructed and arranged that the outer end of the bar is free to swing vertically and horizontally. The head 7 on the outer end of the bar 6 is slotted for the passage of the rope and for the reception of the rope-gripping devices, which consist of stationary and movable blocks 8 and 9, a longitudinally-movable wedge-block 10, and the operating-handle 11. This handle is preferably made in the form of a bell-crank pivotally mounted in the head and having one arm in engagement with the wedge, while the other arm extends forward in line, or substantially so, with the bar.

The rope 12 moves along a channel-way formed by the retaining-walls 13 and is supported, except when in tension, by pulleys 14, loosely mounted on standards 15, arranged in a tunnel 16, extending along under the channel-way. The upper portions of the peripheries of the pulleys project through slots in the bottom plates of the channel-way. It will be observed that the rope is entirely above the tunnel, being at all times in the channel, the side walls of which tend to protect the rope from excessive heat.

In order to transfer the rabble-frames from one side of the furnace to the other, I arrange two turning-tables at each end of the furnace, as shown in Figs. 1 and 2, one continuous line of rails having two half-circles and straight portions and short sections of rails. The turn-tables, which support and carry the rabbling-frames from one line of tracks to the other, are provided with two rims or peripheries 18 and 19, and the tables are so proportioned and arranged, as shown in Figs. 2, 5, and 6, that a line coinciding with the longitudinal axis of the furnace will be tangential to the outer rims or peripheries 18 of the tables and the short rail-sections 20, which are prolongations or extensions of the line of rails 1, will be tangential, or approximately so, to the inner peripheries or rims of the tables. The rope 12, whereby the rabble-frames are moved, passes around the rims or peripheries 18 of the tables, one or both of which are driven. The rims engage the rope

frictionally or in another suitable manner to effect the desired movements of the rabble-frames.

As shown in Figs. 5 and 6, the rail-sections 20 are so arranged that their outer ends lie immediately above the inner rims 19, which are provided with suitable means for engaging and supporting the end of the frame traversing the rails 1. In the construction shown the rims are provided with the notches 21, suitable for the reception of the wheels traversing the rails 1. As the frame is drawn along by the rope the wheel on the inner frame will drop from the rail-section 20 into one of the notches 21, and as the draft mechanism of the frame is at the same time clamped to the outer periphery or rim of the table the frame will be carried around thereby, the outer end of the frame being merely supported by the curved section of rails 22 to prevent sagging down. As the table completes a half-revolution the wheel will be raised from the notch in the rim 19 by the inclined extension 23 of the rail-section 24 and pass onto said rail. At the opposite end of the furnace this operation is repeated except that the wheel will be raised from the notch by the inclined extension 23 of the rail-section 20. While the frames are between the turn-table they can be disconnected from the rope and allowed to cool.

It is desirable that the draft-rope should be maintained at about the level of the floor of the furnace, and to this end the turn-tables are arranged at such a height that the portion of the outer rim or peripheries 18, with which the rope engages, is on or approximately on a level with the floor of the furnace, as shown in Fig. 1. With such an elevation of the turn-table it is necessary to raise the rabble in order that its inner end should engage the inner rim of the turn-table and to correspondingly lower the rabble-frame at the opposite end of the furnace. This vertical movement of the frame can be conveniently done by inclining portions of the lines of track intermediate of the turn-tables and the furnace.

As shown in Fig. 3 the blades 25 are arranged on the frames in two series, the blades of one series being preferably at an angle to those of the other series. In order to vary the transverse and longitudinal movements of the material, it is preferred that the blades should be pivotally connected to the frames, so that their angular position relative to the direction of movement may be adjusted at will. While not limiting the invention to any particular construction or arrangement of blade adjusting and hold mechanism, that shown in Fig. 3 has been found convenient. As therein shown the blades of one series are connected together by a bar 26 and those of the other series by a bar 27, the two series being connected by a bar 28. One of the bars,

as 27, can be used as an operating-bar, being extended at one end and provided with means for engaging the frame, as holes in the bar, and a pin 29 on the frame.

I claim herein as my invention—

1. The combination of a roasting-furnace, a rabbling-frame, turning-tables at the ends of the furnace for carrying or transferring the rabbling-frame and a track connecting said tables, substantially as set forth.

2. The combination of a roasting-furnace, a rabbling-frame, a continuous line of track passing through and outside of the furnace, a section of track passing through the furnace, turn-tables having rims, said tables being so arranged at opposite ends of the furnace that the rims are tangential to the section of track, and a section of track outside of the furnace and intermediate of the tables and tangential to said rims, substantially as set forth.

3. The combination of a roasting-furnace, a rabbling-frame, a continuous line of track passing through and outside of the furnace, for supporting one end of the frame, a section of track passing through the furnace, a section of track outside of the furnace, and means for supporting and transferring the opposite or inner end of the frame from one section of track to the other, substantially as set forth.

4. The combination of a roasting-furnace, a rabbling-frame, a continuous draft-rope passing through and outside of the furnace, a continuous line of track passing through and outside of the furnace for supporting the outer end of the frame, a section of track passing through the furnace, two turn-tables each provided with two rims, the tables being so arranged that the rims are tangential to the line of movement of the draft-rope and the track-section respectively, the inner rims being provided with means for engaging the inner end of the frame, and a track-section outside of the furnace and tangential to the inner rims of the tables, substantially as set forth.

5. The combination of a roasting-furnace, a rabbling-frame, a draft-rope passing through and outside of the furnace, turn-tables each provided with rims, the rim for engagement with the rope being in or approximately in the plane of the floor of the furnace, and the other or inner rim being provided with means for engagement with the rope, and tracks extending from the furnace to the turn-table, said tracks having inclined portions, substantially as set forth.

In testimony whereof I have hereunto set my hand.

ALFRED J. DIESCHER.

Witnesses:

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