

A. J. DIESCHER.
MECHANISM FOR RABBLING MATERIALS.

APPLICATION FILED NOV. 1, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

FIG. 1.

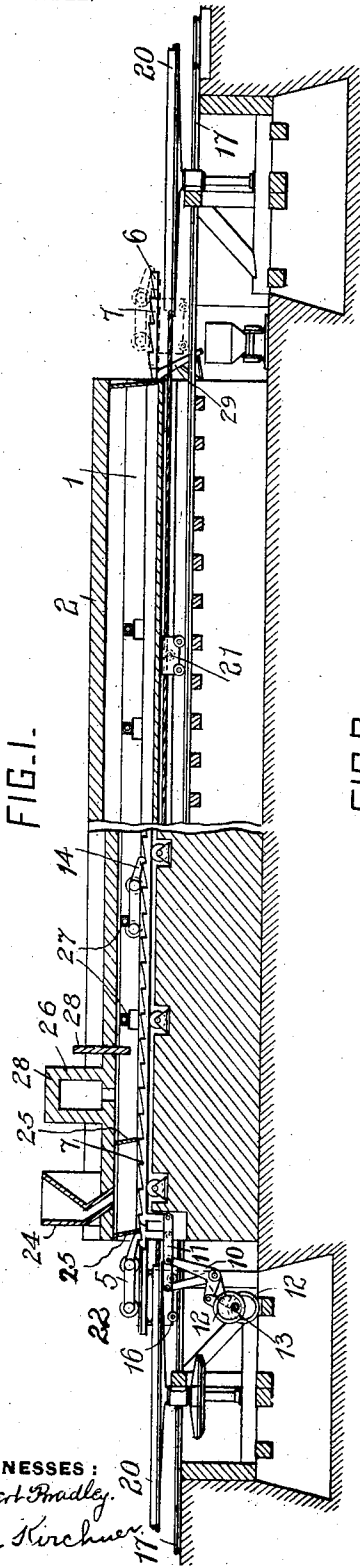
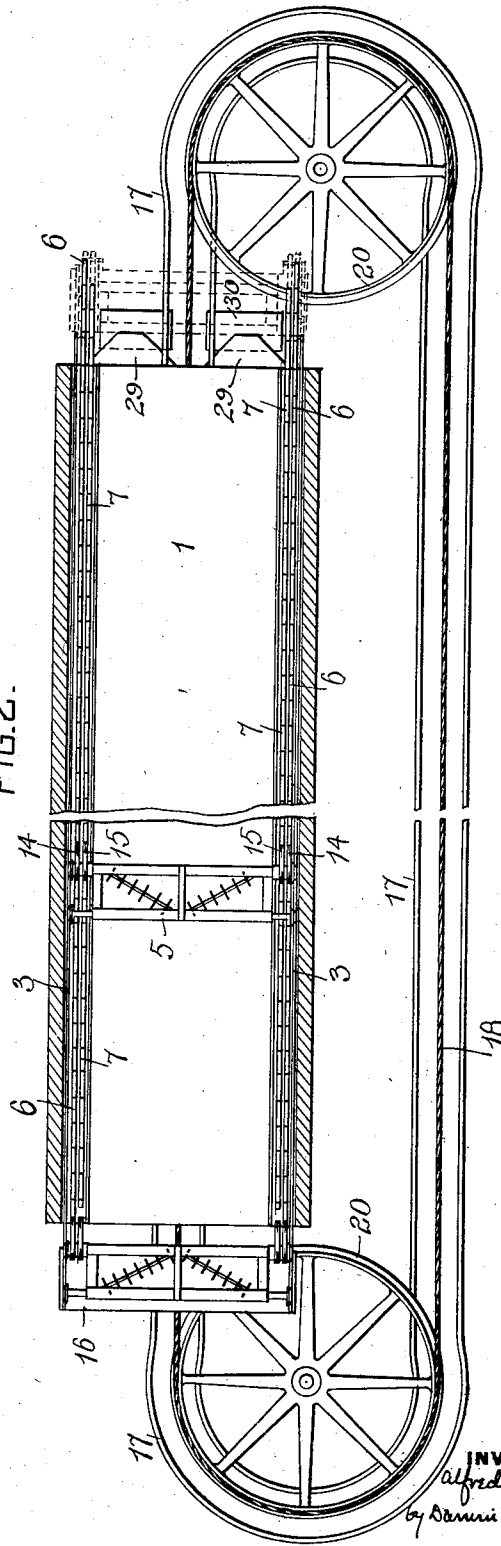


FIG. 2.



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NO MODEL.

2 SHEETS—SHEET 2.

FIG. 3.

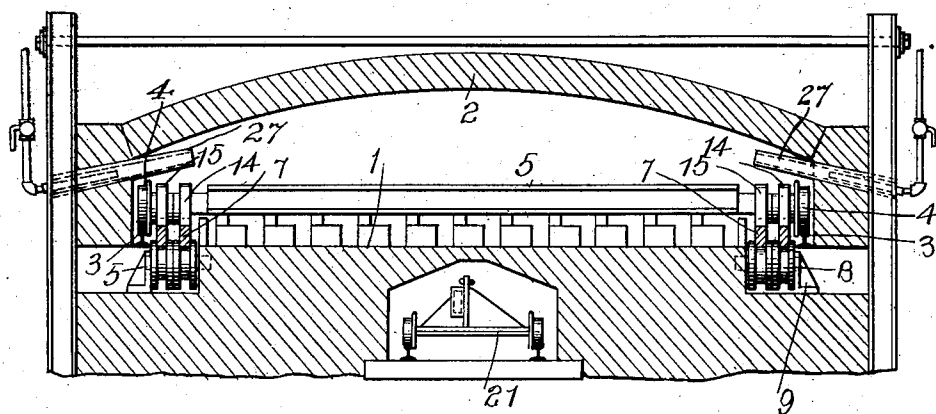


FIG. 4.

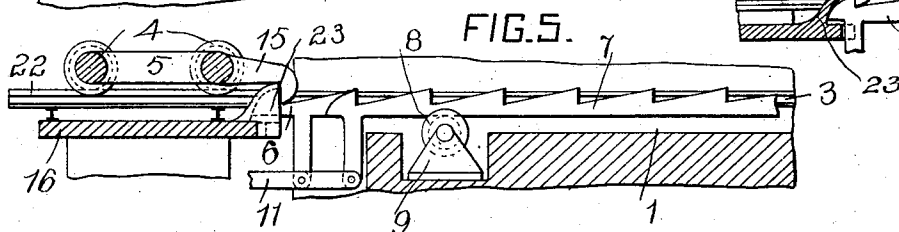
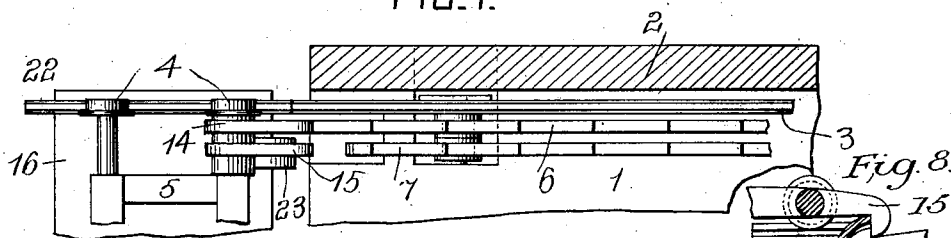


FIG. 6.

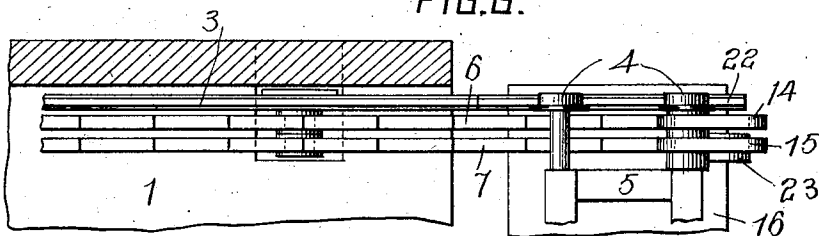
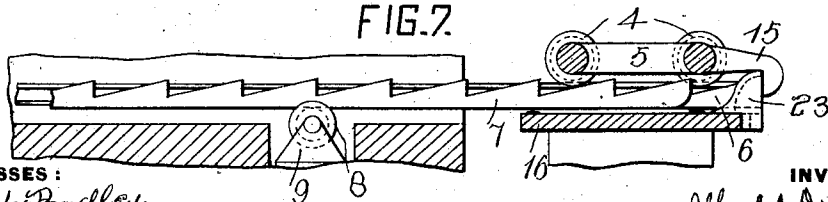


FIG. 7.



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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. 740,102, dated September 29, 1903.

Application filed November 1, 1902. Serial No. 129,698. (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 mechanism for operating rabbles for ore-roasting furnaces, and has for its object a construction and combination of mechanical devices whereby the rabbles may be moved step by step through the furnace and automatically delivered to and taken from a transfer mechanism whereby the rabbles are shifted from the discharging to the charging end of 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 improved rabble-operating mechanism applied thereto. Fig. 2 is a sectional plan view of the same. Fig. 3 is a transverse section on an enlarged scale. Figs. 4 and 5 are a plan and an elevation, respectively, of the rabble-shifting mechanism at the charging end of the furnace. Figs. 6 and 7 are similar views of the shifting mechanism at the discharging end of the furnace, and Fig. 8 is a sectional detail view showing the transfer-car and the ends of the racks at one end of the furnace.

In the practice of my invention the furnace is made with a level bed or hearth 1 with a transversely-arched roof 2. Rails 3 are arranged along the side walls of the furnace and support the wheels 4, which are mounted on suitable journals on the ends of the rabble-frame 5. Two pairs of rack-bars 6 and 7 are arranged parallel and adjacent to the rails, said bars being guided and supported by friction-wheels 8, mounted in suitable supporting-frames 9, located at intervals along the furnace. The bars of each pair are alternately reciprocated on their supporting-wheels by any suitable mechanism—such, for example, as that shown in Fig. 1. This mechanism consists of bell-crank levers 10, having one end connected by links 11 to the rack-bars and their opposite ends connected

to the straps of eccentrics 12 on the driven shaft 13. These eccentrics (four in number) are so arranged on the shaft that the bars 6 of each pair will be shifted forwardly, while the bars 7 of the pairs will be moved in the opposite direction. The rabble-frame is provided with two pairs of hooks 14 and 15, pivotally connected to the frame in line with the respective rack-bars, so that the free ends of the hooks will normally rest on the bars. In such a construction the hooks 14 will engage the teeth on bars 6 when the latter move forward, and the bars 7, which at the same time are moved rearwardly, will slide under the hooks 15. Several rabble-frames are generally employed in order that a frequent turning of the material may be effected, and in order that the latter may be moved along toward the discharge end and out of the furnace the frames should traverse the furnace always in the same direction. To these ends provision is made for transferring the rabble-frames from one end of the furnace to the other. Any suitable form of construction of mechanism may be employed for this purpose—such, for example, as that shown, consisting of a car 16, arranged on a track 17, extending from one end of the furnace to the other, as shown in Fig. 2. This car is shifted back and forth from one end to the other by means of an endless chain or rope 18, passing around drums 20, one of which is driven by reversible mechanism. As shown, one leg of the rope follows the track 17, while the other leg passes through a tunnel under the hearth of the furnace, being supported in its back-and-forth movement by a buggy 21, moving on rails in the tunnel, as shown in Figs. 1 and 3. As shown in Figs. 1 and 2, the car 16 is so supported by the track 17 at the ends of the furnace that short rail-sections 22 on the car will be in alinement with the rails 3, passing through the furnace, so that the rabble-frame can pass directly off and onto the car. The movement of the rabble-frame onto and off the car is effected by means of the rack-bars 6 of each pair, said bars being extended at each end, as shown, so that by their final forward movement they will by reason of their engagement with the hooks 14 so shift the rabble-frame that the hooks 15 will engage lugs 23 on the car and hold the

frame on the car. When the car, with the rabble-frame, is in position at the front end of the furnace, the first teeth on the bars 6 will engage the hooks 14 and in their forward movement drag the frame from the car into the furnace. The furnace is provided at its front end with a charging-hopper 24, having a spout projecting through the roof between the swinging doors 25, which will permit the rabblers and ore to pass, but will check the flow of the products of combustion beyond the outlet-flue 26. Any suitable means may be employed for heating the furnace, but a gaseous fuel is preferred, the gas being introduced through the burners 27. The flow of products of combustion to the outlet-flue is controlled by a damper 28. At the discharge end inclined chutes 29 are provided for directing the ore into the cars 30 as it drops from the furnace.

I claim herein as my invention—

1. A roasting-furnace in combination with a frame carrying rabbling-blades and provided with hooks, rack-bars extending through the furnace and means for reciprocating the bars alternately, substantially as set forth.

2. A roasting-furnace in combination with a car, means for transferring the car from one

end of the furnace to the other, a rabbling-frame provided with hooks, rack-bars extending through the furnace, and means for reciprocating the bars alternately whereby the rabble-frame may be moved from the car through the furnace and onto the car, substantially as set forth.

3. A roasting-furnace in combination with a rabbling-frame, a carrying-car, means for shifting the frame onto and from the car, means for transferring the car from one end of the furnace to the other, and means for moving the frame through the furnace, substantially as set forth.

4. A roasting-furnace in combination with a rabbling-frame, a carrying-car, means for effecting a step-by-step movement of the frame through the furnace and onto the car; a track for said car extending from one end of the furnace to the other, and means for shifting the car along said track, substantially as set forth.

In testimony whereof I have hereunto set my hand.

ALFRED J. DIESCHER.

Witnesses:

DARWIN S. WOLCOTT,
F. E. GAITHER.