Dec. 31, 1929. J. R. LINNEY 1,741,943

SINTERING MACHINE

Filed Oct. 9, 1928

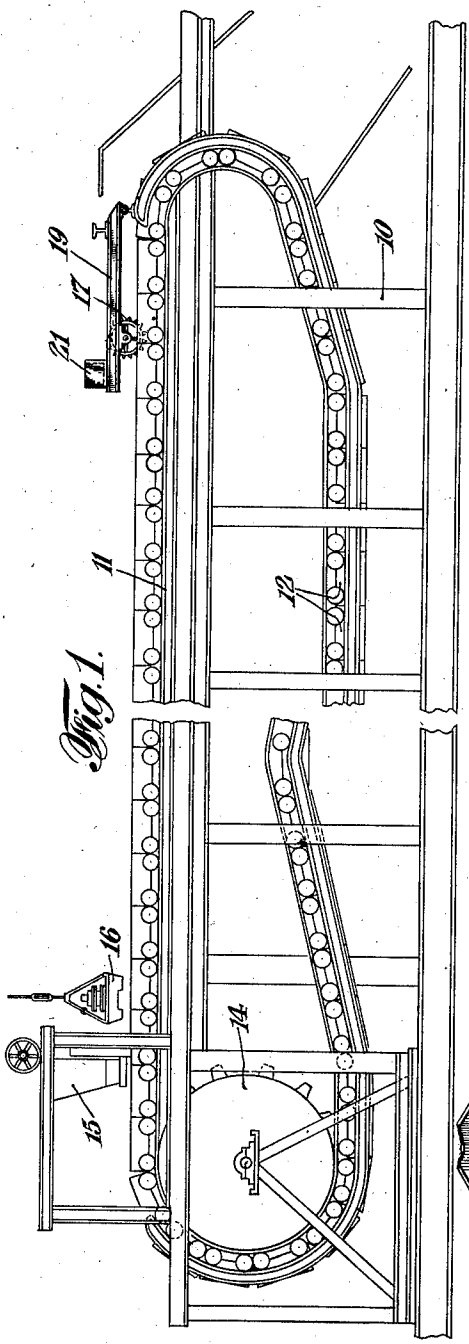


Fig. 1.

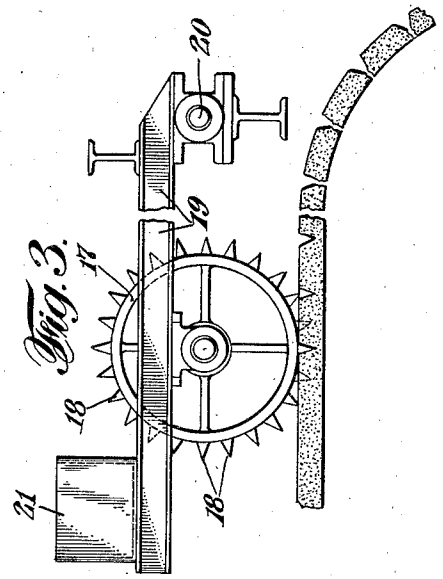


Fig. 3.

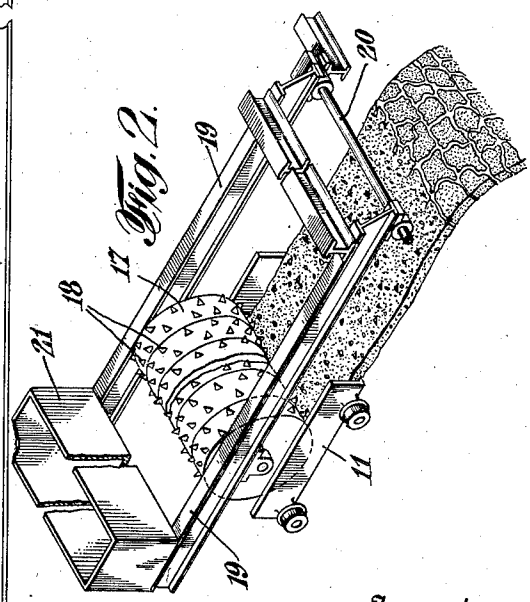


Fig. 2.

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UNITED STATES PATENT OFFICE

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SINTERING MACHINE

Application filed October 9, 1928. Serial No. 311,294.

This invention relates to ore sintering machines and particularly to sintering machines provided with continuously travelling grates made up of articulated elements or pallets.

An object of this invention is an improved sintering machine provided with simple and efficient mechanism for breaking up the sintered ore as it leaves the machine.

According to this invention there is provided adjacent the discharge end of the sintering machine a roller having spikes or teeth projecting from its peripheral surface. This roller is carried by a frame pivotally attached to the machine and provided with means for receiving weights to force the roller downwardly into contact with the bed of sintered ore as the same approaches the discharge end of the machine. The teeth are effective to punch holes in the sinter bed so that as it leaves the machine it breaks up into numerous small pieces which can be readily handled and easily charged into a smelter.

Other objects, novel features and advantages of this invention will be apparent from the following specification and accompanying drawings wherein:

Fig. 1 is a side elevation of a machine embodying the invention:

Fig. 2 is a perspective view of the roller and its support and

Fig. 3 is a side elevation of the same.

The sintering machine consists of a suitable supporting frame 10 provided with an endless track 11 upon which a train of pallets or grate bars 12 is adapted to travel and a sprocket wheel 14 for elevating and propelling the pallets. At the feed end of the upper portion of the track 11 there is provided a hopper 15 supported over the track for feeding ore onto the pallets. Any usual igniting means 16 may be employed for igniting the oil under the pallets. Between the feeding hopper and the discharge end of the machine the pallets form a continuous moving grate. The speed of the grate and the length of the machine are regulated so as to produce the desired degree of combustion of the ore before it is discharged.

The sinter bed is discharged as the pallets move around the discharge end of the machine, the sinter being broken off by its own weight. Normally the sinter breaks up into slabs or the like of such large size that they cannot be easily loaded into cars or charged into a blast furnace.

In the machine herein described means are provided for causing the sinter to break up into small pieces which can be readily loaded into a car and charged into a smelter. This means comprises a roller 17 mounted to roll on the sinter bed as it approaches the discharge end of the machine. This roller is provided with spikes 18 which dig into the sinter bed at frequent intervals and weaken it at such places. This roller is carried by a frame 19 pivoted at one end to the frame of the machine by means of the rod 20. At the opposite end of the frame 19 there is provided a box 21 into which weights may be introduced to supply the necessary pressure to drive the spikes 18 into the sinter bed.

As the pallets 12 move along the track 11 and carry the sinter bed toward the discharge end of the machine, the sinter bed passes under the roller 17 and is weakened at numerous places by holes produced therein by the spikes 18. When the sinter reaches the discharge end of the machine and the pallets move downwardly around the discharge end the sinter breaks into small pieces and drops off the grate. These pieces may be readily loaded into cars and charged into the smelter. The roller constitutes a simple, inexpensive and efficient means for insuring the breaking up of the sinter into pieces of convenient size.

I claim:

In a sintering machine a frame, a plurality of separate grates, an endless track therefor, a second frame pivotally supported from said first frame, a roller carried by said second frame and arranged to contact with the sinter adjacent the discharge end of the machine, means for applying pressure to said roller to force it into contact with the sinter and spikes carried by said roller.

In testimony whereof, I have signed my name to this specification.

JOSEPH R. LINNEY.