April 21, 1942. L. LAFRENIERE 2,280,423

CINDER GRINDER

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Fig. 1.

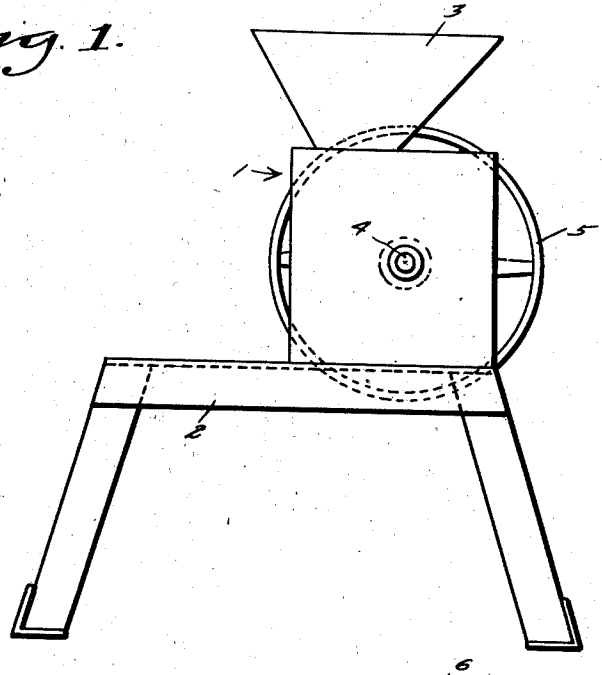


Fig. 2.

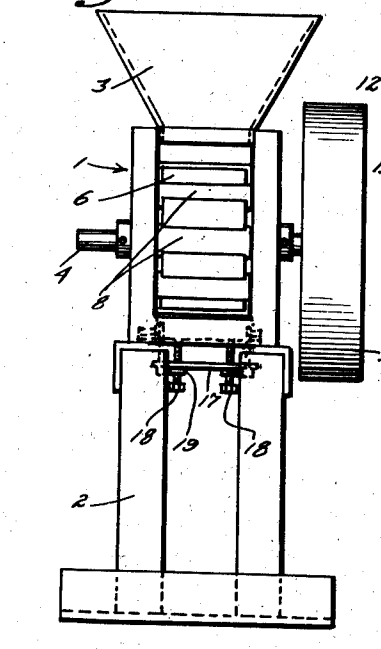
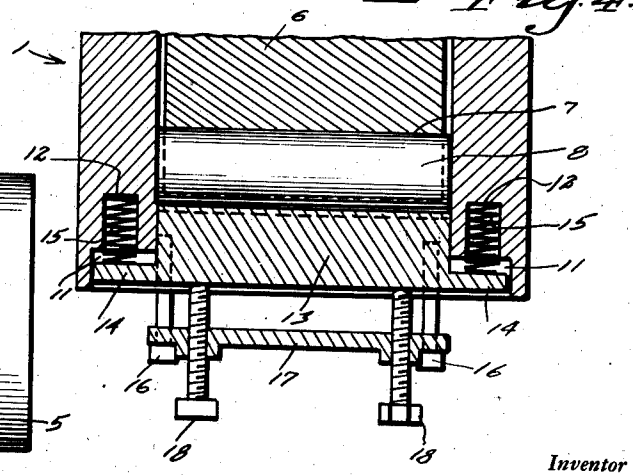


Fig. 4.



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Fig. 3.

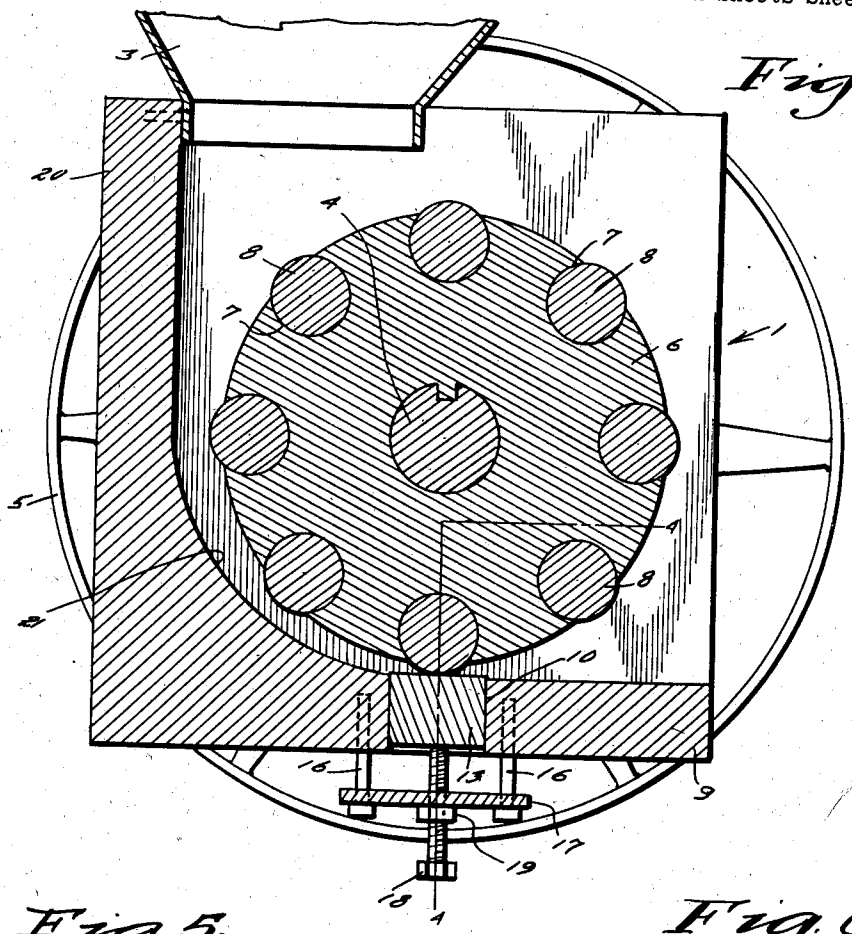


Fig. 5.

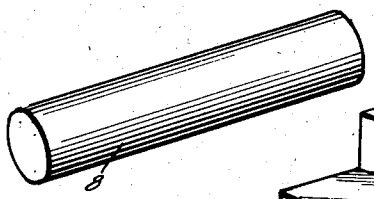
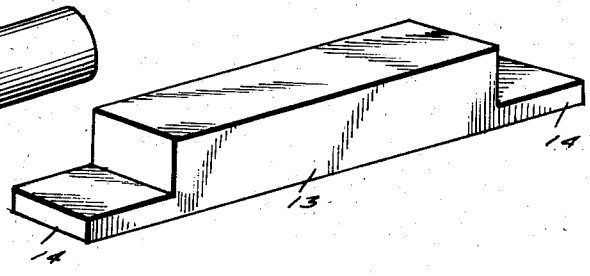


Fig. 6.



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UNITED STATES PATENT OFFICE

2,280,423

CINDER GRINDER

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Application March 12, 1941, Serial No. 382,994

1 Claim. (Cl. 83—14)

The present invention relates to new and useful improvements in cinder grinders and has for one of its important objects to provide, in a manner as hereinafter set forth, a machine of this character comprising a novel construction and arrangement whereby the cinders may be crushed or reduced to any desired size.

Another very important object of the invention is to provide a grinder of the aforementioned character wherein the parts may be expeditiously adjusted to compensate for wear or renewed when necessary.

Other objects of the invention are to provide a cinder grinder of the character described which will be comparatively simple in construction, strong, durable, highly efficient and reliable in use, compact, portable and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawing wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a view in side elevation of a cinder grinder constructed in accordance with the present invention.

Figure 2 is a view in front elevation of the device.

Figure 3 is a view in vertical longitudinal section through the device with the stand omitted.

Figure 4 is a cross sectional view, taken substantially on the line 4—4 of Figure 3.

Figure 5 is a detail view in perspective of one of the grinding members.

Figure 6 is a perspective view of the adjustable block.

Referring now to the drawing in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a cast iron housing which is designated generally by the reference numeral 1, said housing being mounted on a suitable stand 2. As illustrated to advantage in Figure 3 of the drawing, the housing 1 is open at its top and front. Mounted on the rear portion of the housing 1 for discharging cinders thereinto is a hopper 3.

Extending transversely through the housing 1 and journaled in suitable bearings provided therefor is a shaft 4. Fixed on one end portion of the shaft 4 is a pulley 5 for receiving a drive belt (not shown) from any suitable source of power.

Also fixed on the shaft 4 and operable in the housing 1 is a cast iron drum 6. Formed in the periphery of the drum 6 and extending from end to end of said drum are segmental recesses or pockets 7. The pockets 7 are for the reception of grinding rods 8 of circular cross section. The rods 8 are of suitable metal and fit tightly in the pockets 7. However, the grinding rods 8 are removable from the pockets 7 and may be rotatably adjusted therein. The construction and arrangement, it will be noted, is such that the grinding rods 8 project beyond the periphery of the drum 6.

The bottom 9 of the housing 1 has formed therein a transversely elongated opening or slot 10. The lower portions of the end walls of the slot 10 are provided with recesses 11 (see Figure 4) from which sockets 12 extend upwardly in the sides of the housing 1.

Slidably mounted for vertical adjustment in the slot or opening 10 is a block 13 of suitable metal. The block 13 terminates in reduced end portions 14 which project into the recesses 11. Coil springs 15 in the sockets 12 are engaged with the end portions 14 for yieldingly resisting upward movement of the block 13.

Depending from the bottom 9 of the housing 1 adjacent the slot 10 are headed stud bolts 16. Mounted on the bolts 16 is a metallic plate 17. It will be observed that the plate 17 extends beneath the block 13. Threadedly mounted at 19 in the plate 17 and operatively engaged with the block 13 are adjusting screws 18.

It is thought that the operation of the device will be readily apparent from a consideration of the foregoing. Briefly, the cinders are deposited in the hopper 3 and flow by gravity therefrom into the rear portion of the housing 1 between the drum 6 and the back 20 of said housing. As also shown to advantage in Figure 3 of the drawings, the lower, rear portion of the housing 1 is formed to provide a concave 21 which is so shaped and arranged that the space between this portion of the housing and the drum 6 progressively diminishes toward the block 13. It may be well to here state that the drum 6 rotates in a counter-clockwise direction. The cinders are thus carried downwardly and forwardly and are crushed on the way. The final reduction of the cinders takes place when they are carried between the grinding rods 8 and the stationary block 13. The ground cinders are thrown from the housing 1 through the open front thereof. Through the medium of the screws 18, the block 13 may be adjusted as de-

sired toward or away from the drum 6. The coil springs 15 retain the block 13 in engagement with the adjusting screws 18 at all times. As wear on the grinding rods 8 occurs they may be removed from the pockets 7, turned slightly and replaced, thus presenting an unworn surface for use.

It is believed that the many advantages of a conder grinder constructed in accordance with the present invention will be readily understood and although a preferred embodiment of the machine is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

In a grinding machine of the class described including a housing having a longitudinally extending slot in its bottom, bolts depending from the housing adjacent the slot, a plate mounted on said bolts and spaced from the housing, a block mounted for sliding adjustment in the slot, screws threadedly mounted in the plate and engaged against the block for adjusting said block vertically, and springs mounted in the housing and engaged with the block for yieldingly resisting adjustment of said block upwardly.

LAURAN LAFRENIERE.