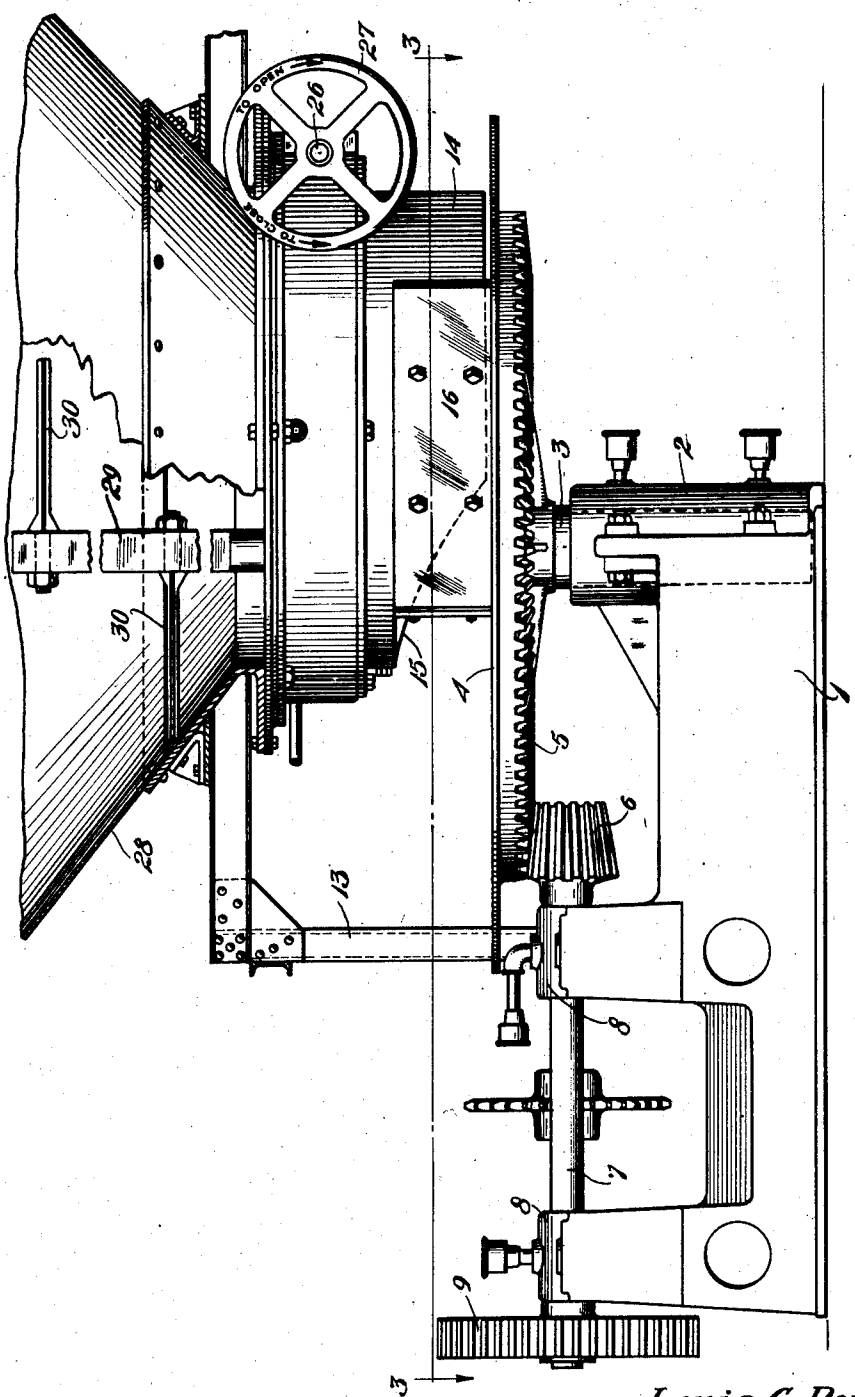
Aug. 7, 1928. 1,679,398

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DISK FEEDER

Filed June 19, 1925 4 Sheets-Sheet 1



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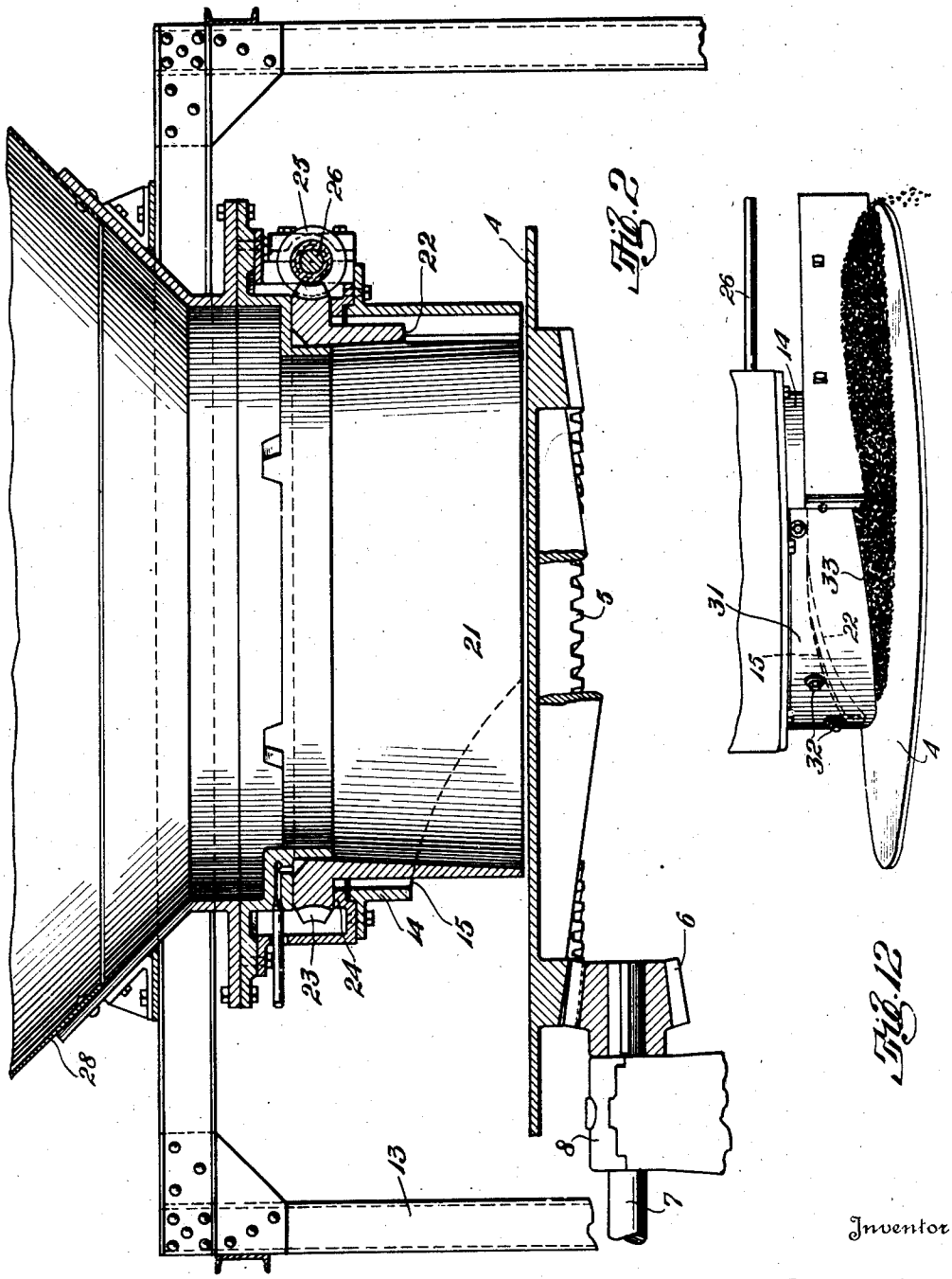


Fig. 2

Fig. 12

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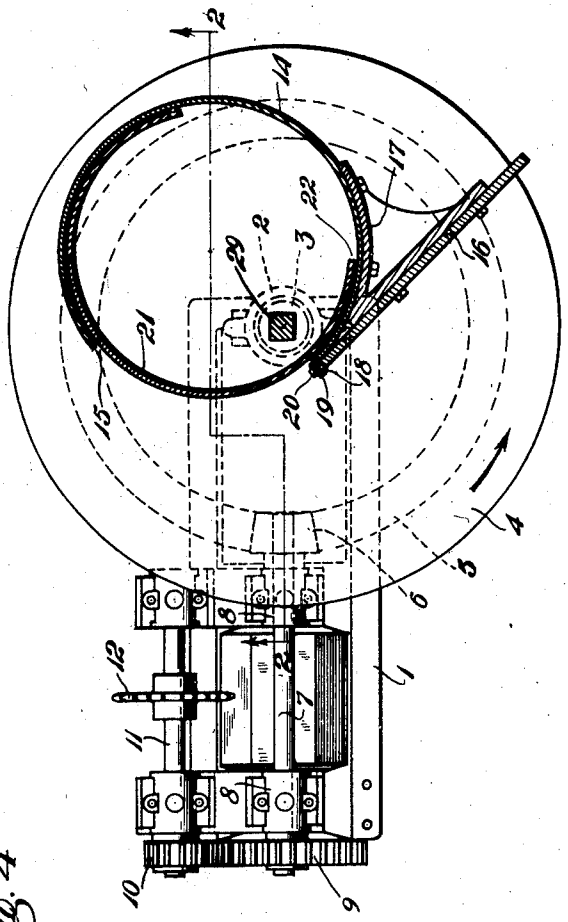


Fig. 3



Fig. 6

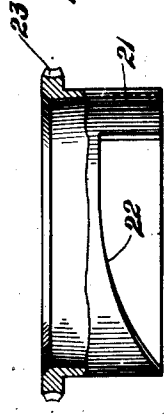


Fig. 4

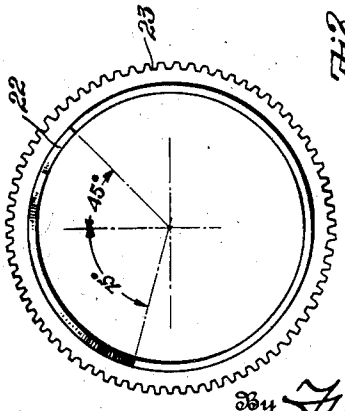


Fig. 5

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Fig. 7

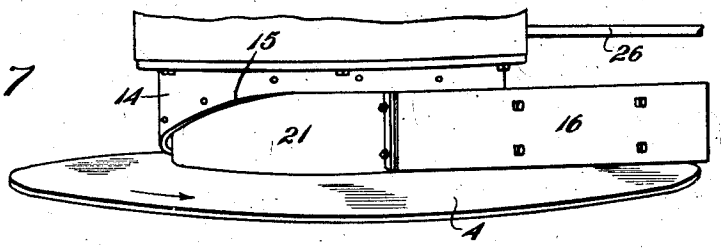


Fig. 8

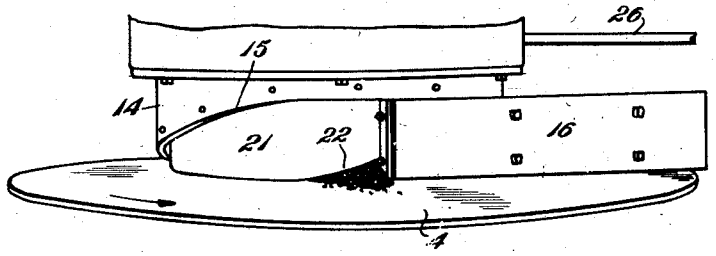


Fig. 9

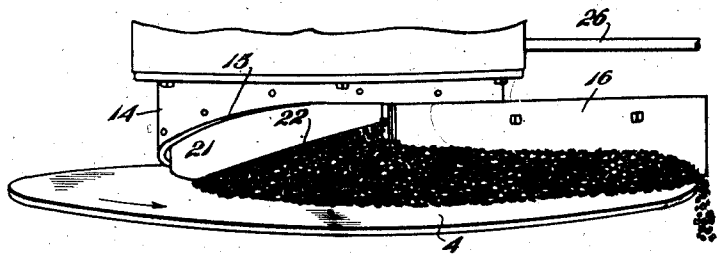


Fig. 10

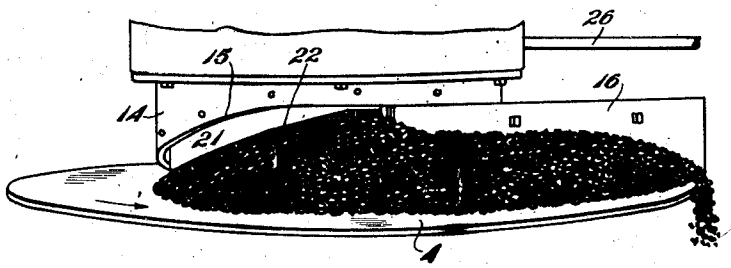
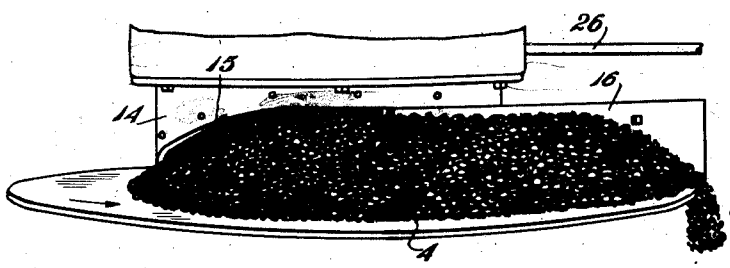


Fig. 11



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Patented Aug. 7, 1928. 1,679,398

UNITED STATES PATENT OFFICE.

LOUIS C. BONNOT, OF LOUISVILLE, OHIO, ASSIGNOR TO THE BONNOT COMPANY, OF CANTON, OHIO, A CORPORATION OF OHIO.

DISK FEEDER.

Application filed June 19, 1925. Serial No. 38,230.

This invention relates to apparatus for receiving coal or similar comparatively coarse material from any source of supply and feeding the same at an even rate of speed to any apparatus such as a pulverizing machine or the like; and the object of the improvement is to provide an apparatus including a hopper bin or spout arranged to receive the coal or other material to be fed, an upright stationary cylinder communicating with the lower end of the hopper and having an outlet opening arranged to be controlled by a rotatable sleeve valve, a rotary feeding disk being mounted directly beneath said cylinder and eccentric thereto and adapted to receive the coal which passes through said outlet opening, a scraper blade extending across said disk at one side of the outlet opening for the purpose of scraping the coal from the disk and feeding it in an even stream to a chute, conveyor or receptacle of any usual design.

An embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation partly in section of the improved feeding machine;

Fig. 2, an enlarged vertical sectional view through the same taken substantially on the line 2—2, Fig. 3;

Fig. 3, a plan sectional view of the machine taken substantially on the line 3—3, Fig. 1; with the valve closed as in Fig. 2.

Fig. 4, a side elevation partly in section of the rotatable sleeve valve;

Fig. 5, a plan view of the same;

Fig. 6, a side elevation with part broken away of the stationary cylindrical spout;

Fig. 7, a fragmentary perspective view showing the rotatable sleeve valve in closed position;

Fig. 8, a similar view showing the valve slightly opened;

Fig. 9, a view showing the valve substantially one-half open;

Fig. 10, a view showing the valve substantially three-fourths open;

Fig. 11, a view showing the valve fully open, and

Fig. 12, a similar view showing an adjusting plate provided for accommodating very fine material.

Similar numerals of reference indicate corresponding parts throughout the drawing.

A base frame 1 may be provided with the vertical bearing portion 2 in which is journaled an upright shaft 3 carrying at its upper end the rotary feeding disk 4 provided on its under side with a bevel gear 5 meshing with a bevel pinion 6 upon the drive shaft 7 which is journaled in horizontal bearings 8 provided upon the base and driven from any suitable source of supply as through the gear 9 meshing with a pinion 10 upon the counter shaft 11 provided with the drive sprocket 12.

A super structure 13 may extend above the base and supports the stationary cylindric spout 14 eccentric to the feeding disk 4. The lower end of this cylindric spout is spaced from the disk just sufficiently to permit free rotation of the disk without frictional engagement with the spout, and one side of the spout is cut away as shown at 15, forming an arcuate outlet opening from the spout onto the feeding disk. Adjacent to one side of said opening and substantially tangential to the spout is located a scraper blade 16 rigidly supported as by the bracket 17 fixed to the cylindric spout.

A wiper 18 which may be of leather or other flexible material is connected to the inner end of the scraper blade as by the plate 19 and cap screws 20 and extends into the outlet opening 15 and contacts with the peripheral surface of the rotatable sleeve valve 21.

This valve is cylindrical and rotates freely within the spout 14 and is provided with an arcuate port 22 of substantially the size and shape of the outlet opening 15 in the spout.

For the purpose of adjusting the valve, a worm gear 23 may be provided around the upper peripheral edge thereof and extended into an annular channel guide bearing 24. A worm 25, mounted upon the valve operating shaft 26, meshes with said worm gear and may be provided with a hand wheel 27 for manually rotating the valve within the spout.

A hopper 28 may be provided above and communicating with the cylindric spout, to receive the coal or other material to be fed through the apparatus.

For the purpose of continually agitating

the material within the hopper, to prevent clogging of the same, the shaft 3 may be continued upward through the cylindrical spout and hopper as indicated at 29 and provided with radial agitating arms 30.

By rotating the sleeve valve 21, within the cylindric spout, the outlet opening 15 in the spout may be entirely cut off as shown in Fig. 7, or the valve may be set at any desired position between the fully closed position and the fully open position shown in Fig. 11, as illustrated in Figs. 8, 9 and 10, thus permitting any desired amount of the coal to be continually fed from the spout onto the feeding disk.

This disk is continuously slowly rotated in the direction of the arrows shown in these figures, the coal being immediately carried away from the outlet opening as it passes through the same, owing to the eccentric position of the disk with reference to the spout, thus continually clearing the outlet opening and preventing clogging of the material at this point.

As the disk rotates the material received thereon through the outlet opening of the spout is carried against the scraper blade 16 and fed over the peripheral edge of the disk adjacent to the scraper blade as illustrated in Figs. 9, to 11, a chute, conveyor or other receiving device being of course arranged in position, beneath this point, to receive the coal in a steady stream as it is fed from the disk.

It should be understood that this feeding disk is rotated at a speed considerably less than that which would develop centrifugal force which would tend to throw the material outward upon the disk or over the peripheral edge thereof. In actual practice the speed of this disk is preferably from one to ten revolutions per minute, depending upon the quality and grade of material being fed through the machine, and also upon the rate of feed of the same.

In Fig. 12 is illustrated an adjusting plate 31 which may be detachably secured to the spout as by screws or bolts 32 covering a portion of the outlet opening of the spout and provided with an inclined lower edge 33 forming a reduced outlet opening especially designed for use upon very fine material as shown in said figure.

I claim:

1. A feeding apparatus including a cylindric spout having a side outlet opening in its lower peripheral portion, a movable feeding disk beneath the spout for receiving material from the same, and a scraper blade tangential to said spout co-operating with the movable disk to feed material over the edge of the same.

2. A feeding apparatus including a cylindric spout having a side outlet opening in its lower peripheral portion, an eccentric feeding disk beneath the spout and a scraper blade tangential to said spout co-operating therewith.

In testimony that I claim the above, I have hereunto subscribed my name.

LOUIS C. BONNOT.