

1,210,227.

FIG. 1.

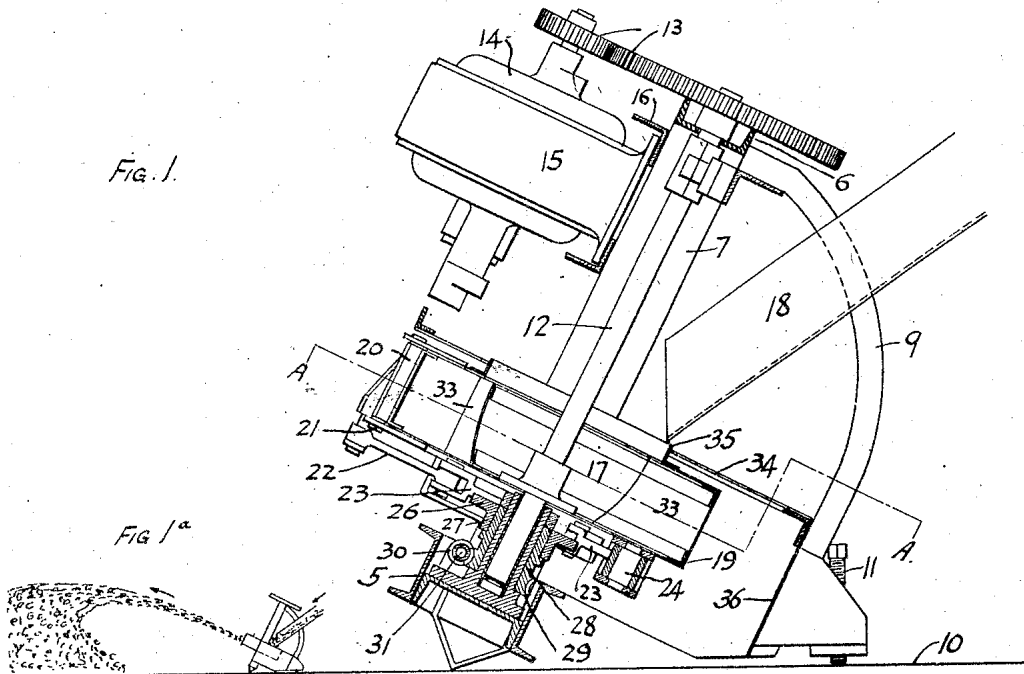
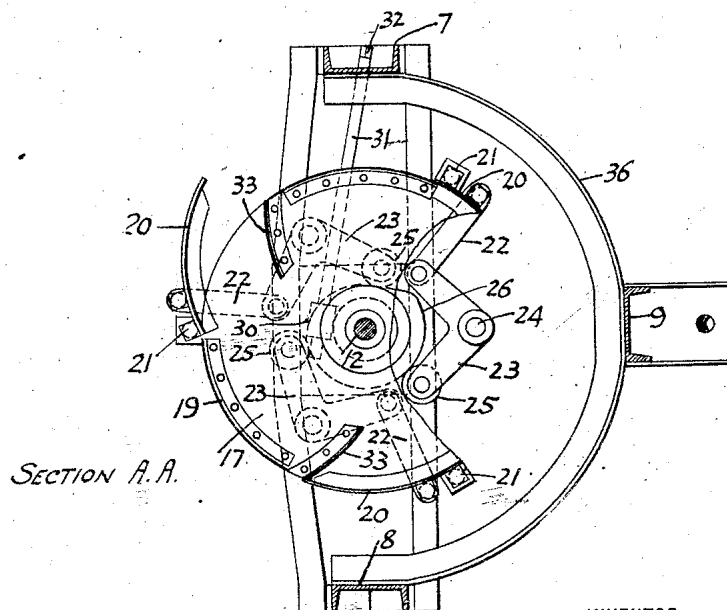
FIG 1<sup>a</sup>

FIG. 2.

SECTION A.A.

INVENTOR

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BY

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# UNITED STATES PATENT OFFICE.

AUGUSTUS SMITH, OF ROSELLE, NEW JERSEY, ASSIGNOR TO BERGEN POINT IRON WORKS, OF BAYONNE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

## DISTRIBUTING APPARATUS.

1,210,227.

Specification of Letters Patent.

Patented Dec. 26, 1916.

Application filed July 13, 1915. Serial No. 39,604.

*To all whom it may concern:*

Be it known that I, AUGUSTUS SMITH, a citizen of the United States of America, and residing at Roselle, in the county of Union and State of New Jersey, have invented a certain new and Improved Distributing Apparatus, of which the following is a specification.

My invention relates to distributing apparatus and particularly to apparatus for trimming or piling coal, or like granular material, the object of my invention being to provide apparatus which will dispense with the necessity for hand shoveling now almost universally employed for work of this character.

In the accompanying drawing, Figure 1 is a side elevation partially in section of a machine in which my invention is embodied in one form; and Fig. 2 is a section on the line A—A, Fig. 1, partially broken away. In the diagram Fig. 1<sup>a</sup> the apparatus is indicated in action.

The apparatus as here shown comprises a frame having lower and upper cross beams 5 and 6, uprights 7—8 at their ends and an intermediate leg 9, the latter being arched and of such length that the uprights 7 and 8 stand at an incline to the floor level 10. The lower ends of the uprights are preferably pointed to dig into the floor, while an adjusting screw 11 is provided at the foot of the leg 9 by means of which the inclination of the frame may be varied as required.

Extending between the upper and lower cross beams and stepped therein is a spindle 12 driven through gears 13 from an electric motor 14 supported by bracket 15 on the cross beam 16 which extends between the uprights of the frame. At the lower end of the spindle is secured the rotor or distributor 17. In the form shown this element comprises a round, box-like member, open at the top to receive from the chute 18 the material such as coal, grain or the like which is to be "trimmed" or piled. At, preferably, a plurality of points, the side wall 19 of the rotor 17 is gapped and the gaps closed by doors 20 hinged at 21 to open outward. Each door is connected by a link 22 to one arm of a bell crank lever 23, pivoted at 24 beneath and to the bottom of the rotor 17 and carrying on its other arm a roller 25 bearing against a cam 26. During

the travel of the rollers over the crest of 55 the cam the doors are maintained shut, while during their travel over the depression of the cam the doors are open. In order to vary the position at which the doors open, the position of the cam is made adjustable. 60 In the present construction the cam ring 27 is mounted on a sleeve 28 having a worm gear 29 with which meshes a worm 30 on the rod 31. The squared end 32 of the latter permits the worm 30 to be manually 65 rotated by a crank during the operation of the apparatus and the point at which the doors 20 are opened thus altered at will.

Guides 33 must be mounted within the rotor to assist in directing the material 70 through the gaps in the rotor when the doors are open. A stationary protective cover 34 may be provided above the rotor, but apertured at the angle iron ring 35 which forms the margin of the opening to the rotor 75 through which the chute discharges into the latter. Similarly a guard casing 36 may be provided for the rotor on the side opposite that at which the doors 20 open.

The principle of operation of the apparatus is based upon centrifugal force—like a sling shot. When the motor is started the rotor 17 is revolved at high speed and the material entering through the chute 18 is thrown outward toward the periphery of 85 the rotor. The doors 20 are maintained closed until their rollers 25 successively run down the sharp incline of the cam and the doors successively open permitting the material to shoot through the openings in the 90 side of the rotor. Owing to the incline of the apparatus, the material is discharged upward and the direction of discharge is controlled by the position of the cam which determines the point at which the doors open. 95

As here shown the doors 20 open by centrifugal force and are positively closed by the bell crank levers as their rollers ride up from the depression to the crest of the cam. It is obvious that this arrangement 100 may be variously modified while at the same time accomplishing substantially like results. It seems to be simplest, however, to allow the doors to fly open by centrifugal force and to close by the action of the roller 105 on the cam as above described and as shown in Fig. 2 and I prefer this arrangement though I do not wish to limit my invention

to it, as it is immaterial to the operation of the machine whether the doors are opened by centrifugal force or otherwise.

The vital principle of my invention is that the doors restrain the material to be thrown until, at a fixed point in the revolution of the rotor, they are opened, thus releasing material which at once flies from the disk as from a sling-shot, the direction being controllable by fixing the point of opening the door and the trajectory being controllable by tilting the whole machine as well as by changing the point of opening the door.

It will usually be found desirable to use electric energy for rotating the rotor but it is evident that a compressed air or steam engine could be utilized instead of an electric motor. The motor means may be of any suitable character without departing from my invention.

Various modifications of construction will readily occur to those skilled in the art, which do not depart from what I claim as my invention.

I claim as my invention:—

1. Apparatus of the type described comprising a rotary support having a peripheral wall, a door therein, means controlling the opening of said door at a predetermined point in the revolution of the support to permit the centrifugal discharge through said door of material resting on said support, and guide means leading to the door-opening and so arranged as to direct the material therethrough when the door is open.

2. Apparatus of the type described comprising a rotary support having a peripheral wall, a door therein, means controlling the opening of said door at a predetermined point in the revolution of the support to permit the centrifugal discharge through said door of material resting on said support, and guide means extending from one side of the door-opening into the sector defined by the latter and serving to direct the material therethrough when the door is open.

3. Apparatus of the type described comprising a rotary support having a peripheral wall, a door therein, means controlling the opening of said door at a predetermined point in the revolution of the support to permit the centrifugal discharge through said door of material resting on said support, and a curved guide leading to one side of the door-opening and presenting its convex side toward the latter to direct the material therethrough when the door is open.

4. Apparatus of the type described, comprising a rotary support having a peripheral wall, a door therein, means controlling the opening of said door at a predetermined point in the revolution of the support to permit the centrifugal discharge through said door of material resting on said support, and a curved guide leading to the door-opening and extending into the sector defined by the latter, and serving to direct the material therethrough when the door is opened.

5. Apparatus of the type described, comprising upper and lower cross beams, end uprights between the same, and an intermediate leg supporting said frame in inclined position, a spindle extending between said cross beams, a rotary support carried in inclined position by said spindle, and means insuring centrifugal discharge of material from only the raised margin of said support.

6. Apparatus of the type described, comprising a rotary support, means for maintaining the same in an inclined position and means insuring centrifugal discharge of material from only the raised margin of the support, together with a stationary guard with central opening above said support and surrounding the lower periphery thereof, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

AUGUSTUS SMITH.

Witnesses:

MALCOLM McINTYRE,  
THOMAS H. ALISON.