

No. 827,450.

PATENTED JULY 31, 1906.

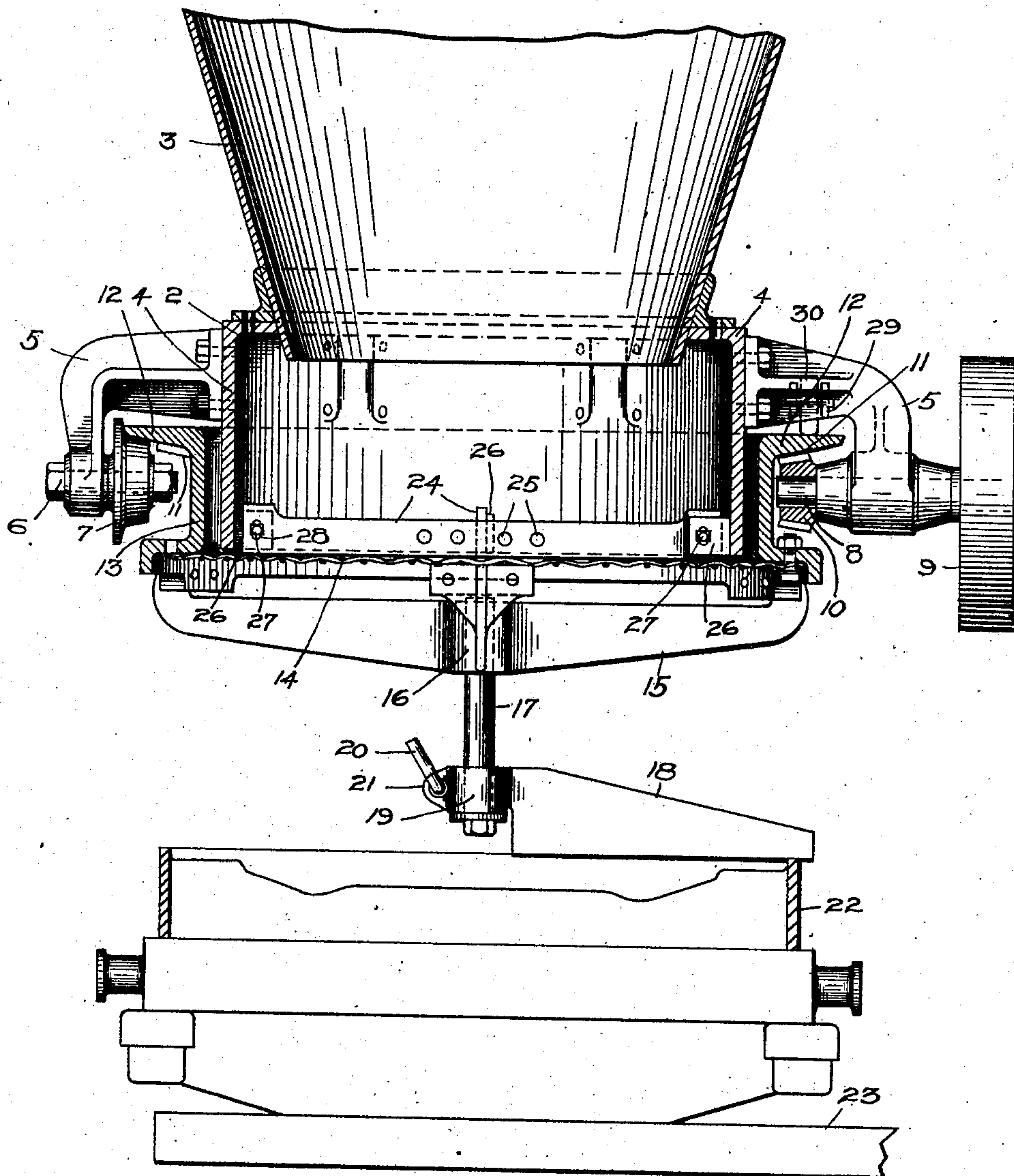
C. R. KNAPP & V. MULHOLLAND.

SAND FEEDER.

APPLICATION FILED SEPT. 19, 1903.

2 SHEETS—SHEET 1.

FIG. 1



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2 SHEETS—SHEET 2.

FIG. 2

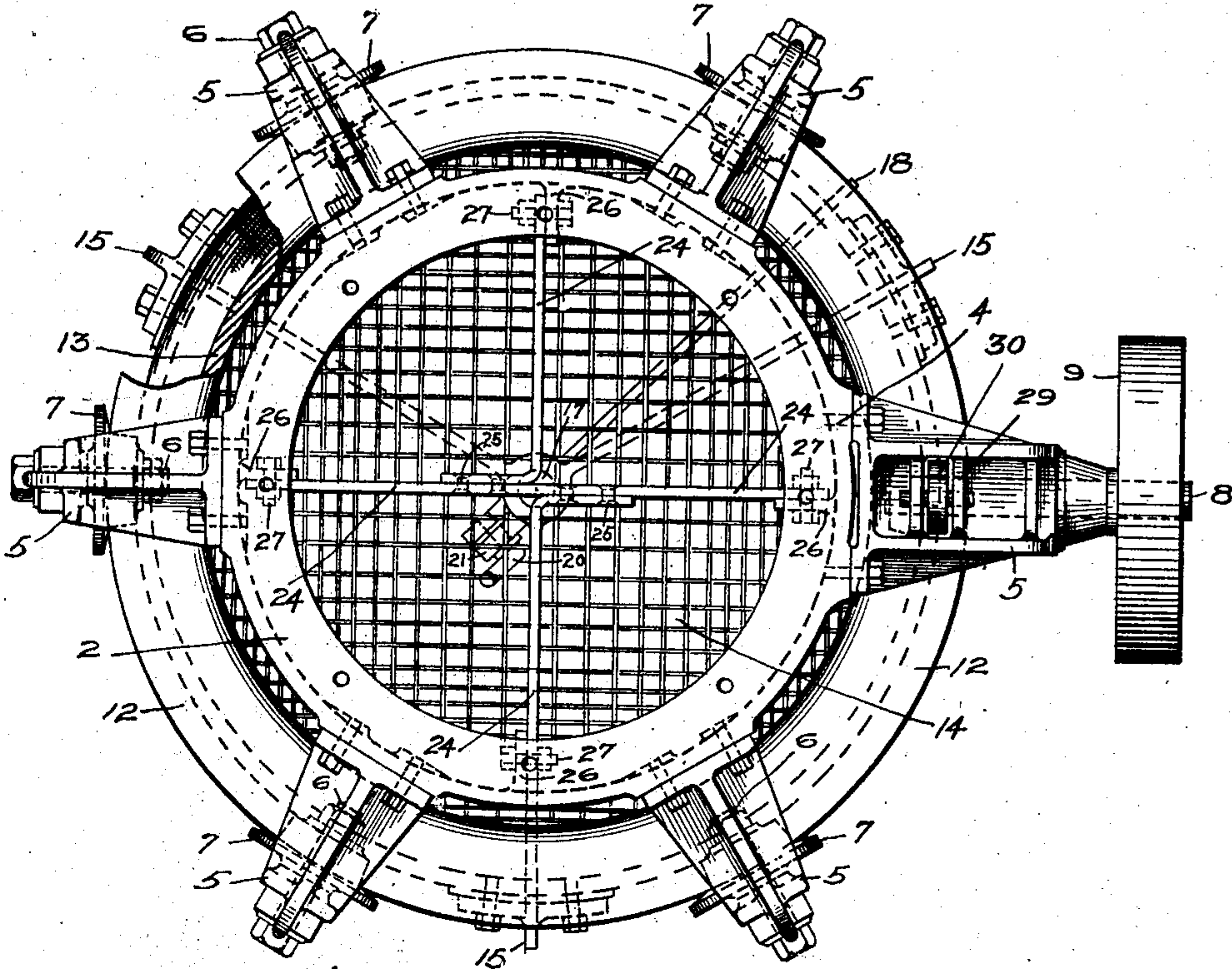
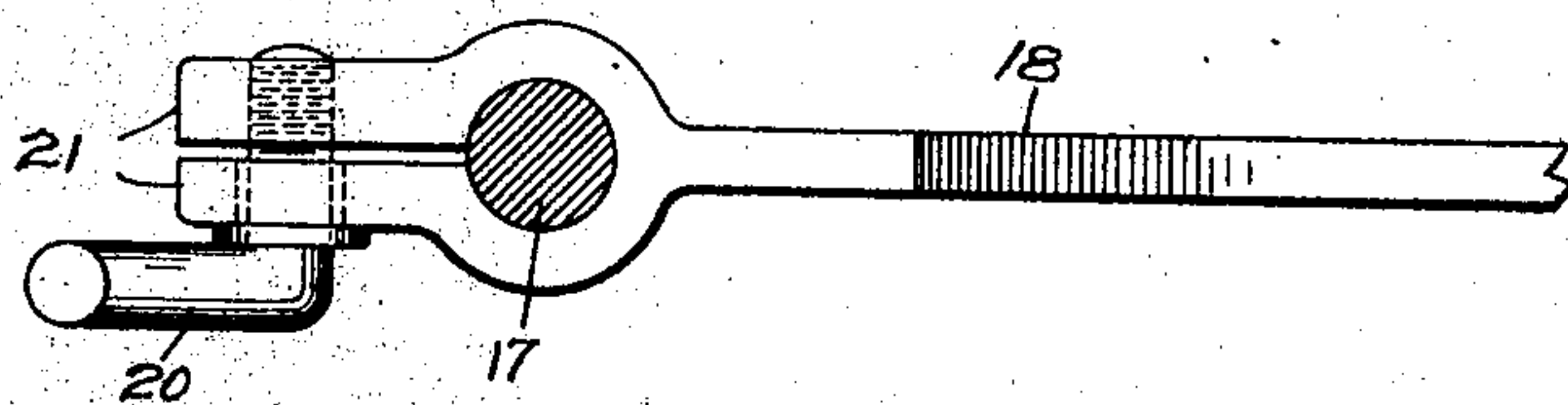


FIG. 3



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UNITED STATES PATENT OFFICE.

CHARLES R. KNAPP AND VERGIL MULHOLLAND, OF PITTSBURG, PENNSYLVANIA, ASSIGNORS TO HEYL AND PATTERSON, OF PITTSBURG, PENNSYLVANIA, A COPARTNERSHIP.

SAND-FEEDER.

No. 827,450.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed September 19, 1903. Serial No. 173,828.

To all whom it may concern:

Be it known that we, CHARLES R. KNAPP and VERGIL MULHOLLAND, residents of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Sand-Feeders; and we do hereby declare the following to be a full, clear, and exact description thereof.

Our invention relates to a device for feeding sand or like material, such as may be employed in connection with foundry plants for feeding the sand to the mold.

The object of our invention is to provide a simple form of device by means of which the sand introduced thereto is properly disintegrated and distributed within the mold without the employment of manual labor.

To these ends our invention comprises the novel features hereinafter set forth and claimed.

To enable others skilled in the art to make and use our invention, we will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a sectional elevation of our improved sand-feeder, illustrated in connection with the formation of molds for car-wheels. Fig. 2 is a plan view, and Fig. 3 is a detail view of the manner of securing the sweep to the vertical shaft.

Like numerals indicate like parts in each of the figures.

In the drawings the numeral 2 designates a box or receptacle of suitable dimensions, said box being provided with the hopper 3, suitably secured at the upper end thereof for the discharging of the sand into the box. Bolted or otherwise secured to the outer wall of the box 2 is the circular frame 4, said frame having the arms or brackets 5 at suitable intervals thereon. Mounted upon the shafts 6 in said brackets 5 are the rollers 7. One of the brackets 5 has the shaft 8 journaled therein, said shaft having the pulley 9 thereon, adapted to be driven by any suitable source of power. On the inner end of the shaft 8 is the bevel-gear 10, which is adapted to engage the circular rack 11 on the lower face of the outwardly-projecting flange 12 of the rotary frame 13. The wheels or rollers 7, carried by the brackets 5, are also adapted to engage the lower face of the

flange 12 beyond the rack 11, said rollers acting to support the rotary frame.

Secured to the bottom of the rotary frame 13 is the screen 14, said screen being made up of wire or other suitable material adapted to form the proper mesh, and the size of the mesh of said screen increases toward the center thereof in order to provide for the proper distribution of the sand. It is apparent that in the rotation of the frame 13 the outer portion thereof will move or travel through a greater distance than the inner central portion, and accordingly the sand will work through the outer meshes of the screen more rapidly than through the meshes at the central portion of the screen. Accordingly the size of the mesh increases toward the center of the screen to provide for the even discharge or feeding of the sand.

Radial arms 15, having a common central bearing 16, are secured to the rotary frame 13, and within this common bearing 16 is secured the vertical shaft 17. Secured to the lower end of the vertical shaft 17 is the sweep 18, said sweep having the split bearing 19, with the screw 20 passing through the parts 21 of said bearing and adapted to secure the sweep to the shaft 17. Below the sweep and in proper position to be swept thereby is the flask 22, supported upon the suitable molding-machine table 23. We have illustrated our invention in connection with the forming of molds for car-wheels, and the flask illustrated is one suitable for that purpose.

Within the box 2 are the radial arms 24, secured together at the central portion of the box by the rivets 25, the outer ends of said arms being secured to the lugs 26 on the inner face of said box. The arms are secured to said lugs by means of the bolts 27 fitting in the slotted openings 28 in said lugs to allow for the adjustment of these radial arms.

Mounted within suitable bearings 29 in the frame 4 is the idle roller 30, adapted to engage the upper face of the flange 12 of the rotary frame 13.

When our invention is in use, the sand is fed into the hopper 3 and descends into the box 2. Power is applied to shaft 8, whereupon through the bevel-gear 10 rotary motion is imparted to the frame 13. As this frame rotates the screen 14 rotates with it,

and the sand sifts through said screen and drops into the mold below. As stated above, owing to the difference in the size of the mesh which increases toward the center of the screen, the sand sifts through evenly even though the outer portion of said screen moves more rapidly than the inner portion. Accordingly an even feeding of the sand to the mold below is obtained, so that practically the same amount is discharged from all parts of the screen to the mold. The radial arms 24 moving in close relation to the screen act to stir up the sand and feed it properly through the screen. As the sweep 18 also rotates with the frame 13 it moves over the top of the mold and distributes the sand properly and when the mold is filled will slick off the top, so as to make it smooth and even.

By our invention the sand fed to the ma-

chine is properly broken up or disintegrated and distributed in the mold, while at the same time the sweep evens off the mold, and the entire operation is done without the use of manual labor, thereby not only increasing the output, but reducing greatly the cost of labor.

What we claim is—

A rotary screen having meshes increasing in size from the outer portion to the center thereof, and means for operating said screen.

In testimony whereof we, the said CHARLES R. KNAPP and VERGIL MULHOLLAND, have hereunto set our hands.

CHARLES R. KNAPP.
VERGIL MULHOLLAND.

Witnesses:

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