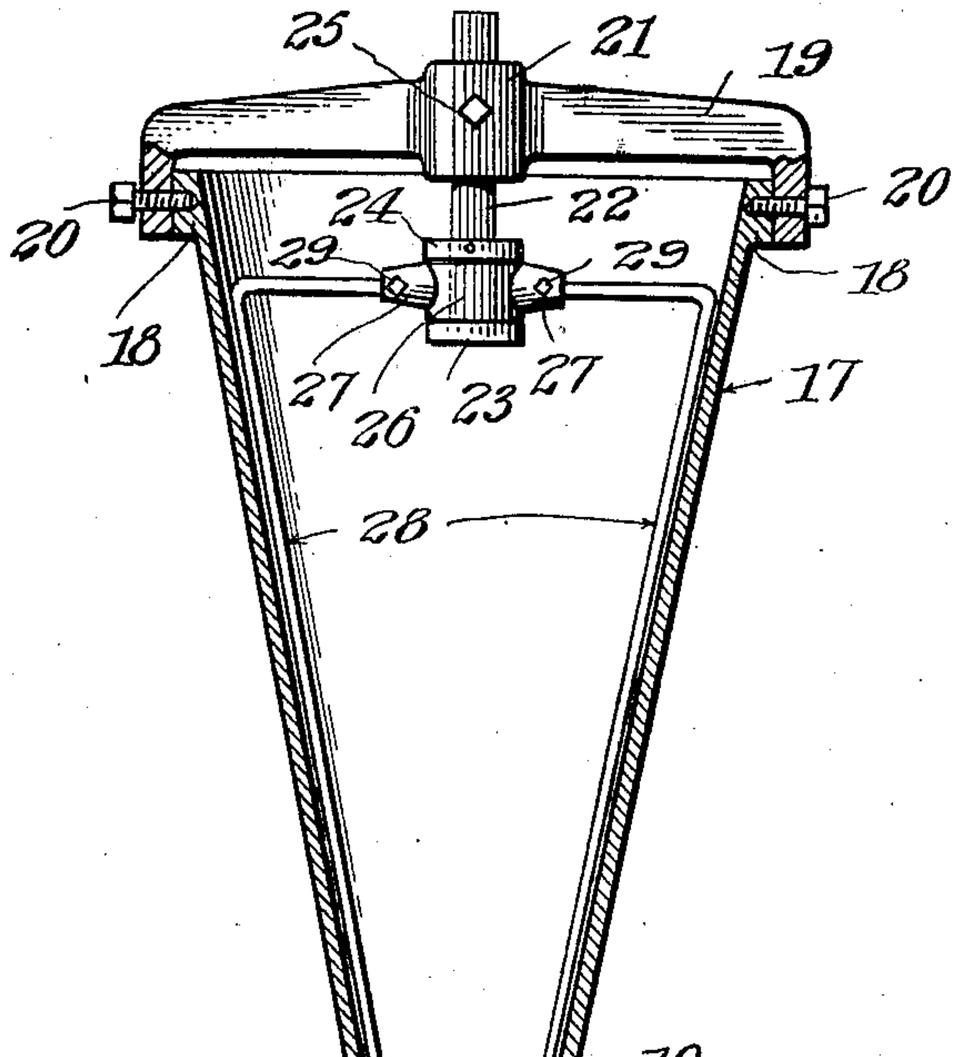
No. 828,567. PATENTED AUG. 14, 1906.

J. S. NICHOLSON.

AGITATOR FOR CORE MAKING MACHINES.

APPLICATION FILED MAR. 28, 1906.

Fig. 1



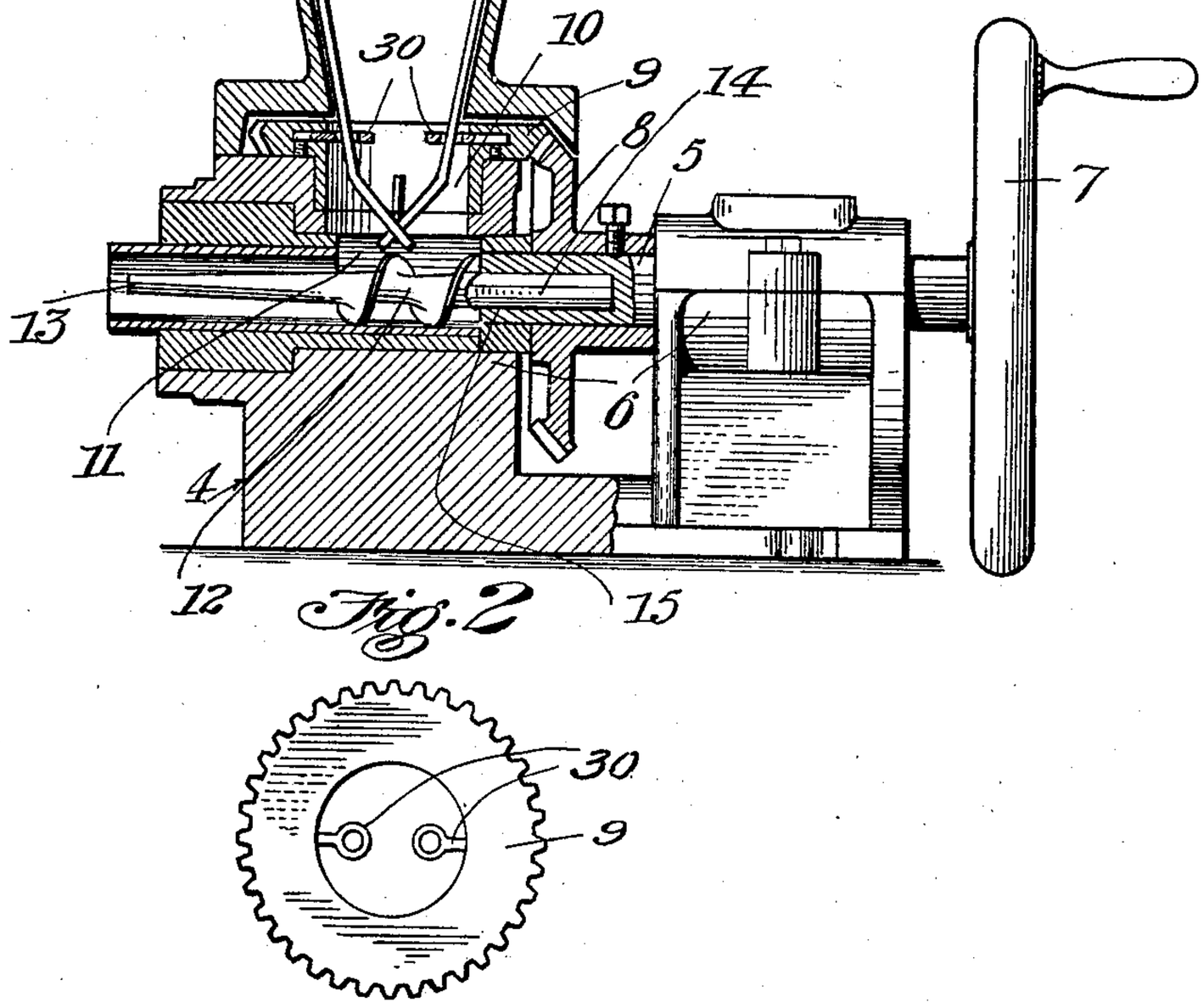




Fig. 2


Witnesses
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# UNITED STATES PATENT OFFICE.

JOHN S. NICHOLSON, OF LOS ANGELES, CALIFORNIA.

## AGITATOR FOR CORE-MAKING MACHINES.

No. 828,567. Specification of Letters Patent. Patented Aug. 14, 1906.

Application filed March 28, 1906. Serial No. 308,450.

*To all whom it may concern:*

Be it known that I, JOHN S. NICHOLSON, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Agitators for Core-Making Machines, of which the following is a specification.

It is the object of my invention to provide a simple and reliable device whereby the material being fed to the core-forming screw will be agitated sufficiently to prevent its sticking to the sides of the hopper and also to prevent its packing in the bottom of the hopper of the machine while in operation. I accomplish this object by means of the device described herein and illustrated in the accompanying drawings, in which—

Figure 1 is a partial central vertical section through my improved machine. Fig. 2 is a detailed plan of one of the miter-gears, showing the means whereby the agitator is rotated.

Referring to the drawings, 4 is the frame of the machine, and 5 is the operating-shaft, horizontally mounted in bearings 6. The outer end of this shaft is provided with a hand-wheel 7, although other sources of power may be substituted. Keyed to the shaft 5 is the vertically-revoluble miter-gear 8, adapted to mesh with and rotate the horizontally-revoluble miter-gear 9. This gear 9 has a large vertical opening 10 therethrough adapted when the gear is in place under the hopper to register with the discharge-opening in the hopper and form a passage-way leading to the upper part of the core-forming chamber 11. Carried by the shaft 5 and projecting inwardly therefrom is the screw conveyer 12, having the inwardly-projecting core-vent-forming stem 13. The shank 14 projects into the socket 15 in the shaft 5 and rotates therewith.

Secured to the frame of the machine and directly over the gear 9 in any suitable manner is a hopper 17. This hopper is cone-shaped and projects upwardly and has on its periphery oppositely-disposed lugs 18, integral therewith, to provide a suitable bearing-surface for the detachable horizontal supporting-bar 19. This bar is secured to the hopper by the cap-screws 20 and has a central bearing 21, through which projects downwardly a vertically-adjustable bearing-shaft 22. The inner end of this shaft is provided with a head 23 and a washer 24, set-screw 25 holding it in any desired position. Loosely mounted on the shaft 22 between the head 23 and the washer 24 is a rotating head 26, which has outwardly-projecting lugs 27, into which are secured the agitator-arms 28, which are adjustable by means of the set-screws 29. These agitator-arms extend horizontally across the hopper to its sides and then project downwardly, passing through the apertures in the lugs 30, which are secured to the inner perimeter of the horizontally-revoluble miter-gear 9. The lower ends of the agitator-arms are preferably bent inwardly toward each other and terminate directly over the conveyer-screw. By this construction the material which is fed into the hopper is agitated sufficiently well to prevent its packing.

The operation of my device is as follows: Power is applied to the shaft 5, which carries with it the miter-gear 8, which in turn imparts motion to the horizontal miter-gear 9, through which motion is imparted to the agitator-arms 28.

It will thus be seen that I have produced an efficient and simple device by means of which the material that is being fed into the machine is prevented from clogging or sticking to the sides of the hopper.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a core-forming machine, agitator-arms secured in bearings; means to rotate said arms; said means comprising a gear adapted to engage the lower ends of the agitator-arms whereby motion is imparted to said arms, and means to rotate said gear.

2 In a core-forming machine, downwardly-projecting agitator-arms adjustably secured in bearings; means to rotate said arms, said means comprising a miter-gear having a central opening therethrough; inwardly-projecting lugs having apertures therein secured to said miter-gear; said agitator-arms passing through apertures in said lugs; and means to rotate said gear.

3. In a core-forming machine, a hopper having supporting means secured thereto; a bearing secured to said supporting means having a head rotatively secured thereon; agitator-arms secured to said head; a miter-gear having a central opening therethrough; inwardly-projecting lugs having apertures

therein secured to said miter-gear, said agitator-arms passing through apertures in said lugs; and means to rotate said gear.

4. In a core-forming machine, a hopper having a supporting-bar removably secured thereto; a vertically-adjustable bearing secured to said supporting-bar having a head rotatively secured thereon; agitator-arms adjustably secured to said head; a miter-gear having a central opening therethrough; inwardly-projecting lugs having apertures therein secured to said miter-gear, said agitator-arms passing through the apertures in said lugs; and means to rotate said gear.

In witness that I claim the foregoing I have hereunto subscribed my name this 20th day of March, 1906.

JOHN S. NICHOLSON.

Witnesses:
G. E. HARPHAM,
EDMUND A. STRAUSE.