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G. H. WADSWORTH.
CORE MAKING MACHINE.
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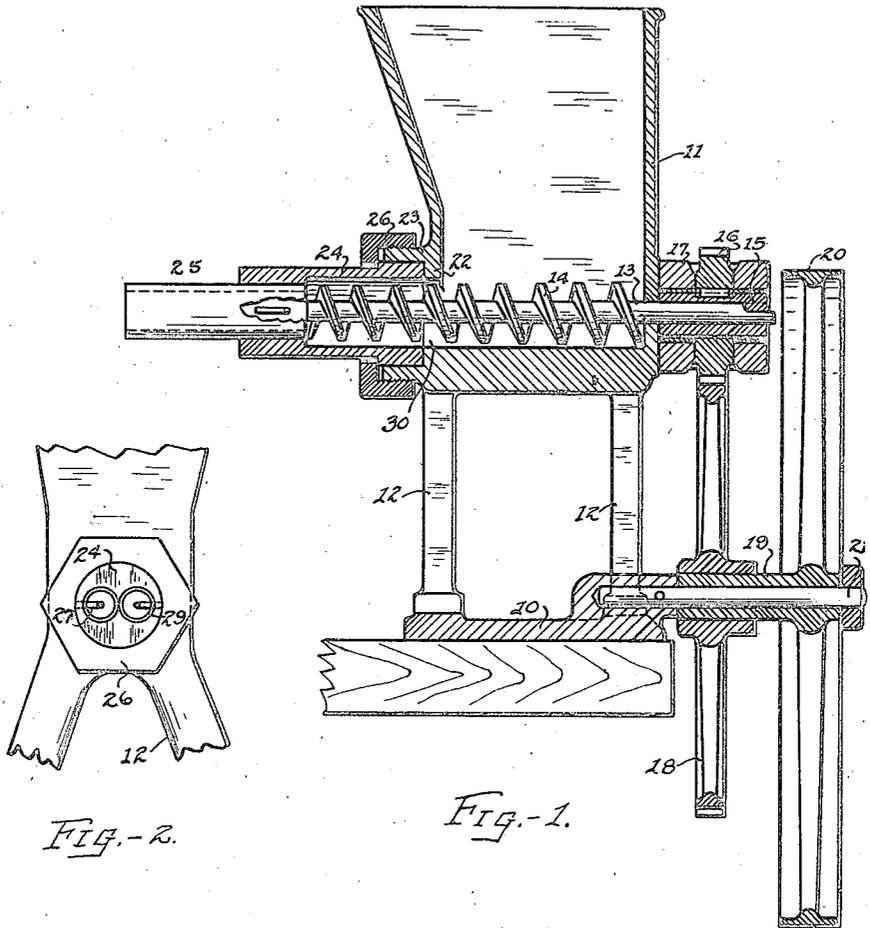


FIG.-2.

FIG.-1.

FIG.-3.

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GEORGE H. WADSWORTH, OF AKRON, OHIO, ASSIGNOR TO THE WADSWORTH CORE MACHINE AND EQUIPMENT COMPANY, OF AKRON, OHIO, A CORPORATION OF OHIO.

CORE-MAKING MACHINE.

Application filed November 30, 1920. Serial No. 427,234.

To all whom it may concern:

Be it known that I, GEORGE H. WADSWORTH, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Core-Making Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

My invention relates to machines for making cores of the type in which material such as sand is forced into, and through a die by suitable means such as a screw or worm.

One of the particular objects is the provision of a machine capable of making cores of different diameters by the mere replacement of the die and without the changing of the propeller screw. Heretofore, it has been considered necessary to have the portion of the propeller screw adjacent the die practically the same as, or slightly smaller, in diameter than the die, but the applicant has found that a die of much smaller diameter can be used in connection with such a propeller screw.

Another object is the provision of a device capable of making a plurality of such cores at one time.

Another object is the provision of a device in which the vent forming member is carried by the walls of the die tube.

The applicant has found that the central opening in the core may be formed by means of a member projecting transversely from the walls of the die and having a portion extending longitudinally of the die, and that the core when formed in such a die will close together after passing the transversely extending member and thereby form a core with the ordinary central vent.

Referring to the drawing, in which an approved embodiment of my invention is shown, Fig. 1 is a sectional view of the center of the machine; Fig. 2 is a fragmentary end view looking from the left of Fig. 1; Fig. 3 is a fragmentary longitudinal section thru the die and propeller shaft showing the relation of these members.

In the drawing, 10 represents the base of the machine carrying the hopper 11 by means of the legs 12. The propeller shaft 13 carries the screw or worm 14 and the shaft has secured thereto a sleeve 15. The sleeve 15 is journaled in bearings 17 car-

ried by the hopper, and the pinion 16 is keyed on the sleeve 15. The spur gear 18 is keyed upon the extended hub 19 of the pulley wheel 20, the wheel being rotatably mounted on stationary shaft 21 carried by the frame 10. The gear 18 meshes with the pinion 16 and power is transmitted thereby to the propeller shaft 13 from the pulley wheel 20.

The screw 14 occupies the bottom of the hopper 11 and extends outwardly through the lateral opening 30 therein. Adjacent this opening the hopper is shouldered as shown at 22 and provided with a threaded boss 23, whereby a nipple 24 of a die 25 may be held against the shoulder 22 by means of a nut 26 threaded upon the boss 23. The die as illustrated comprises a plurality of tubes 29 of lesser diameter than the screw. The vent forming stems 27 project inwardly from the walls of the tubes and have a portion 28 extending longitudinally of each tube to form the vent opening in the core.

The operation of the device is briefly as follows:— Sand or other material for making the core is placed in the hopper and power is applied to the pulley 20 from a suitable source, to rotate the screw 14 through the intervening gears. Material is thereby pressed into the die and is compressed to form a core. As the material passes the members 27, it flows around the transversely extending portion, and after passing the same closes together. The longitudinally extended part, however, extends far enough to hold a central vent open until the material is sufficiently set so that it will not close this opening, and the ordinary form of core with a central vent opening is therefore formed. This opening allows the escape of the vapors and gases resulting in the subsequent baking process.

It will be apparent from the description that in order to form a core of a different diameter it is only necessary to remove the die and replace it by another die of the required size. As the nipple of such other die is of the same size as the one illustrated it is not necessary to change the propeller screw, whereby a great saving is effected over the former practice, as these propeller shafts are the most expensive part of the machine.

The expedient of carrying the central vent forming stem by means projecting trans-

versely of the die does away with the necessity of either carrying such a stem by the propeller shaft (which construction unnecessarily increases the friction encountered by this shaft and has other disadvantages) or of providing a long longitudinally extending member supported by some distant part, and therefore the arrangement shown constitutes a distinct advantage over the former practice.

While I have described a specific device embodying my invention, it is apparent that many forms of device may be made, embodying the principles of the invention. The foregoing description is, therefore, to be taken as illustrative and not restrictive.

Having thus described my invention, I claim:

1. In a core making machine, a die, a vent forming member extending longitudinally thereof and carried by the die.

2. In a core making machine, a die comprising a tube having a vent forming member extending longitudinally thereof, and carried by the die.

3. In a core forming machine, a die comprising a tube having a member provided with a portion extending radially, and a portion extending axially of said tube for forming a vent opening in a core.

4. In a core making machine, a tubular die, a forming stem having a portion extending transversely of the tube and a longitudinally extending portion in the center of the tube.

5. In a core making machine, a nipple having an opening therein, a plurality of tubes carried thereby, vent forming means carried by the walls of said tubes, the openings of said tubes communicating with the opening in said nipple.

6. In a core making machine, a nipple having an opening therein, a plurality of tubes carried thereby, with the openings thereof communicating with the opening in said nipple, and a longitudinal extending vent forming member carried by said tubes.

7. In a core forming member, a hopper, a screw conveyer, a die and a vent forming member, said vent forming member being supported on a wall of the die.

8. In a core making machine, means to hold a supply of material, a screw to convey said material to a die, a removable sleeve surrounding a portion of said screw, a plurality of dies secured to said sleeve, said screw terminating adjacent the end of said dies.

9. In a core making machine, a hopper, a conveying screw, said hopper having a circular rabbeted boss surrounding said screw, a sleeve set in said rabbet and into which said screw extends and a plurality of dies secured in said sleeve.

10. In a core making machine, a hopper, a conveyer screw and a die, said die being of materially less diameter than the conveyer screw, and having its end extending to a point adjacent the end of said conveyer screw.

11. In a core making machine, a hopper, a material conveying screw and a removable die member in alignment with said screw, said die member comprising a sleeve arranged axially of said conveyer and a plurality of dies carried by said sleeve.

12. In a core making machine, a hopper, a material conveying screw and a die member comprising a plurality of aligned dies, the axes of which are parallel and are equally spaced from the axis of the conveyer screw whereby the feed into each portion of the die is uniform.

13. In a core making machine, a hopper, a material conveying screw, a die and a vent forming member, said vent forming member being located and supported intermediate the ends of the die, whereby the die opening is unobstructed to thus cause a tight compacting of the material in the die.

14. In a core making machine, a hopper, a screw conveyer, a die holding member, a die and a vent forming member, said vent forming member being supported at a point within the die member, whereby the opening to the latter is unobstructed, said screw conveyer terminating adjacent the end of the die.

In testimony whereof, I hereunto affix my signature.

GEORGE H. WADSWORTH.

Witnesses:

M. C. SAMMONS,
A. HOGGE.