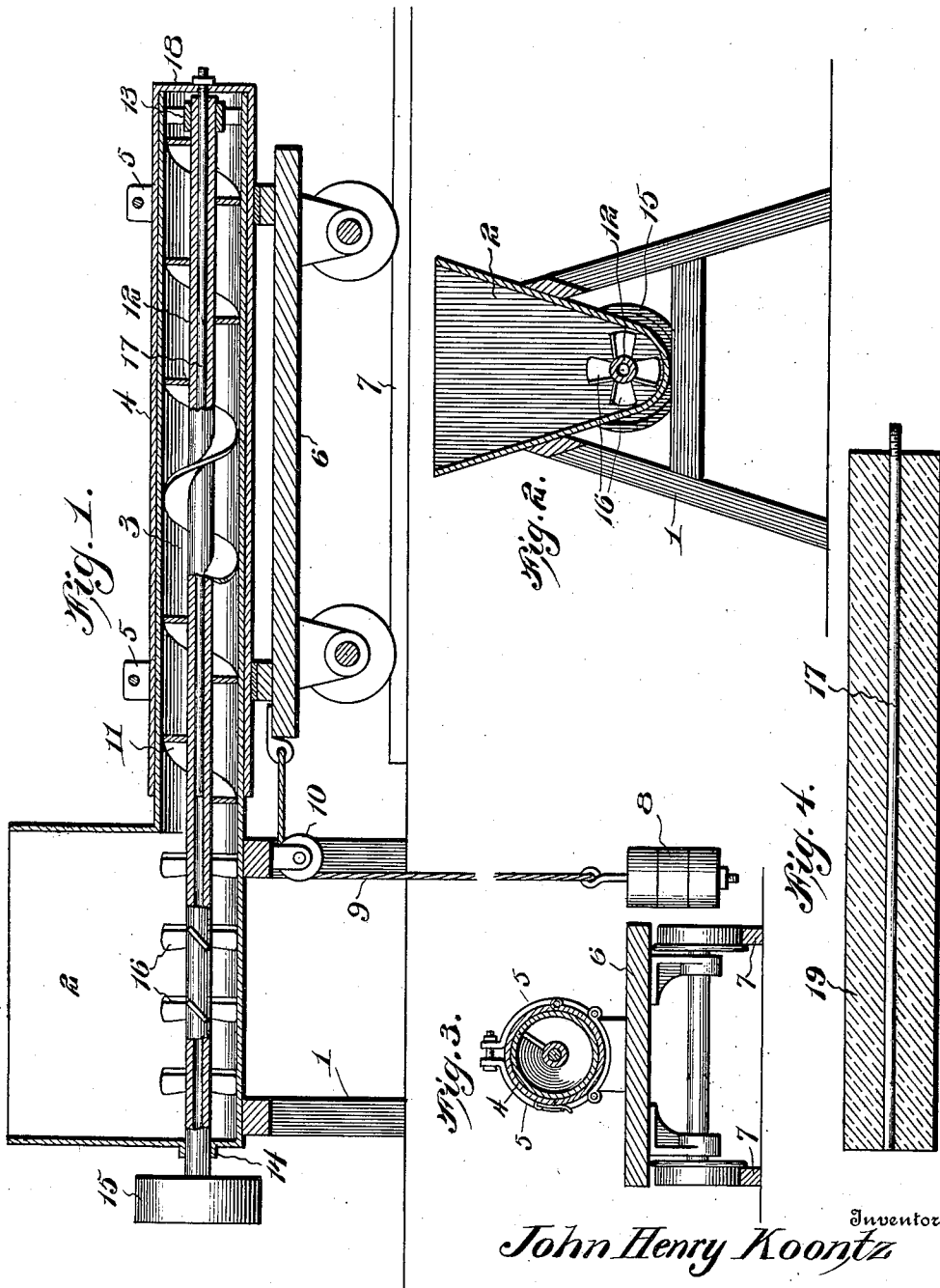


No. 873,559.

PATENTED DEC. 10, 1907.

J. H. KOONTZ.
MOLDING MACHINE.
APPLICATION FILED MAY 3, 1907.



Witnesses

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JOHN HENRY KOONTZ, OF STEWARDSON, ILLINOIS.

MOLDING-MACHINE.

No. 873,559.

Specification of Letters Patent.

Patented Dec. 10, 1907.

Application filed May 3, 1907. Serial No. 371,599.

To all whom it may concern:

Be it known that I, JOHN HENRY KOONTZ, a citizen of the United States, residing at Stewardson, in the county of Shelby and State of Illinois, have invented new and useful Improvements in Molding-Machines, of which the following is a specification.

This invention relates to a molding machine especially designed for producing artificial stone or concrete posts provided with a suitable reinforce.

The invention has for one of its objects to improve and simplify the construction and operation of machines of this character so as to be comparatively easy and inexpensive to manufacture, reliable and efficient in use, and whereby concrete posts can be quickly manufactured.

A further object of the invention is the provision of a molding machine in which the object to be molded is tightly compressed in the mold so that the formation of air holes or other imperfections is obviated.

A still further object is the employment of a hopper having a discharge duct in which is arranged a feed screw that serves to compact the concrete or other plastic material in the mold, the mold being arranged so as to be advanced against the effect of a retarding device as the post is formed, whereby the screw compacts the material in the mold by overcoming the resistance offered by the retarding device.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, Figure 1 is a vertical longitudinal sectional view of the molding machine. Fig. 2 is a vertical transverse section of the hopper of the machine. Fig. 3 is a transverse section of the mold. Fig. 4 is a longitudinal section of the completed post.

Similar reference characters are employed to designate corresponding parts throughout the several views.

Referring to the drawings, 1 designates a suitable framework on which is mounted a sheet metal or other hopper 2 from one end of which projects a tubular duct 3 disposed horizontally or inclined downwardly in an

outward direction, as desired. The outer end of the duct 3 is open so as to permit the concrete or other material to be forced outwardly through the same, and assembled around the duct is a hollow mold 4 preferably composed of longitudinally divisible, hinged sections so as to be easily removed from the molded fence post. The mold is held in place by clamps 5 that encircle the same and are secured to a movable element such as a truck 6 traveling on a track 7, the movement of the truck being retarded by a suitable resistance device such as a weight 8 connected by a cable 9 with the truck and arranged to move vertically by means of a pulley 10 supported on the frame 1. The weight 8 serves to hold the mold in its initial position and permits the mold and truck to move outwardly during the process of forming the post.

The concrete or other material of which the fence post is to be formed, is supplied to the hopper 2 in any suitable manner and is fed into the mold progressively by a device arranged in the duct 3. This device comprises a helical web or screw 11 formed on a shaft 12 that is rotatably mounted in a bearing 13 at the outer end of the duct 3 and in a bearing 14 on the outer wall of the hopper 2, the said shaft extending a suitable distance out of the hopper to receive a belt pulley 15 that is driven from any suitable source of power. The screw 11 has the two-fold function of feeding the concrete or other plastic material outwardly and compacting the said material in the mold, which latter is gradually forced outwardly at the same rate that the post is formed. On the portion of the shaft disposed in the bottom of the hopper 2 are arms 16 that constitute an agitator whereby the concrete or plastic material is thoroughly mixed and agitated before passing to the duct 3 and the arms 16 are inclined in such a manner as to assist in conducting the material to the duct 3 where it is taken up and conveyed outwardly by the screw 11. The shaft 12 is preferably tubular so as to receive the reinforcing rod 17 for the post. This rod is secured to the closed end or head 18 of the mold in any suitable manner and moves outwardly with the mold as the post is formed, and is left in the post to strengthen and reinforce the same.

In practice, the pulley 15 is rotated by a belt, and the concrete or other plastic ma-

terial is supplied to the hopper 2. The rotation of the shaft 12 causes the material to be thoroughly agitated in the hopper and fed to the screw 11, whereby the material is forced outwardly into the mold, which latter gradually moves outwardly off the duct 3. The movement of the mold is retarded by the resistance device formed by the weight 8 or equivalent means, so that the screw has to overcome considerable opposition, thereby causing the plastic material to be thoroughly compacted in the mold as the post is formed; so that air holes or other imperfections are obviated. When the mold has reached the limit of its movement, the machine is stopped so that the material will not be fed out of the duct 3. The mold is then unclamped from the truck 6 and carried to a suitable point where the mold is removed so that the post can dry, the finished post 19 being shown in Fig. 4. The mold is then re-clamped to the truck and the latter moved inwardly to its initial position for enabling another post to be formed in the mold, it being understood that another reinforcing rod 17 is applied to the mold before the latter is slipped on the duct 3. The machine is then again started into operation and material supplied to the hopper to produce a second post and so on the operation is repeated for forming any desired number of posts.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative and that such changes may be made when desired, as are within the scope of the claims.

Having thus described the invention, what I claim is;—

1. In a machine of the class described, the combination of a duct, a hopper connected therewith, a rotatable element extending through the hopper and duct, arms on the element at the portion disposed within the hopper for agitating the contents of the latter and assisting in discharging the contents into the duct, a spiral screw on the part of the element within the duct for forcing the contents from the latter, and a mold yieldingly mounted on the duct for receiving the material discharged from the latter.

2. In a machine of the class described, the combination of a duct, means for supplying plastic material thereto, a mold movable

with respect to the duct, means for forcing the material through the duct to the mold and producing relative movement of the duct and mold, and a resistance device opposing the movement of the parts for causing the material to be compacted in the mold, said resisting device comprising a truck mounted wheels, and a weight and cable means connected with the truck for yieldingly opposing the movement thereof.

3. In a machine of the class described, the combination of a hopper, a duct connected therewith, a mold slidably mounted on the duct, means for conveying plastic material from the hopper to the mold through the duct and for progressively moving the mold during the feed of the material, a movable support for the mold, and a device for opposing the movement of the support, said means comprising a rotatable element extending through the hopper and duct, radial arms on the element suitably disposed for agitating the material and directing it from the hopper to the duct and a helical member on the shaft extending from one end of the duct to the other for discharging the material from the duct.

4. In a machine of the class described, the combination of a duct, a hopper connected therewith, a shaft extending through the duct and hopper, an agitator on one portion of the shaft, a screw on the other, and a mold operatively related with the duct.

5. In a machine of the class described, the combination of an approximately horizontal duct, a hopper connected with one end thereof, a shaft extending through the hopper and duct and rotatably mounted therein, agitator arms on the portion of the shaft extending through the hopper, a screw on the portion of the shaft in the duct, and a mold movably mounted with respect to the duct.

6. In a machine of the class described, the combination of a horizontal duct, a hopper at one end thereof, a hollow shaft extending through the hopper and duct, means for rotating the shaft, a screw on the shaft at the portion extending through the duct, an agitator on the portion of the shaft in the hopper, a mold slidably mounted on the duct, a reinforce attached to the mold and extending into the hollow of the shaft, a truck disposed under the duct and movable parallel therewith, means for clamping the mold to the truck, and a device for retarding the movement of the truck.

In testimony whereof, I affix my signature in presence of two witnesses.

JOHN HENRY KOONTZ.

Witnesses:

JOHN L. BECKER,
W. M. ELAM,