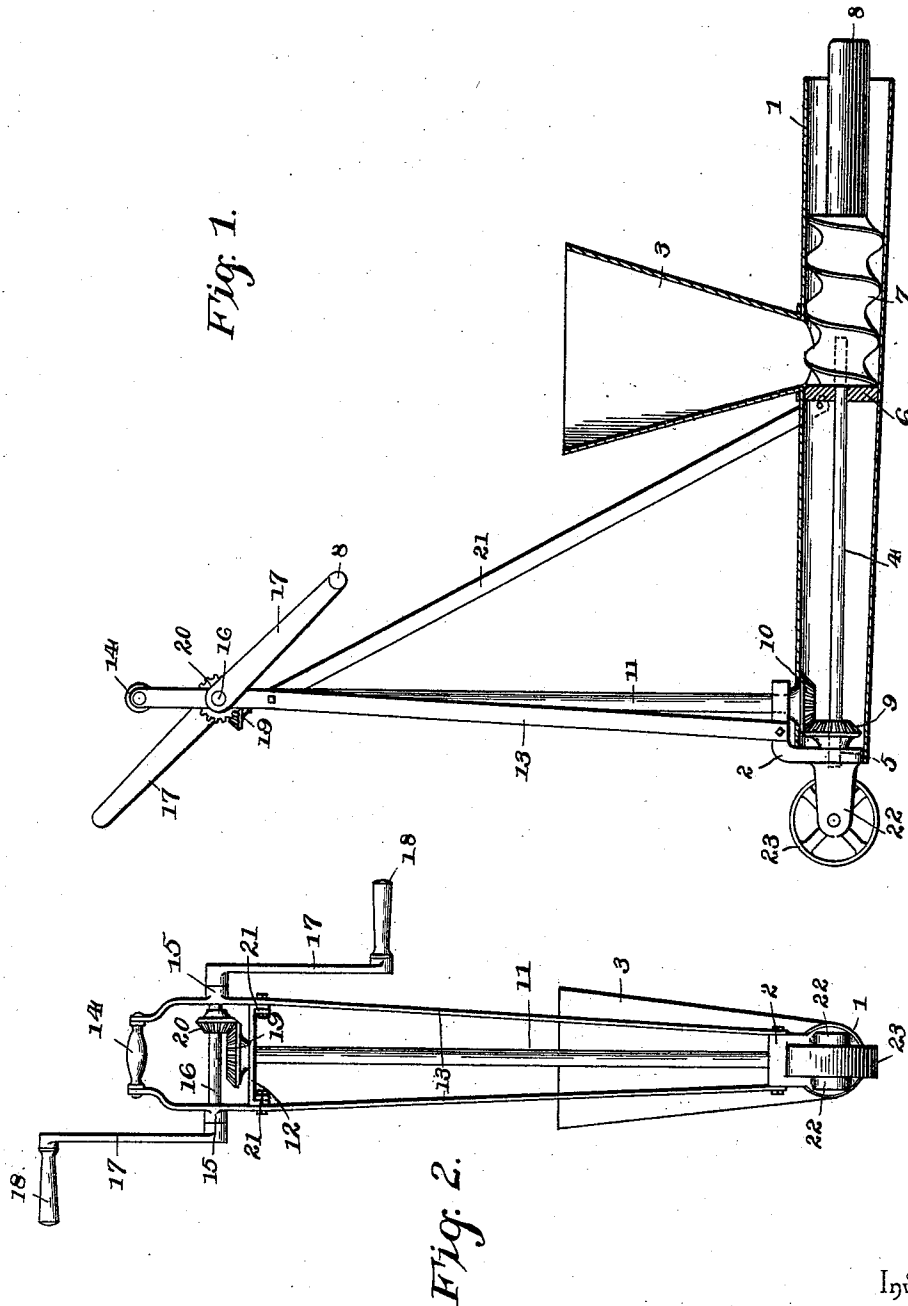


(No Model.)

R. F. DOCKERY.
MACHINE FOR MAKING CONTINUOUS PIPE.

No. 536,376.

Patented Mar. 26, 1895.



Inventor

Robert F. Dockery.

Witnesses

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UNITED STATES PATENT OFFICE.

ROBERT F. DOCKERY, OF LOS ANGELES, CALIFORNIA.

MACHINE FOR MAKING CONTINUOUS PIPE.

SPECIFICATION forming part of Letters Patent No. 536,376, dated March 26, 1895.

Application filed January 10, 1894. Serial No. 496,403. (No model.)

To all whom it may concern:

Be it known that I, ROBERT F. DOCKERY, a citizen of the United States, residing at the city of Los Angeles, county of Los Angeles, State of California, have invented a new and useful Machine for Making Continuous Pipe or Tubing; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improvement in that class of pipe making machines which are adapted to form tiling and the like of plastic material such as clay, and it has for its principal object to provide a machine wherein it will be possible to regulate with greater efficacy the density of the pipe formed. This end I attain by providing a machine which will move as the pipe is formed, owing to the reaction on the part of the partially rigid pipe, and by providing means for retarding the movements of the machine thereby compressing or increasing the density of the pipe. In the accompanying drawings:—Figure 1 represents a longitudinal section of the complete machine. Fig. 2 is a front elevation thereof.

The reference numeral 1, indicates a longitudinal cylinder formed of metal and having one end closed by the angle casting 2, while the remaining or rear end is left open as shown. This open end of the cylinder is slightly larger than the opposite end, owing to the result of a gradual taper in the cylinder from the front to the rear end. The upper side of the cylinder 1, at about its middle is formed with an opening over which the hopper 3 is secured, such hopper being formed flaring or bell-shaped as usual and adapted for the reception of the material of which the pipe is formed.

4 indicates a shaft which extends longitudinally in the cylinder 1, and which is revolvably journaled in the box 5, of the angle casting 2, and in the partition 6, fixed in the cylinder and just forward of the hopper 3. The rear end of the shaft 4 extends beyond the partition 6, and is there securely connected to the worm or screw 7, which is fitted snugly

within the cylinder so that the threads thereof will engage with the interior sides of the cylinder.

Formed integral with or rigidly secured to the rear end of the worm or screw 7, is the core 8, which is axially co-incident to the worm and to the cylinder which projects a short distance beyond the latter. The forward end of the shaft 4 is provided with a miter gear 9, beveled rearwardly and fixed to the shaft so as to impart a movement thereto. This gear 9 meshes with a companion gear 10, fixed, in turn, to the lower end of the vertical shaft 11, which has its bearings in the horizontal portion of the casting 2, and in the horizontal plate of 12, of the vertical frame-bars 13.

The frame-bars 13, are two in number and are bolted one to each side of the casting 2 and project vertically therefrom, diverging or spreading slightly as they proceed.

14 indicates a hand-grasp which is rigidly secured to the contracted upper ends of the bars 13, and which is provided to permit the manipulation of the machine as will appear more fully hereinafter. Formed integral with the bars 13, and near the upper ends thereof, are the boxes 15, which are horizontally aligned and which are provided to afford the shaft 16, a bearing. This shaft, 16, is projected slightly beyond the bars 13, and is provided at its projected ends with the oppositely arranged crank-arms 17, provided with handles 18, and adapted to furnish means for imparting to the shaft 16, a rotary movement.

The upper end of the shaft 11, is projected slightly above the bar 12, and is provided at such end with the beveled gear 19 meshing with the similar though smaller gear 20, affixed to the shaft 16. By this means motion is transferred from the shaft 16, to the shaft 11, and thence, through the medium of gears 9 and 10 to the shaft 4, all of which will be made the subject of subsequent explanation.

21 indicates two braces, which extend downwardly and rearwardly and which are bolted or otherwise rigidly secured to the respective bars 13, and to the respective sides of the cylinder 1. The purpose of these braces is to brace the bars 13, as will be understood.

Formed integral with the front side of the

casting 2, and projecting forward therefrom are the brackets or lugs 22, which are two in number and which are provided to afford means for revolubly mounting the carrying-wheel 23, whereby the front end of the cylinder is raised from contact with the ground and provided with a rolling support. The casting 2 is formed at its vertical portion with a circular or disk-like part as will be seen in Fig. 2, whereby to close the front end of the cylinder 1, and this is effected by placing said disk-like portion within the front end of the cylinder and securing it in place by suitable means.

In the use of my invention supposing that it is desirous to form and lay tiles in a ditch, all that will be required is to fill the hopper 3, with the clay or whatever material that may be used, and lay the machine longitudinally within the ditch. The cranks 17, should now be turned, which will cause the shafts 16, 11 and 4 to revolve owing to their respective and several gears, while the movement of shaft 4 will be directly imparted to the worm 7 and core 8, whereupon the clay from the hopper 3, will be caused to enter the cylinder and owing to the operation of the worm be ejected from the rear and flaring end of the cylinder. During this operation the core 8 will be operating to shape the clay into the form of tiling or pipe, as will be understood.

As the tiling is ejected from the cylinder 1, the continual force attending and causing its ejection will react directly on the worm 7 and indirectly on the whole machine and cause the same to move forwardly. This movement is continuous during the ejection of the pipe; and thus the machine operates. Supposing, now, that it is desired to increase the density of the pipe as it is delivered, all that will be necessary is to apply downward pressure to the machine and to facilitate this I provide the bars 13, and the attending frame work whereby the said power may be applied. The hand grasp 14, furnishes means for this application of power and for this purpose it was provided. As the machine is pressed down its movements will be retarded thus causing more power to move it, and before this power can be applied the pipe being formed must have more rigidity, which is given it by increasing the density of its material. When this density is attained the proper rigidity will also exist and the forward

movement of the machine will be again resumed.

It will be observed that the machine is capable of use in places other than in ditches, and that it may be made to form pipes for use in trade. When so operating, however, it will be necessary to divide the pipe. This may be done by any preferred and suitable means, since it does not enter into my invention.

Having thus described my invention, I claim—

1. In a machine for making pipe, the combination of a cylinder provided with a hopper at its upper side and communicating with its interior, a worm arranged within the cylinder and below the hopper, a core within the cylinder and connected axially with one end of the worm, a shaft fixed to the other end of the worm and mounted centrally within the cylinder, a second shaft perpendicular to the first and geared therewith, a frame rigid on the cylinder and projecting parallel with the second shaft within which the said shaft is journaled, the frame having a hand grasp thereon, and a crank-shaft mounted in the frame and geared with the second shaft, substantially as described.

2. In a machine for making pipe, the combination of a cylinder having a feed opening, an angle casting at one end thereof, said casting having a disk-like portion fitting in and closing one end of the cylinder, a carrying-wheel revolubly mounted at the outer side of the disk-like portion, a shaft extending centrally in the cylinder and journaled revolubly therein, a worm within the cylinder and fixed to the shaft, a core fixed in turn to the worm, two bars rigidly fixed to and projecting vertically from the respective sides of the cylinder and provided at their upper ends with a hand grasp, a shaft extending longitudinally therewith and journaled therein and geared with the shaft in the cylinder, and a crank shaft geared to the shaft of the vertical bars, substantially as described.

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

ROBERT F. DOCKERY.

Witnesses:

E. E. POWERS,
W. H. HOLMES.