No. 647,866. Patented Apr. 17, 1900.

W. P. PARSONS & A. TUITE.

PIPE MACHINE.

(Application filed Nov. 22, 1899.)

(No Model.)

Fig 3

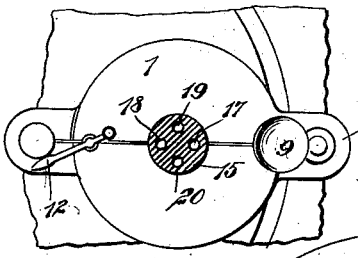
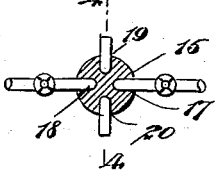


Fig 1

Fig 4

Fig 2



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PIPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 647,866, dated April 17, 1900.

Application filed November 22, 1899. Serial No. 737,898. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM P. PARSONS and ANDREW TUITE, citizens of the United States, and residents of Albany, in the county of Delaware and State of Indiana, have invented a new and Improved Pipe-Machine, of which the following is a full, clear, and exact description.

This invention relates particularly to machines for making glass pipes used for conducting water or gas or as a conduit for electric wires or the like; and the object is to provide a machine by means of which pipes or pipe-sections may be quickly and economically made.

We will describe a pipe-machine embodying our invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of a pipe-machine embodying our invention. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a section on the line 3 3 of Fig. 1. Fig. 4 is a section on the line 4 4 of Fig. 2.

Referring to the drawings, 1 designates a section of a two-part mold which is clamped together when in use by pins passing through lugs 2 3 on one section and a lug 4 on the other section and also through lugs 5 6 on one section at the opposite side and through lugs 7 8 on the other section at the opposite side. The pin 8^a passes into the base-plate and forms a pivot on which the mold-sections may swing. The mold at its upper end has a gate 9, through which the molten glass is to be poured to form the tube, (indicated at x,) and also at the upper end of the mold is a vent-port 10, through which gases and hot air may escape, this vent being controlled by a valve 11, shown in the shape of a plug-valve mounted on a shifting lever 12. The mold-sections are adapted to rotate or open on a bed-plate 13, and to provide for an easy rotary movement of the mold ball-bearings 14 are arranged between the lower end of the mold and the bed-plate, the said mold and bed-plate being provided with channels to receive the balls.

Movable vertically in the mold is a core 15, and on the upper end of the core is a ring 16, with which a chain or other device leading from a hoisting-machine may be attached for the purpose of raising and lowering the core. Leading downward through the core is a port 17, through which water or air is forced by suitable pressure, and also leading down through the core is a port 18. Cold water or air passed into the port 17 will keep the core at the proper temperature and exhaust through the port 18, as the two ports communicate at the lower end of the core. The core is also provided with air-ports 19 and 20, which lead from the upper end of the core out through the lower end of the same. A stand-pipe 22 extends through the bed-plate 13 into the mold and serves to form the flange on the pipe or tube. The stand-pipe 22 projects into a pit 23 and has its end secured to a conduit or pipe 24, which is connected with an air compressor or tank. Within the stand-pipe 22 is a perforated air-pipe 21, whose upper end, as shown, is made conical and fits in a correspondingly-shaped recess in the end of the core. Into this recess the air-ports 19 and 20 open, as clearly shown in Fig. 4, and through said ports the compressed air is allowed to escape. The compressed air is employed to take the place of the core or to fill the space left by it when being withdrawn, so as to hold the material in shape and prevent it from collapsing upon the withdrawal of the core.

As a means for shifting the core laterally we employ a swinging crane 25, through the free end of which said core passes, the crane being mounted to rotate on bearing-balls 26, as clearly indicated in the drawings. The crane may be clamped to the core 15 to hold the core in place by clamping-bolts 27.

The operation is as follows: The parts being in the position shown in Fig. 1 and the molten glass having been poured into the mold through the gate 9, water or air is then admitted to the port 17 and passing down and out through the port 18 keeps the core cool, and the core is then raised slowly, and as soon as the core has started the compressed air is admitted to the bottom of the mold and filling the space left by the core holds and keeps the glass in shape in the mold while the core is being withdrawn.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. A pipe-machine, comprising a mold, a core movable in the mold and having longitudinal passages one for conducting a cooling medium, and the other air under pressure, the air-passage leading out through the ends of the core, and means for supplying compressed air to the mold below the lower end of the core, substantially as specified.

2. A pipe-machine, comprising a mold, a core movable vertically in the mold, a support for said core, a port leading longitudinally through said core, another port extending longitudinally through said core and communicating with the first-named port at the bottom, a stationary stand-pipe, a perforated air-tube arranged in said stand-pipe, and an air-pipe communicating with the stand-pipe, substantially as specified.

3. In a glass-pipe-forming machine, a mold consisting of separable sections, and having a vent or outlet for hot air, a valve for controlling said vent, a core movable in the mold, and having longitudinal passages, one for a cooling medium, and the other for air under pressure, and means for supplying compressed air to the mold below the end of the core, substantially as specified.

4. In a pipe-machine, the combination with a mold, of a movable core having a recess in its lower end and longitudinal passages opening into the recess, a stand-pipe projecting into the mold, and a pipe for supplying compressed air to the mold below the core, said pipe being arranged in the stand-pipe, substantially as described.

5. A pipe-machine, comprising a mold, a vertically-movable core having a conical recess in its lower end and provided with longitudinal passages opening into the said recess, and with longitudinal passages communicating with each other near the lower end of the core, a stand-pipe projecting into the mold, and a pipe in the stand-pipe and having a conical end projecting into the recess of the core, said pipe being adapted to supply compressed air to the mold below the core, substantially as described.

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