C. DAY.

FLUID PRESSURE CONTROLLING MECHANISM FOR GLASS DRAWING MACHINES.

APPLICATION FILED MAY 1, 1913.

1,124,871. Patented Jan. 12, 1915.

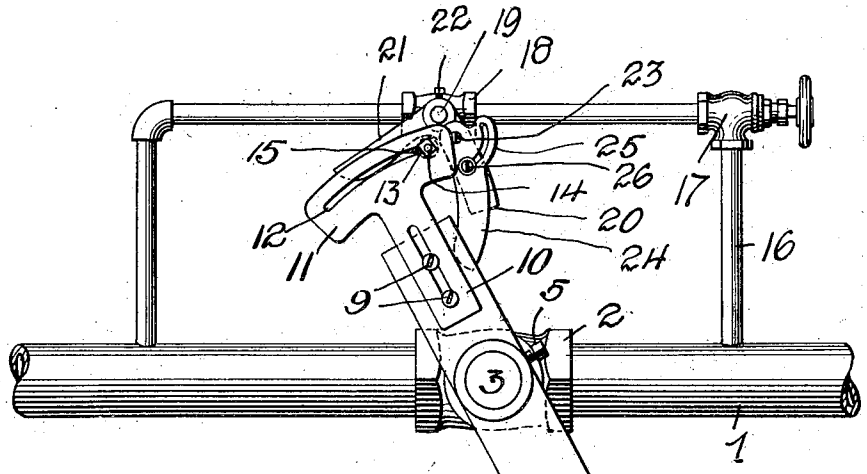


Fig. 1.

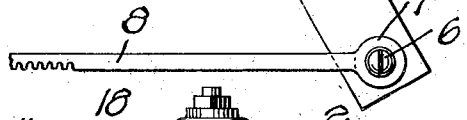


Fig. 2.

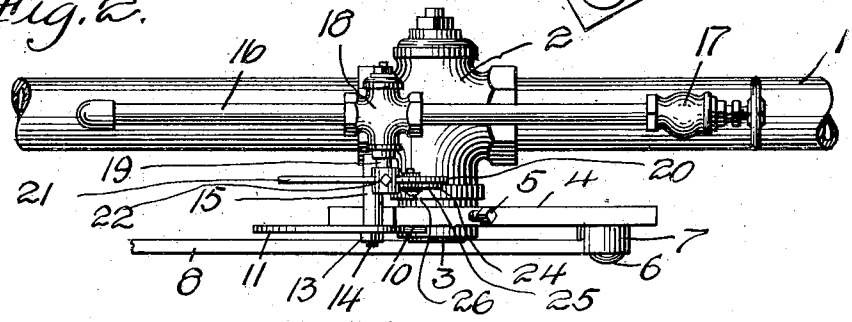


Fig. 3.

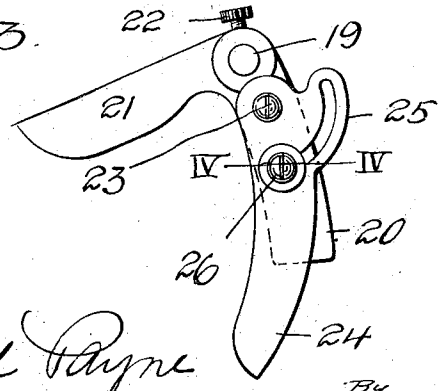
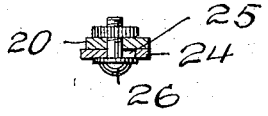


Fig. 4.



WITNESSES

Samuel Payne

Karl H. Butler

INVENTOR

C. Day.

By Henry C. Ewert

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES DAY, OF ARNOLD, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JOHN J. NIGON, OF NEW KENSINGTON, PENNSYLVANIA.

FLUID-PRESSURE-CONTROLLING MECHANISM FOR GLASS-DRAWING MACHINES.

1,124,871. Specification of Letters Patent. Patented Jan. 12, 1915.

Application filed May 1, 1913. Serial No. 764,915.

To all whom it may concern:

Be it known that I, CHARLES DAY, a citizen of the United States of America, residing at Arnold, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Fluid-Pressure-Controlling Mechanism for Glass-Drawing Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to air valves and valve gearing for glass drawing machines, and the primary object of my invention is to provide a novel automatic valve mechanism by which a low pressure of air can be obtained for producing a cap preparatory to drawing a cylinder or tube and then a high or greater pressure of air for forming a glass cylinder or tube as it is drawn from a pot or other receptacle.

Another object of this invention is to provide air valves and valve gearing that are reversible whereby they can be used in connection with left or right hand machines for controlling the supply of air to a drawing head or glass drawing apparatus whereby a primary and secondary supply of air can be obtained to insure a perfect and uniform cap formation and a cylinder or tube of various sizes.

A further object of this invention is to provide a simple, durable and inexpensive valve mechanism of the above type that can be easily operated and readily adjusted to obtain desired results.

With the above and other objects in view the invention resides in the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawing, wherein:—

Figure 1 is a side elevation of an air valve and the gearing thereof, Fig. 2 is a plan of the same, Fig. 3 is an enlarged elevation of a reversible and adjustable valve crank, and Fig. 4 is a cross sectional view taken on the line IV—IV of Fig. 3.

Further describing my invention in detail with reference to the accompanying drawing, wherein like numerals denote corresponding parts throughout: 1 denotes an air supply pipe adapted to be connected to a draw head or a drawing apparatus for forming and producing a glass cylinder or tube. The pipe 1 is provided with a shut-off valve 2 and the stem 3 of said valve is provided with an arm 4, which is adjustably mounted upon said stem by a set screw 5. One end of the arm 4 is pivotally connected by a screw 6 or other fastening means to the head 7 of a rack bar 8 adapted to be moved by a pinion (not shown). The rack 8 and the pinion simply constitute a conventional form of means for rocking the arm 4 whereby the valve 2 can be gradually opened and closed.

Adjustably connected to the opposite end of the arm 4 by screws 9 or other fastening means is the slotted end 10 of a segment-shaped head 11. The segment-shaped head 11, is slotted, as at 12 and adjustably mounted in the slot 12, by a nut 13 is a rod 14 supporting a roller 15 at right angles to said head.

The reference numerals 16 denote pipes connected to the pipe 1 and providing a by-path around the valve 2. The pipes 16 have a regulating valve 17 of the ordinary and well known type, also a shut-off valve 18. The shut off valve 18 has the stem 19 thereof provided with an adjustable angle crank comprising arms 20 and 21. The adjustable crank is held by a set screw 22 and pivotally connected to the arm 20 by a screw 23 or other pivotal means is a contact piece 24 having a slotted segment shaped portion 25 that is adjustably held relatively to the arm 20 by a screw 26 or other fastening means, whereby the contact piece 24 can be adjusted and fixed relatively to the arm 20. The crank of the stem 19 is positioned in the path of the roller 15, whereby said roller will contact with the arm 21, the contact piece 24 or the arm 20 according to desired adjustments.

In view of the arrangement of the valve 18 relatively to the valve 2, that is, its juxtaposition, it is evident that the outer end of the arm 4 will have a greater movement and consequently produce a greater action than that portion of the arm connected to the stem 3 of the valve 2. The valve crank of the valve 18 will therefore be actuated prior and in advance of the valve stem 3, consequently the valve 18 will be opened in advance of the valve 2 by reason of the roller 15 contacting with the piece 24. Of course the location of the piece 24 relatively to the arm 20 determines the action or the opening

and closing of the valve 18 relatively to the valve 2. As the valve 18 is opened sufficient air passes through the by-path to produce a cap above the surface of molten glass preparatory to drawing a cylinder or tube. As the cap is produced it is necessary that a sufficient supply of air enter the cap for the production and formation of a glass cylinder or tube, and as the diameter of the pipes 1 and 16 vary, it is apparent that a greater volume of air will pass through the valve 2 than through the valve 18, consequently as the valve 2 is opened the necessary supply of air is admitted to the cap for the formation of a cylinder or tube.

It is through the medium of the adjustable crank and the contact piece 24 thereof; the adjustable roller 25; the adjustable end of the head 11, and the adjustable arm 4 that the opening of the valve 18 can be regulated relatively to the opening of the valve 2. Furthermore, the valve 17 permits of the air supply through the by-path being regulated, and all of these regulations and adjustments contribute to the proper formation of a cap relatively to a cylinder or tube, without any danger of either bulging or becoming distorted due to an irregular, low or high pressure that is not conducive to the formation of a uniform cylinder or tube.

It is thought that the operation and utility of the valve gearing will be apparent without further description, and while in the drawing there is illustrated a preferred embodiment of the invention, it is to be understood that the structural elements are susceptible to such variations and modifications as fall within the scope of the appended claim.

What I claim is:—

In an air valve and valve gearing for glass drawing machines, an air supply pipe, a valve in connection therewith, pipes connected to said air supply pipe and providing a by-path around said valve, a valve in connection with said pipes, an adjustable crank carried by the stem of said valve, an adjustable contact piece carried by said crank, an adjustable arm in connection with the stem of the first mentioned valve, an adjustable head carried by said arm, and an adjustable roller carried by said head and adapted to move said crank and the contact piece thereof whereby the valve of said pipes will be actuated in advance of the valve of said air supply pipe.

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

CHARLES DAY.

Witnesses:
JOHN J. NIGON,
MAX H. SROLOVITZ.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."