

J. F. HAENNIG.
PUMP ATTACHMENT.
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1,069,003.

Patented July 29, 1913.

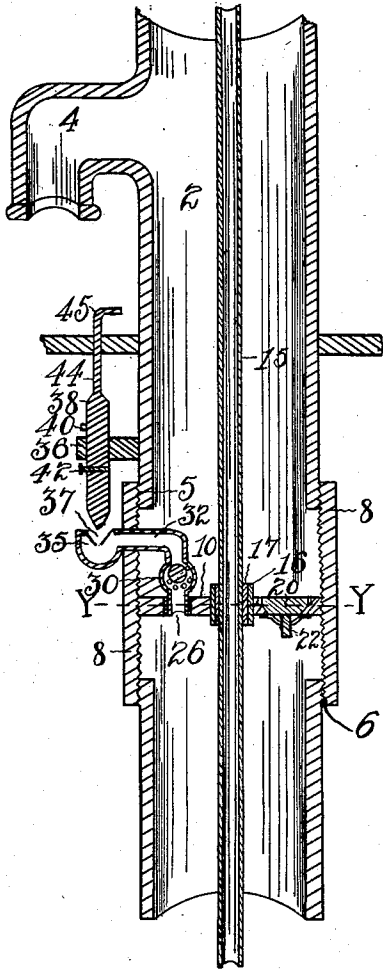


FIG. 1.

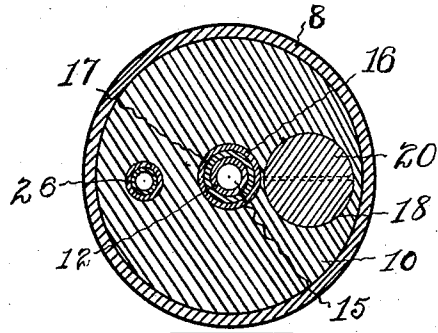


FIG. 2.

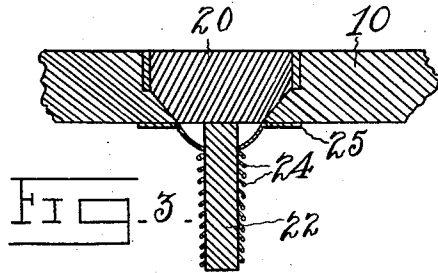


FIG. 3.

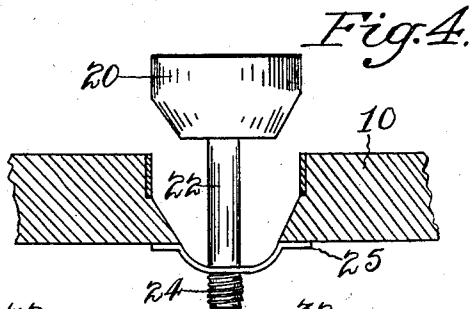


Fig. 4.

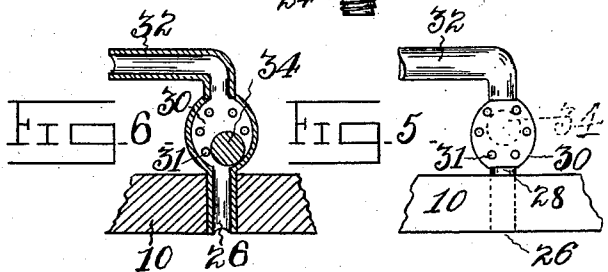


FIG. 6.

FIG. 5.

WITNESSES:
R. Hofer.
F. Becker.

INVENTOR
Joseph F. Haennig
BY
M. M. Gady
ATTORNEY

UNITED STATES PATENT OFFICE.

JOSEPH F. HAENNIG, OF MASONVILLE, IOWA.

PUMP ATTACHMENT.

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To all whom it may concern:

Be it known that I, JOSEPH F. HAENNIG, a citizen of the United States, residing at Masonville, in the county of Delaware and State of Iowa, have invented certain new and useful Improvements in Pump Attachments, of which the following is a specification.

My invention belongs to improvements in pumps with special regard to attachments whereby the pump is rendered automatically non-freezing, and the object is to provide means within the cylinder and below the frost line, which can be easily installed, is simple and inexpensive in construction, will last a long time and can be readily replaced or repaired at a minimum cost and which will automatically draw off the water in freezing weather when the pump has ceased pumping, and further if so desired to retain the water in the pump when the weather is warm.

It consists in inserting in the cylinder of a pump a partition in which partition is a plurality of valves with certain attachments to said valves whereby the objects sought are accomplished.

The following specification with the drawings will fully describe and show my invention.

Figure 1 is a vertical section of a pump cylinder and of my device therein. Fig. 2 is an enlarged cross section through line Y—Y of Fig. 1, showing the partition with the attachments in position. Fig. 3 is a vertical section of one of the valves and of the partition with part cut away. Fig. 4 is a view of the valve raised in the partition. Fig. 5 is a perspective view of another valve in said partition with its attachments, and, Fig. 6 is a vertical section of Fig. 5.

Like characters of reference denote corresponding parts in all of the figures.

Referring to the drawings, 2 represents the cylinder of a pump which is supplied with a discharge pipe 4. Below the frost line of the well, the cylinder is cut in two and the upper portion is provided with screw threads 5 at its lower end and the lower portion of the cylinder is also supplied with screw threads 6 at its upper end. These two parts of the cylinder are coupled together by a coupler 8 which is provided with screw threads on its inside that engage the screw threads 5 and 6 on the two parts of the cylinder and in this manner the two parts

of the cylinder are coupled together. In the coupling 8 is secured a partition 10 which is provided with an opening 12 through which the pump rod 15 passes. In this opening 12 around the pump rod is rigidly fastened packing 17 and around the packing is a tube 16. This packing 17 may be around the pipe 16 but I prefer the other form of construction.

Through the partition 10 at one side of the opening 12 is a valve opening 18, in which is located a valve 20 preferably in the shape as shown in Fig. 4 and provided with a stem 22 around which is coiled a spring 24, which spring is secured to the bottom of the stem and also to a curved bar 25, that extends across the opening 18 and is secured to the underside of the partition. The office of which spring is to keep the valve closed. Through the partition 10 opposite the valve 20 is another opening 26 in which is inserted a pipe 28 that extends through the partition and a short distance above and the top is surrounded by a cage 30. The top of the cage is connected with an opening through the coupling 8 by a pipe 32. This cage is supplied with one or more openings 31. Within the cage is a ball 34 that fits over the top of the pipe 28 and is adapted to close both the pipes 28 and 32 at different times. It will be observed that by the shape of the valve 20 and the arrangement of the other valve through which the water is drawn off, that when the pump ceases pumping the spring 24 will come into immediate action and with the gravity of the valve 20 the water will be forced back into the cylinder below the partition and this effect will continue the pressure of the water in the tube 26 against the ball 34, so as to prevent any water for a brief space of time from passing out through the pipe 32 and therefore, whatever water is above the level of the lower side of the spout will pass out through the spout.

When in non-freezing weather it is desired to retain the water in the cylinder continually, then I provide means for closing the pipe 32. To the end of the pipe 32 is secured a cup 35, which said cup is also provided with an opening 37 which is larger at the top and has tapering sides. Above this on the cylinder or on the coupling 8 is a guide 36 provided with an opening there-through in which opening is a vertical groove extending a short distance from the

top (not shown). Through this opening is a plug 38 which is pointed at its lower end and adapted to fit in and close the opening 37 and shut off the flow of water from the cylinder, and has also secured to one side a pin 40, which is adapted to slide in the groove in the guide and limit the vertical movement of the plug 38. At the lower end of the plug is a pin 42 passing through the plug, which is adapted to engage the guide and limit the upward movement of the plug. To the top of the plug is attached a rod 44 that extends up through the platform of the well and is provided with a handle 45 whereby the operator can raise and lower the plug and shut off or open the pipe 32. This appliance for retaining the water in the cylinder above the partition may be placed in the cylinder and the handle project through the cylinder above the platform of the well, but I prefer to have it set outside of the cylinder. The manner in which this operates is substantially as follows: The pump is started and the water passes up in the cylinder against the underside of the valve 20 and raises it up to the position shown in Fig. 4, having compressed the spring 24, and the water passes out through the partition up around the valve and into the cylinder above the partition. At the same time the pressure of the water will also force the ball 34 up into the top of the cage 30 and shut off the water from also passing out through the pipe 32, but since the cage 30 is open it will not prevent the water from passing into the cylinder 2 above the partition. When the pump has ceased then the valve 20 will drop down by its own weight and the force of the spring 24 and close the opening 18 and at the same time the ball will drop down to the lower end of the cage over the pipe 28 and prevent any water from passing back into the cylinder through the partition. Then the water that is in the cylinder above the partition will pass out through the tube 32. Whenever it is desired to retain the water in the cylinder, the operator releases the plug and it drops into the opening 34 and closes the pipe 32. It will be seen by this mode of construction that all of the appliances for preventing the freezing is wholly within the cylinder and down below the frost line.

Having now described my invention what I claim and desire to secure by Letters Patent is,

1. In a device of the character described, a pump cylinder, a partition in said cylinder, a valve in said partition, and means connected with said partition and side of the cylinder for drawing off the water from said cylinder above the partition through the side of the cylinder after the pump has ceased pumping.

2. In a device of the character described,

a pump cylinder, a partition in said cylinder, a plurality of valves in said partition and means connected with one of said valves for automatically drawing off the water from said cylinder above the partition after the pump has ceased pumping.

3. In a device of the character described, a pump cylinder, a partition in said cylinder, a spring controlled valve in said partition, a second valve in said partition and means engaging said partition and one side of the cylinder for automatically drawing off the water above the partition when the pump has ceased pumping.

4. In a device of the character described, a pump cylinder, a partition in said cylinder, a valve in said partition, a second valve opening through said partition into the cylinder and through the side of the cylinder for automatically drawing off the water within the cylinder above the partition, and means for controlling the second valve.

5. In a device of the character described, a pump cylinder, a partition in said cylinder, a valve in said cylinder, a pipe through said partition, a pipe through the side of the cylinder, a cage connecting the two pipes, and a ball in said cage adapted to close the pipe through the side of the cylinder when the pump is in operation and to close the pipe through the partition when the pump has ceased pumping.

6. In a device of the character described, a pump cylinder, a partition in said cylinder, a valve in said partition, a pipe through said partition and through the side of the cylinder for automatically drawing off the water within the cylinder above the partition, and means in said pipe for controlling the flow of water through the side of the cylinder.

7. In a device of the character described, a pump cylinder, a partition in said cylinder, a spring controlled valve in said partition, a second valve, means for connecting the second valve through the side of the cylinder for drawing off the water from said cylinder above the partition after the pump has ceased pumping, and means for controlling at will the flow of water through the side of the cylinder after the pump has ceased pumping.

8. In a device of the character described, a pump cylinder, a partition in said cylinder, a valve in said partition controlled by a spring, a pipe through the partition and side of the cylinder above the partition, and means for automatically controlling the flow of water through the pipe.

9. In a device of the character described, a pump cylinder, a partition in said cylinder, a pump rod through the partition, a plurality of valves in said partition one of which is controlled by a spring and the pressure of water, and means in connection with the second valve in the partition for auto-

atically drawing off the water above the partition through the side of the cylinder after the pump has ceased pumping.

5 10. In a device of the character described, a pump cylinder, a partition in the cylinder, a valve in the partition, a second valve in the partition and side of the cylinder, and means connected with the first valve for pressing the water in the cylinder below the

partition and thereby holding open the second valve for a short time after the pump has ceased pumping.

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

JOSEPH F. HAENNIG.

Witnesses:

M. M. Cady,
R. S. Hoeft.

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