

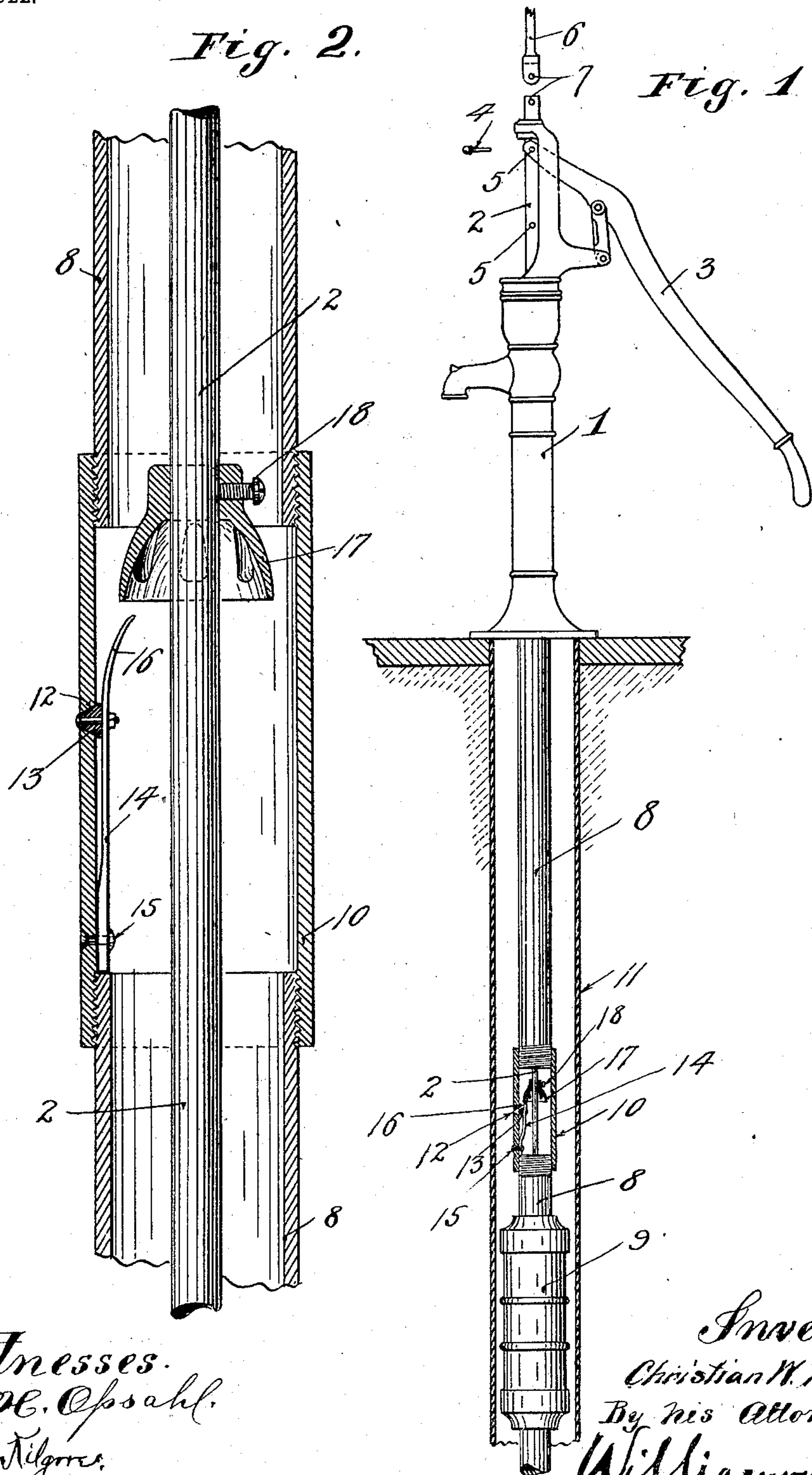
No. 725,189.

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C. W. WINTHER.  
VENT CONTROLLING DEVICE.

APPLICATION FILED DEC. 31, 1901.

NO MODEL.



Witnesses.  
A. H. Opsahl.  
H. D. Kilgore.

Inventor:  
Christian W. Winterer  
By his Attorneys.  
William M. Meacham



# UNITED STATES PATENT OFFICE.

CHRISTIAN W. WINTHER, OF FEDORA, SOUTH DAKOTA.

## VENT-CONTROLLING DEVICE.

SPECIFICATION forming part of Letters Patent No. 725,189, dated April 14, 1903.

Application filed December 31, 1901. Serial No. 87,873. (No model.)

*To all whom it may concern:*

Be it known that I, CHRISTIAN W. WINTHER, a citizen of the United States, residing at Fedora, in the county of Miner and State of South Dakota, have invented certain new and useful Improvements in Vent-Controlling Devices; 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.

My invention has for its object to provide an improved venting-pipe for wells—that is, for the pump-pipes thereof; and to this end it consists of the novel devices and combinations of devices hereinafter described, and defined in the claim. Hitherto devices of this general character have been provided whereby by the use of a connection provided especially for that purpose the venting-valve may be opened and closed at will. In accordance with my present invention I provide a venting-valve which is opened by a downward movement of the pump-rod and the part carried thereby below the lowest position which it can reach in the act of pumping. This extreme downward movement of the pump-rod is preferably accomplished by temporarily disconnecting the said rod from the pump-handle in the one case or from the windmill-rod in the other. The well-known purpose of these venting-valves as used in connection with pump-pipes is to allow the water to run down below the freezing-line whenever the pump is thrown out of action.

My invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a view, partly in side elevation and partly in vertical section, showing the pump, its supply-pipe, and other devices and illustrating my improved venting device applied in working position thereto. Fig. 2 is an enlarged vertical section of those portions of the pump pipe and rod to which my improved venting device is applied.

The numeral 1 indicates an ordinary pump, having a pump-rod 2 and handle 3, which rod

and handle are adapted to be detachably connected by inserting a pin 4 through perforations 5 of said parts.

The numeral 6 indicates the lower end of a windmill-rod, which by means of the pin 4 and perforations 7 is adapted to be detachably connected to the upper end of a pump-rod 2.

8 indicates the pump-pipe, which is provided with an ordinary cylinder 9 and above said cylinder with an interposed sleeve-section 10.

The well illustrated is what is known as a "tubular" well, involving what is called an "independent" pump, and the numeral 11 indicates the outer tube or sheath of such well. The pump-rod 2 is of course connected to a piston, which works in the cylinder in the ordinary way.

The sleeve-section 10 is located at a depth below the freezing-line, and in one side thereof is a vent-perforation 12, which is normally closed by a valve 13, preferably of rubber, but which may be made of any suitable material. This valve 13 is carried by a leaf-spring 14, the lower end of which is rigidly secured to the inner and lower portion of the sleeve 10 and the upper end of which is preferably bent slightly inward, as shown at 16.

On the piston-rod 2 is a valve-trip, preferably afforded by an inverted cup 17, adjustably secured to said rod by a set-screw 18. The lower edge of the trip-cup 17 stands in such position that when the pump-rod is disconnected and allowed to lower to an extreme position it will engage the cam end 16 of the valve-support 14 and move the valve 13 into an open position, as indicated in Fig. 1. The lowest position which the said trip 17 will occupy in the pumping action is indicated in Fig. 2.

The device above described is of course capable of considerable modification within the scope of my invention as herein claimed.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

The combination with a pump having a supply-pipe and a pump-rod, the latter of which

is detachably connected to the pump-handle  
or other power device, of a vent-opening in  
the supply-pipe, a leaf spring or support car-  
rying a valve which normally closes said vent-  
5 opening, and a depending trip carried by the  
pump-rod and adapted under an extreme  
downward movement of the pump-rod, to en-  
gage the free end of said leaf-spring and force

said valve into an open position, substantially  
as described. 10

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

CHRISTIAN W. WINTHER.

Witnesses:

H. R. BARNES,

CLYDE SHOEMAKER.