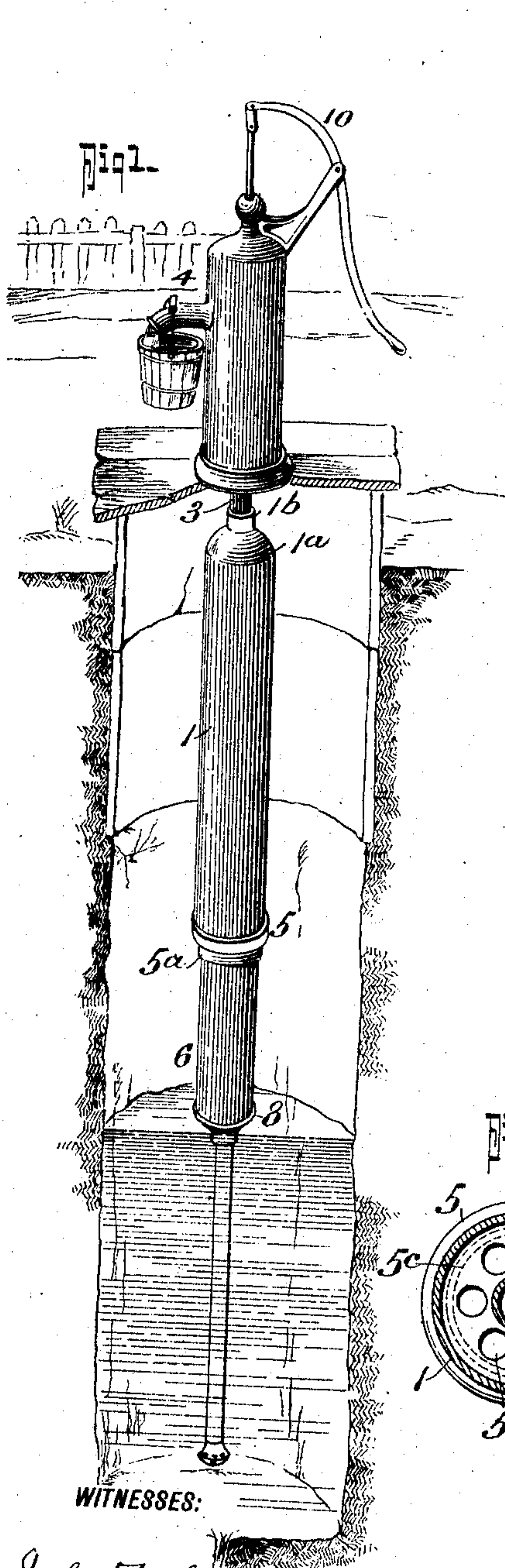


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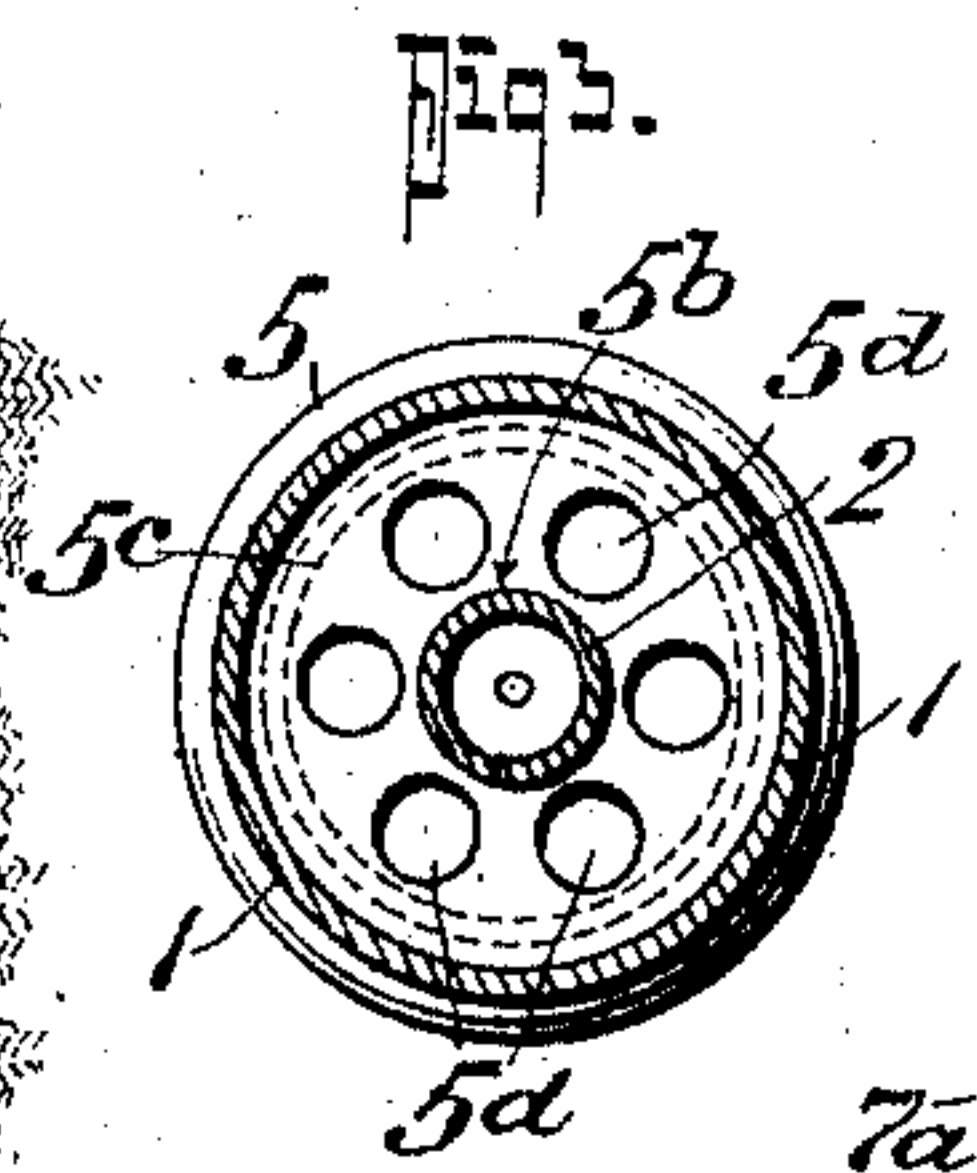
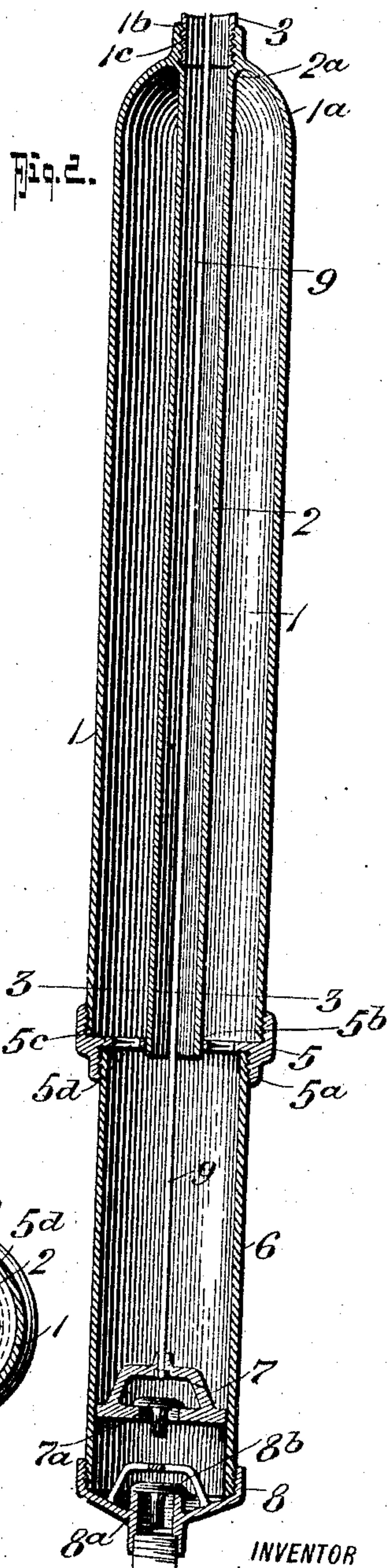
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PUMP.

APPLICATION FILED DEC. 11, 1907.



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GOTLIEB SIPPERT, OF BOWDLE, SOUTH DAKOTA.

PUMP.

No. 883,496.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GOTLIEB SIPPERT, residing at Bowdle, in the county of Edmunds and State of South Dakota, have invented certain new and useful Improvements in Pumps, of which the following is a specification.

My invention relates to certain new and useful improvements in pumps, and it more particularly is adapted for use in connection with wells and pumping systems, and in its generic nature embodies an improved construction of pump comprising a casing including an air compression chamber, and a piston casing coöperating therewith, together with means for securing the piston casing and compression casing or cylinder together. Integrally formed with the compression cylinder is a central water conveying pipe whose lower end passes through an apertured disk and is in communication with the pump cylinder, the pumping rod passing through this pipe and joining with the valved piston. A water off-take pipe is secured to the compression casing and in communication with the water conveying pipe thereof to convey the water to the surface.

My present invention also embodies certain novel details of construction, combination and arrangement of parts, all of which will be first described, and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which,—

Figure 1, is a perspective view of a pump embodying my invention, the well being shown in section. Fig. 2, is a central, vertical, longitudinal section of the compression cylinder or casing and the parts below the same. Fig. 3, is a horizontal section on the line 3—3 of Fig. 2.

Referring now to the accompanying drawings in which like letters and numerals of reference indicate like parts in all of the figures, 1 designates the air compression cylinder whose upper end is closed by a dome-like portion 1^a, and with which the water conveying pipe 2 is integrally formed as at 2^a, the pipe 2 and the cylinder 1 being preferably constructed of malleable iron. The cylinder 1 is formed with a collar 1^b internally threaded as at 1^c into which the water off-take pipe 3 screws, the pipe 3 extending up to the top of the well and joining with the spout head 4, as indicated. At the lower end of the casing or cylinder 1, a collar 5 is screwed, the lower

end of the casing being externally threaded to receive such collar, and the collar 5 has a portion of reduced diameter 5^a that is internally threaded to receive the piston cylinder 6 in which the pump piston 7 operates, the cylinder 6 being screwed into the collar 5 and having its lower end closed by a cap 8 that is provided with a valved aperture 8^a controlled by a puppet or other suitable valve 8^b, as indicated. The piston 7 is also provided with a valved aperture controlled by a valve 7^a and is secured to the piston rod 9 which passes through the water conveying pipe 2 and the off-take pipe 3 connects with the pump handle 10, as clearly indicated in Fig. 1 of the drawings. The water conveying pipe 2 is preferably formed slightly longer than the casing 1 to project through the central aperture 5^b of the disk portion 5^c of the collar 5, the collar 5 with its disk portion 5^c serving as a coupling, not only for the casing 1 and the valve cylinder 6, but also for the pipe 2 so that the three parts are rigidly united by the single coupling connection. The disk portion 5^c in the coupling 5 is provided with a series of water passages 5^d so as to open up communication between the interior of the cylinder 1 and the piston cylinder 6 so that the water may be forced from the cylinder 6 into the cylinder or casing 1, as the pump is in operation.

In the practical application of my invention, the operator manipulates the pump handle 10 to work the pump rod 9 up and down and consequently operates the valved piston 7 and causes water to be drawn into the piston casing, through the valved aperture 8^a and on the down stroke of the piston 6 water passes through the piston valve 7^a into the cylinder 6 above the same and on the next up stroke of the piston 7 the same action as before takes place and in addition the water in the casing 6 is forced up into the cylinder 1 (which it should be understood is filled with air) and also forces the water into the pipe 2. After a few operations the water will compress the air in the cylinder or casing 1 to such a degree that the compressed air within the cylinder 1 will serve to force the water out through the pipe 2 and off-take pipe 3 to the off-take spout 4 and deliver the same at the surface. This action of the compressed air is supplemented by the operation of the piston 7 so as to cause a continuous steady stream of water to flow out of the pump at the surface and not a pulsating or

fluctuating stream as is usual in the ordinary type of pumps not employing a compression cylinder or casing.

From the foregoing description taken in connection with the accompanying drawings, it is thought the complete construction, operation and advantages of my invention will be readily understood by those skilled in the art to which the invention appertains.

What I claim is:

1. In a pump, the combination with the pump cylinder, the piston operable therein, and the piston rod, of a compression cylinder, a water conveying pipe passing through the compression cylinder and in communication with the pump cylinder, combined with a coupling member for the pump cylinder, the compression cylinder, and the water conveying pipe, said coupling comprising a threaded portion to receive the compression cylinder, and another threaded portion to receive the pump cylinder and an apertured disk portion to receive the water conveying pipe.
2. In a pump, the combination with the pump cylinder, the piston operable therein, and the piston rod, of a compression cylinder, a water conveying pipe passing through the compression cylinder and in communication with the pump cylinder, combined with a coupling member for the pump cylinder, the compression cylinder, and the water conveying pipe, said coupling comprising a threaded

portion to receive the compression cylinder and an apertured disk portion to receive the water conveying pipe, said disk portion having a series of apertures opening communication between the pump and the compression cylinders.

3. In a pump, the combination with the pump cylinder, the piston operable therein, and the piston rod, of a compression cylinder, a water conveying pipe passing through the compression cylinder and in communication with the pump cylinder, combined with a coupling member for the pump cylinder, the compression cylinder, and the water conveying pipe, said coupling comprising a threaded portion to receive the compression cylinder, and another threaded portion to receive the pump cylinder, an apertured disk portion to receive the water conveying pipe, said disk portion having a series of apertures opening communication between the pump and the compression cylinders, said compression cylinder and said water conveying pipe being integrally formed and said compression cylinder having an internally threaded collar or neck portion, and a water off-take pipe threaded into said collar.

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Witnesses:

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