

A. S. CHIVERS.
WELL DISCHARGER AND CLEANSER.
APPLICATION FILED DEC. 7, 1908. RENEWED DEC. 9, 1910.

990,801.

Patented Apr. 25, 1911.

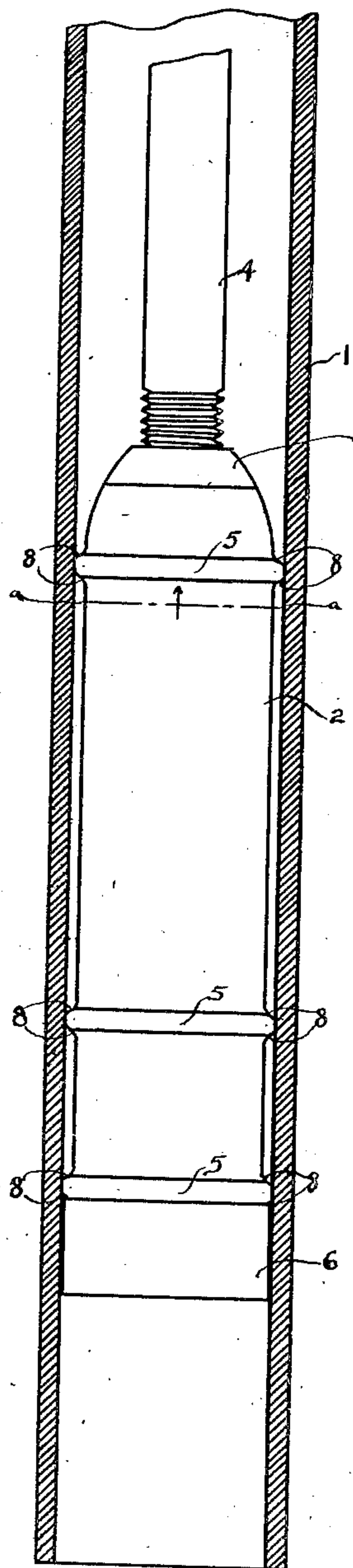


Fig. 1.

WITNESSES:

Ernest H. Guy.
La Vera Miller.

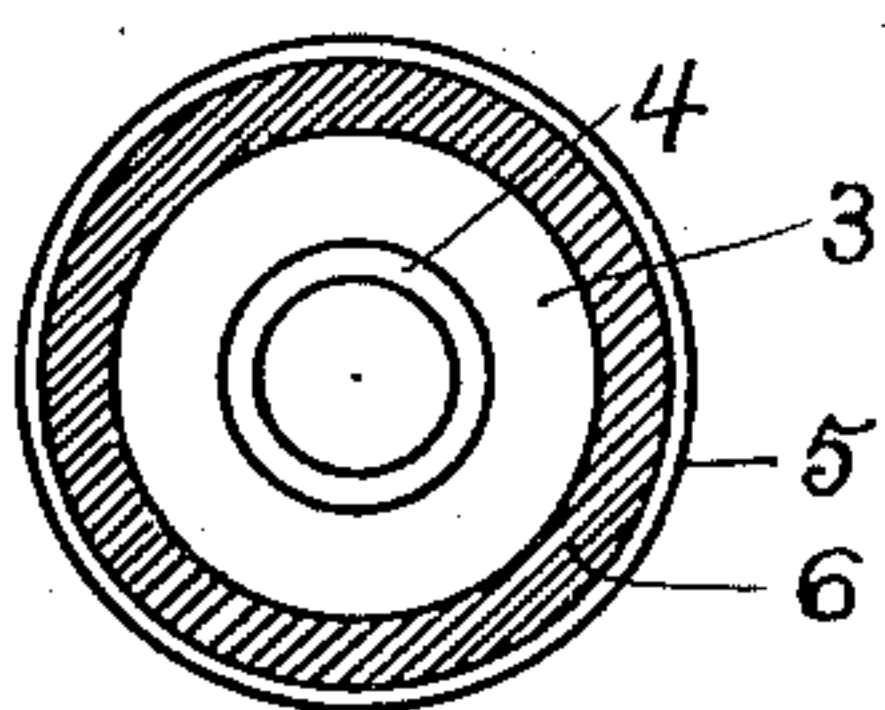


Fig. 3.



Fig. 5.

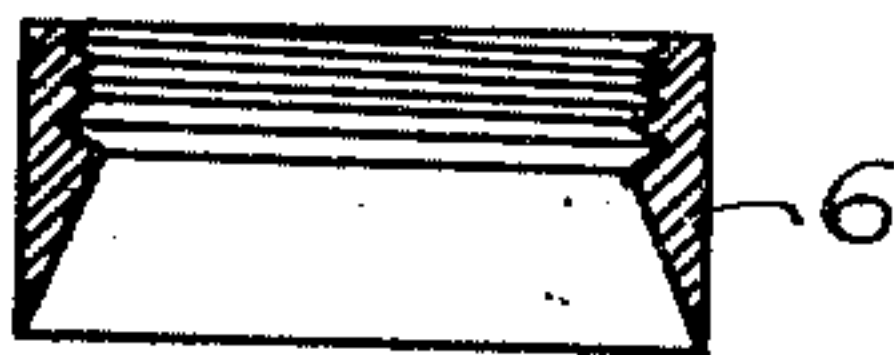


Fig. 4.

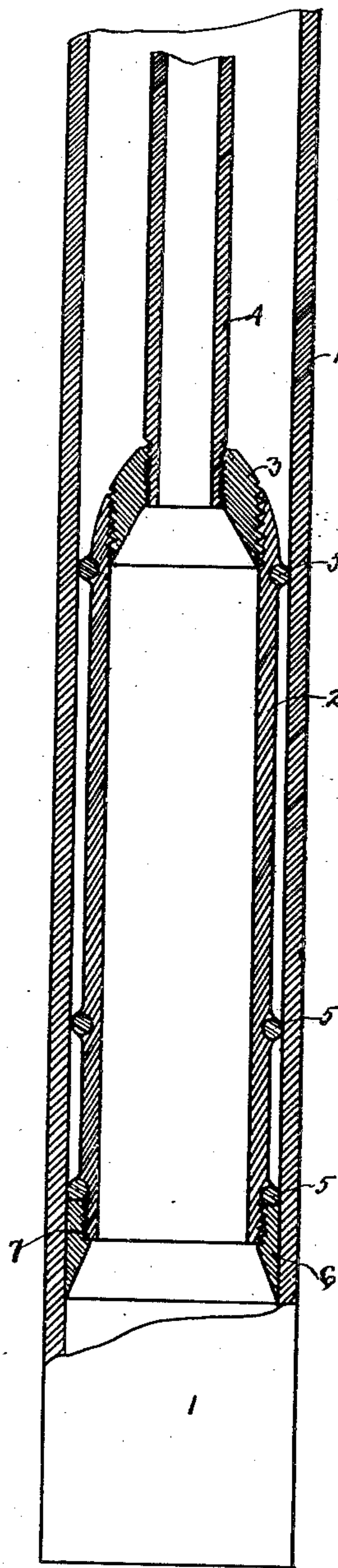


Fig. 2.

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ALGERNON S. CHIVERS, OF BEEVILLE, TEXAS, ASSIGNOR OF ONE-FIFTH TO THOMAS CRAVEN, OF BEEVILLE, TEXAS.

WELL DISCHARGER AND CLEANSER.

990,801.

Specification of Letters Patent.

Patented Apr. 25, 1911.

Application filed December 7, 1908, Serial No. 466,257. Renewed December 9, 1910. Serial No. 596,507.

To all whom it may concern:

Be it known that I, ALGERNON S. CHIVERS, a citizen of the United States, residing at Beeville, in the county of Bee and State of Texas, have invented certain new and useful Improvements in Well Dischargers and Cleansers, of which the following is a specification.

My invention relates to new and useful improvements in a well discharger and cleanser and more particularly to that class of such devices as may be used to draw up water, by reduction, compression and exclusion of the air.

The object of the invention is to produce a device of this character which will discharge the water from the well by reciprocating the same up and down in said well.

Another object is to produce a device of this character which will cleanse the inside of the well casing of all mud, slime, scales etc., and also draw off the water, when once it is placed in the well, in a continuous stream.

Finally the object of the invention is to produce a device of the character described, that will be strong, durable, efficient and comparatively inexpensive to produce and one that may be easily operated.

With the above and other objects in view the invention has relation to certain novel features of construction, and operation which will be fully described and claimed in this specification, reference being had to the accompanying drawings which form a part of the same, in which,

Figure 1 is a side elevation of my device, set in a half section of a well casing. Fig. 2 is a side sectional view of my device with the well casing broken away to show the details. Fig. 3 is a sectional plan view on the line *a-a* of Fig. 1 looking in the direction of the arrow. Fig. 4 is a half section of a circumferential bit. Fig. 5 is a valve and valve seat which may be screwed into the bit and whose use will be set forth hereinafter.

Referring now more particularly to the drawings the numeral 1 refers to the ordinary well casing in which the cylinder 2 operates.

3 refers to a bushing which is used to reduce the cylinder and 4 refers to the reduced pipe which extends from the bushing to above the surface of the ground.

5 refers to hard rubber rings which sur-

round the cylinder 2 at various points as shown in Fig. 1 and are intended to prevent air and water from passing between the cylinder 2 and the well casing when said cylinder is being raised or lowered in said casing.

A bit 6 is screwed into cylinder 2 at 7. This bit is beveled from the inside to a sharp edge at its lowermost point as shown in Fig. 4 and is made to fit very closely within the casing 1 and its principal duty is to cut all the rust, scales and other obstacles from the inner portion of the casing so that rubber rings 5 may pass up and down without becoming cut or marred. These rings 5 are held in position by shoulders 8 and extend entirely around cylinder 2. The bit 6 may be provided with a clapper valve 9 which so operates as to open and admit the water into cylinder 2 as said cylinder is being lowered, but which closes and prevents the water from flowing out of said cylinder when the same is elevated. The device is thus made more effective in throwing out water when the cylinder is forced up and down.

In constructing my device I use a cylindrical body a fraction smaller in diameter than the well casing used in the well and place thereon three or more rubber rings, one near the lower or bit end and a second about two feet above this one and a third one near the upper end. These rings are placed in depressions and shoulders of the metal are drawn around the rubber rings so that they will be stationary. I then screw on the lower end of this cylinder a bit which is preferably made of chilled steel and is sharp at its edge. The circumference of this bit is just enough smaller than the well casing to allow said bit to pass up or down therein. The bushing is screwed into the upper end of the cylinder to reduce the inner circumference thereof any desired amount and then the inner pipe 4 is screwed into this bushing which completes my device the operation of which is as follows:—The bit end is placed into the well casing and forced downward until a sufficient depth has been attained and the water will be caused to flow into the cylinder 2 and with the great reduction in volume and the compression which is caused by the lowering of the said cylinder, the air being excluded from the space between the cylinder and casing and the device being reciprocated

vertically, the water will flow entirely over the top of the pipe 4 and there being a constant flow from the fountain or source of the well the water will be replaced as fast as the device draws off the water. I have even
 5 drawn off a greater quantity of water per minute through a reduced pipe in this manner than I was able to force out of the well with the ordinary centrifugal pump.

0 The depth to which this device is to be forced and the reduction required depends upon the distance from the surface of the ground to the surface of the water.

The device may be made to accomplish
 15 the desired result by raising it out of the water and then gradually forcing it down again and repeating this movement as soon as the water ceases to flow from the smaller pipe. When used in this way the valve will
 20 permit the casing 2 and pipe 4 to be filled with water as the device is lowered, but will prevent the water from running out when the device is elevated, and as soon as it begins to move downward again the water will
 25 immediately begin to flow out of the pipe 4 as it will be entirely full of water and the time which would otherwise be consumed in filling the casing and pipe thus be saved.

What I claim is:—

30 1. In a well discharger and cleanser a three piece cylinder for operating within a well casing, a bit at its lower end for securing a valve within said cylinder, said cylinder being also provided with a pair of an-

nular elevations near the upper end of said cylinder and upon its periphery and integral therewith, a single annular elevation carried by said cylinder near its lower end, a rubber ring carried upon the periphery of the cylinder and between the elevations of the pair
 35 and a packing ring carried upon the periphery of the cylinder and between the said single elevation and the said bit.
 40

2. In a well discharger and cleanser, a cylinder having a plurality of pairs of annular elevations integral therewith, a single annular elevation carried by the said cylinder near its lower end, a plurality of hard rubber rings carried by said cylinder between the elevations of each of the said pairs and held in place thereby, a bit screwed on to the lower end of the cylinder adapted to receive a valve and being beveled from its inner side to its outer edge, a packing ring held in place by said bit and said single annular elevation, a reducing bushing secured to the upper end of the cylinder and a hollow reduced pipe having connection with said cylinder through said bushing substantially as described and for the purpose specified.
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In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALGERNON S. CHIVERS.

Witnesses:

LA VERA MILLER,
 ERNEST C. GUY.