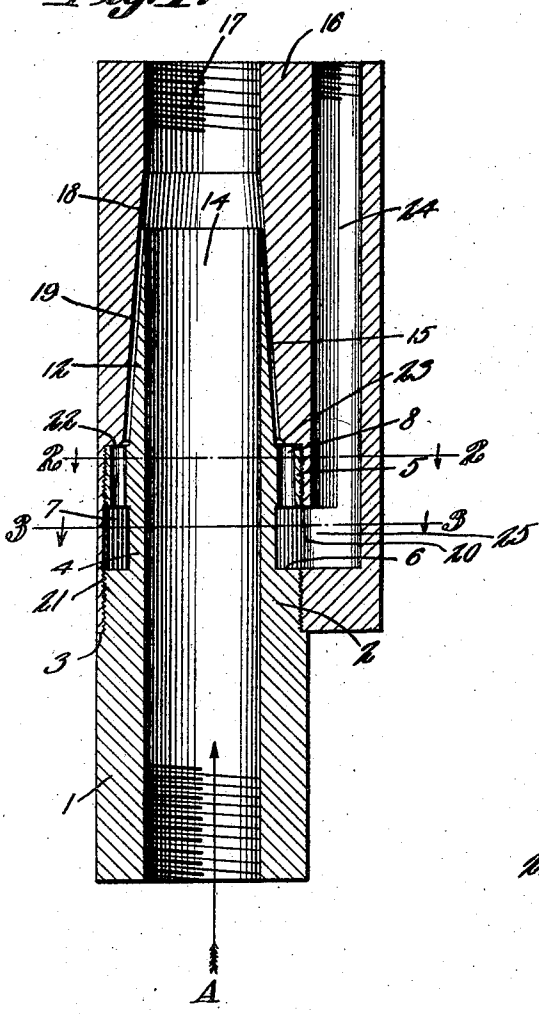
April 8, 1924. 1,489,869

B. F. WALDRON

WELL MECHANISM

Filed Dec. 1, 1922

Fig. 1.



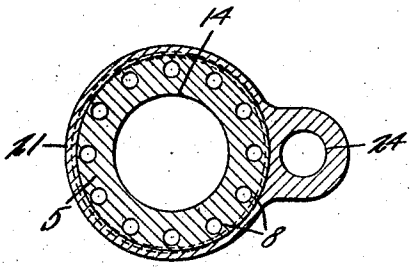


Fig. 2.

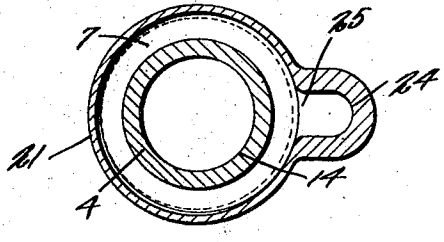


Fig. 3.

Fig. 4.

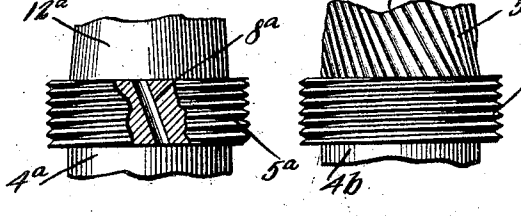


Fig. 5.

Inventor,
B. F. Waldron.

By C. A. Snow & Co.
Attorneys.

Patented Apr. 8, 1924. 1,489,869

UNITED STATES PATENT OFFICE.

BENJAMIN F. WALDRON, OF MEXIA, TEXAS.

WELL MECHANISM.

Application filed December 1, 1922. Serial No. 604,348.

To all whom it may concern:

Be it known that I, BENJAMIN F. WALDRON, a citizen of the United States, residing at Mexia, in the county of Limestone and State of Texas, have invented a new and useful Well Mechanism, of which the following is a specification.

This invention aims to provide a simple means whereby air or other fluid under pressure may be carried downwardly into a well, to force liquid upwardly, out of the well.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that, within the scope of what is claimed, changes in the precise embodiment of the invention shown can be made without departing from the spirit of the invention.

In the accompanying drawings:—

Figure 1 shows in longitudinal section, a device constructed in accordance with the invention; Figure 2 is a cross section on the line 2—2 of Figure 1; Figure 3 is a cross section on the line 3—3 of Figure 1; Figure 4 is a fragmental side elevation showing a modification, parts being broken away; Figure 5 is a fragmental side elevation showing a further modification.

In carrying out the invention, there is provided a tubular base 1 having a reduced neck 2 defining an external circumferential shoulder 3 connected by a reduced portion 4 with a circumferential rib 5, the reduced portion 4 forming a circumferential shoulder 6, and a circumferential channel 7 between the shoulder 6 and the rib 5. Passages 8 extend through the rib 5 and are located parallel to the axis of the base 1. The base 1 terminates in a nozzle 12. A bore 14 extends entirely through the base 1 from end to end. The outer surface of the nozzle 12 is of conical form as shown at 15.

The numeral 16 denotes a tubular cap having a bore 17 including a flared part 18, the flared portion 18 of the bore 17 being enlarged, and being of cylindrical form, as shown at 20, thereby to fashion a circumferential flange 21 and an internal transverse shoulder 22 in the cap. The cap is beveled as indicated at 23 adjacent to the shoulder 22, to form a circumferential channel which communicates with the flared part 18 of the bore of the cap. The cap 16 has a longitudinal duct 24 provided with an inwardly prolonged lateral extension 25.

The flange 21 of the cap 16 is threaded on the neck 2 of the base 1 and on the rib 5 of the base and abuts at its end against the shoulder 3 of the base 1, the shoulder 22 of the cap 16 abutting against the outer end of the rib 5 on the base 1. The flange 22 of the cap 16 extends about the channel 7 of the base 1 and forms the outer wall thereof. The lateral extension 25 of the duct 24 in the cap 16 communicates with the channel 7. The conical surface 15 of the nozzle 12 is spaced from the flared part 18 of the bore of the cap to form an outlet 19. The shoulder 22 of the cap overhangs the passages 8 in the rib 5 of the base 1, the channel 23 communicating with the passages 8 and constituting means whereby air or other fluid under pressure may find its way from the passages 8 into the space 19 existing between the nozzle 12 and the cap 16.

In practical operation, air or other fluid under pressure is forced downwardly through the duct 24 in the cap 16 and passes by way of the lateral extension 25 of the duct, into the circumferential channel 7 of the base 1, the fluid passing through the passages 8 and moving through the channel 23 into the outlet 19. The fluid under pressure, moving from the outlet 19 into the bore 17, causes the liquid in the well to move through the bore 14 of the base 1 and through the bore 17 of the cap 16, as indicated by the arrow A in Figure 1.

The passages 8 and the nozzle 12 constitute cooperating parts of the device shown, and either one of these cooperating parts may be so constructed as to impart a whirling motion to the fluid proceeding through the passages 8 and the outlet 19. With this end in view, the passages 8^a of Figure 4 are inclined circumferentially of the rib 5^a, whereas, in Figure 5 the nozzle 12^b is provided with circumferentially inclined corrugations 50, parts hereinbefore described being designated in Figure 4 by numerals previously used, with the exponent "a,"

parts hereinbefore described being designated in Figure 5 by numerals previously used, with the exponent "b."

What is claimed is:—

1. A device of the class described comprising a base having a nozzle and provided with an external circumferential channel forming a rib provided with a passage communicating with the channel; and a cap engaged about the base and forming the outer wall of the channel, the cap receiving the nozzle and being spaced therefrom to define an outlet wherewith the passage communicates, the cap having a longitudinal duct communicating with the channel.

2. A device of the class described comprising a base having a nozzle and provided with an external circumferential channel forming a rib provided with a passage communicating with the channel, and a cap engaged about the base and forming the outer wall of the channel, the cap receiving the nozzle and being spaced therefrom to define an outlet wherewith the passage communicates, the cap having a longitudinal duct communicating with the channel, the nozzle and the passage constituting cooperating parts of the device, and one of said cooperating parts being so constructed as to impart a whirling motion to the fluid proceeding through the passage and the outlet.

3. In a device of the class described, a main member having a bore and provided with a conical passage communicating with the bore, the main member having an internal transverse shoulder located at one end of the passage; and an auxiliary member inserted into the main member and comprising a nozzle located in the passage and spaced from the wall thereof, the auxiliary member having longitudinal openings located about the nozzle and communicating with the space between the nozzle and the wall of the passage, the openings being partially closed by the shoulder.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

BENJAMIN F. WALDRON.

Witnesses:

H. M. PEEPLES,

W. A. VERDIER.