A. A. BARTON.

DISCHARGE T FOR PUMPS.

APPLICATION FILED FEB. 3, 1920.

1,364,680.

Patented Jan. 4, 1921.

Fig. 1

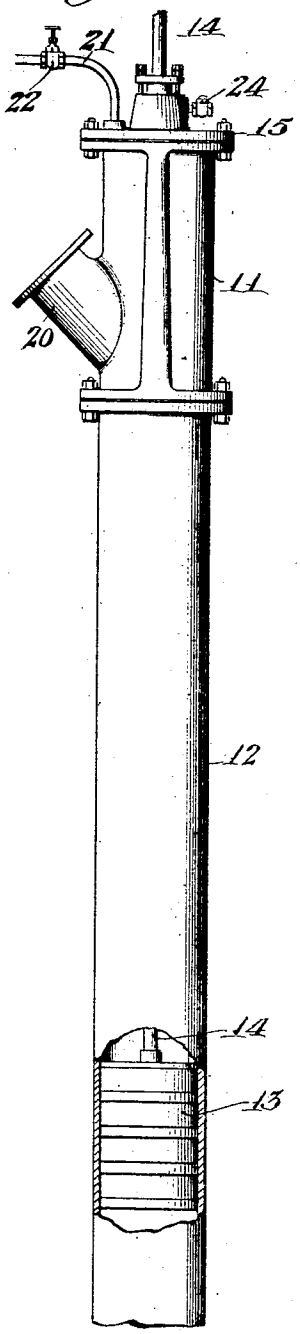
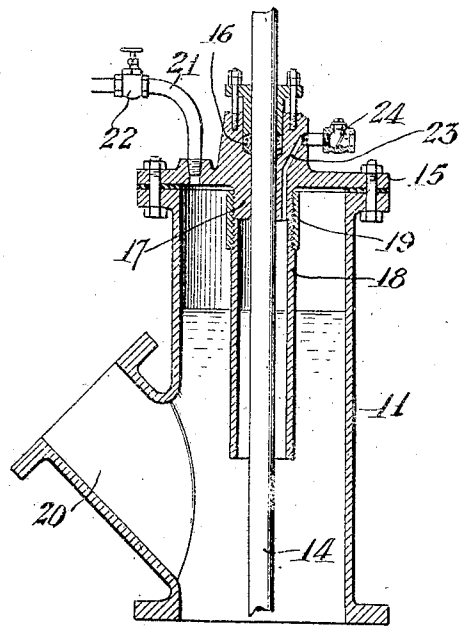


Fig. 2.



Inventor
Archilles A. Barton
by Graham & Dain
Attorneys

UNITED STATES PATENT OFFICE.

ARCHILLES A. BARTON, OF GLENDALE, CALIFORNIA.

DISCHARGE T FOR PUMPS.

1,364,680. Specification of Letters Patent. Patented Jan. 4, 1921.

Application filed February 3, 1920. Serial No. 356,039.

To all whom it may concern:

Be it known that I, ARCHILLES A. BARTON, a citizen of the United States, residing at Glendale, in the county of Los Angeles and State of California, have invented a new and useful Discharge T for Pumps, of which the following is a specification.

My invention relates to pumps, and is particularly applicable to pumps in which the working barrel is placed in the ground, the pump head being placed on the surface of the ground and operating the bucket through a series of pump rods.

One of the principal problems in the operation of any pump is to provide a steady flow of water, doing away with pulsations which are ordinarily quite noticeable in many forms of reciprocating pumps. For the purpose of increasing the capacity of pumps and doing away with these pulsations, two and three buckets are sometimes placed in the same water column and various forms of cams and link motions have been devised for moving these buckets in the most favorable manner. My invention provides an air chamber in the top of the discharge T by means of which the pulsations are compensated for as will hereinafter be explained.

Referring to the drawings which are for illustrative purposes only,

Figure 1 is a side elevation of my invention; and,

Fig. 2 is a central sectional elevation on an enlarged scale.

In the form of the invention shown, 11 is the discharge T connected to the water column 12 in which a single bucket 13 is reciprocated vertically through pump rods 14. The pump rods 14 pass through the cover 15 of the discharge T 11, a stuffing box 16 being provided therein. A boss 17 is provided on the under side of the cover 15 and a pipe 18 is secured thereto by means of a coupling 19. The pipe 18 extends downwardly inside the T 11 to a point somewhat below the discharge outlet 20.

Compressed air may be admitted to the space inside the discharge T 11 and outside the pipe 18 by means of the pipe 21 controlled by a valve 22, compressed air being supplied to the pipe 21 through the valve 22 from any convenient source (not shown). A small opening 23 extends downwardly through the cover 15 communicating with the space inside the pipe 18 and being provided with a check valve 24 which allows air to be drawn inwardly into the interior of the pipe 18 and prevents it being forced outwardly therethrough.

The method of operation is as follows:

The water column 12 being partially emptied due to the fact that the level of the water in the well is considerably below the discharge T 11, the bucket 13 is reciprocated through the rods 14 and water is pumped upwardly and outwardly through the discharge 20. The air which is in the top of the discharge T 11 is trapped between the cover 15, the walls of the discharge T 11 and the pipe 18. As all of these members may be made air tight, this air will not leak out over long periods. In some cases, however, it is advisable to supply a small amount of compressed air thereto through the pipe 21. The check valve 24 is provided for the purpose of relieving any vacuum in the top of the discharge T 11 when the pump is shut down.

What I claim is:—

1. In a pump, the combination of a water column, a bucket in said water column, an outlet T secured to the top of said water column and having a side outlet for discharging water, a cover for the top of said T, a pump rod connected into said bucket and passing upwardly through said water, said T and said cover, packing in said cover around said rod, a pipe extending downwardly inside said T around said rod, the upper end of said pipe being secured in gas tight relationship with said cover, a check valve admitting air to the space inside said pipe, and an air supply pipe for delivering compressed air to the space inside said T around said pipe.

2. In a pump, a water column, a bucket in said water column, an outlet T secured to the top of said water column and having a side outlet for discharging water, a cover for the top of said T, a pump rod connected into said bucket and passing upwardly through said water, said T and said cover, a pipe extending downwardly inside said T around said rod, the upper end of said pipe being secured in gas tight relationship with said cover, a check valve admitting air to the space inside said pipe, and an air supply pipe for delivering compressed air to the space inside said T around said pipe.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 27th day of January, 1920.

ARCHILLES A. BARTON.