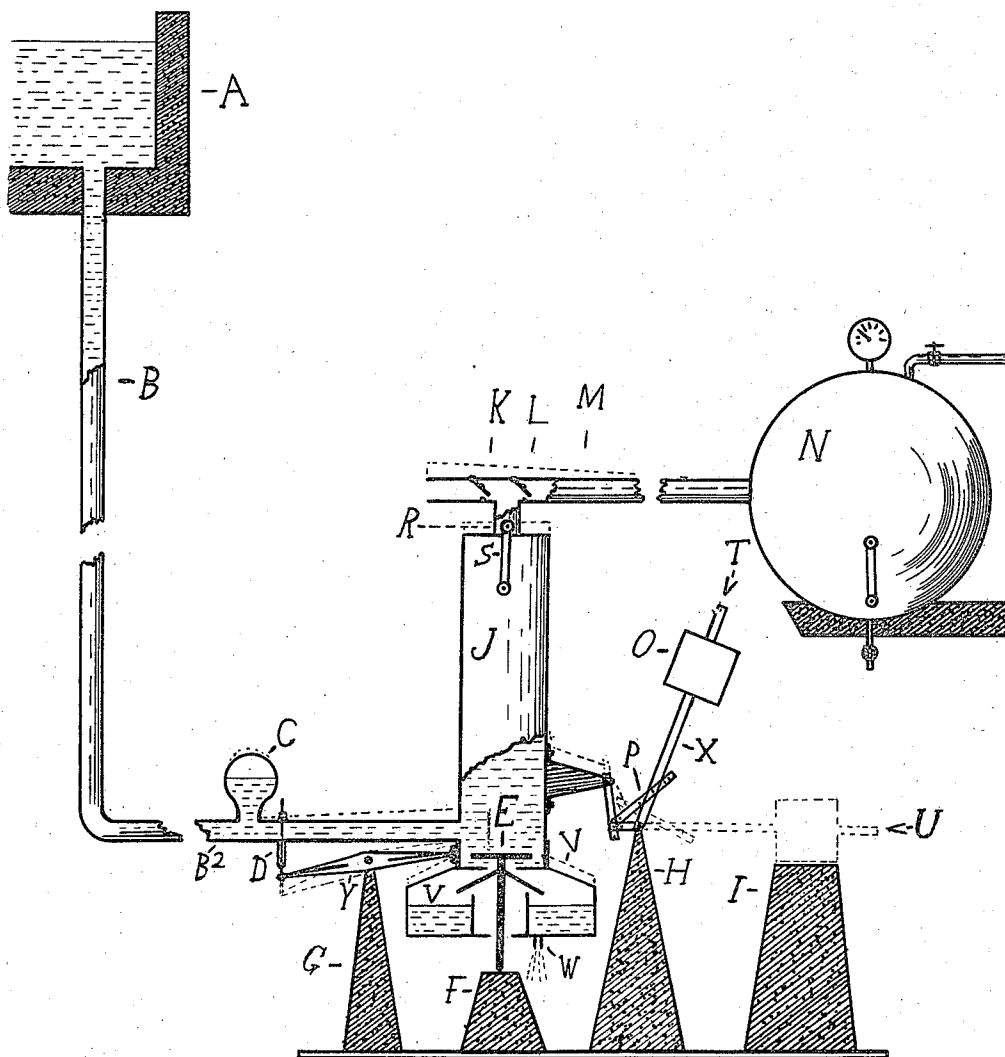


G. T. UNDERWOOD.
HYDRAULIC AIR COMPRESSOR.
APPLICATION FILED MAR. 5, 1921.

1,425,813.

Patented Aug. 15, 1922.



WITNESSES:

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GEORGE T. UNDERWOOD, OF MAXWELL, CALIFORNIA.

HYDRAULIC AIR COMPRESSOR.

1,425,813.

Specification of Letters Patent. Patented Aug. 15, 1922.

Application filed March 5, 1921. Serial No. 449,640.

To all whom it may concern:

Be it known that I, GEORGE T. UNDERWOOD, of Maxwell, in the county of Colusa and State of California, have invented a Hydraulic Air Compressor, of which the following is a specification.

This invention has for its object to compress air for general purposes, such as where compressed air is used in mines, liquid air plants, or ice plants, and may be installed in mountainous districts where high water pressure can be obtained, and is advantageous over the ordinary air pump in the fact that few wearing parts are required, and little attention is required to operate.

The accompanying drawing, forming a part of this specification, represents a sectional view of the entire apparatus embodying my invention.

In the drawing, A represents any suitable reservoir or mountain stream, the elevation from the lower apparatus depending upon the amount of air pressure desired. Pipe B carries said water together with its pressure, to chamber J, and said water in filling chamber J, crowds the air from chamber J, through check valve L, pipe M, into air tank N. Said water rises to line R indicated by gauge glass S, and the weight of the water in chamber J is then sufficient to lower chamber J, and raise balance weight O from point U to point T. Valve D then closes by the aid of pedestal G, stopping water from flowing through pipe B, and valve E opens by striking pedestal F, and the water passes from chamber J into tank V. The water in tank V acts as a balance weight to hold chamber J down until empty. As the water passes from chamber J a fresh charge of air enters chamber J through check valve K. When a sufficient quantity of water passes from tank V through opening W to lessen the weight of

the apparatus sufficiently, balance weight O drops from point T to point U. Chamber J and tank V rises and closes valve E and opens valve D, and chamber J again refills with water and the said operation continues to automatically repeat, until the air pressure in tank N is equal to the water pressure in pipe B², when the apparatus will automatically stop until air is taken from tank N, when the said apparatus will automatically start itself and the said operation continue to repeat until the air pressure in tank N again equals the pressure in pipe B².

Pipes M and B² are of such length that the natural spring of the pipes permits chamber J to raise and lower sufficiently without damaging the pipes.

The angle of balance bar X may be adjusted by means of adjustable brace bar P. Weight O may be adjusted in or out on balance bar X. The proper adjustment is made when the balance weight O rises from point U as soon as water in chamber J reaches line R.

I claim—

An air compressor comprising in combination a compression tank adapted for vertical reciprocation, a counterbalancing arm pivoted to said tank, a valve for admitting liquid under pressure to said tank, operative connection between said tank and said valve, a valve in the lower part of said tank adapted to open when tank is lowered, a second tank attached to and beneath said first named tank and in communication therewith when the second mentioned valve is open having a smaller outlet whereby said tank serves to hold down said first named tank until same is emptied, substantially as described.

GEORGE T. UNDERWOOD.

Witnesses:

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