G. PHILLIPS.

AIR COMPRESSOR.

APPLICATION FILED APR. 16, 1918.

1,331,209. Patented Feb. 17, 1920.

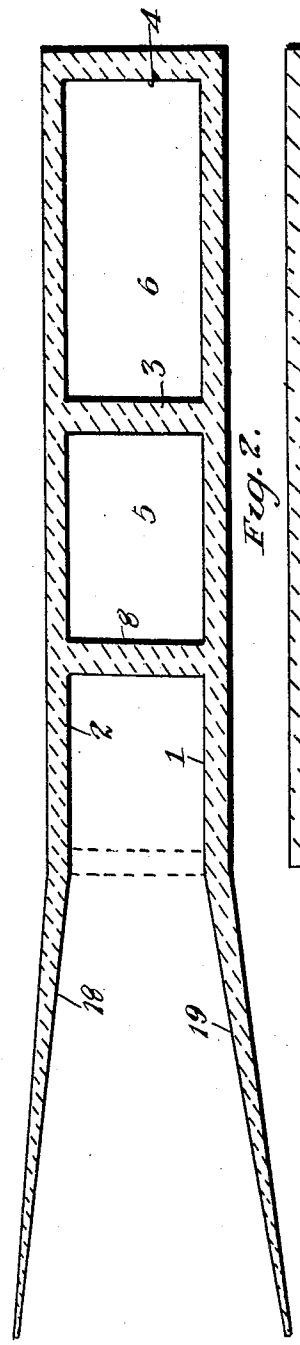


Fig. 2.

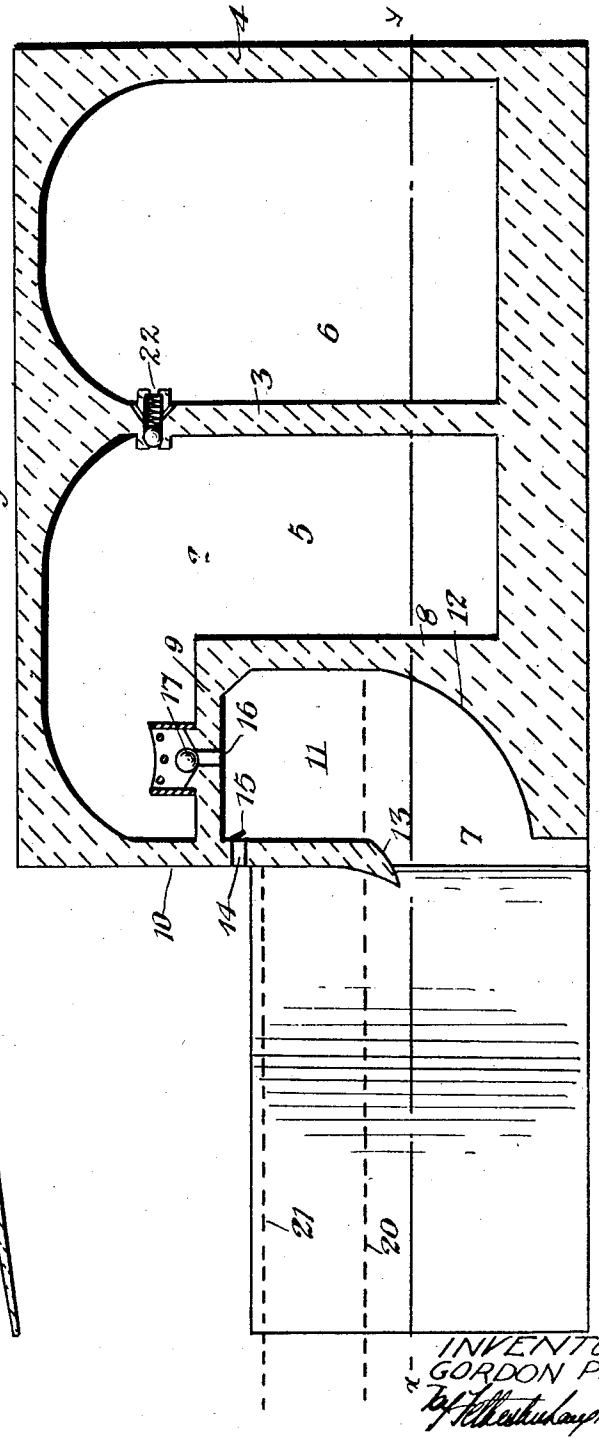


Fig. 1.

INVENTOR
GORDON PHILLIPS
By Whittemore Hulbert & Belknap
Attys

UNITED STATES PATENT OFFICE.

GORDON PHILLIPS, OF COBALT, ONTARIO, CANADA.

AIR-COMPRESSOR.

1,331,209. Specification of Letters Patent. Patented Feb. 17, 1920.

Application filed April 16, 1918. Serial No. 228,858.

To all whom it may concern:

Be it known that I, GORDON PHILLIPS, of the town of Cobalt, in the District of Nipissing, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Air-Compressors, of which the following is a specification.

My invention relates to improvements in air compressors and the object of the invention is to devise simple means whereby the force of an incoming wave may be utilized for compressing air and it consists essentially of the following arrangement and construction of parts as hereinafter more particularly explained.

Figure 1, is a longitudinal sectional view through my device.

Fig. 2, is a plan section on line *x—y* Fig. 1.

In the drawings like letters of reference indicate corresponding parts in the various figures.

1 and 2 indicate walls connected together by cross walls 3 and 4 to form chambers 5 and 6. The chamber 5 is provided with a bottom opening 7. 8 indicates a supplemental cross wall located in the chamber 5 and extending upwardly from the bottom thereof intermediately of its height, the upper end of such cross wall being conected by a horizontal wall 9 to the front wall 10 of the chamber 5. The walls 8 and 9 form a supplemental compartment or chamber 11 into which the front opening 7 hereinbefore described enters. The bottom of the chamber 11 is curved upwardly as indicated at 12 so as to merge into the vertical wall 8 at its inner end. The lower edge of the wall 10 forming the upper edge of the opening 7 is also provided with a curved portion 13 substantially concentric to the curved portion 12.

14 indicates an opening formed in the wall 10 below the horizontal wall 9 and above the maximum water level. 15 indicates an air inlet valve of any suitable construction. 16 indicates an orifice formed in the wall 9 and 17 indicates a non-return valve adapted to normally close the orifice 16. 18 and 19 indicate walls extending outwardly from the outer ends of the walls 1 and 2, the outer ends of such walls extending into the sea and diverging outwardly so as to receive a maximum length of wave therebetween.

Having described the principal parts involved in my invention I will briefly describe the operation of the same.

As the wave passes inwardly it is gathered together between the walls 18 and 19 thereby increasing its depth and volume. As the rush of water passes inwardly toward the wall 8 the body of the wave strikes the curved surface 12 and is directed upwardly forming a closure for the bottom of the chamber 11 as indicated by dotted lines 20, the water level gradually rising until it reaches the dotted lines 21 whereby the force of the water compresses the air imprisoned in the upper portion of the chamber 11, such air being forced out through the non-return valve 17 into the chamber 5. As the water recedes the water level again falls forming a vacuum in the upper portion of the chamber 11 and thereby opening the valve 15 allowing a fresh supply of air to be drawn through the orifice 14 into the chamber 11.

It may be understood that the orifice 14 and valve 15 may be dispensed with and the opening 7 so arranged that when the water sinks to its lowest level the surface of the water is below the upper edge of the opening allowing a fresh supply of air to pass through such exposed portion of the opening into the upper portion of the chamber.

If desired a further chamber may be provided such as the chamber 6, such chamber being connected to the chamber 5 by a non-return valve orifice 22.

By a device such as I have described a quantity of air may be gradually compressed and fed into a reservoir ready for utilization for any power purpose.

What I claim as my invention is.

An air compressor, comprising a chamber adapted to extend beneath the water level and having the chamber bottom curved upward to the back and having an opening in the front wall beneath the water level, diverging walls extending outwardly from each side of the opening, a lip formed at the upper edge of such opening and curved

upward from its edge so as to gradually merge into the vertical face of the front wall of the chamber, whereby a portion of the water as it is directed and gathered by the diverging walls of the chamber forms a pressure head of increased height, a valved air inlet in the front wall above the water level, a valved outlet in the top wall of the chamber, and a storage chamber surrounding the aforesaid chamber.

GORDON PHILLIPS.

Witnesses:
P. J. KNOX,
HARDY J. MCNAUGHTON.