

W. S. COOK.
COMPRESSED AIR SYSTEM.
APPLICATION FILED JAN. 28, 1911.

1,006,912.

Patented Oct. 24, 1911.
2 SHEETS—SHEET 1.

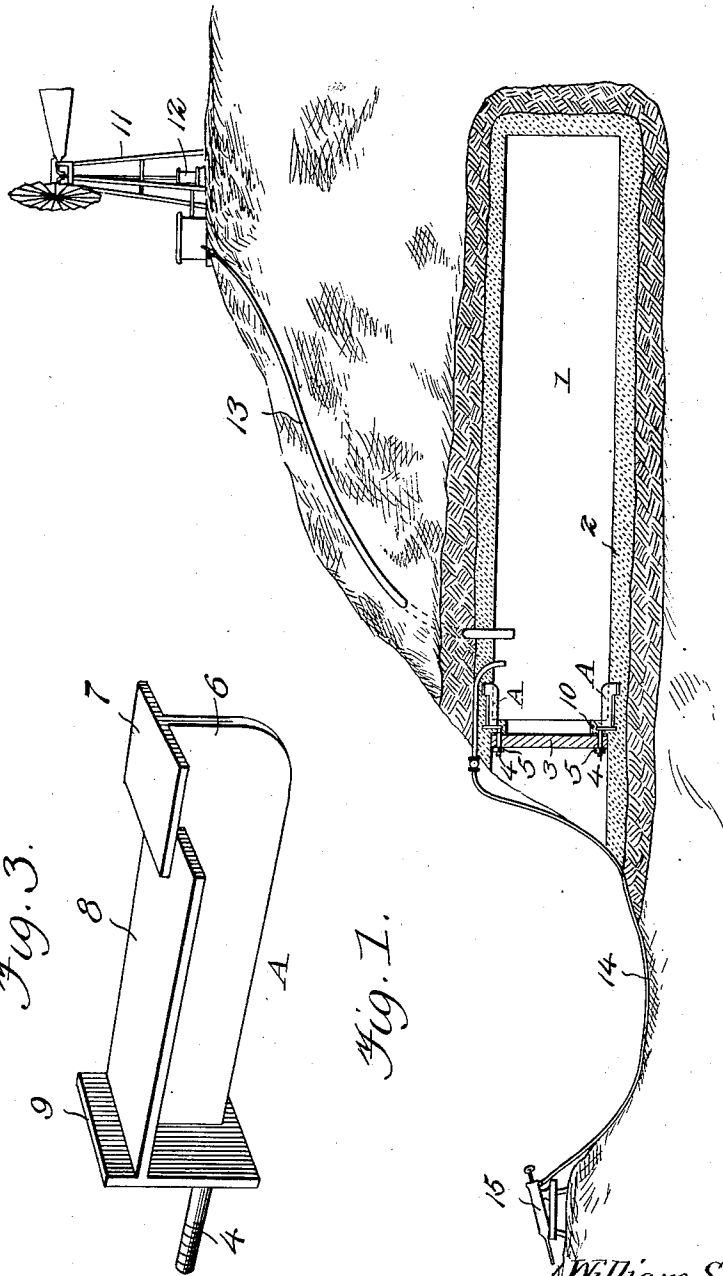


Fig. 3.

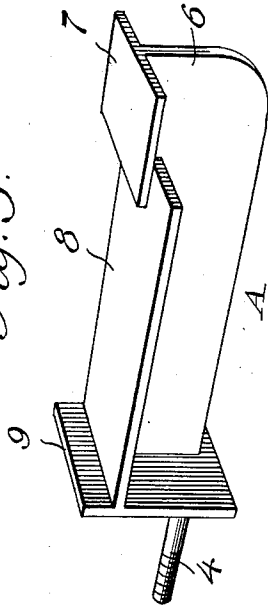


Fig. 1.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

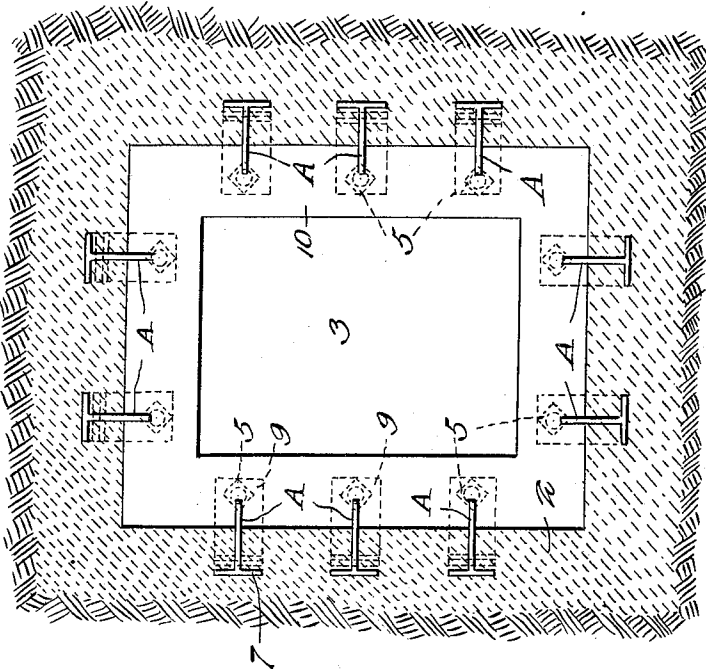
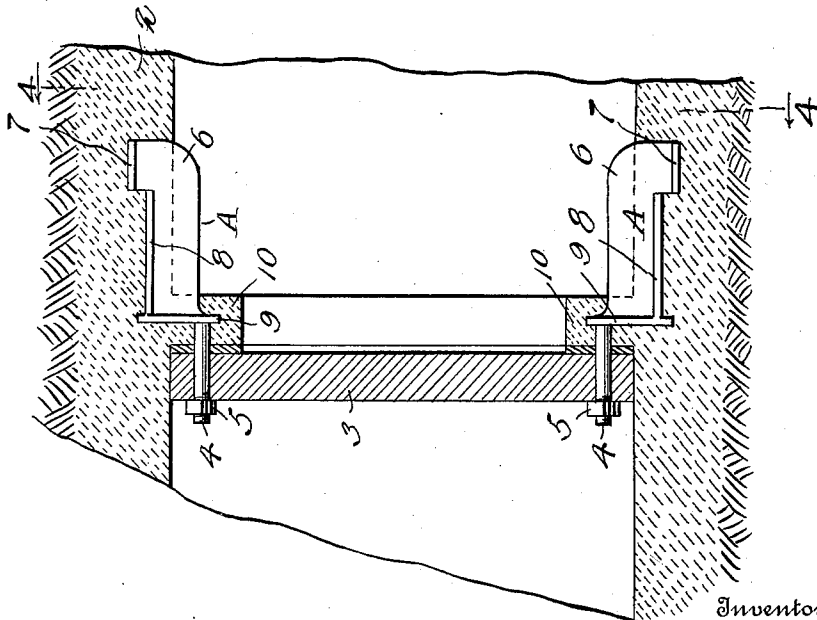


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM S. COOK, OF ATLANTIC CITY, WYOMING.

COMPRESSED-AIR SYSTEM.

1,006,912.

Specification of Letters Patent.

Patented Oct. 24, 1911.

Application filed January 28, 1911. Serial No. 605,250.

To all whom it may concern:

Be it known that I, WILLIAM S. COOK, a citizen of the United States, residing at Atlantic City, in the county of Fremont and State of Wyoming, have invented new and useful Improvements in Compressed-Air Systems, of which the following is a specification.

The purpose of this invention is to utilize a natural force and abandoned tunnels, wells, mining drifts and like excavations or openings in the earth.

In carrying out the invention unused and abandoned tunnels and like excavations are made tight so as to be used as reservoirs for storing air under pressure, said air to be subsequently used for driving machinery for operating mining drills, pumps or other appliances in the industrial arts. The reservoir formed by the tunnel, well, or other excavation is charged with air by means of a compressor of any type, said compressor being driven by any motor, preferably a windmill so as to utilize air currents.

The invention contemplates novel means for sealing the mouth or entrance of the tunnel, well, or other excavation so as to prevent the escape of the confined air and to prevent blowing out of the sealing means.

The invention consists of the novel features, details of construction and combination of parts, which hereinafter will be more particularly set forth, illustrated in the accompanying drawing, and pointed out in the appended claim.

Referring to the drawing, forming a part of the specification, Figure 1 is a detail view in perspective of the invention. Fig. 2 is a sectional view of a portion of the mouth or entrance of the tunnel or like excavation. Fig. 3 is a detail view of one of the anchoring members. Fig. 4 is a cross section of the tunnel on the line 4—4 of Fig. 2.

Corresponding and like parts are referred to in the following description, and indicated in all the views of the drawing, by the same reference characters.

The numeral 1 designates a tunnel, passage, drift, or like excavation resulting from mining operations and abandoned as of no further use. This tunnel opening or excavation is made tight so as to confine air under pressure and is lined with concrete, cement or like material 2. It is to be understood that where the walls of the tunnel or excavation are solid and of a nature to con-

fine air pressure it is not necessary to line the same. The mouth or entrance of the tunnel is sealed by means of a closure 3, which may be a plate, stopper or like device. The closure 3 is held in place by means of anchoring members A, which have their inner portions embedded in the lining and their outer parts reduced and threaded, as at 4, to pass through openings in the closure 3 and receive nuts 5.

The inner members A have their inner ends formed with lateral extensions 6 from the opposite sides of which project flanges 7, which latter are embedded in the lining 2. Other flanges 8 project from opposite sides of the member and are likewise embedded in the lining 2.

An end piece 9 is located at the base of the reduced part 4 and projects at a right angle from the sides of the body and lateral flanges 8 and is embedded in an inner flange 10 formed of concrete or like plastic material near the mouth or entrance of the tunnel. The inner flange 10 reduces the entrance to the tunnel and at the same time forms a shoulder for the closure 3.

It is to be understood that any number of anchoring members A may be provided and disposed around the sides of the tunnel to form a substantial anchoring means for the closure to insure a close joint to prevent the escape of any air or the loosening or blowing out of the closure.

The tunnel, passage, well or like opening or excavation after being prepared in the manner stated provides a reservoir for containing air under pressure and from which said air may be drawn when required for operating mining drills, irrigating pumps or other machinery.

In order that the cost of operation may be reduced to the smallest amount possible it is proposed to utilize a natural force for operating the air compressor for charging the air reservoir. While the force of flowing water and wave power may be advantageously used it is preferred to harness the force derived from air currents and for this purpose a windmill 11 may be conveniently positioned and arranged to operate a compressor 12, a pipe 13 conveying the air from the compressor 12 to the reservoir 1. A pipe 14 connected with the reservoir conveys the compressed air therefrom to the drill 15 or other machine or part to be driven.

In accordance with the invention abandoned excavations resulting from mining operations may be utilized as chambers or reservoirs for storing compressed air and
5 wind power may be employed for operating the air compressor for charging the reservoir with compressed air which is subsequently used for operating machinery, thereby producing a saving and utilizing elements
10 which have heretofore been permitted to go to waste.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of
15 the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I
20 now consider to be the embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claim appended
25 hereto.

Having thus described the invention what is claimed as new, is:—

In combination a self setting plastic material arranged to form an inclosure and having an inner shoulder, a closure placed
30 against said shoulder, and anchoring members for securing the closure in place, each anchoring member comprising a body having a lateral extension at its inner end, and
35 having lateral flanges along the outer edges of the body and the said lateral extension, said body being further provided at its outer
end with an end piece and with a reduced part projecting from the body in line there-
40 with, said reduced part being threaded and passing through the closure and receiving a nut, the end piece being embedded in the
aforesaid shoulder and the lateral flanges being embedded in the wall of the inclosure.

In testimony whereof I affix my signature
45 in presence of two witnesses.

WILLIAM S. COOK.

Witnesses:

WM. B. GRATRICK,
MAURICE LEWELLYN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."