

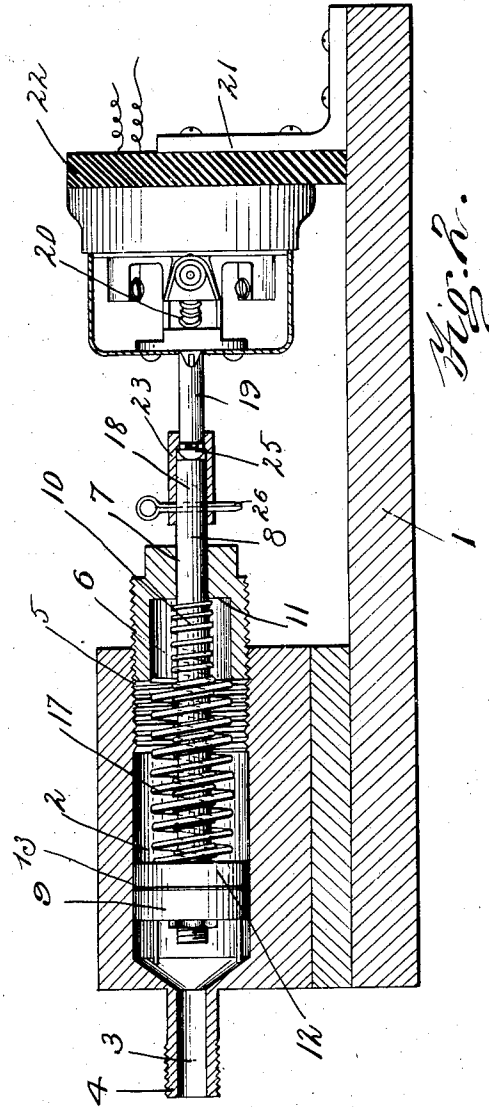
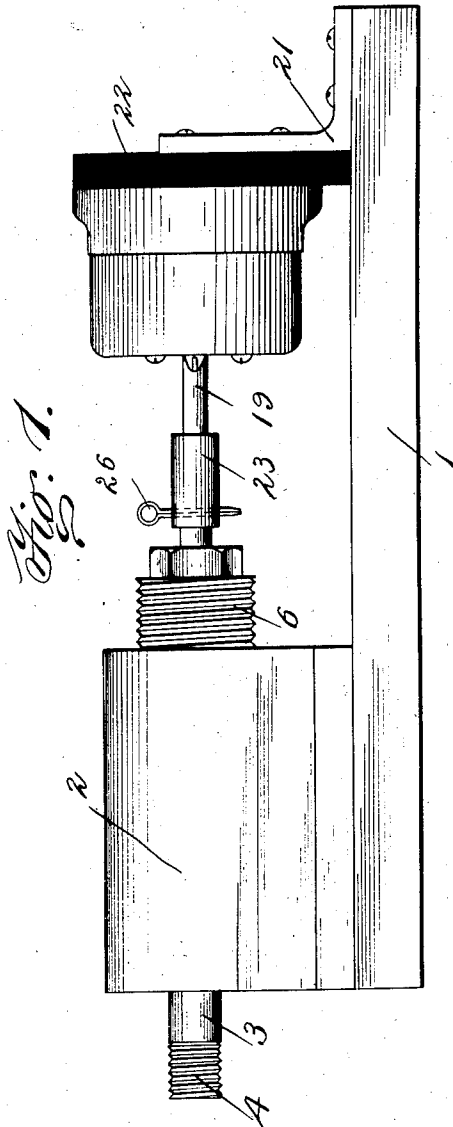
J. A. SCHADEL.
FLUID PRESSURE SWITCH.

APPLICATION FILED FEB. 14, 1911. RENEWED MAY 3, 1913.

1,073,175.

Patented Sept. 16, 1913.

2 SHEETS—SHEET 1.



Witnesses

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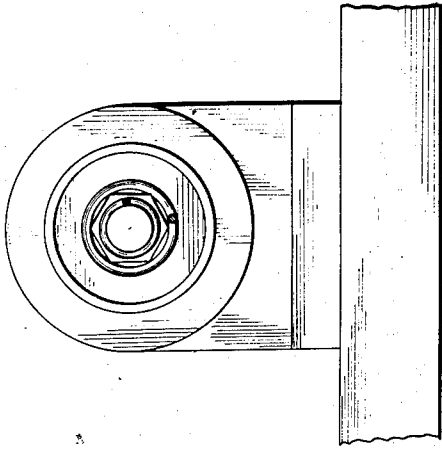


Fig. 4.

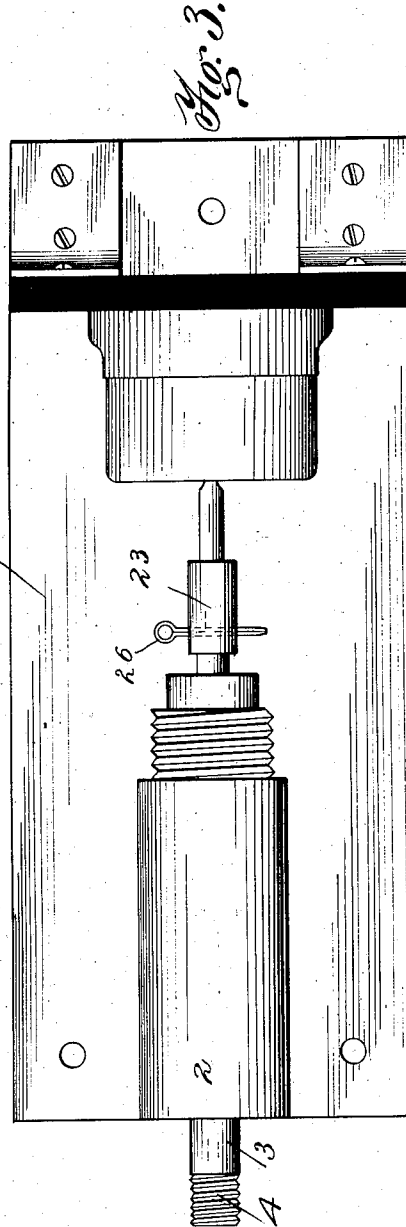


Fig. 3.

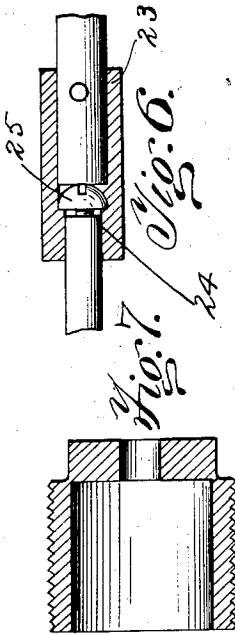


Fig. 6.
Fig. 7.

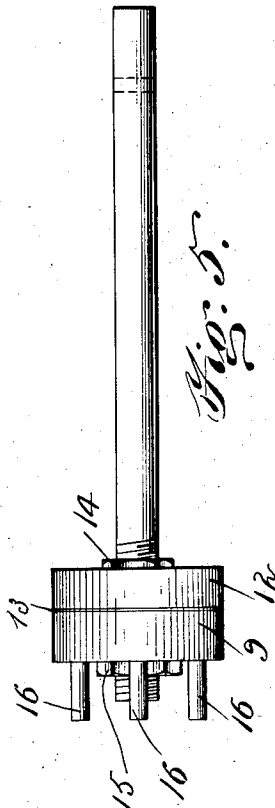


Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN ALBERT SCHADEL, OF PITTSBURGH, PENNSYLVANIA.

FLUID-PRESSURE SWITCH.

1,073,175.

Specification of Letters Patent.

Patented Sept. 16, 1913.

Application filed February 14, 1911, Serial No. 608,544. Renewed May 3, 1913. Serial No. 765,394.

To all whom it may concern:

Be it known that I, JOHN ALBERT SCHADEL, citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Fluid-Pressure Switches, of which the following is a specification.

This invention relates to a governor and more specifically to governors for compressed air tanks and has for its object to provide a means by which the air compressing means may be cut off when a certain pressure is reached, and started again as soon as the pressure has dropped below the desired point.

A further object is to provide a tension device for a piston or plunger removably engaging the cylinder and suitably guiding the forward projecting portion of the piston rod whereby the piston will encounter more or less resistance against its movement in the cylinder.

With the above and other objects in view, I have invented the governor illustrated in the accompanying drawings in which the governor is shown in use with an air compressor, but it will be understood that it may be used in other situations as well without sacrificing any of the benefits accruing therefrom.

Figure 1 is a side elevation of my invention, Fig. 2 is a longitudinal sectional view therethrough, Fig. 3 is a top plan view of my device, Fig. 4 is an end view thereof, Fig. 5 is a detail view of a piston and rod therefor, Fig. 6 is a detail sectional view of a coupling member shown in elevation and, Fig. 7 is a detail longitudinal sectional view of a spring compressing member or tension regulator.

Referring to the accompanying drawings, 1 is a base upon which is mounted a cylinder 2, having an air inlet 3, which is screw threaded on its end 4 by means of which it is connected up with a compressed air tank. One end 5 is internally screwthreaded to receive the externally screwthreaded bushing or cylindrical tension regulating member 6, provided with a centrally disposed opening 7 therein, through which a piston rod 8, the free end of which is secured to a piston 9, located in the cylinder 2, passes. The bushing 6 is formed with a relatively long

socket 6', and mounted upon the piston rod 8 is a spring 10, one end of which abuts the shoulder 11 of the socket 6' and the other end of which abuts the member 12 on the piston 8, which is adapted to hold a packing 13 in place. Nuts 14 and 15 are adapted to hold the members 9 and 12 tightly against the packing 13. The piston 9 is provided with a number of projecting members 16, which are adapted to prevent the piston from getting too close to the opening 3, in which event sufficient air could not get into the cylinder 2 to operate the piston. A larger and stronger spring is mounted on the piston rod 8 over the weaker spring 10, being shorter in length with respect to and arranged to fit the socket of the bushing 6, being held therein against the movement of the piston. When it is desired to secure a very great pressure in the air tank, the bushing 6 may be screwed into the cylinder 2 until the shoulder 11 thereof engages the strong spring, thus bringing it into operation.

The cushion regulated piston herein disclosed may be utilized to control the operation of any actuator for an air compressor having a disengaging member which the piston rod may engage to render said actuator inactive and I have shown it used in connection with an electric cut-off.

The end 18 of the piston rod 8 is connected to a push member 19 of an electric cutoff 20 which is secured to a bracket 21 mounted on the base 1, an insulating member being placed between the switch and the bracket. The members 8 and 19 are connected by a coupling 23, having a shoulder 24 thereon which engages the screw thread 25 screwed into the end of the member 19 and a pin 26 which passes through the coupling and an opening in the piston rod 8.

The operation of the device is extremely simple and is as follows: When a predetermined air pressure is reached in the air tank the piston 9 forces the piston rod 8 out and being coupled to the push pin 19 on the cutoff 20, a suitable switch is operated to break the circuit to the compressor which stops the motor or engine used for compressing the air, and when the air pressure in the tank drops below the normal pressure it is desired to maintain, the springs 10 and 17 come into action and force the piston to-

ward the air inlet, thus drawing in the piston rod and completing the electric circuit for restarting the engine.

I claim and desire to secure by Letters
5 Patent:—

A compressed air actuated electric circuit
maker and breaker consisting of a piston
chamber, an air inlet in one end thereof, a
10 plug screw threaded in the other end thereof,
said plug having a bore in its inner end
and an opening through its outer end, a cylinder
engaging piston in said cylinder, a
rod connected to said piston and extending
through said opening, a long spring of weak
15 tension and a short spring of strong tension

mounted on said rod and directly abutting
said piston, said long spring constantly
abutting the inner end wall of said plug,
said wall being removable from engagement
with said short spring, a coupling on the 20
outer end of said rod and an electrical contact
adapted to be engaged and operated by
said coupling.

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

JOHN ALBERT SCHADEL.

Witnesses:

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GEO. WEDDERBURN.