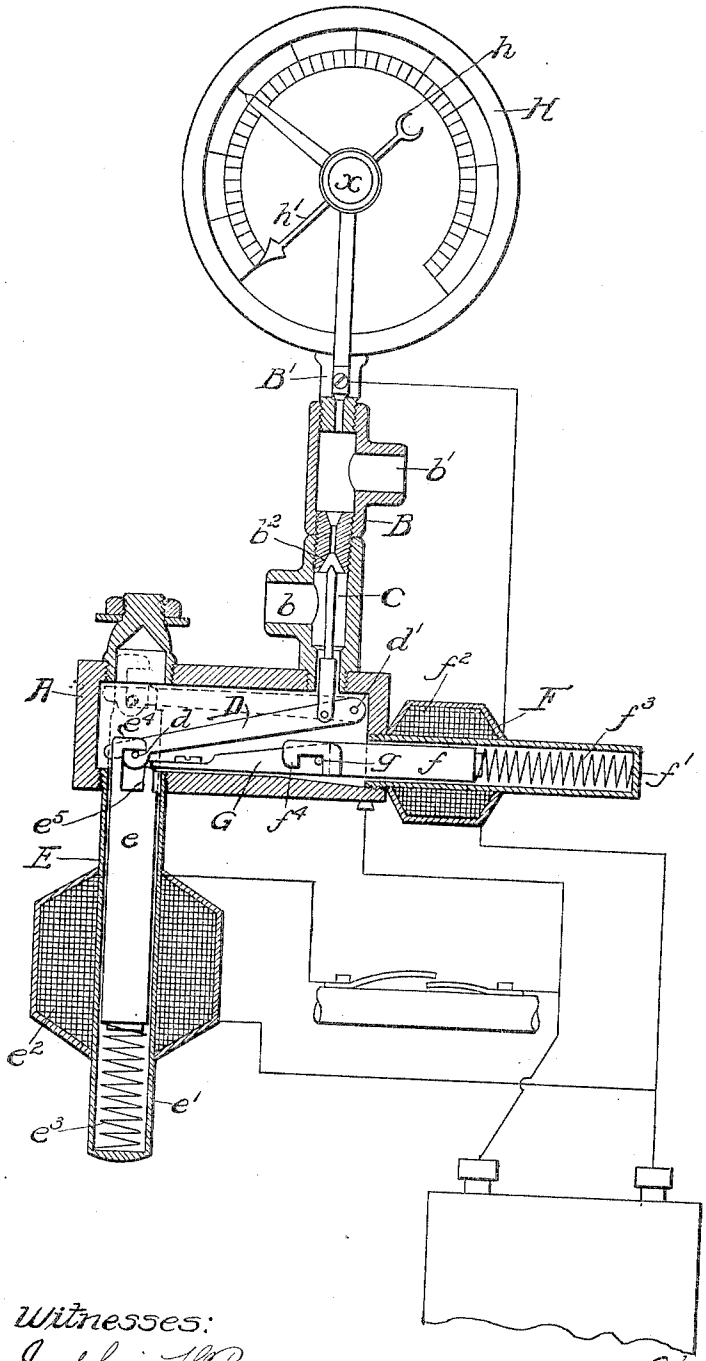
E. K. PARKER.

ELECTRIC PNEUMATIC PRESSURE CONTROL.

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1,108,470.

Patented Aug. 25, 1914.



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UNITED STATES PATENT OFFICE.

EDWARD K. PARKER, OF SANTA BARBARA, CALIFORNIA.

ELECTRIC PNEUMATIC-PRESSURE CONTROL.

1,108,470. Specification of Letters Patent. **Patented Aug. 25, 1914.**

Original application filed August 12, 1912, Serial No. 714,584. Divided and this application filed March 14, 1913. Serial No. 754,256.

To all whom it may concern:

Be it known that I, EDWARD K. PARKER, a citizen of the United States, and resident of Santa Barbara, in the county of Santa Barbara and State of California, have invented new and useful Improvements in Electric Pneumatic-Pressure Control, of which the following is a specification.

My invention relates to a control for use in pneumatic pressure and power systems, and more particularly it relates to electrically operated means for controlling the valve in such systems, whereby the pneumatic pressure or power may be shut off or let on instantaneously at the will of the operator, or shut off automatically at a predetermined degree of pressure.

The present application is a division of an application filed by me August 12, 1912, Serial No. 714,584 patented Dec. 16, 1913, No. 1,081,693.

While my invention is particularly adapted for use in devices wherein it is essential quickly to shut off and let on the power, as for example where pneumatic pressure or power is employed for sand blast or for riveting, or for other industrial purposes, and is also adapted for automatically shutting off the pressure in pneumatic pressure apparatus for inflating tires, etc., when the pressure reaches a predetermined point; it will be understood that the invention is by no means limited to use in such environments, but that it is adapted for use in pneumatic pressure and power systems generally.

In the drawing hereto annexed which illustrates an embodiment of my invention, the figure is a diagrammatic view partly in section and partly in elevation, of an automatically controlled pneumatic pressure apparatus.

Referring to the drawings, A is an air-tight casing upon which is mounted a conduit B having an inlet port b and an outlet port b', and forming in effect a part of the casing. Within said conduit B and located between said ports b and b' is a valve seat b^2 for the valve C, said valve being slidably mounted in said conduit and pivotally connected at one end to a lever D, which is pivoted within said casing A at d' and provided with a stud d. Mounted upon the bottom of said casing in any suitable manner is an electro-magnet E consisting of an armature e, a guide-tube e' and a coil e^2. A spring e^3 is located within said tube e' between said armature and the bottom of said tube; and said armature e is provided at its top with a hook or projection e^4 and a finger e^5. Upon a side wall of said casing A is mounted another electro-magnet F consisting of an armature f, a guide-tube f' and a coil f^2. A spring f^3 is located within said tube f' between said armature and the bottom of said tube; and said armature is provided at its top with a hook or projection f^4. Slidably mounted upon an inner wall of said casing is a bolt G provided near one end with a stud g, said bolt adapted to coöperate with said armature f to lock the valve C in open position as presently to be described. A pressure gage H is mounted in the usual manner upon an extension B′ on the conduit B, and is provided with the usual dial h, index hand h' and glass front. When the electro-magnet E is energized in the manner described in my said Patent No. 1,081,693, the armature e is drawn down from its normal position shown in dotted lines to the position shown in full lines. Upon its downward passage the hook e^4 engages the stud d of the lever D and draws said lever downward thus opening the valve C. It will be observed that the hook e^4 is of such length that it has traveled a considerable distance upon its downward passage before it engages the stud d so that it strikes sharply against said stud and draws the lever D quickly downward. The armature e, and consequently the valve C, is locked and retained in its depressed position by the sliding bolt G which is pushed forward by the armature f, actuated by the spring f^3, into engagement with the end of Fig. e^5. When the electro-magnet F is energized in the manner described in my said former patent, the armature f is drawn backward, and in its backward movement the projection f^4 engages the stud g and withdraws the bolt G from engagement with finger e^5 permitting the spring e^3 to return the armature e to its normal or dotted line position, thus reseating the valve. It will be clear that as the projection f^4, like the hook e^4, is relatively long, it has traversed a considerable distance upon its backward move-

ment before it engages the stud g, and that therefore it strikes sharply against said stud and quickly withdraws the bolt G.

I claim:

1. In a device of the class described, a casing having an inlet port and an outlet port, a valve and valve seat located between said ports, a lever pivoted in said casing, a connection between said lever and said valve, an electro-magnet mounted on said casing comprising a spring-pressed armature having a projection, said projection adapted to coöperate with said lever to open said valve, a bolt, another electro-magnet mounted on said casing and comprising a spring-pressed armature adapted to cooperate with said bolt to lock said valve in open position, and to unlock said valve.

2. In a device of the class described, a casing having an inlet port and an outlet port, a valve and valve seat located between said ports, a lever pivoted in said casing, a pivotal connection between said lever and said valve, an electro magnet mounted on said casing comprising a spring-pressed armature having a projection, said projection adapted to coöperate with said lever to open said valve, a bolt slidably mounted on said casing and having a stud, another electro-magnet mounted on said casing and comprising a spring-pressed armature having a projection, said armature adapted to coöperate with said bolt to lock said valve in open position and said projection adapted to coöperate with said stud to withdraw said bolt, thereby unlocking said valve.

Signed by me at Santa Barbara California this 4th day of March 1913.

EDWARD K. PARKER.

Witnesses:

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