P. KUDLA.

VALVE.

APPLICATION FILED APR. 5, 1920.

1,360,960. **Patented Nov. 30, 1920.**

FIG. 1

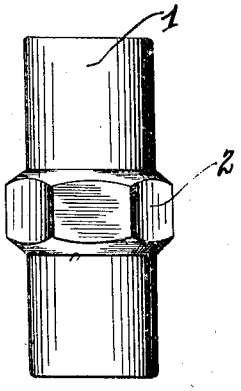


FIG. 2

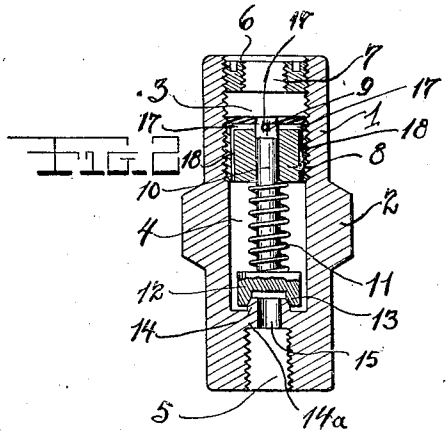


FIG. 3

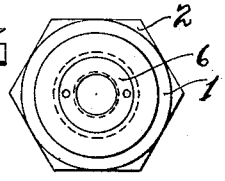
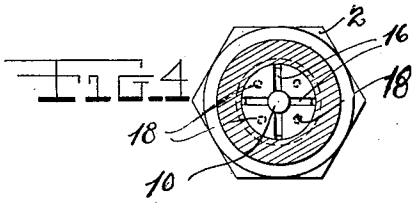


FIG. 4



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VALVE.

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To all whom it may concern:

Be it known that I, PETER KUDLA, a citizen of Poland, and resident of Thompsonville, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Valves, of which the following is a specification.

This invention relates to valves more particularly to valves adapted to automatically check the flow of gas or fluid under pressure when the pressure rises above a desired point.

The above and other objects will become apparent in the description below, in which characters of reference refer to like-named parts in the drawings, in which—

Figure 1 is an elevational view of the exterior of my valve.

Fig. 2 is a central longitudinal cross-sectional view of the same.

Fig. 3 is a plan view of the same.

Fig. 4 is a plan view of the same with the screw cap 6 removed.

Referring now in detail to the drawings, the numeral 1 represents the main frame of my valve, comprising a cylindrical body, as shown, having a hexagonal central collar 2 adapted to receive a wrench for the purpose of mounting the valve. The interior of the body 2 is divided into two chambers 3 and 5, separated by a wall 14^a having a channel 15 connecting said chambers, the former being considerably larger than the latter. About the upper mouth of said channel 15 the wall 14^a is raised in the form of a mound, the surface thereof being tapered as shown. The wall of the chamber 5 is threaded.

An interior nut 8, having a central opening or channel 9 passing therethrough, is screwed into the chamber 3. A rod 10 is slidably mounted in said channel 9, and an inverted-cup-shaped cap 12 is attached to the lower end of said rod, the said cup having its mouth shaped similarly to the raised portion 14^a, so that said cup is adapted to sit upon said raised portion to close the same. A spring 11 is coiled about said rod and normally urges said cap 12, and rod 10, downwardly, or away from the nut 8.

Near the periphery of the nut 8, in spaced apart relation, are tubular vertical channels 18, four being shown, the same being open at the bottom, and at the top communicating into horizontal tubular channels 17, the latter communicating in turn into the central channel 9.

The upper surface of the nut 8 is provided with slots 16 adapted to receive a screw driver for the purpose of turning the same. A small interior nut 6 having a central opening 7 is adapted to screw into the top of the body 1; this, however, is only for the purpose of demonstration, as the upper portion of the threaded walls of the chamber 3 is adapted to engage a pipe or the like to which the device is to be attached.

Assuming that the valve is attached adjacent a steam boiler, the lower end 5 being secured to a pipe leading from the boiler, and the upper end being secured to a pipe leading to a steam engine, the operation of the device will be as follows. When no steam passes into the opening 5 from the boiler, the spring 11 forces the cap 12 down onto the mouth 14. When, however steam begins to flow into the opening 5, the pressure of the same will raise the cap 12, and the steam will flow into the chamber 3 (through the lower portion 4 thereof). When the steam pressed upon the underside of the cap 12 the former raised the latter, as aforementioned, at the same time raising the rod 10. By a previous regulation, the rod 10 rises to a height below the level of the channels 17 so long as steam of a certain minimum pressure flows. However, should the pressure of the steam entering the opening 5 exceed the desired maximum, the pressure will raise the cap 12 and the rod 10 higher, that is, to cover the openings of the channels 17 in the central channel 9, thus shutting off the exit of the steam through the top. Not until the pressure of the steam has again fallen will the rod 10 fall and again allow the outflow of the steam.

I claim:

A valve comprising a cylindrical body having a relatively large chamber therein and a relatively small chamber therein communicating with said first-named chamber, a wall separating said chambers and having a tubular channel passing from said first-named chamber into said second-named chamber, the mouth of said channel in said first-named chamber being raised and having a tapered surface, the upper portion of said first-named chamber being screw-threaded, an interior nut adapted to screw into said screw-threaded portion, said nut having a

central tubular channel therethrough, a rod adapted to slide in said central channel, a substantially inverted-cup-shaped cap secured to the lower end of said rod and adapted to sit upon said mouth, a spring coiled about said rod and normally urging said cap and rod away from said interior nut, channels communicating from the under surface of said nut into the said central channel, said rod adapted to slide so as to open or close the mouths of said last-named channels where the latter enter into said central channel.

PETER KUDLA.