R. F. LANDIS.

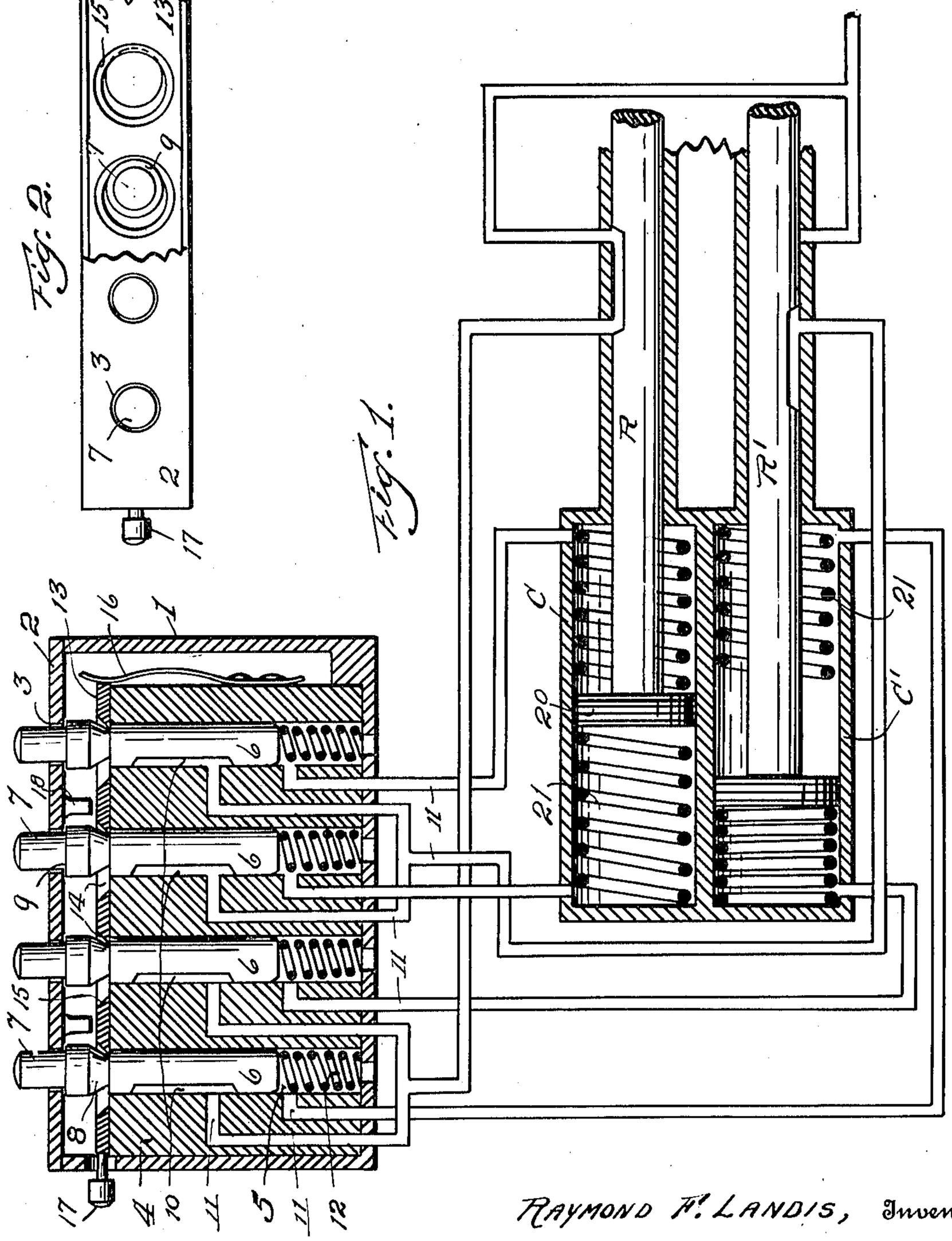
VALVE CONTROLLING AND RELEASING DEVICE.

APPLICATION FILED AUG. 1, 1917. RENEWED AUG. 27, 1918.

1,298,227. Patented Mar. 25, 1919.

Fig. 2.

Fig. 1.



RAYMOND F. LANDIS, Inventor

By E. A. Hall

Attorney

UNITED STATES PATENT OFFICE.

RAYMOND F. LANDIS, OF READING, PENNSYLVANIA.

VALVE CONTROLLING AND RELEASING DEVICE.

1,298,227. Specification of Letters Patent. Patented Mar. 25, 1919.

Application filed August 1, 1917, Serial No. 184,002. Renewed August 27, 1918. Serial No. 251,691.

To all whom it may concern:

Be it known that I, RAYMOND F. LANDIS, a citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Valve Controlling and Releasing Devices, of which the following is a specification.

This invention relates to improvements in valve controlling and releasing devices and the object in the present instance is to provide a device in which a plurality of valves are used, and in which the actuation of any one of said valves will release all of the others, and cause them to return to neutral position.

The device is applicable to many uses, and I have shown it applied to a rod shifting device, in which the rods are provided with spring backed pistons, traveling in cylinders, and in which the action of the pistons is to be controlled through the valve device above referred to.

As shown in the accompanying drawing, I have illustrated in Figure 1, a sectional view of my invention applied, as stated, to a rod shifting device, also shown in section, and in Fig. 2 I have shown a plan view of the valve casing, a portion of the cover of which is cut away to show the slide.

In this drawing, the numeral 1 designates a rectangular casing or shell provided with a cover 2 which is formed with a series of perforations 3. The numeral 4 designates the block or body of the device, which is formed with a plurality of vertical cylindrical openings 5, in each of which is located a cylindrical valve 6, each of which valves is formed with an upwardly projecting head 7, providing means for manually operating said valves. Each of the valves is formed with an annular, tapered groove 8 near its upper end, and each valve is also formed with a longitudinal groove 10 about midway of its length, which groove is adapted, when the valve is in lowered position, to connect two passageways 11 through the block 4 and to thereby provide a free communication through that particular valve, for any purpose desired, as for instance, in the construction illustrated, to permit the movement of one of the piston rods R, operating in a cylinder C in communication with the valve 6 through the passageways 11.

Each of the valves 6 is provided with a spring, 12, upon which the said valve rests, and which tends to hold the valve normally in raised position, and with communication through the valve cut off.

The numeral 13 designates a releasing slide, resting on the top of the block portion 4, and provided with a series of perforations 14, each adapted to register with the openings 5 in the block, and each of which perforations is formed with a tapered wall 15 adapted to co-act with the tapered groove 8 in the valve. A spring 16 attached to the block 4 serves to hold the plate normally toward the left side of the casing, at which point I provide a thumb button 17 for moving the slide against the tension of the spring. A pair of guides 18 on each of the side walls of the casing serve to keep the slide from lifting or buckling.

When the slide is in normal position, as shown, the tapered walls of the perforations in the slide bear against the tapered grooves 8 in the valves, and, when one of the valves is depressed, as by pressure on the head 7, the action will cause the slide to move to the right, against the tension of the spring 16, and the shoulder 9, formed at the top of the body 6 of the valve, will engage the under side of the slide as soon as it reaches the point where the slide may return after passing the larger portion of the body 6. With the one valve thus depressed, the groove 10 therein will register with the two ports of the communications 11, as above stated.

When it is desired to open communication through another of the valves, it will be only necessary to depress that particular valve, as before described, and this action will place the ports of that valve into communication, and at the same time, the act of depressing the second named valve will, through the movement of the slide 13, release the first named valve which will be raised to its normal position by the spring 12 beneath it.

It will be noted therefore that with my improved device, the actuation of any one of the series of valves will open communication therethrough and at the same time release from communication any one or more of the valves previously so held.

When it is desired to release one of the valves from its communicating or open position, without opening one of the other valves, the slide 13 is moved by pressure on the thumb button 17, which action will release the valve and allow its spring 12 to raise it

to closed position, and in this upward movement the shoulder 9 on the valve will engage the cover 2 and prevent further upward movement of the valve.

It is also evident that two or more of the valves may be opened at the same time, and that the later opening of another of the valves, or the actuation of the slide by the thumb button, will release all of them and allow them to close.

What I claim is:—

1. In a device of the character described, the combination of a body member having a plurality of valve openings and ports leading into said openings, with manually operated valves in said openings, springs to keep the valves normally in closed position, each of said valves having an annular groove; and a slide member, formed with perforations whose walls are tapered and adapted to engage the tapered grooves in the valves, said slide being adapted for movement by the actuation of any one of the valves to open position.

2. The combination of a body member provided with a plurality of vertical, circular valve openings, each of said openings having two ports leading thereinto, with valves adapted to move vertically in said openings, springs to keep the valves normally in closed position, and a slide member adapted to be moved laterally by the actuation of any one of said valves to open position and a spring against the tension of which the slide is moved.

In testimony whereof I affix my signature.

RAYMOND F. LANDIS.