Oct. 20, 1925. 1,558,064

H. C. THRIFT

PRESSURE CONTROLLING MECHANISM.

Filed Dec. 10, 1923 2 Sheets-Sheet 1

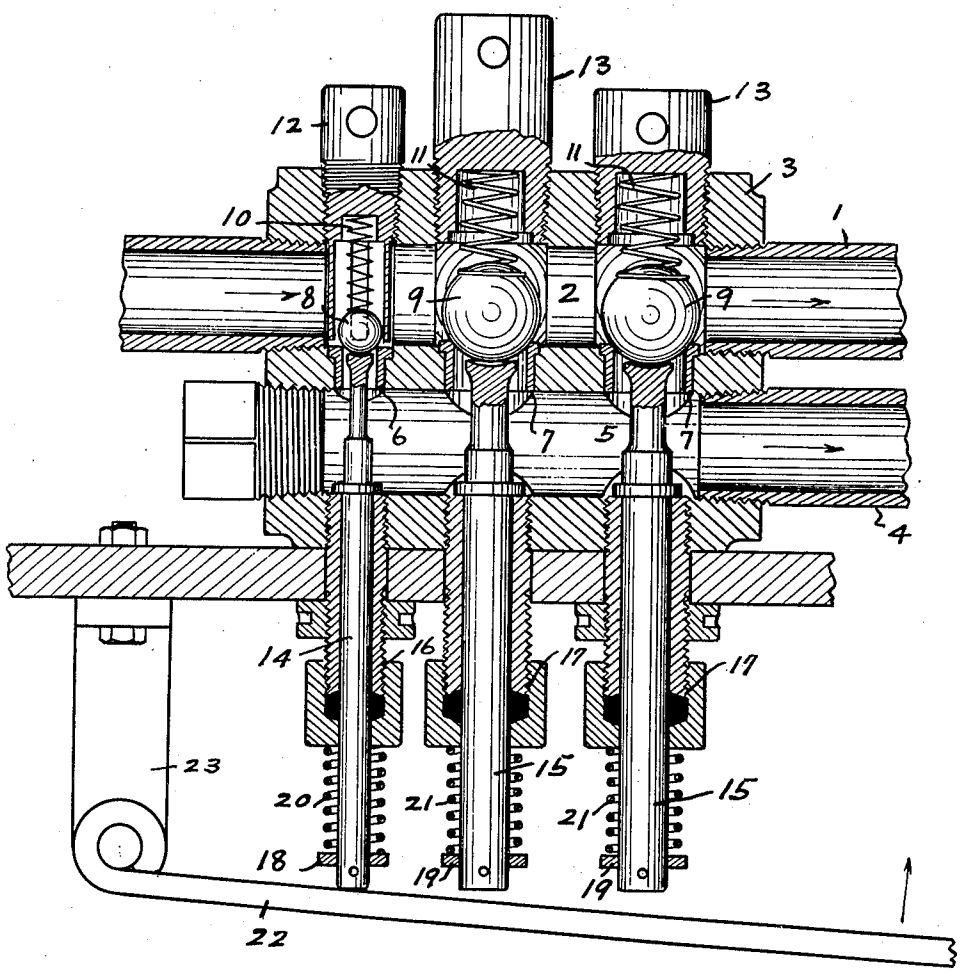


Fig. 1.

Inventor
Homer C. Thrift.

By Hardway & Cathey
Attorneys

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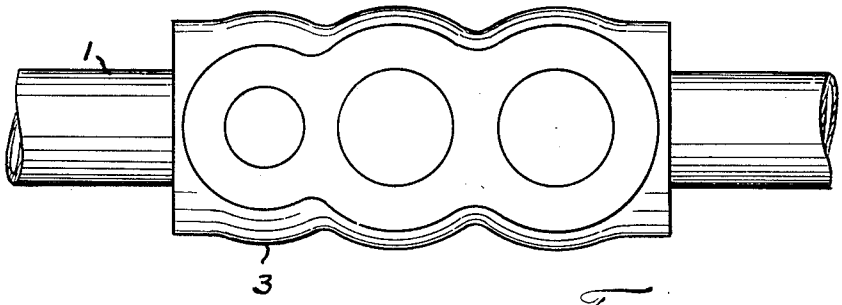


Fig. 2.

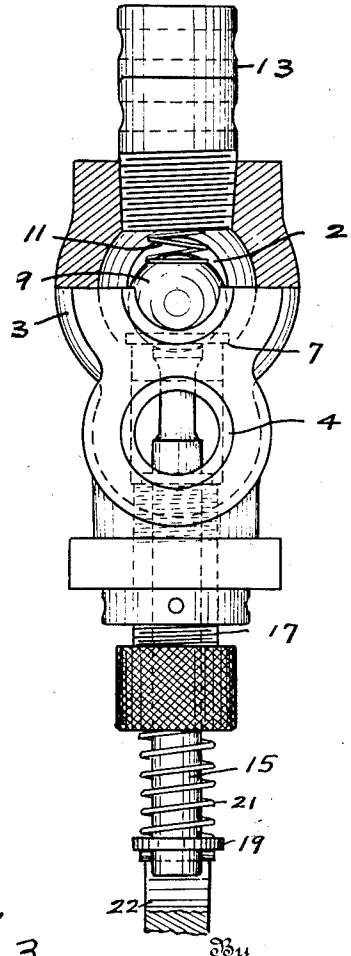


Fig. 3.

Inventor
Homer C. Thrift.

By Hardway & Curtis
Attorneys

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UNITED STATES PATENT OFFICE.

HOMER C. THRIFT, OF HOUSTON, TEXAS.

PRESSURE-CONTROLLING MECHANISM.

Application filed December 10, 1923. Serial No. 679,656.

To all whom it may concern:

Be it known that I, HOMER C. THRIFT, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in a Pressure-Controlling Mechanism, of which the following is a specification.

This invention relates to new and useful improvements in a pressure controlling mechanism.

One object of the invention is to provide a mechanism of the character described specially designed to be used on air pressure lines for relieving the pressure therethrough. The mechanism is adapted for general use, but has been designed particularly for use on pressure lines of pneumatic lifting jacks where great pressure is required, and on account of the pressure it is difficult to operate the release valve to relieve the pressure when such is desirable.

Another object of the invention is to provide a release mechanism, of the character described which is of very simple construction, and which may be easily operated to accomplish the purpose intended.

With the above and other objects in view, this invention has particular relation to certain novel features of construction, operation, and arrangement of parts, an example of which is given in this specification and illustrated in the accompanying drawings, wherein:—

Figure 1 shows a sectional view of the device.

Figure 2 shows a plan view thereof; and,

Figure 3 shows an end view, partly in section.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in each of the figures, the numeral 1 designates the pressure line through which fluid, as air, is delivered, under pressure, from a suitable pump, or compressor (not shown) to the cylinder of a pneumatic lifting jack (also not shown). This line continues through the bore 2 of the casing 3 incorporated into the line. The numeral 4 designates a relief line which continues from the bore 5 in the casing 3, said bore 5 forming part of the relief line.

The casing 3 has the annular valve seats 6 and 7, 7, through which said bores 2 and 5 communicate. These seats are normally closed by the small and large ball valves 8 and 9, 9, which are normally held seated by the coil push springs 10 and 11, 11, which are seated against said valves, at one end, and whose other ends are fitted into sockets in the inner ends of the nuts 12, and 13, 13, threaded into the casing 3 opposite said respective valves. By the adjustment of these nuts the pressure of the respective springs on their valves may be varied.

Valve lift rods 14 and 15, 15 are provided. These rods work through stuffing boxes 16 and 17, 17, respectively, which are carried by the casing 3. The inner ends of the rods work through the corresponding valve seats, against the respective valves and their outer ends carry the annular collars 18 and 19, 19, and surrounding the rods, and interposed between the respective collars and the corresponding stuffing boxes are the coil springs 20 and 21, 21, respectively, which normally hold the valve lift rods in inactive position.

A release lever 22 is provided. This lever is hinged at one end to the fixed fulcrum 23. This lever is aligned with the outer ends of the valve lift rods 14 and 15, 15, and the first named rod is located nearest the fulcrum. When it is desired to cut off the pressure from the jack the lever 22 is manipulated toward the valve lift rods, and the rod 14 is first actuated to lift the valve 8, thus partially relieving the pressure through the line 1. As the lever is further actuated, the other rods 15 will be successively actuated and the valves 9 successively lifted to permit the volume of fluid passing through the line 1 to be diverted into the relief line 4. When the lever 22 is released, the springs 20 and 21, 21, will withdraw the lift rods and the springs 10 and 11, 11, will then seat the corresponding valves.

What I claim is:

1. A device of the character described including a pressure line having a plurality of relief parts, formed with seats, valves controlling said seats, yieldable means normally tending to seat said valves to close said ports, and a common means for unseating the valves successively.

2. A device of the character described including a pressure line having a plurality of relief ports, valves provided to close said

ports and arranged to be held seated by the pressure in said line, and means arranged to unseat said valves successively, by a single operation thereof.

3. A device of the character described including a pressure line having a plurality of relief ports, valves provided to close said ports and arranged to be held seated by the pressure in said line, and means arranged to unseat said valves successively, said means including valve lift rods and a common manual means for actuating said rods.

4. A device of the character described including a pressure line having a plurality of relief ports, valves provided to control said ports, yieldable members normally tending to seat said valves, means arranged to unseat said valves successively, said means including valve lift rods and a manual lever through which said rods may be actuated.

5. A device of the character described including a pressure line having a plurality of relief ports, valves provided to control said ports, and arranged to be held seated by the pressure in said line, means through which said valves may be successively unseated, said means including valve lift rods, and a lever through which said rods may be actuated one in advance of the other.

6. In combination a pressure line, a relief line, ports through which said lines communicate, valves arranged to control said ports, means adapted to open said valves successively to permit the pressure fluid to pass from the pressure line to the relief line, said means being arranged to actuate the valves into open position, one in advance of the other.

7. In combination a pressure line, a relief line, ports through which said lines communicate, valves arranged to control said ports, means adapted to open said valves successively to permit the pressure fluid to pass from the pressure line to the relief line, said means being arranged to actuate the valves into open position, one in advance of the other, and yieldable members operating against the valves and tending to close them.

In testimony whereof I have signed my name to this specification.

HOMER C. THRIFT.