

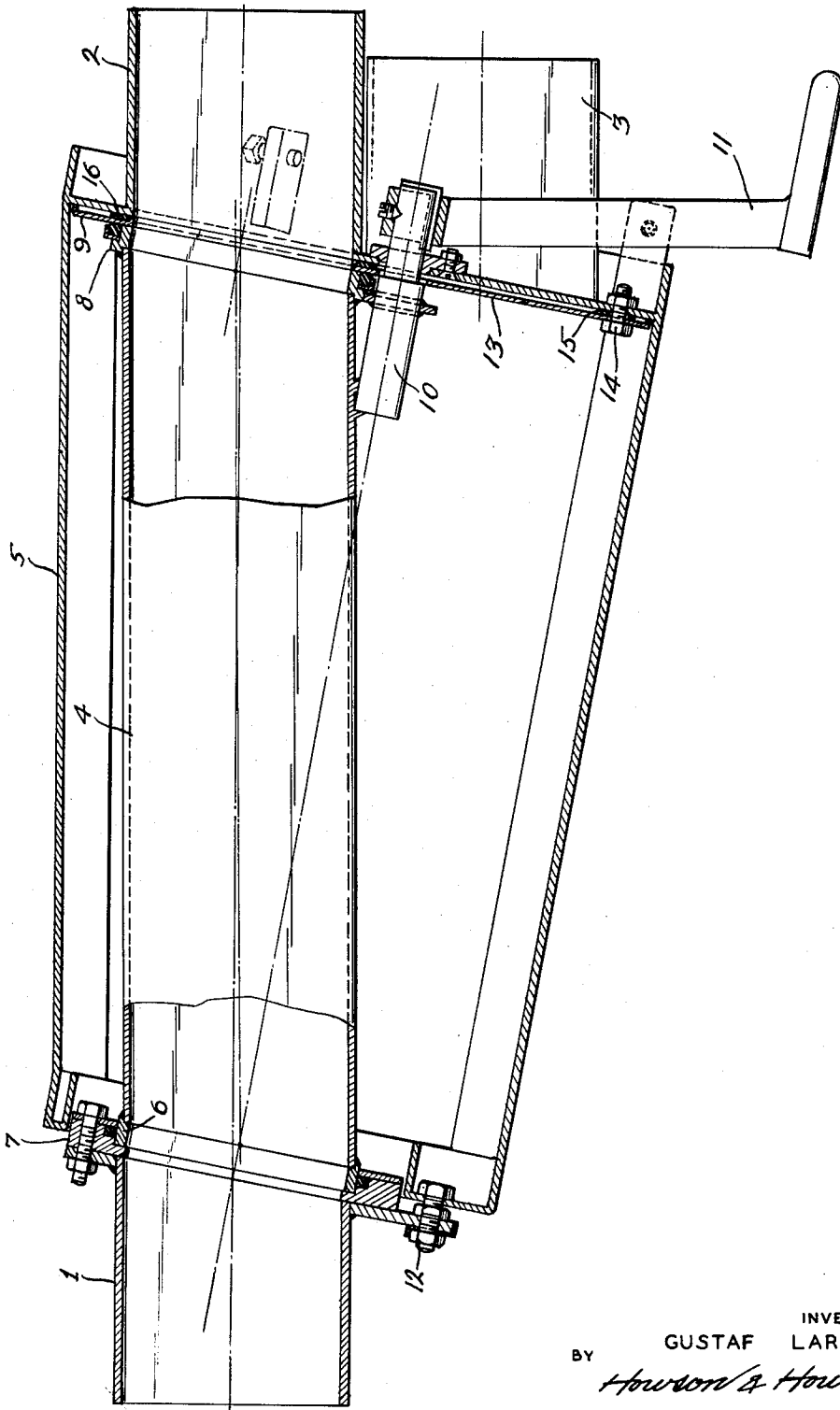
Aug. 25, 1964

G. LARSSON

3,146,033

SWITCH VALVE FOR PIPE LINES

Filed May 9, 1962



INVENTOR:
GUSTAF LARSSON
BY *Howson & Howson*
ATTYS.

1

3,146,033

SWITCH VALVE FOR PIPE LINES

Gustaf Larsson, Jonkoping, Sweden, assignor to Aktiebolaget Svenska Flakfabriken, Stockholm, Sweden
Filed May 9, 1962, Ser. No. 193,473

Claims priority, application, Sweden, May 19, 1961,
5,293/61

4 Claims. (Cl. 302—28)

The present invention relates to a switch valve for pipe lines preferably of the type adapted for pneumatic material conveyance, comprising an inlet pipe socket and two or more outlet pipe sockets attached to opposite ends of, for example, a parallelepipedic frame structure, and a rotary switch pipe disposed between the inlet and outlet pipe sockets, the said switch pipe provided with end flanges orientated to form angles with the longitudinal axis of the pipe, one of the said end flanges being pivoted at a likewise angularly orientated flange mounted on the inlet pipe socket, while the other end flange is adapted to be aligned with either of the outlet pipe sockets by rotating the switch pipe and thereby caused to abut against a sealing flange secured to the front end wall of the frame structure, which flange is common for all outlet pipe sockets.

In pneumatic material conveyance, such switch valves are employed for rendering possible the distribution to alternative containers without applying reversing valves, which latter give rise to considerable risk of operational breakdowns due to material accumulation and have, moreover, the disadvantage that foreign matter from previous conveyances will be admixed to the material to be conveyed.

As a disadvantage of the heretofore known switch valves must be mentioned that it has proved difficult to avoid air leakage, due to the wear of the packings after a certain time of operation.

It is the object of this invention to overcome the said disadvantage by simple means. The invention is substantially characterized in that the frame structure is secured to the inlet pipe socket by a plurality of adjusting screws adapted to displace the frame structure axially for adjusting the contact pressure of the switch pipe against the common sealing flange of the outlet pipe sockets. As a further measure for obtaining safe sealing, the common sealing flange of the outlet sockets may consist of a thin resilient plate secured to the front end wall of the frame structure by screws and distance sleeves, and to arrange between the plate and the frame structure sealing rings of resilient material about all through openings for the outlet pipe sockets.

The invention will now be described more in detail with reference to the accompanying drawing showing by way of example an embodiment of the device according to the invention.

In the drawing 1 designates an inlet pipe socket, and 2 and 3 designate outlet pipe sockets. A rotary switch pipe 4 is pivoted in a parallelepipedic frame structure 5 disposed between the said inlet and outlet pipe sockets. The switch pipe comprises end flanges orientated to form angles with the longitudinal axis of the pipe, one of the said flanges designated 6 being pivoted on a likewise angularly orientated flange 7 fastened to the inlet pipe

2

socket 1. The other end flange 8 of the switch pipe is adapted to be aligned with either of the outlet pipe sockets 2 and 3 respectively by rotating the switch pipe. Thereby, the end flange 8 is caused to abut a sealing flange 9 secured to the said front end wall of the frame structure, which flange is common for both pipe sockets. 10 designates an axle journal secured to the switch pipe and mounted in the said sealing flange 9, which journal is equipped with a handle 11 for turning the switch pipe and positioning it as desired. According to the invention, the frame structure 5 is secured to the flange 7 of the inlet pipe socket by a plurality of adjusting screws 12 rendering it possible to displace the frame structure axially and thus to adjust the contact pressure of the switch pipe against the sealing flange 9 common to the outlet pipe sockets, so that satisfactory sealing is always ensured. In the embodiment shown in the drawing, the sealing flange 9 is a thin resilient plate 13 secured to the front end wall of the frame structure by screws 14 and distance sleeves 15. Between the plate 13 and the front end wall of the frame structure 5, sealing rings 16 of elastic material are mounted about all through openings for the outlet pipe sockets.

What I claim is:

1. A switch valve assembly for pipe lines, comprising in combination, a common pipe at one end of the assembly, a plurality of pipes at the other end of the assembly spaced axially from said common pipe, a switch pipe mounted for circumferential turning and swinging movement between axially spaced parallel joint planes to shift the flow between said common pipe at one end and said plurality of pipes at the other end, a concentric turning joint between said switch pipe and said common pipe, and a plane sealing joint for the swinging end of said switch pipe, said plane sealing joint including an end wall secured to said plurality of pipes, a resilient plate secured in spaced relation to said rigid plate, sealing means between said resilient plate and said end wall around each of said plurality of pipes, sealing means between the swinging end of said switch pipe and said resilient plate, and connecting means between said common pipe and said end wall holding the end of said switch pipe against said flexible plate.

2. A switch valve assembly as set forth in claim 1, in which said connecting means is adjustable to vary the pressure of said switch plate against said resilient plate.

3. A switch valve assembly as set forth in claim 1, in which said parallel joint planes are inclined at an angle to the axis of said common pipe.

4. A switch valve assembly as set forth in claim 3, in which said common pipe and one of said plurality of pipes are disposed substantially in axial alignment, and in which said switch pipe is straight and disposed in the same common axis when arranged to connect said pipes which are disposed on a common axis.

References Cited in the file of this patent

UNITED STATES PATENTS

683,666	Shannon	Oct. 11, 1901
721,743	Richmond	Mar. 3, 1903
2,380,310	Hornbrook	July 10, 1945
2,825,604	Sebestyen	Mar. 4, 1958