

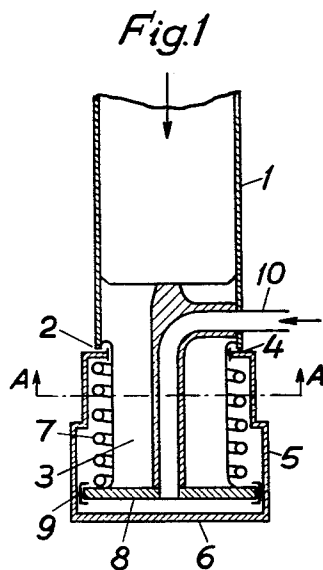
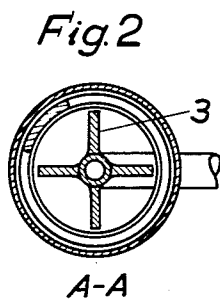
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QUICK AIR RELEASE VALVE FOR CIRCUIT BREAKERS

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QUICK AIR RELEASE VALVE FOR CIRCUIT BREAKERS

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2 Claims. (Cl. 251—63)

This invention relates especially to compressed air circuit breakers. It is often of great importance that the breaker can be quickly emptied of compressed air after completed interruption. The invention more particularly relates to a simple emptying valve, which may be closed and opened by means of a cylinder slidably arranged on the outlet side of the blow-out tube. More clearly defined, the emptying valve consists of a blow-out tube having attached within its outlet end and protruding therefrom supporting members, which support a disc on their free ends, of a pneumatically and spring-operated cylinder having a bottom and adapted to slide upon the edge of said disc, and of a supply pipe line for supplying operating air to the space between said disc and said bottom.

On the accompanying drawing, one embodiment according to the invention is shown diagrammatically, wherein Figure 1 is a sectional elevation view and Figure 2 is a section taken on the line A—A in Figure 1 in the direction of the arrows.

On the drawing 1 designates the blow-out tube, which is provided on its lower end with a sealing edge 2. Within the outlet end of the tube and protruding therefrom, there are fixed four supporting fin members 3 on the axial edges of which slides an inwardly extending shoulder 4 of the cylinder 5. The cylinder 5 has a bottom 6 and is maintained in upwardly pressed condition by a spring 7, so that the shoulder 4 engages the sealing edge 2. Fixed on the lower end of the supporting fin members 3 there is a disc 8, which is provided with a sealing ring 9, on which the lower wall portion of the cylinder 5 slides. 10 is a supply pipe for operating air which enters through the wall of the tube 1, and streams downwardly to the lower side of the disc 8.

The arrangement functions in such a way, that as operating air is admitted through the pipe line 10, the cylinder 5 is depressed against the action of the spring 7, whereat free passage is obtained for the compressed air from the tube 1 along the supporting fin members 3 and between the sealing edge 2 and the shoulder 4 to the open air.

Besides being particularly simple and easy to manufacture, the valve according to the invention has the

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advantage of providing a very large outlet opening upon a comparatively small movement of the valve system.

The invention is not limited to the use in compressed air circuit breakers, but can also be employed in other blow-out tubes.

I claim as my invention:

1. An air release valve comprising an open-ended tube for the passage of the released air, an auxiliary air pipe-line centrally disposed in said tube, a plurality of radially extending fins widely spaced from each other to permit free passage of the released air from the open end of the tube, said fins being secured to said pipe-line and to said tube and being arranged in alignment with and projecting beyond the open end of said tube, a disc secured on the ends of said fins remote from the tube and having one side subjected to the air pressure within said tube, said pipe line extending through said disc whereby the other side of said disc is subjected to the pressure within said auxiliary pipe-line, a cylinder mounted on and sealingly engaging the edge of said disc, an end wall on one end of said cylinder adjacent to said other side of said disc, an inwardly extending shoulder formed on the opposite end of said cylinder for engagement with the open end of said tube, the inner edge of said shoulder being supported by the outer edges of said fins, a spring in compression between said disc and said shoulder for normally retaining said shoulder in airtight engagement with the open end of the tube, said pipe line being adapted to supply operating air to the space between said disc and said end wall to open the valve against the compression of said spring.

2. An air release valve for a compressed air circuit breaker, comprising an open-ended tube for the passage of the released air, an auxiliary air pipe-line centrally disposed in said tube and extending from the open end thereof, a disc secured to the end of said pipe-line, a cylinder sealingly mounted on said disc, an end wall formed on one end of said cylinder and forming with part of said cylinder and said disc an air chamber in communication with the auxiliary air pipe-line, an inwardly projecting annular shoulder formed on the other end of the cylinder and having an inner flat surface exposed to the air pressure within said tube and an outer flat surface in sealing engagement with the open end of the tube when the release valve is closed, and a spring in compression between said disc and said shoulder to hold the valve in the closed position until the pressure of the auxiliary air upon the end wall of the cylinder overcomes the air pressure and the force of said spring on the said inner surface of the shoulder and so opens the release valve.

References Cited in the file of this patent

UNITED STATES PATENTS

2,049,997	Eaton	Aug. 4, 1936
2,549,689	Jurs	Apr. 17, 1951