J. P. MURPHY.

AIR COMPRESSOR.

APPLICATION FILED JULY 13, 1915.

1,189,722. Patented July 4, 1916.

Fig. 3.

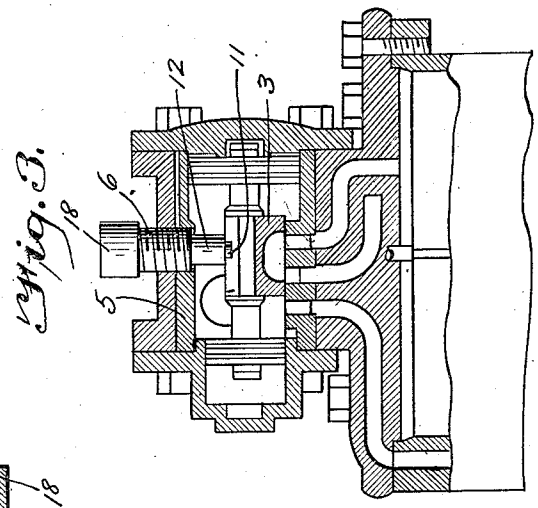


Fig. 1.

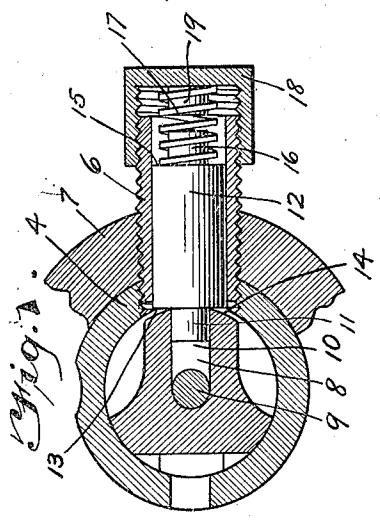
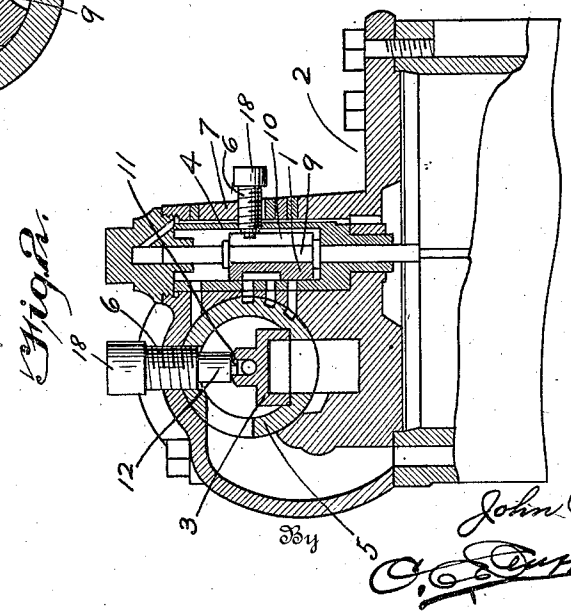


Fig. 2.



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AIR-COMPRESSOR.

1,189,722. Specification of Letters Patent. Patented July 4, 1916.

Application filed July 13, 1915. Serial No. 39,546.

To all whom it may concern:

Be it known that I, JOHN P. MURPHY, a citizen of the United States, residing at Charleston, in the county of Charleston and State of South Carolina, have invented certain new and useful Improvements in Air-Compressors; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to air compressors for locomotives and the like, and has for its object to provide positive means for guiding and holding the main slide valve and the reversing valve of the air compressor in proper effective operative position to increase the efficiency of the compressor, and to insure at all times and under all conditions proper and continuous action.

With this object in view the invention consists in the novel construction and arrangements of the parts for guiding, holding and positioning the reversing valve in proper position, and the invention also consists in the construction for guiding, holding and positioning the main slide valve in proper position.

The invention further consists in the novel features of construction and in combinations of parts, all of which will be first fully described and afterward specifically pointed out in the appended claims.

Referring to the accompanying drawing—Figure 1 is a fragmentary view in horizontal section through the reversing valve of an air compressor and through the improved guiding and positioning device. Fig. 2 is a vertical sectional view through the reversing valve and the main slide valve of an air compressor illustrating the guiding and positioning devices thereon, and Fig. 3 is a vertical longitudinal view through the main slide valve of an air compressor illustrating the guiding and positioning device thereon.

Like numerals of reference indicate the same parts throughout the three figures, in which—

1 indicates the reversing valve of an air compressor, 2 and 3 indicates the main slide valve, which valves operate in cylindrical casings 4 and 5 respectively, to open and close their ports as is of course entirely understood to those skilled in the art. In valves of this type on air compressors they very quickly become worn, inefficient and inoperative to such an extent that they will not seat and properly function.

Referring now to Fig. 1 and also to Fig. 2 it will be seen that I apply a threaded sleeve 6 through the shell 7 and into the cylindrical casing 4 of the reversing valve 1, said valve being bifurcated at 8 to receive the reversing valve stem 9 and to provide a longitudinal guiding slot 10 to receive the guiding boss 11 of the plunger 12, said plunger 12 being shouldered at 13 to engage the surface 14 of the reversing valve 1, and being shouldered near its opposite end at 15 to provide a boss 16, which accommodates a coil spring 17. 18 indicates a threaded cap having a central boss 19 to receive the other end of the coil spring 17 to properly guide, center and position said spring 17.

In operation the guiding boss 11 entering the reversing valve 1 properly positions the same within its cylindrical casing 4, while the shouldered plunger 12 holds said valve properly seated to insure its effective operation while tension on the coil spring 17 can be accurately adjusted by means of the threaded cap 18, so that a proper functioning of the valve 1 can be secured and permanently maintained.

The same construction as just described is employed in connection with the main slide valve 3 as shown in Figs. 2 and 3 except that in this instance the plunger 12 is somewhat longer and extends well within the casing 5. The action of the guiding and positioning device is precisely the same in both instances.

Having thus fully described the invention it is apparent that the same is susceptible to certain changes in the construction and arrangement of the parts, and I consider myself clearly entitled to all such modifications as fall within the limit and scope of the appended claims.

What I claim as new and desire to secure by Letters Patent of the United States is—

1. An air compressor, including a casing, a valve slidable therein, said casing being provided with ports adapted to be commanded by said valve, a sleeve entering said casing, a plunger disposed in said sleeve and provided with a boss to enter said valve,

said plunger being shouldered for engagement with said valve, the said plunger being provided with a boss on its outer end, a coil spring arranged on said boss and a threaded cap for said sleeve against which the outer end of the spring bears, the whole arranged in such manner as to resiliently hold the said plunger in engagement with the said valve.

2. An air compressor, including a casing provided with ports, a valve slidable within said casing to command said ports, a sleeve entering said casing, a plunger in said sleeve and in engagement with said valve, means for closing the outer end of said sleeve and a spring in engagement with the outer end of said plunger to hold said plunger resiliently in engagement with said valve, substantially as described.

3. An air compressor including a casing provided with ports, a valve slidable within said casing to command said ports, a plunger entering said casing and in engagement with said valve, means inclosing the outer end of said plunger, and a spring interposed between said plunger and the outer end of said inclosing means to hold said plunger resiliently in engagement with said valve.

In testimony whereof, I affix my signature, in presence of two witnesses.

JOHN P. MURPHY.

Witnesses:
JOHN L. HEIDTMAN,
C. J. MURPHY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."