

No. 626,064.

Patented May 30, 1899.

F. G. HOBART.
COMPRESSOR VALVE.

(Application filed Oct. 13, 1898.)

(No Model.)

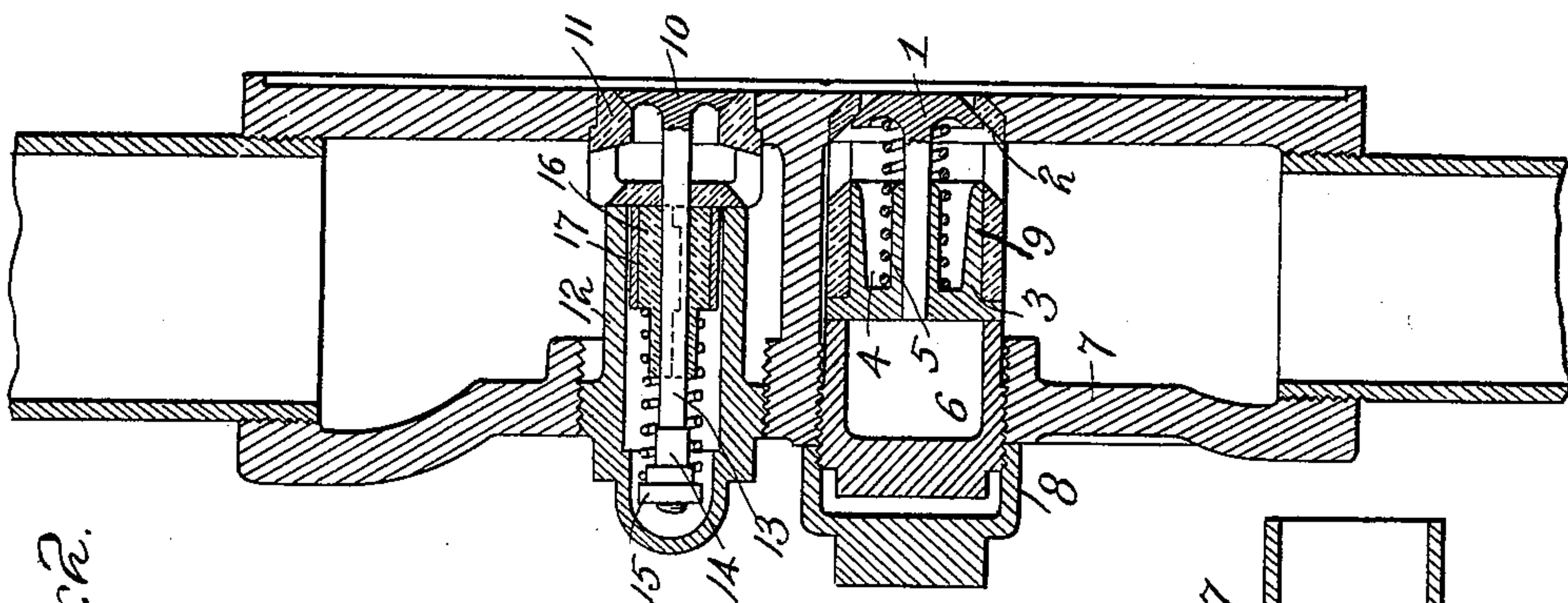


Fig. 2.

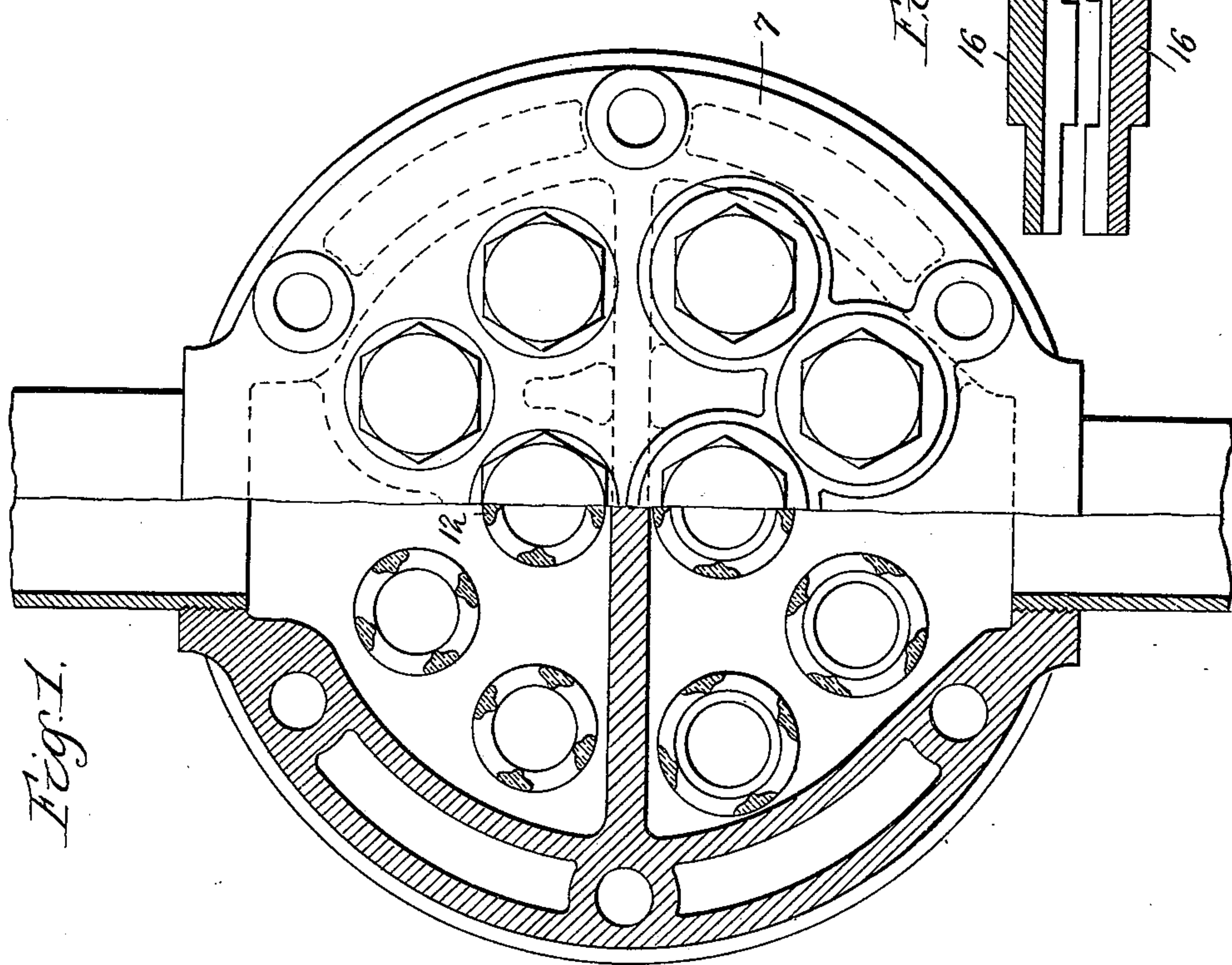


Fig. 1.

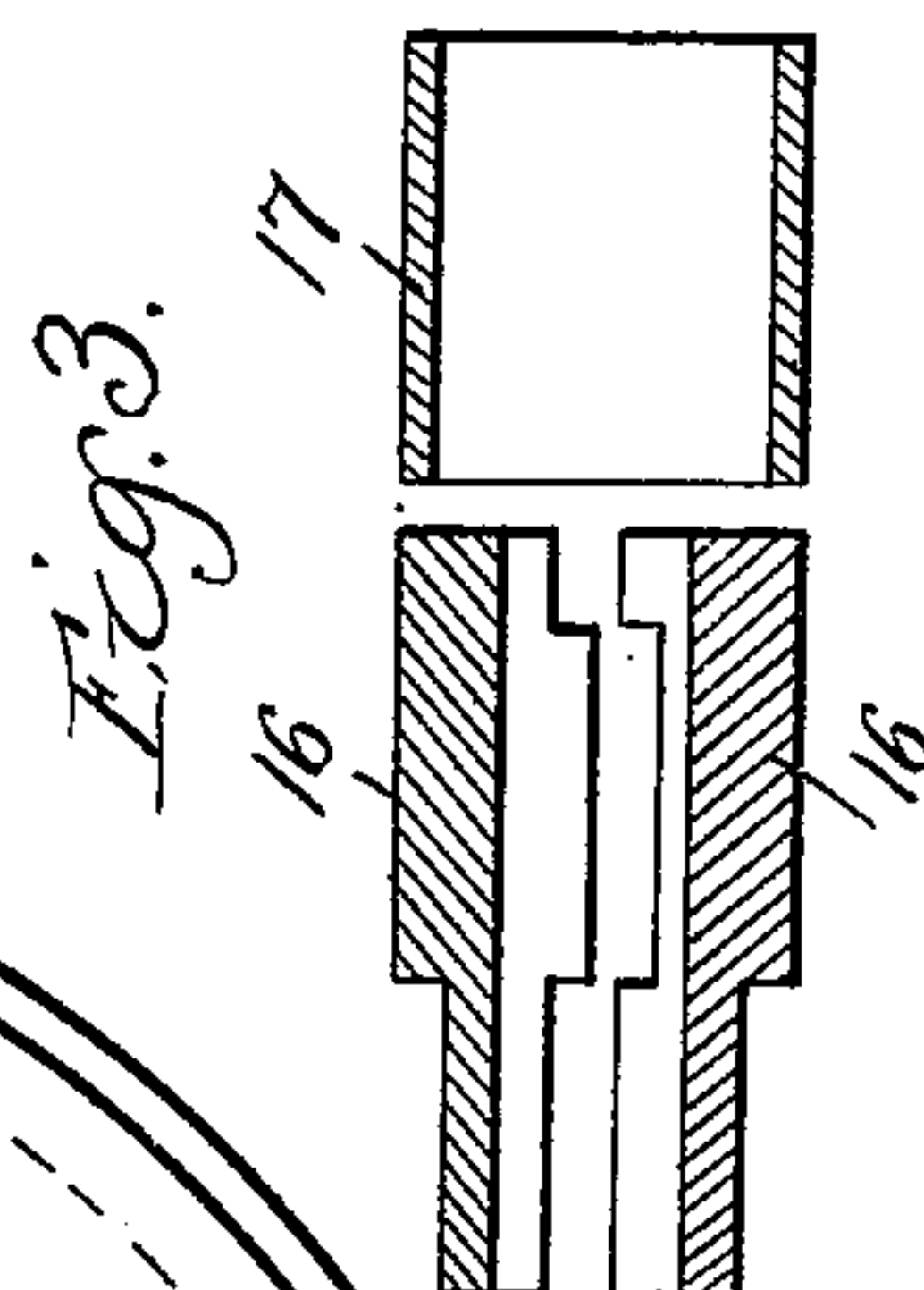


Fig. 3.

Witnesses.
Wm. M. Rheem.
H. G. Burnett.

Inventor
Frank G. Hobart
by
Paul Symmestredt
Atty.

UNITED STATES PATENT OFFICE.

FRANK G. HOBART, OF BELOIT, WISCONSIN, ASSIGNOR TO THE FAIRBANKS,
MORSE & COMPANY, OF CHICAGO, ILLINOIS.

COMPRESSOR-VALVE.

SPECIFICATION forming part of Letters Patent No. 626,064, dated May 30, 1899.

Application filed October 13, 1898. Serial No. 693,435. (No model.)

To all whom it may concern:

Be it known that I, FRANK G. HOBART, a citizen of the United States, residing in Beloit, Rock county, Wisconsin, have invented certain new and useful Improvements in Compressor-Valves, of which the following is a specification.

My invention relates particularly to compressor-valves which are used in air and gas compressors for the inlet and discharge of the air or gas, and has for its object the provision of a set of valves which will be durable as well as light in operation and reliable and in which it will be possible to renew any one of the wearing parts separately without changing the others.

Another object of my invention is to provide an arrangement of valves, valve-stems, seats, and guides which when put together will insure the utmost accuracy of alinement.

My invention contemplates the construction of a discharge-valve provided with a seat-cage, a guide-bushing, and a retaining-nut of novel and improved construction, which will be hereinafter more particularly described, and an inlet-valve having a seat-cage, a retaining-nut, and a guide-bushing and bushing-thimble, also of novel and improved construction.

It has been heretofore proposed to provide against the dropping of the inlet-valves into the compressor-cylinder and consequent serious damage to the machinery by the construction of the inlet valve and stem with an enlargement or head upon what may be termed the "spring end" of the valve-stem integral with the valve-stem itself, the guide for the stem being formed or two intermeshing or interlocking halves divided on a central plane, so as to be put around the stem when the latter is placed in position. This construction is subject to the objection that it is difficult to make because of trouble encountered in holding the parts in position while they are being fitted and afterward put into place. In the practice of my invention I aim to overcome all of these difficulties, and in order to give a clear understanding of the purposes and objects which I seek to accomplish I will proceed to a more detailed description, refer-

ence being had to the accompanying drawings, in which—

Figure 1 shows a portion of a compressor-cylinder having my improved valves applied thereto. Fig. 2 is a section through an inlet and discharge valve, and Fig. 3 shows a detail of the guide I use for the inlet-valve stem.

The discharge-valve 1 is mounted within a seat-cage 2, having projecting within it and bearing against it at its outer end a guide-bushing 3, which is provided with a socket 4 for the spring 5. Against the guide-bushing 3 is a retaining-nut 6, which engages a thread in the cylinder 7 and is provided upon its outer end with an air-tight cap 8 to prevent the escape of any air-pressure that may leak past the thread of the nut 6.

By making the seat-cage 2 and the guide-bushing 3 separate from each other it is possible when one or the other becomes worn to effect a renewal without the necessity of changing all of the parts. In a large compressor, where there are quite a number of valves, this effects quite a saving in expense.

It will be noticed from an examination of the drawings that there is no screw-threaded engagement between either the seat-cage or the guide-bushing or the guide-bushing and the retaining-nut, but that the bushing has a projection 9, fitting snugly within the seat-cage 2, this construction being adopted because it secures greater accuracy of alinement than the construction in which the various parts are secured together by screw-threads and also because they are more readily separated and put together again in making renewals.

The inlet-valve 10 is provided with a seat-cage 11, which has no screw-threaded engagement with the opening into which it is secured, but is held in position thereon by the screw-nut 12. Upon the stem 13 of the inlet-valve, at the spring end thereof, is a boss or enlargement 14, which is formed integrally with the stem and which is threaded to engage the spring-retaining nut 15. The enlargement is designed to prevent the valve from dropping out in case the spring-bearing nut should work off, and the nut is used in

combination with the enlargement, because if the enlargement were made in itself of sufficient size to form a bearing for the spring it would be more difficult to put the spring in position. Surrounding the stem 13 is a guide-bushing 16, which is made in two parts divided along a middle plane, as clearly shown in Fig. 3, so that they may be put around the stem in spite of the enlargement 14.

10 To facilitate the handling of these parts, not only in putting them in place, but also in drilling and machining them when they are first made, I provide a containing-collar 17, made to fit snugly over the two split portions

15 of the guide-bushing 16 when the latter is in place in the stem 13.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A compressor-valve having a stem provided upon its spring end with an integral enlargement, and a split or divided guiding-bushing held in place by a containing-collar.
2. A compressor-valve having a stem provided at its spring end with an integral enlargement upon which is secured, by a screw-thread connection, a spring-bearing nut.

FRANK G. HOBART.

Witnesses:

B. P. ELDRED,
F. L. BUSH.