No. 884,332.

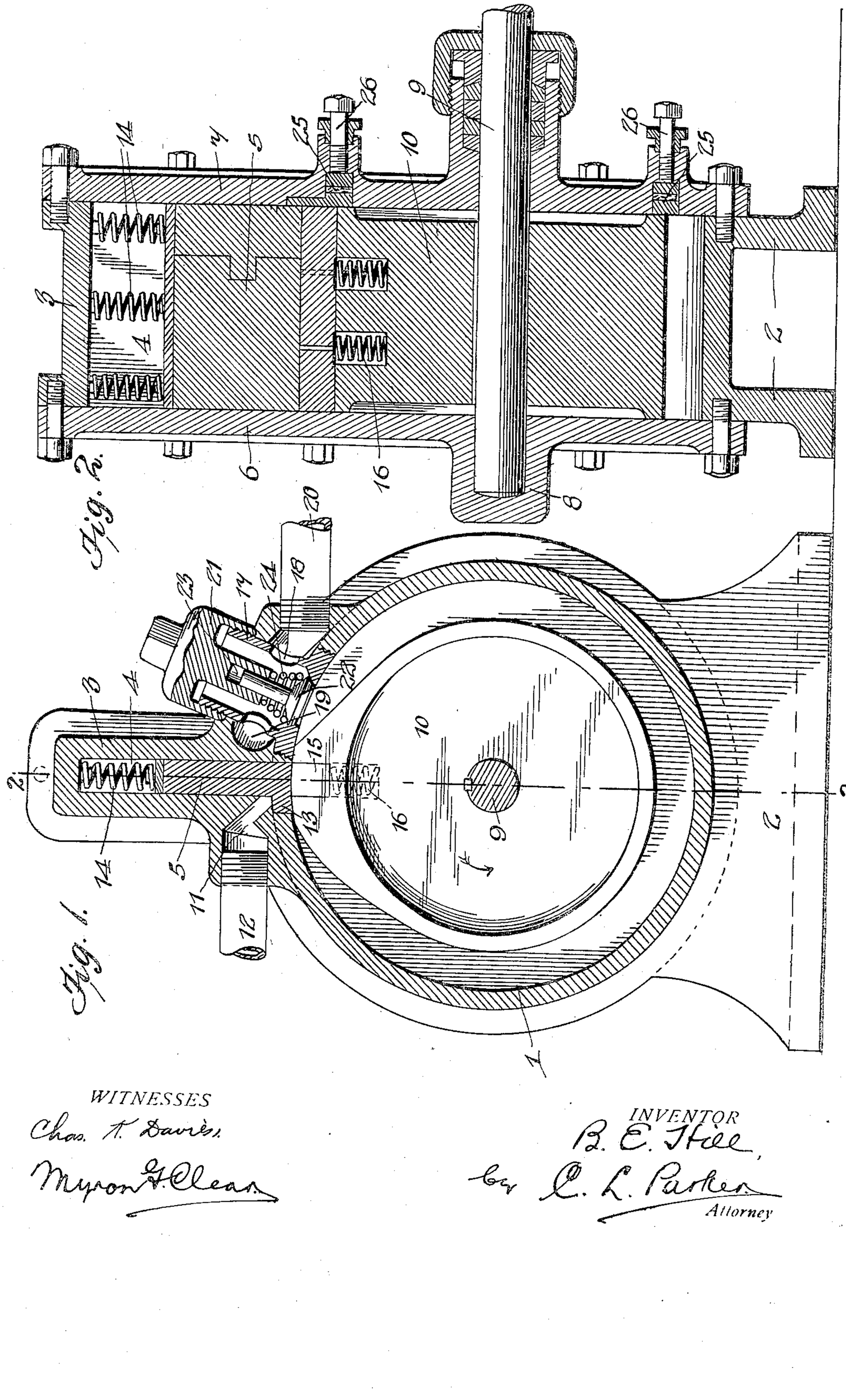
PATENTED APR. 7, 1908.

B. E. HILL.

COMPRESSOR.

APPLICATION FILED JUNE 12, 1907.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 4.

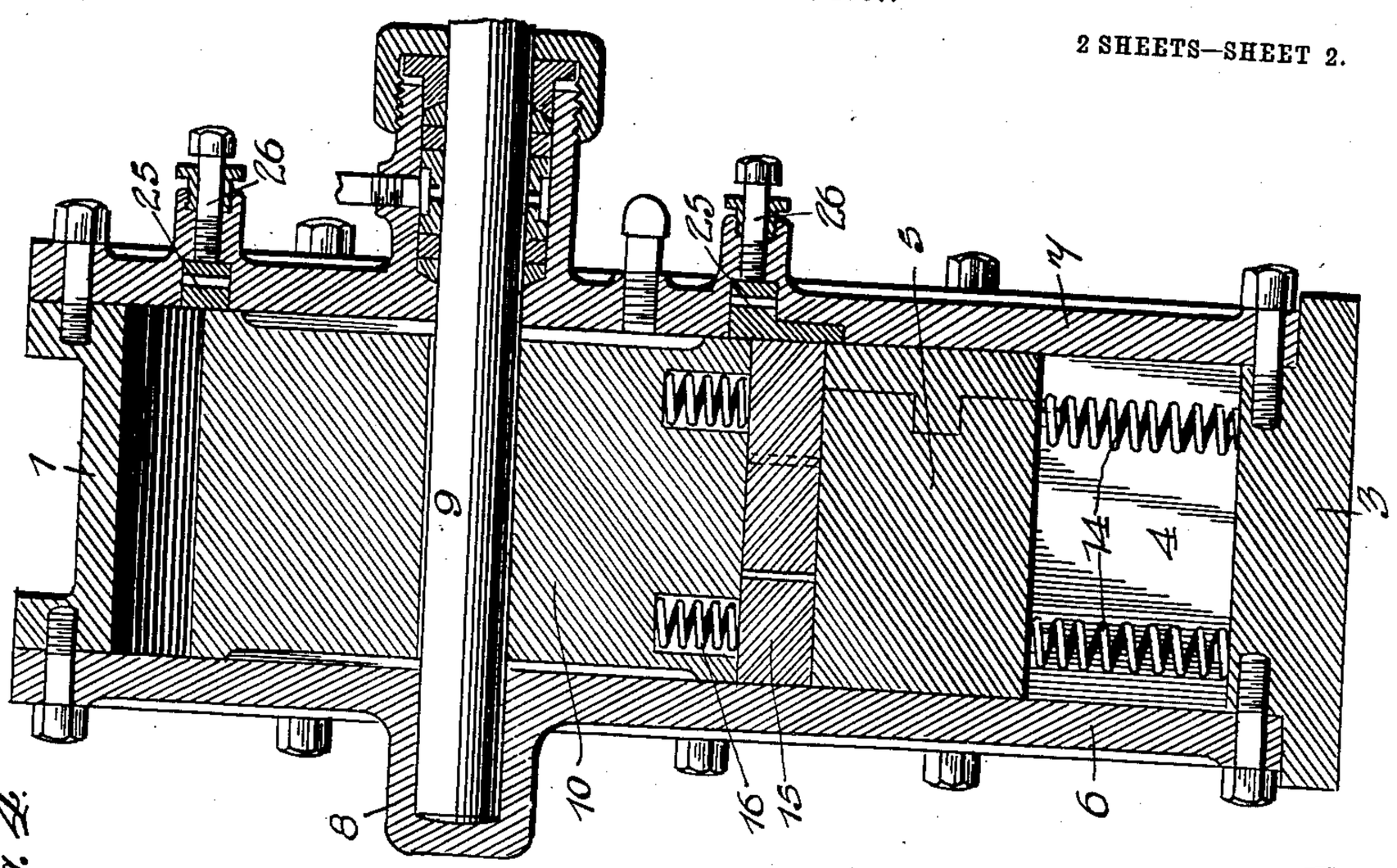
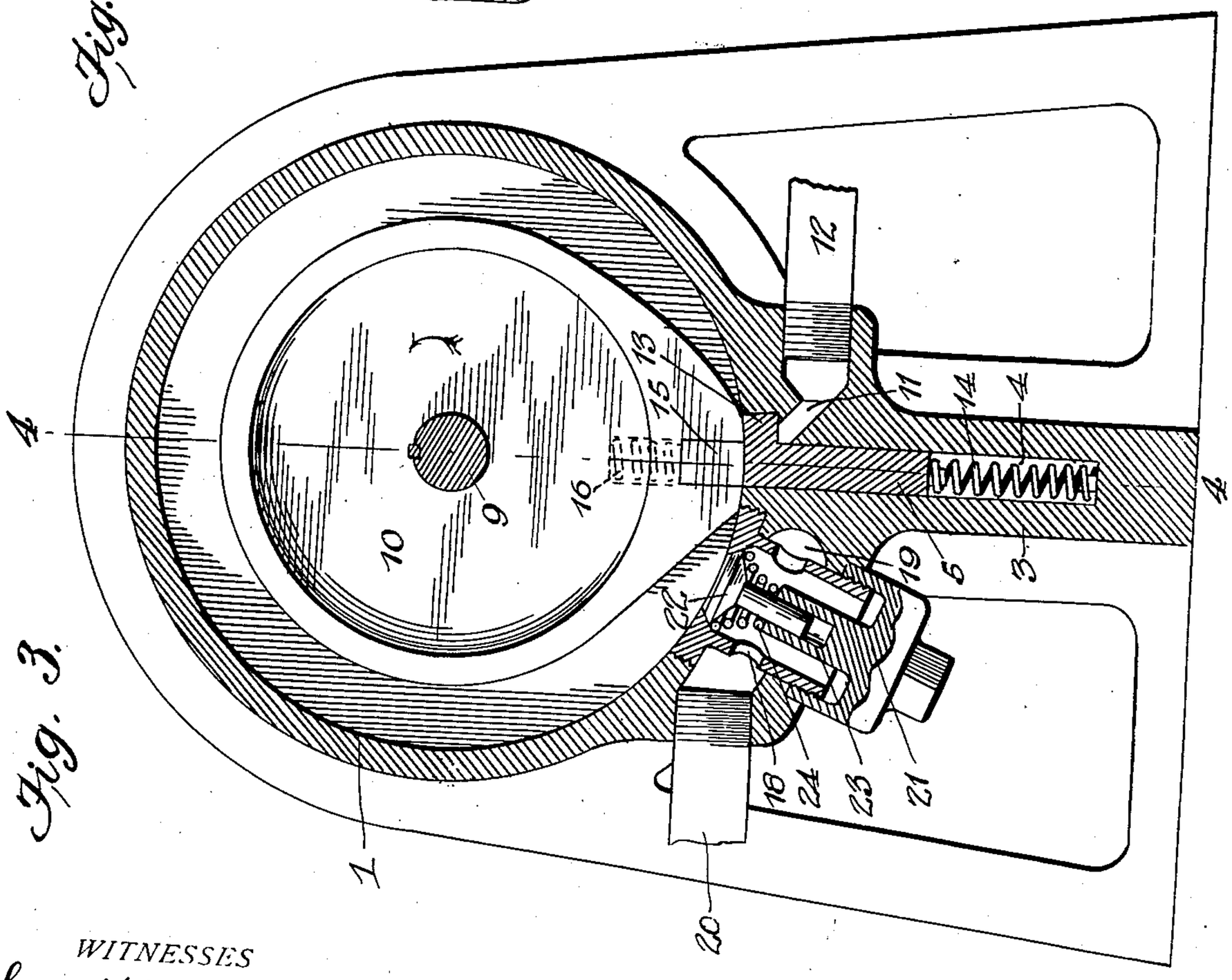


Fig. 3.



WITNESSES

Chas. A. Davis.

Myron G. Clear.

INVENTOR

B. E. Hill,

by C. L. Parker

Attorney

UNITED STATES PATENT OFFICE.

BERT E. HILL, OF PITTSBURG, KANSAS.

COMPRESSOR.

No. 884,332. Specification of Letters Patent. Patented April 7, 1908.

Application filed June 12, 1907. Serial No. 378,615.

To all whom it may concern:

Be it known that I, BERT E. HILL, a citizen of the United States, residing at Pittsburg, in the county of Crawford and State of Kansas, have invented certain new and useful Improvements in Compressors, of which the following is a specification.

My invention relates to air, ammonia or other compressors, and particularly contemplates the provision of a simple and inexpensive structure to take the place and perform the same functions that are performed by the complicated machines now in use.

My invention resides specifically in the following features of construction, arrangement and operation as will be hereinafter described with reference to the accompanying drawings in which like numerals are used to indicate like parts in each embodiment of my invention, and in which,

Figure 1 is a vertical sectional view through my improved compressor showing certain parts in side elevation, Fig. 2 is a cross section therethrough taken on the line 2—2 of Fig. 1, Fig. 3 is a similar view to Fig. 1 showing an arrangement of parts constituting a modified form of my invention, and Fig. 4 is a cross section therethrough on the line 4—4 of Fig. 3.

In the practical embodiment of my invention, and with particular reference to the form thereof illustrated in Figs. 1 and 2, I provide a structure comprising a substantially circular cylinder 1 mounted on the base 2, and having a portion 3 thereof extending vertically therethrough, and provided with an elongated slot 4, in which a sliding gate 5 is adapted to operate. The casing 1 is provided with the cylinder heads 6 and 7 bolted thereto, the cylinder head 6 providing an end bearing 8 for the driven shaft 9 carrying the cam rotor 10, keyed thereto within the circular cylinder 1. The cylinder 1 is provided with an inlet aperture or nozzle 11 within which is threadedly engaged an inlet pipe 12. The sliding gage 5 is provided with an extended piece 13 at the lower end thereof, which, in conjunction with said gate is adapted to close the inlet nozzle 11 when said gate is forced upward within the slot 4 against the tension of a spring 14 therein until the extension 13 engages with the edge of the cylinder 1. The cam rotor 10 is provided with a movable section 15, spring pressed into sliding engagement with the inner circumference of the cylinder 1 by means of coil springs 16. Thus it will be seen that as the rotor 10 is moved in the direction of the arrow shown in Fig. 1, the air, gas, or the like, will be compressed within the cylinder 1 between the cam portion of said rotor and the sliding gate 5, a new charge being received through the inlet nozzle 11 behind said cam portion as said rotor moves, and as the gate 5 slides downwardly against the periphery of said rotor 10.

The outlet for the compressed charge is arranged upon the opposite side of the gate 5 from the inlet 11, and comprises a bushing 17 screwed within the cylinder 1, and provided with openings 18 lying within an annular recess 19 within said cylinder wall which has connected with and arranged therein the outlet pipe 20. The bushing 17 is provided with a cap 21, and has formed with its inner circumference a valve seat for the reception of a valve 22, having its stem arranged within a guiding socket 23 in the cap 21, a strong coil spring 24 being arranged between said valve and said socket 23 to hold said valve tightly upon its seat until the pressure of the charge within the cylinder 1, caused by the movement of the rotor 10, reaches a predetermined degree, at which time said valve will be moved away from its seat to allow the charge to pass from the cylinder 1 through the outlet pipe 21. The cylinder head 7 is provided with packing rings 25 seated in a circumferential recess upon the inner face of said cylinder head and adjustably pressed against the peripheral edge of the rotor 10 by means of the adjusting screws 26.

In the modified form of my invention, as shown in Figs. 3 and 4, it will be seen by reference thereto, that the same consists simply in reversing the elements contained in Figs. 1 and 2, in other words, in turning Figs. 1 and 2 upside down. This form includes all of the elements shown in Figs. 1 and 2, and of exactly the same construction, the inlet and outlet pipes 12 and 20 being arranged at the bottom of the cylinder 1 to substantially adapt the same for the compression of ammonia, inasmuch as any liquid which may have gotten into the cylinder 1 will at once settle in the base thereof, and will be readily forced through the outlet valve, settling then within the annular recess 19.

Having thus fully described my invention I claim:

1. In a compressor of the character described, the combination of a casing having a slotted extension and a recess thereon adjacent said extension, a driven shaft mounted centrally through said casing and provided with a cam rotor mounted thereon within said casing, a fluid inlet for said casing opening through said recess, a sliding gate arranged within said slotted extension of said casing and provided with a shoulder extending therefrom and fitting within said recess, said gate being spring pressed into engagement with the periphery of said rotor and being adapted with its shoulder to close said inlet when forced outwardly by the cam, and a pressure regulated outlet arranged through said casing adapted to receive the compressed charge, substantially as described.

2. In a compressor of the character described, the combination of a casing having a slotted extension and a recess adjacent said extension, a driven shaft mounted centrally through said casing and provided with a cam rotor mounted thereon within said casing, a fluid inlet for said casing opening through said recess, a sliding gate arranged within said slotted extension of said casing and provided with a shoulder extending therefrom and fitting within said recess, said gate being spring pressed into engagement with the periphery of said rotor and being adapted with its aforementioned shoulder to close said inlet when forced downwardly by said cam, an outlet for said casing forming a valve seat, a valve seated upon said seat with its cam projecting outwardly from said casing, a cap threadedly engaging within the walls of said casing and having a central socket portion forming a guide for said valve stem, and a spring interposed between said valve and said socket portion to allow said valve to open when upon a desired pressure, substantially as described.

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

BERT E. HILL.

Witnesses:
Mrs. J. ALLEN,
F. C. WERNER.