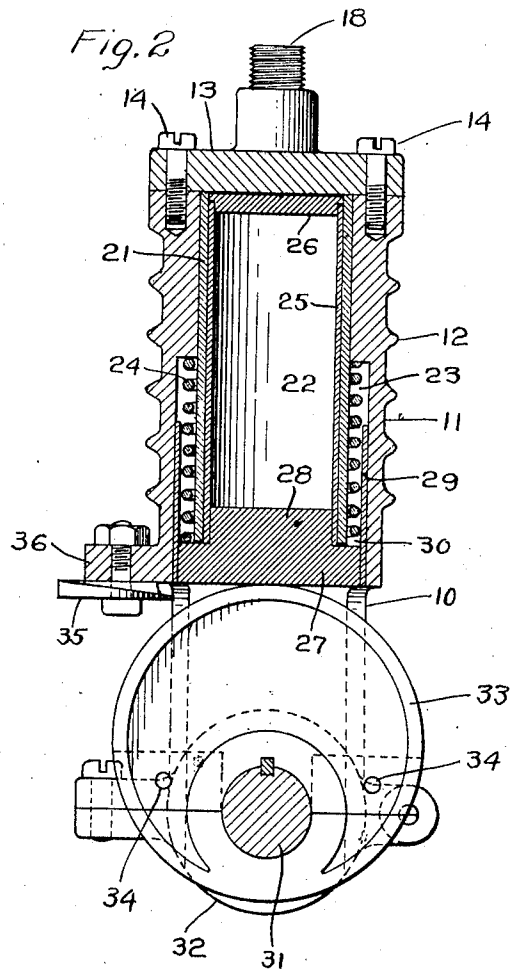
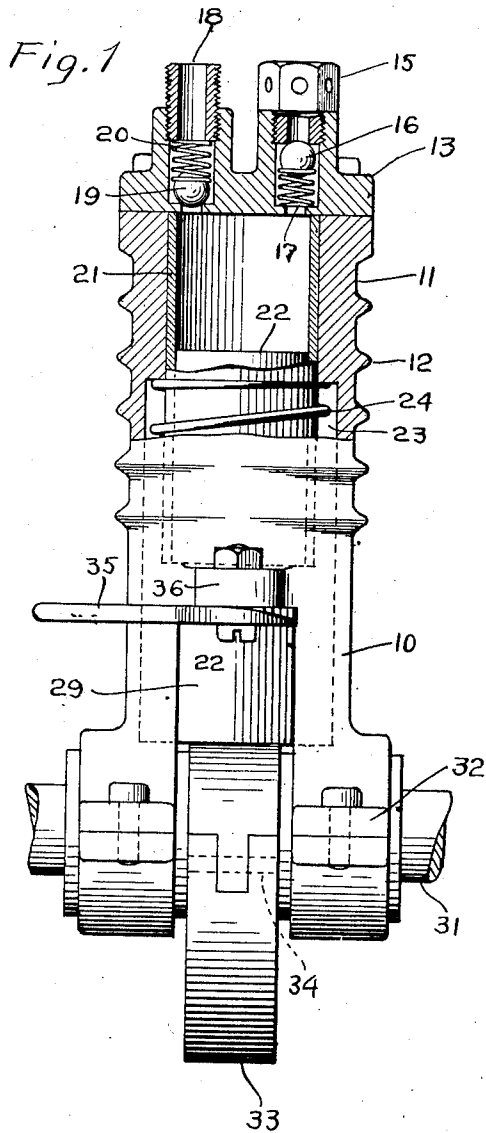


W. R. THOMPSON.
AIR COMPRESSOR.
APPLICATION FILED OCT. 19, 1911.

1,026,132.

Patented May 14, 1912.



WITNESSES:

H. W. Meade
S. W. Acton

INVENTOR

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BY

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UNITED STATES PATENT OFFICE.

WILLIAM R. THOMPSON, OF SOUTH NORWALK, CONNECTICUT, ASSIGNOR OF ONE-HALF TO JOHN TIEBOUT, OF BROOKLYN, NEW YORK, AND ONE-FOURTH TO ELMER E. CASE, OF SOUTH NORWALK, CONNECTICUT.

AIR-COMPRESSOR.

1,026,132.

Specification of Letters Patent.

Patented May 14, 1912.

Application filed October 19, 1911. Serial No. 655,571.

To all whom it may concern:

Be it known that I, WILLIAM R. THOMPSON, a citizen of the United States, residing at South Norwalk, county of Fairfield, State of Connecticut, have invented an Improvement in Air-Compressors, of which the following is a specification.

This invention relates to the type of air compressors illustrated and described in Letters Patent Number 940,751, granted to me November 23, 1909, and has for its object to provide a compressor of this type adapted for general use and especially adapted for use in inflating pneumatic vehicle tires.

With this and other objects in view I have devised an air compressor in which the spring is placed outside the cylinder so that there is no loss of air space whatever within the cylinder and the entire area of the piston head may be used for compression, thus enabling me to utilize the full power applied to the piston and to develop a very much higher pressure than has been possible with any compressor of this type heretofore produced.

To these ends the invention consists in the simple and novel construction which I will now describe and then specifically point out in the claims hereunto appended.

In the accompanying drawing forming a part of this specification, Figure 1 is an elevation of my novel compressor partly in longitudinal section, the piston being retracted; and Fig. 2 is a longitudinal section on a plane at right angles to the plane of Fig. 1, the piston being at its forward position, that is approximately in contact with the cylinder head.

10 denotes a frame which may be of any ordinary or preferred construction, 11 a cylinder which may be cast integral therewith and 12 heat radiating ribs which may be provided on the cylinder. The cylinder head 13 is secured to the cylinder by bolts 14 and is provided with an inlet nipple 15, the inner end of which forms a seat for a valve 16 which is normally held seated by a spring 17.

18 is an outlet pipe connected to the cylinder head and 19 a check valve which is normally held in engagement with a seat in the cylinder head by a spring 20.

Within the cylinder is a lining shell 21

within which the piston 22 reciprocates. This lining shell is secured in the inner end of the cylinder by a drive fit. Outside the outer end of the shell is a circular recess 23 in the cylinder which extends half the length, more or less, of the bore of the cylinder and receives the spring 24.

For the sake of lightness and cheapness of construction, the piston is preferably made as shown in Fig. 2, and consists of a tube 25 the upper end of which is closed by a head 26 and the lower end of which is closed by an enlarged base 27, the upper portion of which consists of a plug 28 which is driven within tube 25. 29 denotes an outer shell into the lower end of which the base is driven. This outer shell fits closely in the circular recess and extends upward therein far enough to form a pocket 30 in which the lower end of the spring is seated. It will be obvious, however, that the piston may be otherwise constructed, if preferred, provided it has the enlarged base.

31 denotes the shaft which is journaled in bearings 32 upon the frame and 33 an actuating cam which is carried by the shaft. This cam is preferably made in two parts which are tongue-and-grooved together and secured by pins 34 as clearly shown in Fig. 2. This is in order to permit the cam and frame to be attached to and removed from a shaft without disturbing the shaft.

35 denotes a locking lever which is pivoted to a lug 36 cast upon the frame and is adapted to be swung under the piston when in its forward position, as in Fig. 2, to retain it in the forward position.

Having thus described my invention I claim:

1. An air compressor comprising a casing having a longitudinal bore and enlarged at one end to form an annular recess, a rigid lining shell secured within said bore and cooperating with the wall of said recess to form an annular chamber, a piston mounted to reciprocate within said shell, a spring in said chamber acting against said piston, and means for moving the piston in opposition to said spring.

2. An air compressor comprising a casing having a longitudinal bore and enlarged at one end to form an annular recess, a rigid lining shell secured within said bore, a second lining shell secured within said

recess, a piston mounted to reciprocate in the first mentioned shell and having an enlargement working in the second shell, a spring located between said shells and acting against the enlargement in said piston, and means for moving the piston in opposition to the spring.

3. An air compressor comprising a casing having a bore provided with an annular enlargement, a tube mounted to reciprocate within said bore, a plug closing the upper end of said tube, whereby a piston is provided, an enlarged base closing the lower end of said tube and arranged to reciprocate within the annular enlargement of said bore, a spring acting against said base, and means for moving the piston in opposition to said spring.

4. An air compressor comprising a casing having a bore provided with an annular enlargement, a tube mounted to reciprocate within said bore, a plug closing the upper end of said tube, whereby a piston is formed, an enlarged base larger in diameter than said tube and having a reduced plug for

closing the outer end of the latter, said base being arranged to reciprocate within the annular enlargement of said bore, a spring acting against said base, and means for moving the piston in opposition to said spring.

5. An air compressor comprising a casing having a longitudinal bore and an enlarged recess, a lining shell secured in said bore, and cooperating with said recess to form a chamber, a tube mounted to reciprocate in said sleeve, a plug closing the upper end of said tube, whereby a piston is formed, an enlarged base closing the lower end of said tube and arranged to reciprocate within the annular enlargement of said bore, a spring within said chamber and acting upon said base, and means for moving the piston in opposition to said spring.

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

WILLIAM R. THOMPSON.

Witnesses:

SPENCER S. ADAMS,
T. H. LEONARD ROBINS.