March 4, 1924. 1,485,803

M. W. MOUNT, JR., ET AL

FILLER BLOCK FOR CONVERTIBLE INTERNAL COMBUSTION ENGINES

Filed Sept. 8 1922 2 Sheets Sheet 1

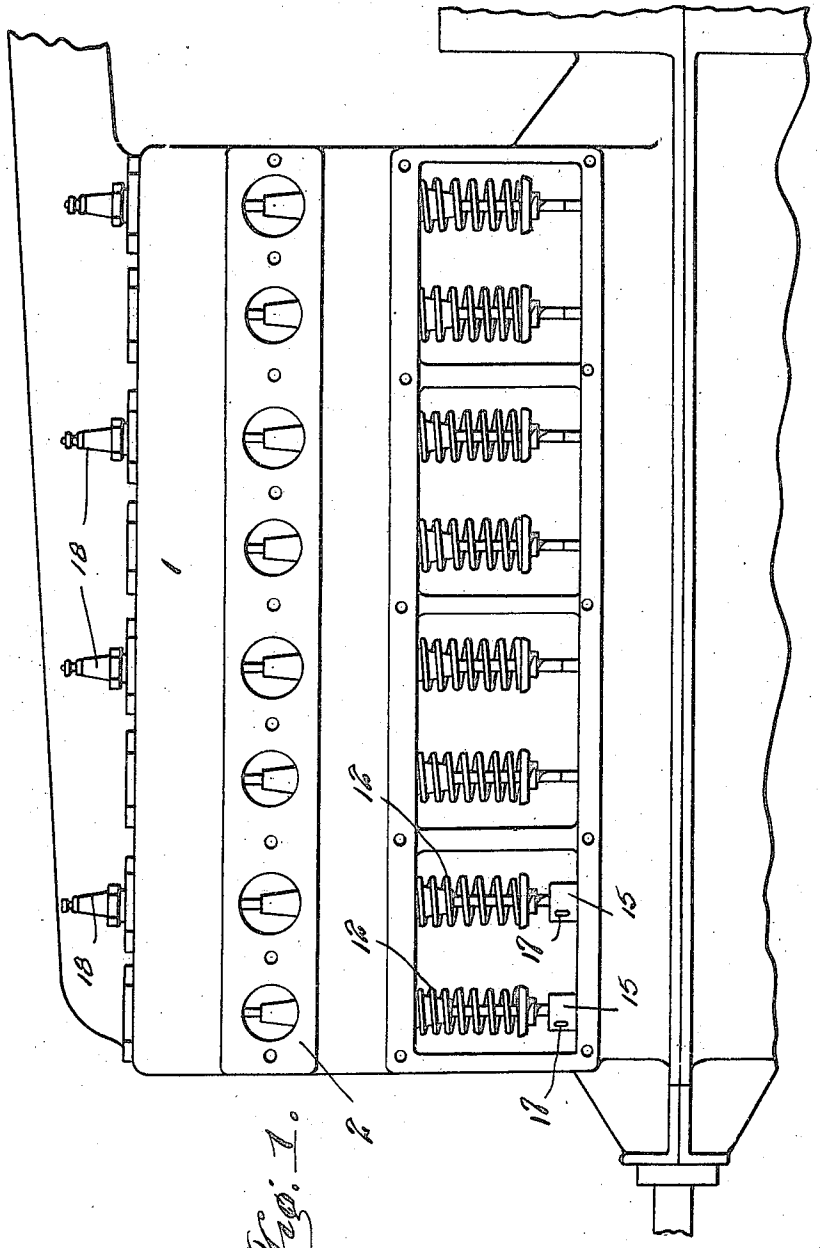


Fig. 1.

Witnesses:
F. L. Fox.
N. Berman

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Fig. 3.

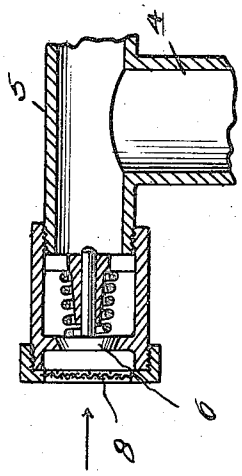


Fig. 4.

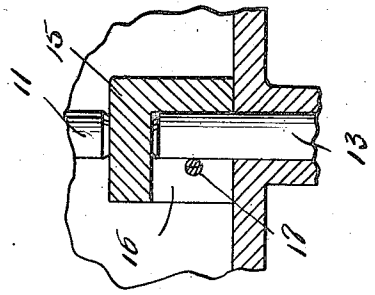


Fig. 1.

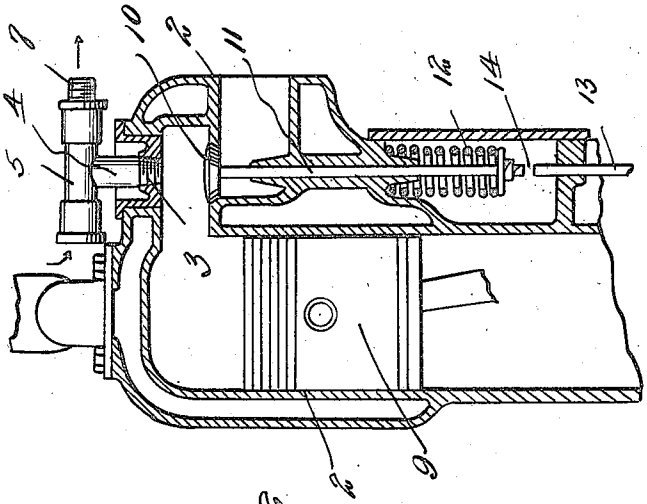


Fig. 2.

Witnesses:
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Patented Mar. 4, 1924. 1,485,803

UNITED STATES PATENT OFFICE.

MARCUS W. MOUNT, JR., AND DONALD MOUNT, OF MEMPHIS, MISSOURI.

FILLER BLOCK FOR CONVERTIBLE INTERNAL-COMBUSTION ENGINES.

Application filed September 8, 1922. Serial No. 586,839.

To all whom it may concern:

Be it known that we, MARCUS W. MOUNT, Jr., and DONALD MOUNT, citizens of the United States, residing at Memphis, in the county of Scotland and State of Missouri, have invented new and useful Improvements in Filler Blocks for Convertible Internal-Combustion Engines, of which the following is a specification.

The object of our said invention is the provision of an internal combustion engine adapted to be expeditiously and easily converted into an efficient air compressor and as readily reconverted into an internal combustion engine.

In the preferred embodiment of our invention the internal combustion engine is made up of a multiplicity of cylinders, and one cylinder only is adapted to be converted and reconverted as indicated.

To the attainment of the foregoing, the invention consists in the improvement as hereinafter described and definitely claimed.

In the accompanying drawings, forming part of this specification:—

Figure 1 is a side elevation of a convertible engine constituting the best practical embodiment of our invention that we have as yet devised.

Figure 2 is a vertical section showing one of the cylinders of the engine as converted into an air compressor for use in the actuation of various pneumatic appliances.

Figure 3 is an enlarged vertical broken section showing the T-coupling with which the cylinder is equipped when the same is converted into an air compressor.

Figure 4 is an enlarged detail section showing one of the filler blocks that are employed when the cylinder is reconverted into one of the units of a multi-cylinder internal combustion engine.

Similar numerals of reference designate corresponding parts in all of the views of the drawings.

The internal combustion engine 1 shown in Figure 1 is of multi-cylinder, automobile type. It is to be understood, however, that our invention is not restricted to internal combustion engines such as ordinarily used in automobiles, but is capable of being used to advantage in all types of internal combustion motors.

All of the cylinders of the engine 1 are of the usual construction and are ordinarily equipped except the cylinder 2 shown at the left of the said figure. The cylinder 2 is peculiar in that it is provided in one wall of its outlet conduit with a screw tappet aperture 3. When the cylinder is to be used for internal combustion purposes the said aperture 3 is closed by a threaded plug which we have deemed it unnecessary to illustrate. When, however, the cylinder is to be converted into an air compressor the stem 4 of a T-coupling 5 is threaded into the said aperture 3, the said T-coupling 5 being provided adjacent to one of its ends with an outwardly seating non-return valve 6 and being also provided at 7 with a reduced and threaded portion for the connection of a conduit to carry air under pressure to the tool or device to be operated thereby. We would also have it understood at this point that the end of the head of the T-coupling 5 adjacent to the valve 6 is open, and is guarded by a screen 8, designed to exclude dust and dirt. The piston 9 in the cylinder 2 is of the ordinary well known construction and is operated in the usual manner. The valves 10 complementary to said cylinder are, however, provided with short stems 11 and are yieldingly held to their seats by springs 12. It will also be noted by reference to Figure 2 that the valve stems 11 are separated from their co-operating tappet rods 13 by spaces 14, the said spaces 14 being sufficiently large to permit vertical reciprocation of the rods 13 without opening the valves 10.

Manifestly with the cylinder 2 equipped as shown in Figure 2, the usual operation of the internal combustion engine will be attended by the compression of air in the cylinder 2 and by the reciprocating piston 9, the air being drawn from the atmosphere into the cylinder 2 on the instroke of the piston, and being compressed and discharged from the cylinder on the outstroke of the piston, the valve 6 being tightly seated at that time.

When it is not desired to use the cylinder 2 for air compressing purposes, the T-coupling 5 is removed and the aperture 3 is plugged as before described, and filler blocks 15, Figures 1 and 4 are interposed between the meeting portions of the valve stems 11 and tappet rods 13 so that movements of the said stems 11 will attend the movements of the rods 13. Each of the filler blocks 15 is kerfed as indicated by 16 in Figure 4 to receive the upper end of

one rod 13, and is secured to the rod 13 through the medium of a removable pin 17.

Obviously for the plugging of the aperture 3, a spark plug 18 is preferably employed as shown in Figure 1.

It will be apparent from the foregoing that in virtue of our invention and particularly the embodiment illustrated, a combined internal combustion engine and air compressor may be readily produced; and it will also be readily appreciated that but little difficulty will be experienced in reconverting the air compressing portion of the engine back into an internal combustion engine unit.

We have entered into a detailed description of the construction and relative arrangement of the parts embraced in the present and preferred embodiment of our invention in order to impart a full, clear and exact understanding of the said embodiment. We do not desire, however, to be understood as confining ourselves to the specific construction and relative arrangement of parts inasmuch as in the future practice of the invention various changes and modifications may be made such as fall within the scope of our invention as defined in our appended claim. In this connection we would have it understood that it is within the purview of our invention to employ more than one cylinder as air compressors or one cylinder above for such purpose, the plurality of cylinders being used in conjunction with each other or separately at the same time; also, that our invention is applicable to internal combustion motors in which the members are operated by an overhead rocker-arm system from the cams of the motors, the pinions that cooperate with the rocker arms being in such cases removed in order to prevent opening and closing of the internal combustion valves. Obviously in this application of our invention, filler blocks 15 or the equivalent thereof need not be employed.

Having described our invention, what we claim and desire to secure by Letters-Patent, is:—

A device of the character described comprising a rectangular body adapted to be arranged on the lift rod of an internal combustion engine valve and adapted to engage the stem of the valve and provided with a kerf opened at the side thereof to permit sliding of the block laterally onto or off the lift rod to render the valve either operative or inoperative, and a transversely removable pin carried by the block to detachably fasten the latter to the lift rod.

In testimony whereof, we affix our signatures.

MARCUS W. MOUNT, JR.
DONALD MOUNT.