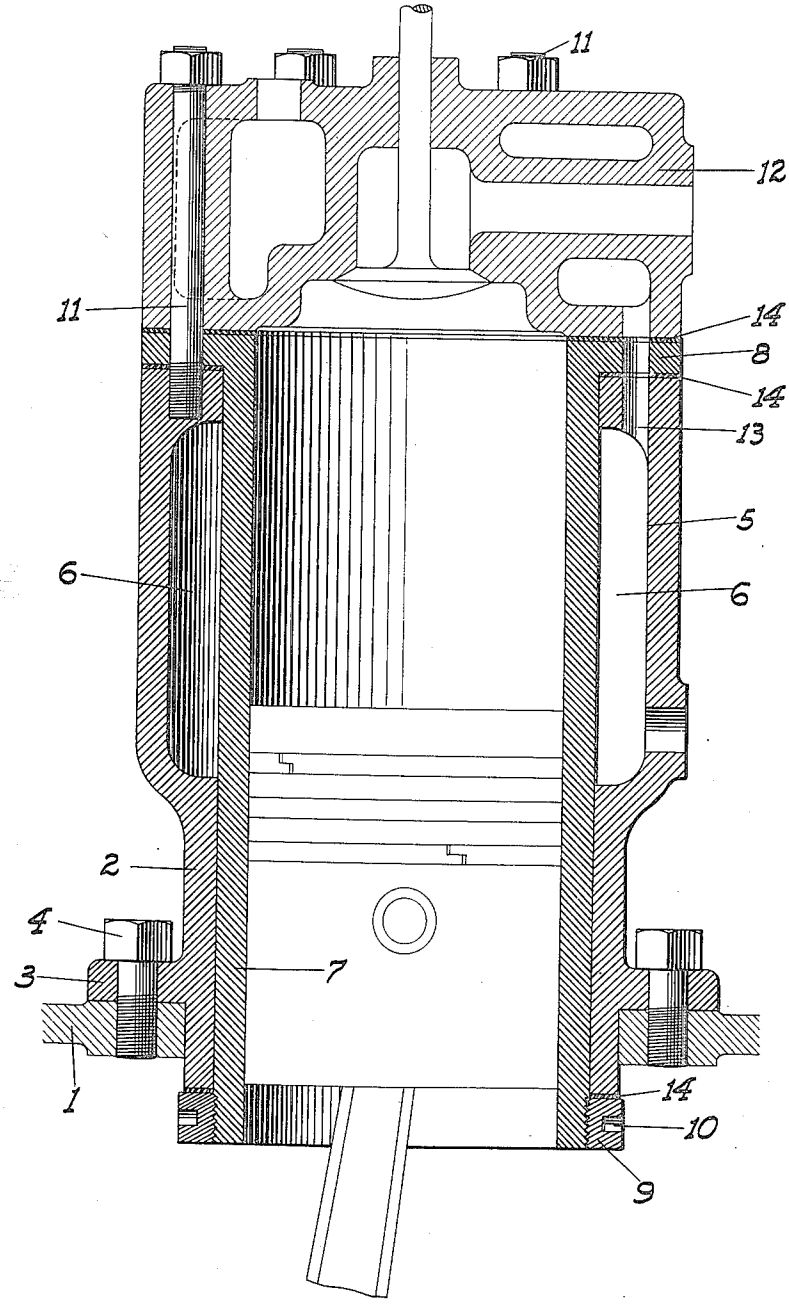
S. B. WOLGAMOTT.

ENGINE CYLINDER.

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1,306,843.

Patented June 17, 1919.



INVENTOR.

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ENGINE-CYLINDER.

1,306,843. Specification of Letters Patent. Patented June 17, 1919.

Application filed September 28, 1918. Serial No. 256,134.

To all whom it may concern:

Be it known that I, SAMUEL B. WOLGAMOTT, a citizen of the United States of America, residing at Stockton, in the county of San Joaquin, State of California, have invented certain new and useful Improvements in Engine-Cylinders; and I do declare the following to be a clear, full, and exact description of the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in engine cylinders and particularly to cylinders for water cooled internal combustion engines of the removable head type.

It is common practice at present to cast gas engine cylinders, either singly or *en bloc*, with their water jackets formed in such casting. This method is slow and expensive as it necessitates the use of expensive cores for the forming of the jacket in the mold. Furthermore, the finished product can never be inspected properly owing to the inaccessibility of the water jacket, and deep blow-holes and other defects peculiar to castings are not located until they show up when the interior of the cylinder is turned and the tool cuts into a blow-hole, or when the jacket leaks when put under a hydraulic test. These defects, of course, necessitate the cylinder being discarded, which is expensive, particularly in the case of an *en bloc* casting and after all the machine work has been done on it.

Another disadvantage with present day cylinders is the fact that when they have become badly burned or scored through long wear or misuse, the entire cylinder or set of cylinders must be thrown away.

The principal object of my improved cylinder is to do away with the intricately cored cylinder body by casting the outer portion or the jacket covering of the cylinder separate from the piston sleeve. This accomplishes a two-fold purpose;—it enables me to cast the outer portion of the cylinder with the use of a simple barrel core, and provides a piston sleeve which is readily removable from the cylinder, and which in case of the necessity of removal or regrinding, may be replaced without taking down the entire engine, and at a minimum of expense. This is particularly the case with cylinders cast *en bloc*. This construction of the cylinder, by forming the water jacket between the walls of the separate parts, permits of good inspection of the water space and allows the cylinder to be readily disassembled for the purpose of cleaning the jacket of scale, mud, etc., which frequently clogs up the water circulating system and causes the engine to overheat.

As a further object, I have provided a simple and inexpensive form of cylinder construction, and one which will be exceedingly advantageous for the purpose for which it is designed.

These objects, I accomplish by means of such structure and relative arrangement of the parts as will fully appear by a perusal of the following specification and claim.

The figure of the drawings represents a longitudinal section of a gas engine cylinder showing my improved form of construction.

Referring now more particularly to the characters of reference on the drawing, the numeral 1 represents the base of the engine on which is mounted the outer member 2 of the cylinder. This portion has a flange 3 a short distance above its lower end as is customary, and cap screws 4 secure the same to the base 1. For a portion of its length, the interior of this member 2 is of greater diameter than at the top and bottom thereof, as at 5, thereby forming a chamber 6 between the wall of the same and a piston-sleeve or bushing 7 which is slidably mounted in the member 2 and impinges against the inner wall thereof, except where said enlarged portion 5 extends.

This sleeve has a flange 8 on the upper edge extending outwardly to the outer edge of the member 2, and at its lower end projects beyond the end of said member. This end is threaded to receive a lock nut 9 thereon, which nut is provided with a plurality of holes or slots 10 for the reception of a tool to turn the same.

Stud bolts 11 are secured in the upper end of the member 2, which studs project through suitable orifices provided in the flange 8 and through the valve retaining head 12 of the cylinder. Suitable orifices 13 provide communication between the chamber or water jacket 6 and the water jacket of the head 12. Suitable gaskets 14 are placed between the abutting joints of the

head, flange and body member 2, and between the latter and the lock nut 9, as is customary.

Thus it will be evident that all that is necessary to be done to replace the piston sleeve is to remove the head 12, unscrew the nut 9, and remove the sleeve without removing the outer member 2 from the base. This is as readily accomplished with two or four cast *en bloc* as with a singly cast member.

Thus, from the foregoing description, it will readily be seen that I have produced such a device as substantially fulfils the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice, such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention as set forth herein.

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

A gas engine cylinder comprising in combination with a valve retaining head, an outer member adapted to be secured to the engine base and extending below the same and having its interior enlarged excepting at the ends thereof, a piston sleeve removably seated in the outer member and projecting below the same, an outwardly projecting flange on the sleeve adapted to seat on the upper surface of the outer member between the same and the head, packing rings above and below the flange, the flange being provided with an orifice giving communication between the water jacket formed by the outer member and the sleeve and the head, and a lock nut threaded onto the lower end of the sleeve and adapted to bear against the lower face of the outer member, there being a packing ring between the lock nut and said lower end.

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

SAMUEL B. WOLGAMOTT.

Witnesses:

VERADINE WARNER,

BERNARD PRIVAT.