No. 722,440. PATENTED MAR. 10, 1903.

W. G. WILSON.

PISTON RING.

APPLICATION FILED JUNE 23, 1902.

NO MODEL.

FIG. 1.

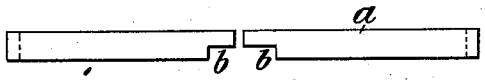


FIG. 2.



FIG. 3.

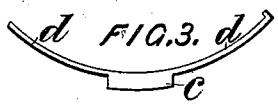
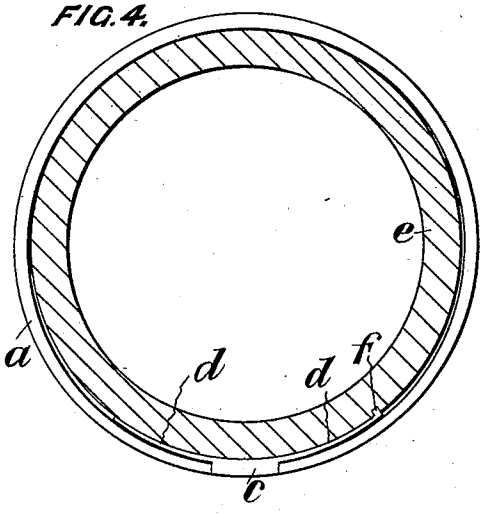


FIG. 4.



Witnesses:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WALTER GORDON WILSON, OF WESTMINSTER, ENGLAND.

PISTON-RING.

SPECIFICATION forming part of Letters Patent No. 722,440, dated March 10, 1903.

Application filed June 23, 1902. Serial No. 112,916. (No model.)

To all whom it may concern:

Be it known that I, WALTER GORDON WILSON, engineer, a subject of the King of Great Britain, residing in the city of Westminster, in the county of Middlesex, England, have invented new and useful Improvements in Piston-Rings, of which the following is a specification.

This invention relates to improvements in piston-rings applicable for use in the cylinders of steam-engines, explosion-engines, and the like wherever it is necessary to make a tight joint with the wall of a cylinder.

According to this invention the ring is made split somewhat in the usual manner, and at each of the adjoining ends of the ring formed by the split recesses are made, in which recesses is or are arranged a tongue or tongues so fashioned as to more or less conform with the general contour of the ring. The tongue has in one therewith or attached thereto a spring, which is suitably made flat as wide as the ring in the vicinity of the said tongue and adapted to force the tongue outward, and consequently the ring, owing to the ends of the spring bearing on bottom of groove in the piston adapted to receive the piston-ring.

Figure 1 of the accompanying sheet of drawings represents a piston-ring in elevation. Fig. 2 is a similar view of the tongue with the spring. Fig. 3 is a plan of the tongue with the spring; and Fig. 4 is a plan section of a piston, showing the piston-ring in position.

As shown in Figs. 1 and 4, the ring *a* is made split somewhat in the usual manner. On each end of the adjoining ends of the ring, formed by the split, recesses *b b*, Fig. 1, are made, in which recesses is arranged a tongue *c*, Figs. 2, 3, and 4, so fashioned as to more or less conform with the general contour of the ring *a*, and this tongue has in one therewith or attached thereto a flat leaf-spring *d*, Figs. 2, 3, and 4, as wide as the ring in the vicinity of the said tongue *c* and adapted to force the tongue outward and also the ring, as the spring is in contact therewith, whereby the ring is expanded.

If it be desired to prevent the ring from revolving on the piston *e*, Fig. 4, the latter is provided, for example, with a small hole, and the spring has at or near one end a small stud or projection *f*, which takes into this hole, as shown. Thus if the spring cannot revolve on the piston the tongue on same will prevent the piston-ring also from revolving.

By this invention it is impossible for the motive fluid, such as steam or the products of combustion of an explosive charge, to pass through the split in the ring, because the tongue *c* prevents the passage of the motive fluid to a great extent in the direction of the axis of the piston. Further, the bottom of the tongue, (formed in the construction shown by the spring *d*,) being of the full width of the piston-ring and in contact with its edges and greater in the circumferential direction than the split in the piston-ring, prevents the motive fluid from passing in a direction transverse to the axis of the piston, or, in other words, between the inner periphery of the ring and the bottom of the groove in the piston.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a piston; of a split piston-ring thereon having recesses in its ends, a spring as wide as the ring lying freely between it and the piston, a tongue formed integral with the spring to rest in the recesses in the ends of the ring.

2. The combination with a piston having a recess in its periphery; of a split piston-ring thereon having recesses in its ends extending from one edge of the ring to a point intermediate its opposite edges, a spring lying freely between the ring and piston, and having a tongue and stud oppositely directed, the tongue to fit the recesses in the ends of the ring and the stud to fit that in the piston, substantially as set forth.

3. The combination with a split piston-ring provided with recesses in the adjoining ends of the said ring, a tongue conforming to the contour of the said ring and adapted to take into the said recesses and a spring formed in one with the said tongue as wide as the ring, adapted to force the tongue and also the piston-ring outward, of a stud on the spring and a hole in the groove in the piston to prevent the ring from revolving on the piston substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WALTER GORDON WILSON.

Witnesses:
VICTOR JENSEN,
WALTER J. SKERTEN.