

W. ADAIR.

Packing for Steam and Other Pistons.

No. 155,059.

Patented Sept. 15, 1874.

Fig. 1.

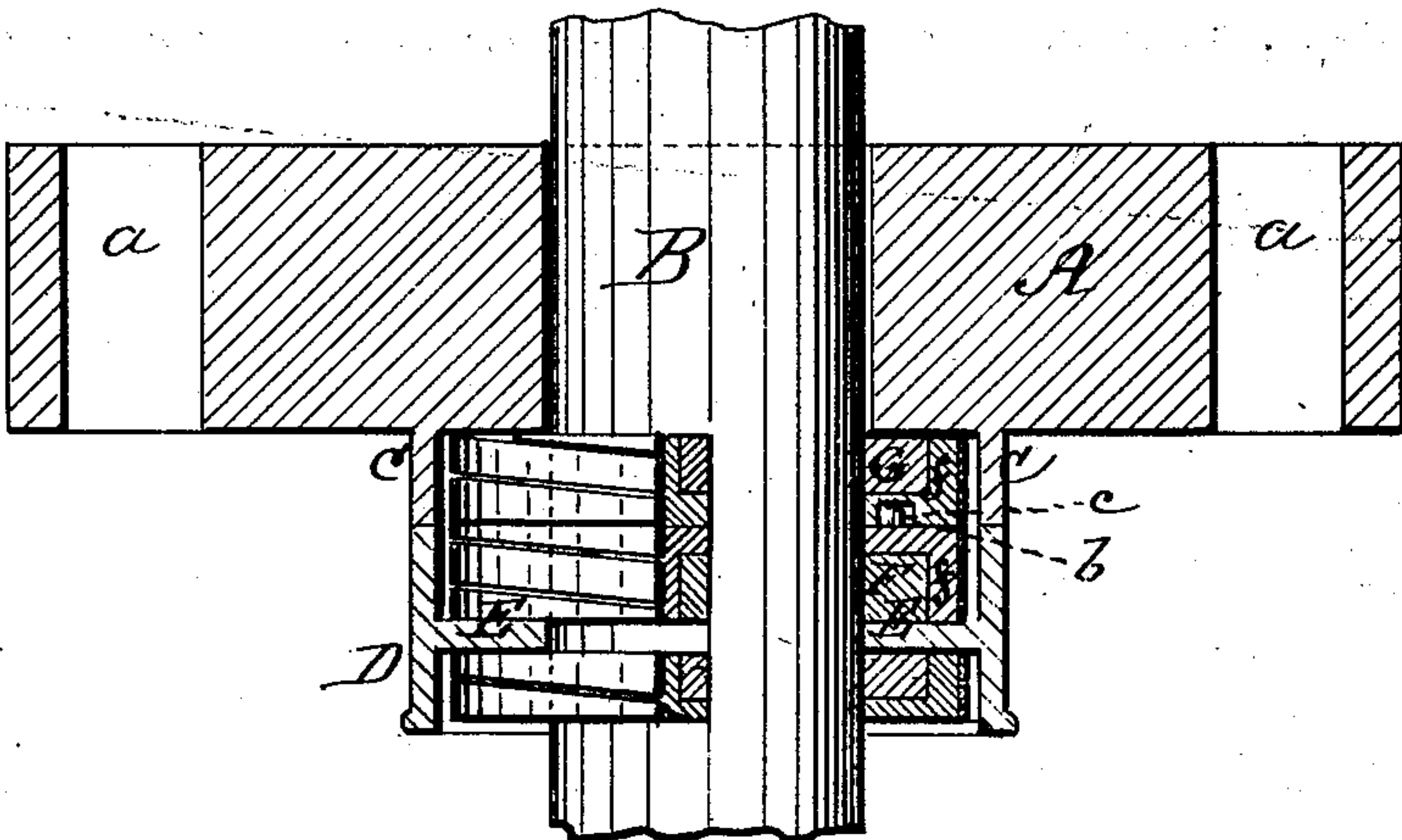
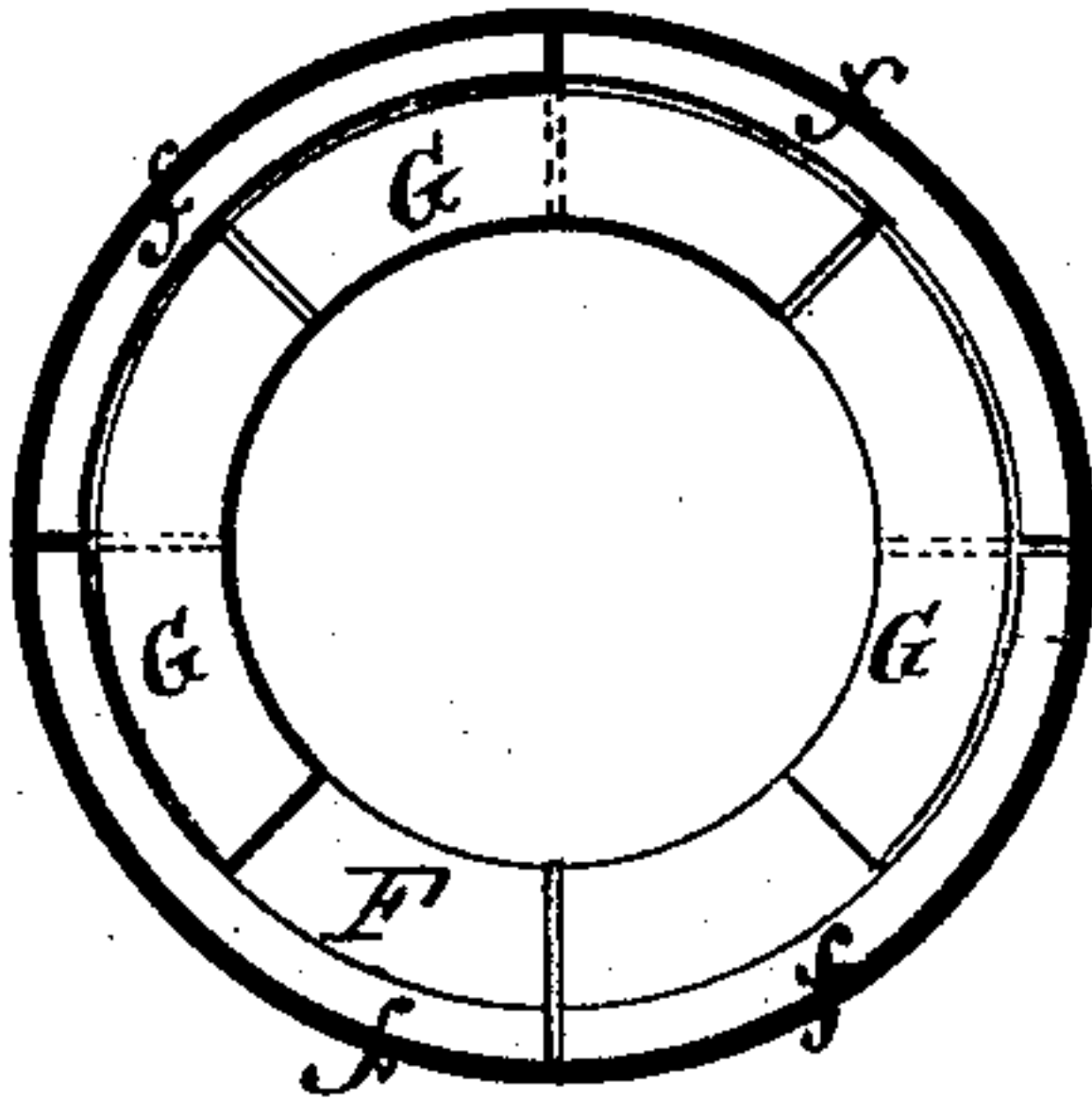


Fig. 2



Witnesses:—

Colborne Brookes del

Chas. F. Goch.

Inventor: -

Mr. Adair.

By ally Spencer

UNITED STATES PATENT OFFICE.

WILLIAM ADAIR, OF BOWLING GREEN, KENTUCKY, ASSIGNOR OF THREE-FOURTHS HIS RIGHT TO THOMAS H. HINES, JAMES MONTGOMERY, AND JAMES H. WILKERSON, OF SAME PLACE.

IMPROVEMENT IN PACKINGS FOR STEAM AND OTHER PISTONS.

Specification forming part of Letters Patent No. **155,059**, dated September 15, 1874; application filed August 4, 1874.

To all whom it may concern:

Be it known that I, WILLIAM ADAIR, of Bowling Green, in the county of Warren and State of Kentucky, have invented certain new and useful Improvements in Packing for Steam and other Pistons; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making a part of this application.

My invention relates to piston and other steam or hydraulic packings. It has for its object to produce a metallic packing which shall be durable and efficacious; and to these ends my invention consists of two or more sectional metallic rings secured in place and adapted to compensate for wear by encircling springs, as will be hereinafter more fully set forth.

To enable those skilled to more fully understand the same, I will proceed to describe the same, referring by letters to the accompanying drawing, which represents a packing for a piston-rod of a steam-engine.

Figure 1 is a longitudinal section of a gland and stuffing-box, showing an ordinary steam-piston in relief, and the upper half of the packing-rings in plan view; and Fig. 2 is a face or side view of one of the packing-rings.

Similar letters designate like parts in both figures.

A is an ordinary gland, with suitable holes *a a* for the passage of the stuffing-box bolts, to which it is secured in the ordinary manner, and the central hole for the movement of the piston B. The gland A has the usual short cylinder projection C, which comes in contact with the box D, and thus forms the cylindrical space through which the piston moves and is packed. The box D is formed with a partition, which extends toward the center to a distance equal to the hole in the gland through which the piston moves. This partition forms an annular shoulder, against which one of the packing-rings lies, while the other lies against the gland, so that both may be clamped and confined against longitudinal movement. The packing-rings are composed of sections, forming what are known as "cut

rings." I have shown them as composed of eight sections, but any suitable number may be used. F represents one set, formed with a flange, *f*, and G represents the other set, which lie against the flanged set F, and the outer surfaces of both being flush. The two sets are put together so that they shall break joints, and they are held in place by a ribbon-spring traveling spirally around the flanged set F. Suitable space is provided between the ends of the sections to allow for the action of the spring and the lessening of the diameter of the rings. Within the box D, and between the partition E and the inside face of the gland, and upon the piston-rod B, are placed two of these packing-rings, and they are so arranged relatively to each other that they shall break the joints of the flanged sections of each, and thus prevent the escape of steam through them. In order to maintain the two rings in this relation and yet permit radial expansion and contraction, I provide on one or more of the flanged sections of one ring a dowel-pin, *b*, and in one or more of the flanged sections of the other ring are formed radial slots *c*, so that the two rings are prevented from changing their relation axially, while at the same time they may contract or expand independently of each other radially. I have shown the springs as composed of a ribbon wound around like a snake coil, and deem this the best manner of making them, as greater elastic force is obtained. It will be observed that the whole diameter of the rings, with their encircling retaining-springs, is somewhat less than the interior of the box D C, the object of which is, that any steam which may be confined between the springs and the interior of the box will tend to compress the springs, and thus hold the packing-ring sections close down or around the piston-rod B. I have shown a third ring arranged on the other side of the partition E as an auxiliary packing, and it is obvious that as many may be used as thought desirable. It will readily be understood that the packing-ring I have shown as applied to the stuffing-box and piston of a steam-engine may be used in connection with pumps, or

wherever it is desirable to form a tight packing for a moving piston or rod.

Having described my invention so that those skilled can fully understand the same, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a sectional ring, as above described, and having a radial slot in one or more of its flanged sections, a similar ring having a dowel-pin upon one or more of its sections, whereby any number may be held in a given axial relation to each other, substantially as and for the purpose set forth.

2. The combination of two or more packing-rings, such as described, with a suitable box, D, having internal annular partitions, between which the faces of the rings are clamped, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand this 30th day of July, 1874.

WILLIAM ADAIR.

In the presence of—

WM. P. PAYNE,
G. B. PAYNE.