

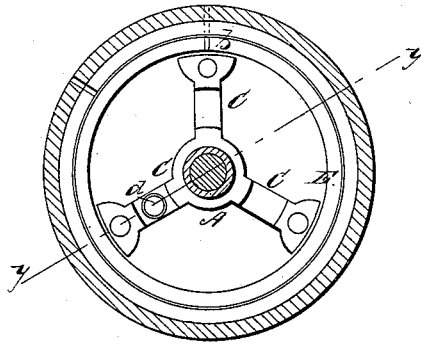
*A. J. Sterens,*

*Piston Packing.*

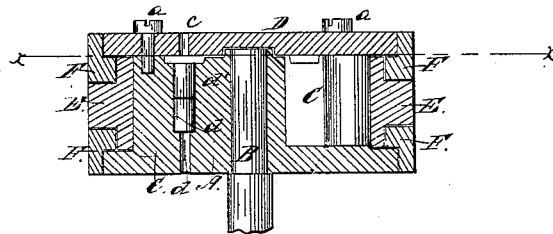
*N<sup>o</sup> 46,723.*

*Patented Mar. 7, 1865.*

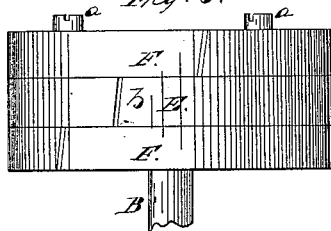
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses.*  
*Henry Morris*  
*Ed. Topliff*

*Inventor.*  
*A. J. Sterens*  
*per Wm. M. F.*  
*att'y*

# UNITED STATES PATENT OFFICE.

A. J. STEVENS, SAN FRANCISCO, CALIFORNIA.

## IMPROVEMENT IN PISTON-PACKINGS.

Specification forming part of Letters Patent No. 46,723, dated March 7, 1865.

*To all whom it may concern:*

Be it known that I, A. J. STEVENS, of San Francisco, in the county of San Francisco and State of California, have invented a new and Improved Piston-Packing; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompany drawings, forming part of this specification, in which—

Figure 1 represents a horizontal section of this invention, taken in the plane indicated by the line *x x*, Fig. 2. Fig. 2 is a vertical central section of the same, the plane of section being indicated by the line *y y*, Fig. 1. Fig. 3 is a side elevation of the same.

Similar letters of reference indicate like parts.

This invention consists in the employment or use of a T-shaped and two L-shaped rings, in combination with the head and follower of a steam-piston, in such a manner that the three rings are held in position by each other and by the piston-head and follower, and that the L-shaped rings project up over the outer edges of the head and follower and flush with the outer surfaces of the same, and thus an increased bearing-surface is obtained between the piston and cylinder, and said piston is more securely guided than a piston of the same size constructed in the usual manner.

A represents the piston-head, which is constructed in the usual manner, and bored out in the center to receive the rod B. It is provided with three radiating arms, C, to which the follower D is secured by screws *a*, or in any other suitable manner. The arms are turned off to form the guides for the inner T-shaped ring, E, which is provided with an oblique slot, *b*, and sprung on said arms, as clearly shown in the drawings. The height of the inner section of this ring is equal to that of the arms, but its outer section is narrower and equal in

height to about one-third of the height of the entire piston with follower. The spaces between the narrow section of the T-shaped ring E, and the inner surfaces of the cylinder-head on one and of the follower on the opposite side are occupied by L-shaped rings F, the edges of which project over the head and follower, and are flush with the outer surfaces of the same, as clearly shown in Figs. 2 and 3 of the drawings.

By these means the bearing-surface between the piston and cylinder is increased and rendered equal to the full width of the piston. The wear of the inner surface of the cylinder is reduced, and the piston is kept firmly in the center of the cylinder.

Instead of using springs to keep the rings out against the inner surface of the cylinder, I use steam-packing by admitting steam through holes *c c'* in the follower and in the piston-head. These holes are situated over one of the arms of said piston-head, which arm forms the guide for a valve or valves, *d d'*. The object of these valves is to prevent the steam passing from one side of the piston to the other, and they close automatically by the action of the steam, according to the direction in which the piston moves. By the action of the steam the rings are pressed out uniformly against the inner surface of the cylinder, and the piston is made to work steam-tight and with the least possible amount of wear.

I claim as new and desire to secure by Letters Patent—

The arrangement of a T-shaped ring, E, two L-shaped rings, F, piston-head A, and follower D, constructed and operating in the manner and for the purpose substantially as herein shown and described.

A. J. STEVENS.

Witnesses:

AB. MARX,

JAS. P. CUNNINGHAM.