

UNITED STATES PATENT OFFICE.

NICHOLAS PFLAUM, OF PITTSBURG, PENNSYLVANIA

METALLIC PISTON-PACKING.

No. 840,250.

Specification of Letters Patent.

Patented Jan. 1, 1907.

Application filed April 10, 1906. Serial No. 310,915.

To all whom it may concern:

Be it known that I, NICHOLAS PFLAUM, a citizen of the United States, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Metallic Piston-Packing, of which the following is a full, clear, and exact description.

The invention relates to metallic piston-packings, such as shown and described in the Letters Patent of the United States, No. 450,493, granted to me April 14, 1901.

The object of the present invention is to provide a new and improved metallic piston-packing composed of comparatively few parts and arranged to prevent leakage of steam in the cylinder from one side of the piston to the other and to compensate for all wear of the interior contacting surfaces of the engine-cylinder and the piston-packing, thus requiring no reboring of the cylinder.

The invention consists of novel features and parts and combinations of the same, which will be more fully described herein-after and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a face view of the improvement as applied, parts being in section and one head of the piston being removed. Fig. 2 is a sectional plan view of the same on the line 2-2 of Fig. 1. Fig. 3 is a sectional side elevation of one of the interior angular blocks, and Figs. 4 and 5 are inner face views of adjacent exterior segments.

The improved metallic piston-packing, as illustrated in Figs. 1 and 2, is arranged between the heads A and B of the piston C, fastened by a key D or other means to a piston-rod E. The metallic piston-packing consists, essentially, of a plurality of interior segmental blocks F and exterior segments G, and the said blocks F are provided at their inner faces with segmental offsets F', fitting onto the exterior surface of the spider H of the piston C. The inner faces of the blocks F to one side of the offsets F' are also segmental and form with the spider H an annular recess, in which are placed springs I for pressing the blocks F outward.

Each of the blocks F is provided with angular outer surfaces, formed with dovetailed

grooves F², slidably engaged by dovetailed tongues G', integral with the inner surfaces of the segments G. By reference to Fig. 1 it will be seen that the alined surfaces of two adjacent angular blocks F are engaged by one segment G—that is, the dovetailed groove G' thereof fits the corresponding grooves of the alined surfaces of the blocks F. In order to insure a complete fitting of the segments G on the blocks F the dovetail G' of one segment G is somewhat longer than the dovetail G' of the adjacent segment, as will be readily understood by reference to Figs. 1, 4, and 5.

By the arrangement described the blocks F, pressed outwardly by the springs I, hold the exterior surfaces of the segments G in firm contact with the inner surface of the cylinder, and consequently all wear between the contacting surfaces of the segments G and the inner surface of the cylinder is compensated for, and leakage of steam from one side of the piston to the other is completely prevented. It will also be noticed that by having the segments G provided with dovetailed tongues engaging corresponding dovetailed grooves in the angular blocks F the segments and blocks are held together, but allow sliding movement of the segments on the blocks without danger of the segments and blocks F becoming disconnected.

By the arrangement described the uniting-keys for fastening the blocks and segments together, as shown in the patent above referred to, are completely dispensed with, and consequently the piston-packing is composed of comparatively few parts which can easily be fitted together.

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

1. A metallic piston-packing, comprising interior segmental blocks each having outer surfaces at right angles to each other, exterior segments fitted onto the said angular surfaces of the said blocks, and dovetailed tongues and grooves connecting the blocks and segments with each other at their contacting faces.

2. A metallic piston-packing comprising interior segmental blocks having outer angular surfaces and dovetailed grooves formed therein, the said blocks being provided at their inner faces with curved offsets, the inner faces of said blocks to one side of the offsets being also curved, exterior segments fitted

onto the said angular surfaces of the said blocks and provided at their contacting surfaces with dovetailed tongues slidably fitting the said dovetailed grooves, the tongue of
5 one segment being longer than the tongue of the adjacent segment to insure a complete fitting of the segments on the blocks.

3. The combination with a piston, of a metallic packing arranged between the heads of
10 the piston, and comprising a plurality of interior segmental blocks provided on their inner faces at one end with concaved offsets engaging the peripheral surface of the piston, the inner faces of the blocks at one side of the
15 offset being also concaved and forming with

the surface of the piston an annular recess, springs in said recess for pressing the blocks outward, exterior segments fitted onto the outer angular surfaces of the said blocks, and dovetailed tongues and grooves connecting
20 the blocks and segments with each other at their contacting faces.

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

NICHOLAS PFLAUM.

Witnesses:

H. C. BAIR,

H. P. GAZZAM.