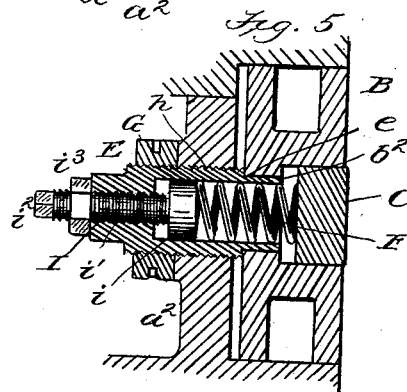
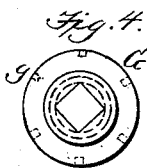
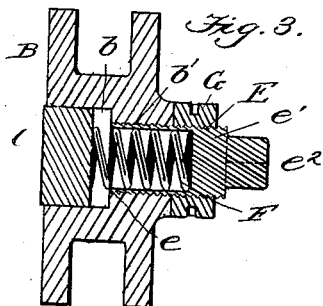
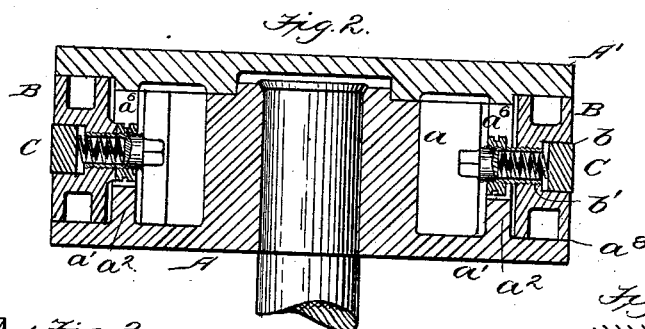
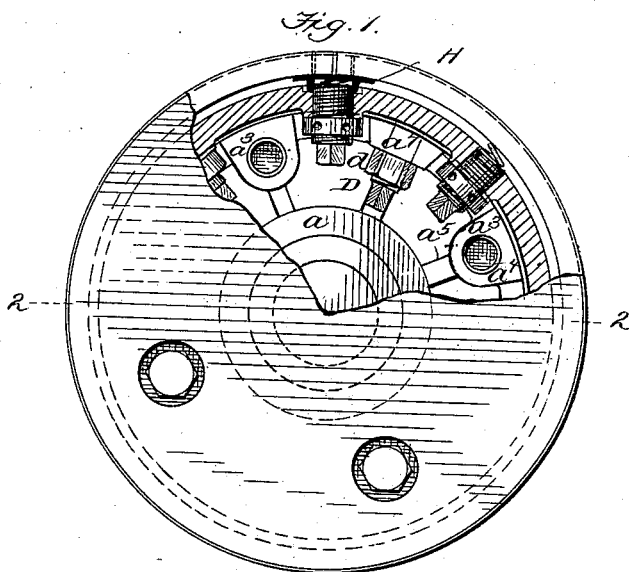


(No Model.)

M. D. KILMER.  
PISTON PACKING.

No. 523,147.

Patented July 17, 1894.



Witnesses:

Herbert Bradley.

Harry S. Rohrer.

Inventor:

Melvin D. Kilmer,  
By W. H. Singleton.  
Atty.

# UNITED STATES PATENT OFFICE.

MELVIN D. KILMER, OF NEWBURG, NEW YORK.

## PISTON-PACKING.

SPECIFICATION forming part of Letters Patent No. 523,147, dated July 17, 1894.

Application filed February 17, 1894. Serial No. 500,573. (No model.)

*To all whom it may concern:*

Be it known that I, MELVIN D. KILMER, a citizen of the United States, residing at Newburg, in the county of Orange and State of New York, have invented certain new and useful Improvements in Piston-Packings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improvement in piston packing, more especially to such packing as is shown in United States patent of I. A. Kilmer, dated August 22, 1893, No. 503,859.

The object of the present invention is to so improve the piston packing that the proper adjustment may be given to springs which hold out the packing ring.

The invention consists in the construction hereinafter set forth.

Figure 1 represents a plan view of the piston head partly in sections, showing the end construction. Fig. 2 represents a diametric section on the line 2—2 of Fig. 1. Fig. 3 shows an enlarged sectional detail of one way of adjusting the spring. Fig. 4 shows the adjusting nut which is in sections in Fig. 3. Fig. 5 shows a section of still another way of adjusting the spring.

Referring to the drawings: the letter A indicates a piston head having a central boss  $a$  and the flange  $a'$ . Arising from this flange  $a'$  is a flange  $a^2$  circumferential with the boss  $a$ . At intervals around the disk there are made enlargements  $a^3$  having the holes  $a^4$ , and running from these enlargements  $a^3$  to the boss  $a$  are strengthening ribs  $a^5$ . The flange  $a^2$  has recesses  $a^6$ , and also enlargements  $a^7$ . Beyond or outside of the flange  $a^2$ , the piston head A has a recess  $a^8$ . And the flange  $a'$  is secured to the piston head A by bolts, which pass through the holes  $a^4$ , the edge of the follower A' forming the other side of the recess  $a^8$  of the piston head. Placed within the recess  $a^8$  is what is known as a bull ring, B. This bull ring B, has an exterior groove  $b$ , within which is placed the piston packing ring C. The projections  $a^7$  are threaded and through these pass the set screws D, which bear against the inner face of the bull

ring B, such set screws D having adjusting nuts,  $d$ .

The bull ring B has threaded holes  $b'$ , such holes being aligned with the recesses  $a^6$  of the flange  $a^2$ . Screwed into these threaded holes  $b'$ , are the thimbles E having the outer open end  $e$  and the inner closed end  $e'$ . Within this thimble E is placed the spiral spring F, the outer end of which bears against the piston packing C, and its inner end against the closed end  $e'$  of the thimble E. The inner closed end  $e'$  of this thimble E projects beyond the inner face of the bull ring B and through the recess  $a^6$  and out into the space between the flange  $a^2$  and the boss  $a$  of the piston head A. The extreme outer end of this thimble is made with an angle end  $e^2$ . Within the recess  $a^6$ , a nut G is placed upon the threaded portion of the thimble E, this nut G being provided with suitable recesses  $g$  so that it may be readily turned, as will be explained.

As shown in Fig. 1, when the device just described comes to the joint in the packing ring, a coupling plate H is placed at the joint, otherwise the construction and operation are the same.

The operation of a piston head with the improvements just set forth will be first described, and then the other method will be described in detail.

In using the piston head as described, when it is desired to take up any wear in the packing ring C, or any loss of resiliency in the spring F, this is done by turning up the thimble E toward the packing ring C. This is done by applying power to the angle end  $e$  of this thimble E. When the proper adjustment is obtained the nut G is turned against the inner face of the bull ring B, locking the thimble E in position. And any adjustment of the bull ring itself may be obtained by operating the set screws D in the same manner.

In the modifications shown in Fig. 5, the flange  $a^2$  is made without the recess  $a^6$ , and instead thereof a threaded hole  $h$  is made in such flange  $a^2$ , in which the threaded sleeve E is placed, and this threaded sleeve E has a shoulder  $e$ , which bears against the inner face of the bull ring B. The outer end of the thimble E is reduced in size and fits in a hole  $b^2$  of the bull ring B. The nut G is placed on

the threaded thimble E inside of the flange  $a^2$ . Within the thimble E is placed the head  $i$  of the follower I, such head bearing against the inner end of the spring F, and the stem  $i'$  of the follower passing through the threaded hole into the inner end of the thimble E and having on its outside the square end  $i^2$  by which it may be turned, and the nut  $i^3$  by which the follower is locked in place after it is adjusted. In this construction it will be seen that the spring F is adjusted up by turning the follower I against it. And the bull ring B is adjusted by turning the sleeve E against it and locking the same by the nut G.

I am made aware of British Patent No. 868, of March 14, 1868; wherein is shown a piston head having a packing ring and back of such ring recesses wherein are held adjustable thimbles containing springs. I am also made aware of British Patent No. 5,217 of 1880, wherein is shown a piston head having a packing ring and back of such ring recesses wherein are contained springs, such springs being adjusted by a plate through which passes a bolt and on said bolt there being adjusting and locking nuts for adjusting up and holding the plate. In my device the thimble is adjusted and locked in position by different means independent of each other, so that, when the spring is nicely adjusted to take

up any looseness, it keeps this adjustment until the locking device is moved up to this degree of adjustment. And this independent locking device prevents the adjusting device from working loose by the movement of the piston head.

Having thus described my invention, what I claim is—

1. A piston head, provided with a bull ring having threaded holes, and a piston packing ring, the holes in the bull ring being back of the packing ring, thimbles or cylindrical holders threaded on the outside and placed in such holes and projecting beyond the inside of the bull ring, locking nuts for such thimbles and placed on their projecting ends, and springs within the thimbles and bearing against the packing ring, as set forth.

2. The piston head, A, having the packing ring C, and bull ring, B, the holes,  $h$ , back of such rings, the sleeves, E, threaded on the outside; the springs, F, in such sleeves; the nuts, G; the follower, I, and its nut,  $i^3$ , as set forth.

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

MELVIN D. KILMER.

Witnesses:

C. A. MCCREADY,  
LEMAI KILMER.