(No Model.)

A. C. ELLITHORPE.

PISTON PACKING.

No. 451,209. Patented Apr. 28, 1891.

Fig. 1.

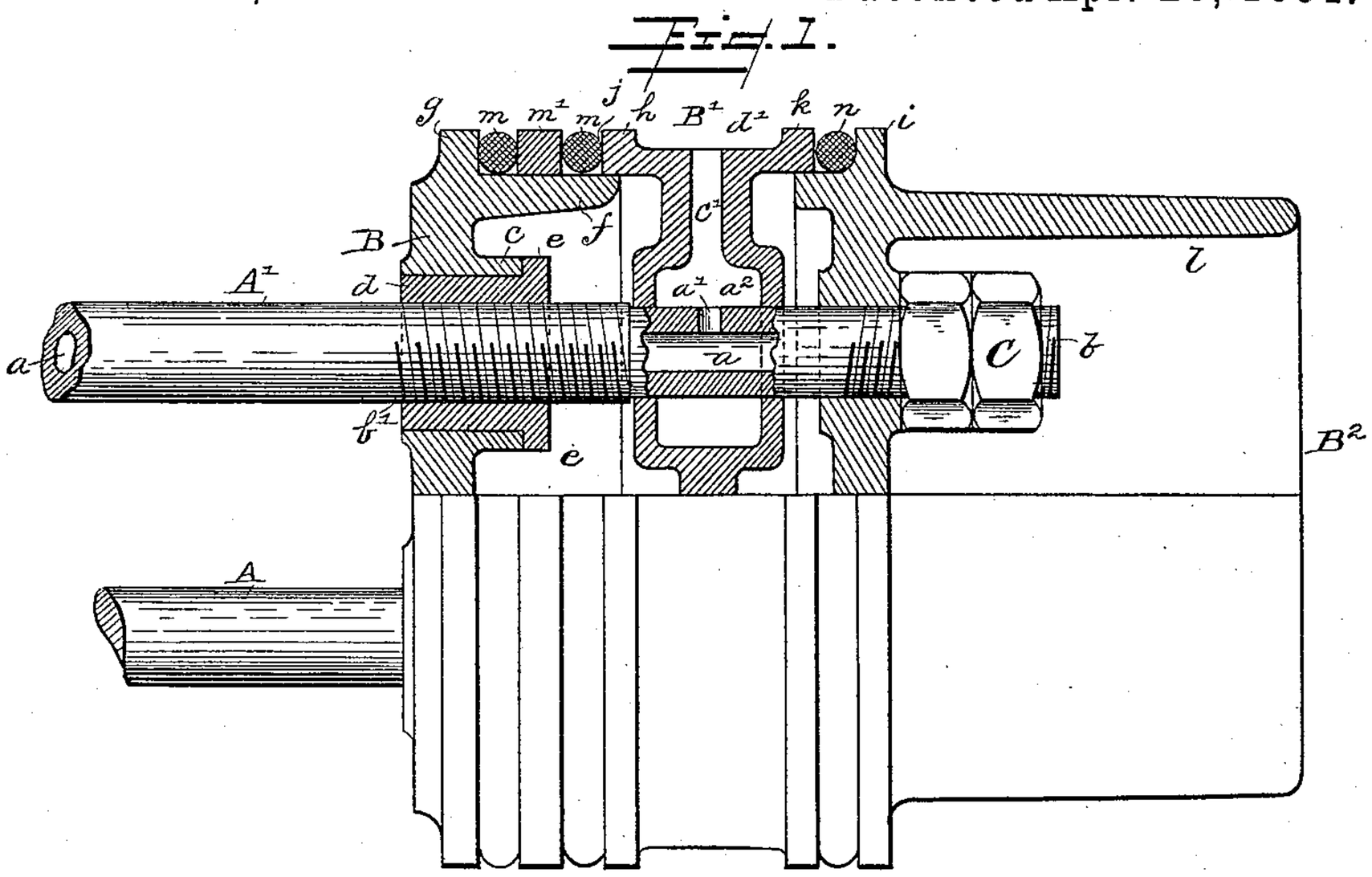
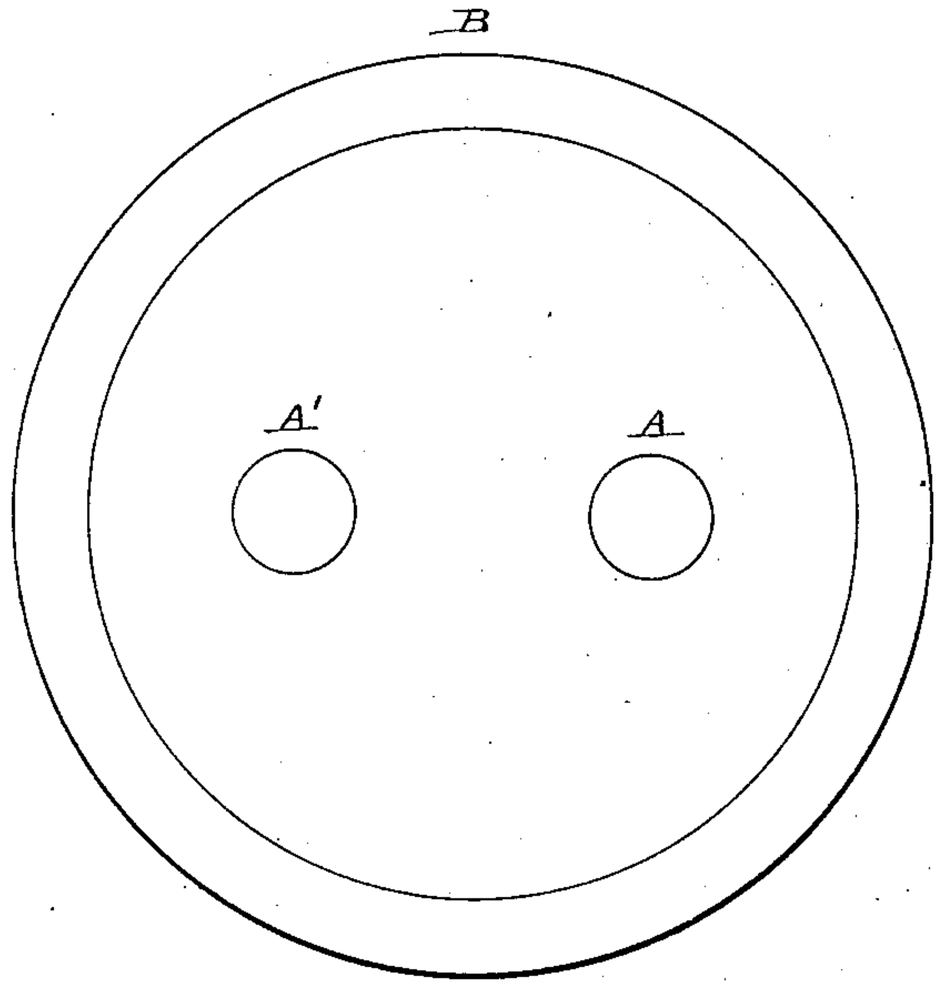


Fig. 2.



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UNITED STATES PATENT OFFICE.

ALBERT C. ELLITHORPE, OF CHICAGO, ILLINOIS.

PISTON-PACKING.

SPECIFICATION forming part of Letters Patent No. 451,209, dated April 28, 1891.

Application filed November 28, 1890. Serial No. 372,876. (No model.)

To all whom it may concern:

Be it known that I, ALBERT C. ELLITHORPE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Piston-Packings; and I do 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.

My invention relates to certain new and useful improvements in pistons, more especially a certain novel means for tightening packing with which such pistons are provided, and to means for the introduction and distribution of the lubricant to the cylinder.

To the accomplishment of the above the invention consists in certain novel parts and combination of parts, as will be fully hereinafter described, and specifically claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a view partly in elevation and partly in section, and Fig. 2 an end view thereof.

In the drawings I have illustrated the invention as adapted to use in connection with a vertical hydraulic cylinder, and I will so describe it throughout; but it will be understood that the invention is adapted to use in other connections.

In the drawings, A A′ represent two piston-rods of corresponding size, the rod A being solid and the rod A′ formed with a longitudinal passage, as at *a*, the purpose of which latter construction will be hereinafter named. Each rod A A′ is provided with two screw-threads *b b′*, the former located at one end of each rod and extending along the same a suitable distance, and the thread *b′* in each case being formed a suitable distance therefrom toward the center of each rod.

The piston-head consists, preferably, of three parts, lettered, respectively, B B′ B². The section B consists of a ring provided with two hubs *c c*, (one shown,) into each of which a metal bushing *d* is inserted, which bushing is screw-threaded on its inner circumference and each preferably formed at its lower end with a flange *e*, which abuts against the lower end of the hub. The ring B is also provided with a downwardly-projecting ring-flange *f*, which is situated at a sufficient distance from the outer circumference of the ring to leave the projection *g*. Part B′ of the piston-head consists of a ring provided with two vertical openings for the passage therethrough of the two rods A A′. At each end this ring is formed with an upwardly-projecting flange *h*, so located that its inner face will be adjacent to the outer face of the flange *f*, described in connection with ring B, and also adjacent to the outer face of the ring-flange *i*, to be described in connection with part B² of the piston-head. The flanges *h* are also extended outwardly, as shown at *j*. The third part B² of the piston-head consists of a ring provided with two openings for the passage of the two piston-rods, also with the upwardly-projecting flanges *i*, before referred to, and with ring *h*, corresponding to flange *j* of ring B′. The ring B² is also provided with a downwardly-projecting flange *l*, as shown.

Between the flange *g* of ring B and flange *j* of ring B′ two packing-rings *m* are placed, they being separated from each other by a ring *m*. A similar packing *n* is placed between flanges *k j* of rings B B′, respectively. On the screw-threaded end of each piston-rod is placed a nut C, as shown.

The manner of using the invention as thus far described—that is, that part thereof which refers to the tightening of the packing—is as follows: The parts being in the position shown in the drawings, if it is desired to tighten the packing each piston-rod is turned in the proper direction, it being preferable that one rod be first turned, say, a quarter and then the other a like distance, this operation being continued alternately with respect to each rod. By the turning of the rod the screw B′ thereon operates in the thread of the bushing forming part of ring B, and such ring is thereby forced toward the central ring B′, the lower ring B² being at the same time drawn toward the central ring by the nut C. In this way the flanges *j* of rings B and B′ are brought closely together and the packing held therebetween tightened, the flanges *j* and *k* of rings B′ and B² likewise cutting upon and tightening the packing *n* held therebetween. The channel *a* of rod A′ connects at a suitable

point with an opening a', which leads into a chamber a^2, formed in part B′ of the piston-head, such chamber communicating in turn through a passage c' with a recess d', formed in the outer circumference of such part B′.

Mounted at a suitable point on the piston-rod A′ (not shown, but fully described in a prior application) is a lubricant-cup, from which a suitable lubricant is forced through channel a and opening a' into chamber a^2 and thence into recess c', where it is utilized to lubricate the cylinder.

What I claim is—

1. An externally-threaded piston-rod, in combination with a head composed of an upper section having threads to engage the threads of the rod and also having a circumferential flange, a lower section held on the rod by a nut or the like and also having a circumferential flange, an intermediate section arranged loosely on the rod and having flanges overlapping the flanges of the upper and lower sections, respectively, and packing-rings adapted to be operated upon by the turning of the piston-rod, substantially as specified.

2. Two externally-threaded and parallel piston-rods, in combination with a head composed of an upper section having two sets of threads to engage the threads of the rod and also having a circumferential flange, a lower section held on the rods by nuts or the like and also having a circumferential flange, an intermediate section arranged loosely on the rods and having flanges overlapping the flanges of the upper and lower sections, and packing-rings exterior to one or both of the outer sections, substantially as specified.

3. The combination, with a solid rod having external screw-threads, of a parallel hollow rod having corresponding screw-threads, a head composed of an upper section having threads to engage the respective rods and also having a circumferential flange, a lower section confined on the rods by nuts or the like and also having a circumferential flange, an intermediate section arranged loosely on the rods, said intermediate section having a chamber communicating with the interior of the hollow rod, and an aperture in its periphery leading from said chamber and also having flanges overlapping the flanges of the upper and lower sections, and packing-rings exterior to the latter sections, substantially as specified.

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

ALBERT C. ELLITHORPE.

Witnesses:
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