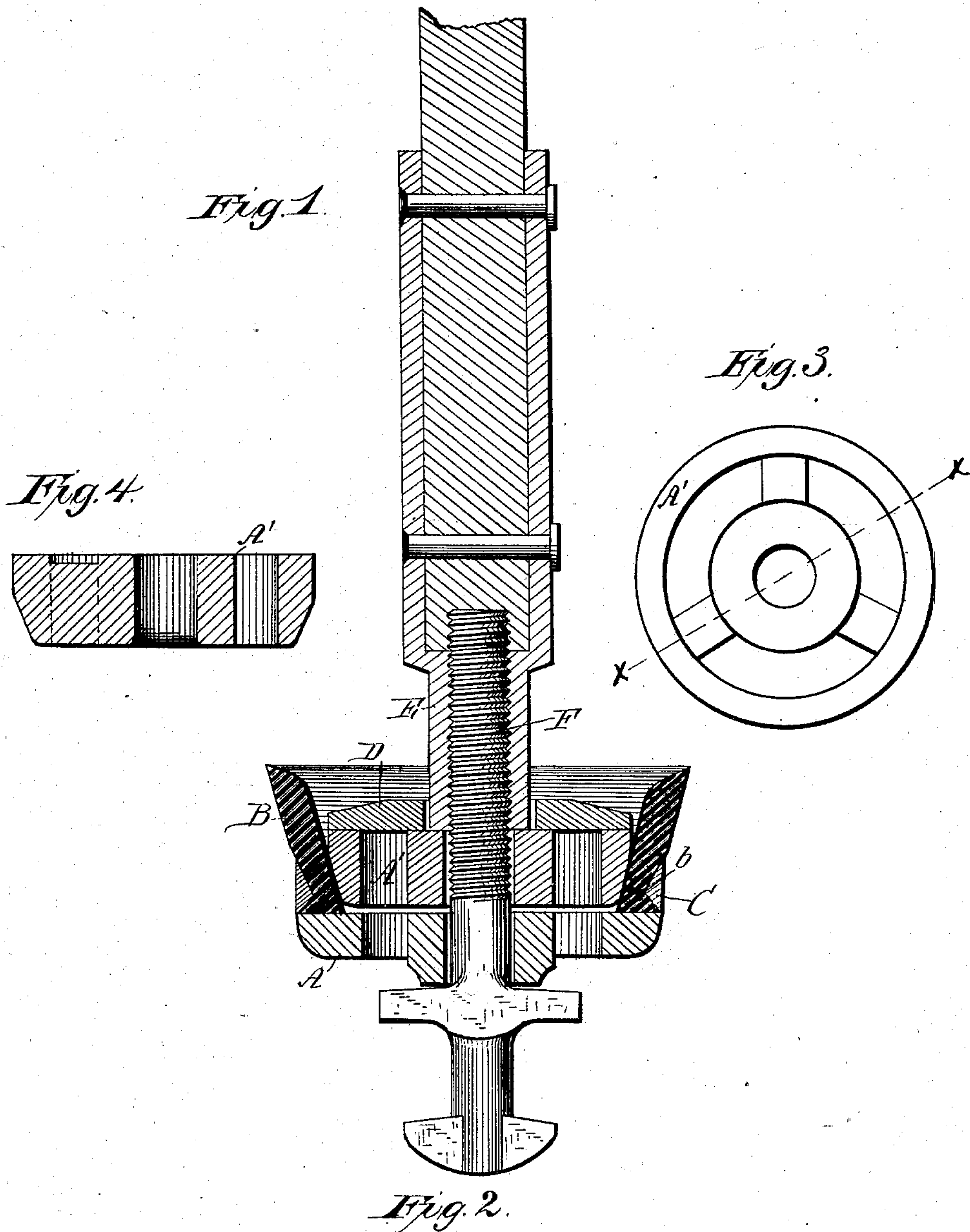


(No Model.)

W. BURLINGHAM.
Pump Piston.

No. 237,430.

Patented Feb. 8, 1881.



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM BURLINGHAM, OF BALTIMORE, MARYLAND.

PUMP-PISTON.

SPECIFICATION forming part of Letters Patent No. 237,430, dated February 8, 1881.

Application filed December 30, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BURLINGHAM, of Baltimore, county of Baltimore, State of Maryland, have invented new and useful
5 Improvements in Pump-Pistons, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

10 Figure 1 represents a vertical section through my improved plunger. Fig. 2 is a similar section through the packing-ring, detached. Fig. 3 is a plan view of the inner clamping-ring, and Fig. 4 represents a section through said ring
15 on the line *x x*, Fig. 3.

The present invention relates to an improvement upon the construction of pump-pistons described in Letters Patent granted to me September 28, 1880, No. 232,629; and it consists
20 in the combination, in a pump-piston, of a flat perforated base-plate or disk, an annularly-grooved packing-ring resting thereon, an outer clamping-ring resting in the groove in the packing-ring, and an inner perforated disk or
25 ring for holding the packing-ring engaged with the outer clamping-ring, as hereinafter explained.

It further consists in a novel construction of the packing-ring, whereby it has an annular
30 wedge or key formed upon it, insuring its retention by the rings and plates forming the piston, as hereinafter explained.

In the accompanying drawings, A represents the perforated disk forming the base-
35 plate of the piston, made, preferably, in the form of a ring flat on its upper face, on which the packing-ring B rests, and connected by radial arms with a central hub, similar in form to the inner ring, A', (shown in plan view,
40 Fig. 3,) but with the ring made broad and flat, as shown in Fig. 1. The inner ring, A', may be made either in the form of a short cylinder having parallel sides, or it may be made slightly tapering downward to conform to the shape
45 given to the inner face of the packing-ring B, the inner face or walls of which may be made straight or parallel, or slightly converging toward the lower side of the ring, as preferred, so long as the inner ring, A', is made to snugly
50 fill the packing-ring at its lower end. The

outer face or periphery of this packing-ring is made to taper slightly from its upper side or end, and near its lower end it has an annular groove or depression formed in it at *b*, (shown in the present instance made in V shape in
55 section,) in such manner that the portion of the ring below the central line of said groove is made to assume the form of an annular wedge, B', having its point or apex at the central line of said groove *b*, with its sides di-
60 verging thence downward to or near the lower end of the ring, as shown. Within the groove thus formed is placed a metal clamping-ring, C, conforming on its inner face to the shape of the groove *b* and fitting snugly therein, the
65 rubber packing-ring being held firmly engaged with the clamping-ring by the inner ring or disk, A'.

D is the valve, E the nut on the end of the pump-rod, and F the screw for uniting the
70 parts of the piston thereto and to each other, these last-named parts being similar in construction and arrangement to the corresponding parts in my former patent referred to; or, instead of clamping the plates A and A' to-
75 gether by said screw and nut, one of said plates or rings may be provided with a threaded annular flange and the other with a threaded socket for uniting said parts and clamping the
80 packing-ring in place, the piston, as a whole, being connected, in such case, with the pump-rod by the screw and nut, as shown, or in any other suitable manner.

By the construction described and shown it will be seen that when the packing-ring is in
85 place between the rings C and A', and the latter is clamped or united to the base A, the ring B will be firmly grasped and held by means of the annular wedge B', and accidental displacement of the same when in use will be
90 effectually prevented.

Having now described my invention, I claim—

1. The combination, in a pump-piston, of the flat perforated base, the annularly-grooved
95 rubber packing-ring, the outer clamping-ring, and the inner perforated disk or plate for holding the packing-ring engaged with said clamping-ring, substantially as described.

2. The rubber packing-ring, made straight 100

or slightly tapering on its inner face, and having the annular groove or depression formed upon its outer face, the portion of said ring below the central line or bottom of said groove
5 or depression being made in wedge shape, forming a key for retaining the packing-ring in place, substantially as described.

In testimony whereof I have hereunto set my hand this 28th day of December, A.D. 1880.

WILLIAM BURLINGHAM.

Witnesses:

J. M. YZNAGA,
ALEXR. MAHON.