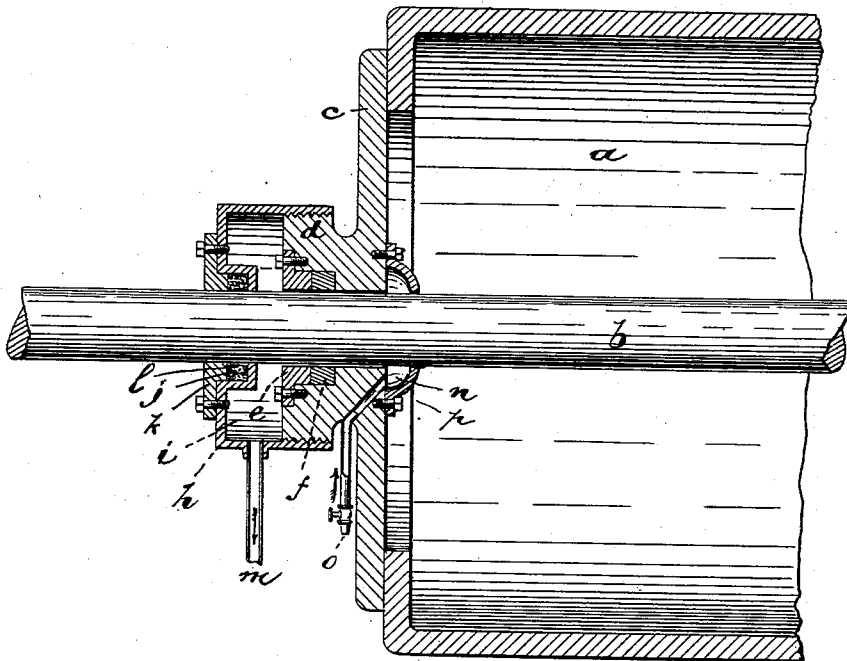


(No Model.)

E. C. BUTTS.
STUFFING BOX FOR PUMPS, &c.

No. 570,726.

Patented Nov. 3, 1896.



WITNESSES: _____ INVENTOR:

Robert Gollberger **Edward C. Butts,**
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BY *Drake & Co.* ATTY'S.

UNITED STATES PATENT OFFICE.

EDWARD C. BUTTS, OF BELLEVILLE, NEW JERSEY.

STUFFING-BOX FOR PUMPS, &c.

SPECIFICATION forming part of Letters Patent No. 570,726, dated November 3, 1896.

Application filed August 26, 1895. Serial No. 560,479. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. BUTTS, a citizen of the United States, residing at Belleville, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Stuffing-Boxes for Pumps, &c.; 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, reference being had to the accompanying drawing, and to letters of reference marked thereon, which forms a part of this specification.

The object of this invention is to save the expense involved in packing the piston-rods of reciprocating pumps, to prevent sand or gritty matter from being caught in said packing and thus unduly wearing the said piston-rod in its lengthwise movements, to secure close and impervious joints, and to avoid the friction and the consequent loss of power due to the severe pressure of such packing on the rod.

The invention consists in the improved appliances for the piston-rod and cylinder of a reciprocating pump and in the arrangements and combinations of parts, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawing, and the letters of reference marked thereon, *a* indicates the cylinder of a plunger-pump, and *b* is the longitudinally-reciprocating piston-rod thereof.

c indicates the cylinder-head, having the usual stuffing-box *d*, and *e* is the usual follower or gland arranged within said box; also within the box is a metallic ring or rings *f*, which is held in place by said gland or follower. Said ring *f* serves to prevent a free outflow of liquid from the pump-cylinder, but does not so closely hug the rod as to produce a severe friction, such as is occasioned when a perfectly impermeable joint is effected by compressing the packing in the manner commonly employed. The joint produced by said parts is more or less open, so that a leakage is allowed, the water serving to lubricate the joint. To lead this leakage water away, so that it will not interfere with the comfort or convenience of the engineer

or maintain a puddle adjacent to the pump, I have provided the end of the stuffing-box with a supplemental box *h*, which forms a drip-chamber *i* at the end of said box. Said supplemental box is preferably screwed upon the threaded periphery of the box *d*, and at its center rod perforation is provided with a packing-chamber *j* and a gland or follower *k*. The packing *l* in said chamber *j* simply serves as a wiper, so that any water carried forward by the rod beyond the gland *e* will be wiped off by said packing. A leakage-conduit *m* serves to convey the water from said box to any point convenient or place suitable to receive the same.

When the pump is used in connection with water containing dirt, sand, or other matter tending to cut the rod, I employ an interior clean-water chamber *n*, fed by a water-pipe *o*, the water of which is under more or less pressure. Said chamber is formed by securing to the inside of the pump-head *c* a concaved ring *p*, which covers the mouth of the duct *o* in communication with the water-pipe. The piston-rod forms, with said ring, a small annular opening around said rod, through which the water under pressure is forced into the pump-cylinder to clean the rod of sand or prevent an entrance of the same into the stuffing-boxes, as will be understood.

The operation of the rod is as usual and needs no further description.

Having thus described the invention, what I claim as new is—

1. The improved reciprocating or plunger pump, comprising a reciprocating piston and cylinder having a stuffing-box *d*, with a follower and loose packing, of a supplemental box forming a drip-chamber *i*, with the stuffing-box *d*, and having at its rod perforation a packing-chamber *j*, and a gland or follower for producing a tight-joint around the rod, a supply-pipe opening at and supplying the bearing for the rod between the drip-chamber and cylinder with clean water, and a duct or pipe *m*, for carrying the drippings away from the drip-chamber, said parts being arranged and combined, substantially as set forth.

2. The improved plunger-pump herein described in which is combined with a longitudinally-reciprocating piston-rod, and cylinder having a stuffing-box *d*, with a gland or fol-

lower and packing, of a supplemental box *d*,
forming a drip-chamber *i*, with said box *d*,
and having at its rod perforation a packing-
chamber and a gland or follower, a concaved
5 ring fastened within said cylinder, around
said piston-rod, forming a clean-water cham-
ber, a water-supply pipe communicating with
said clean-water chamber and a drip-pipe
m, communicating with the drip-chamber,
10 whereby the clean water may be forced both
out into the cylinder to prevent the entrance
of gritty matter and through the packing, *f*,

to lubricate the rod, into the drip-chamber,
and be from thence carried away through the
drip-pipe *m*, all said parts being arranged and 15
combined substantially as set forth.

In testimony that I claim the foregoing I
have hereunto set my hand this 14th day of
August, 1895.

EDWARD C. BUTTS.

Witnesses:

CHARLES H. PELL,
C. B. PITNEY.