

(No Model.)

J. HENWOOD.  
DOUBLE ACTING PUMP.

No. 277,279.

Patented May 8, 1883.

FIG. 1

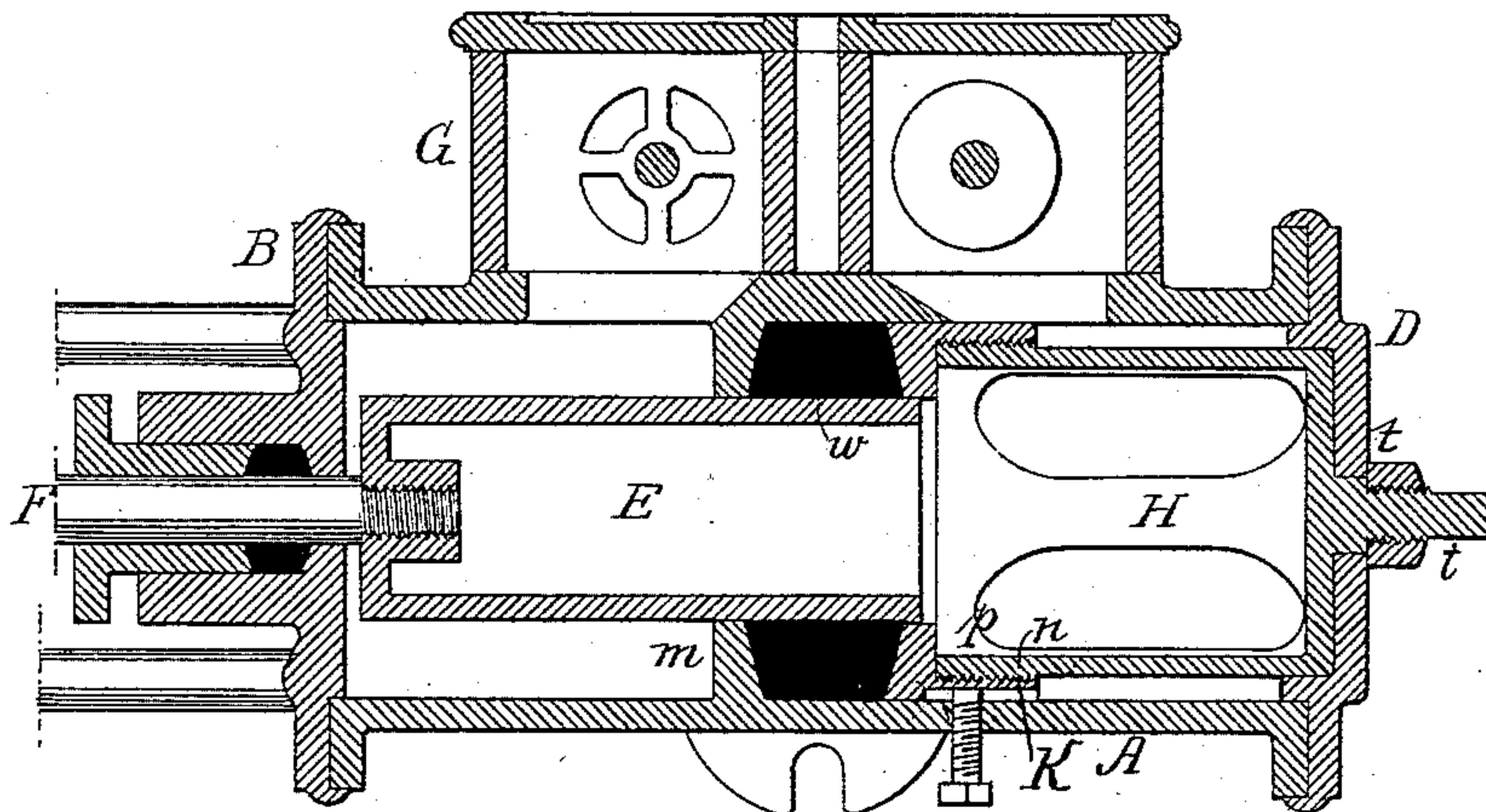
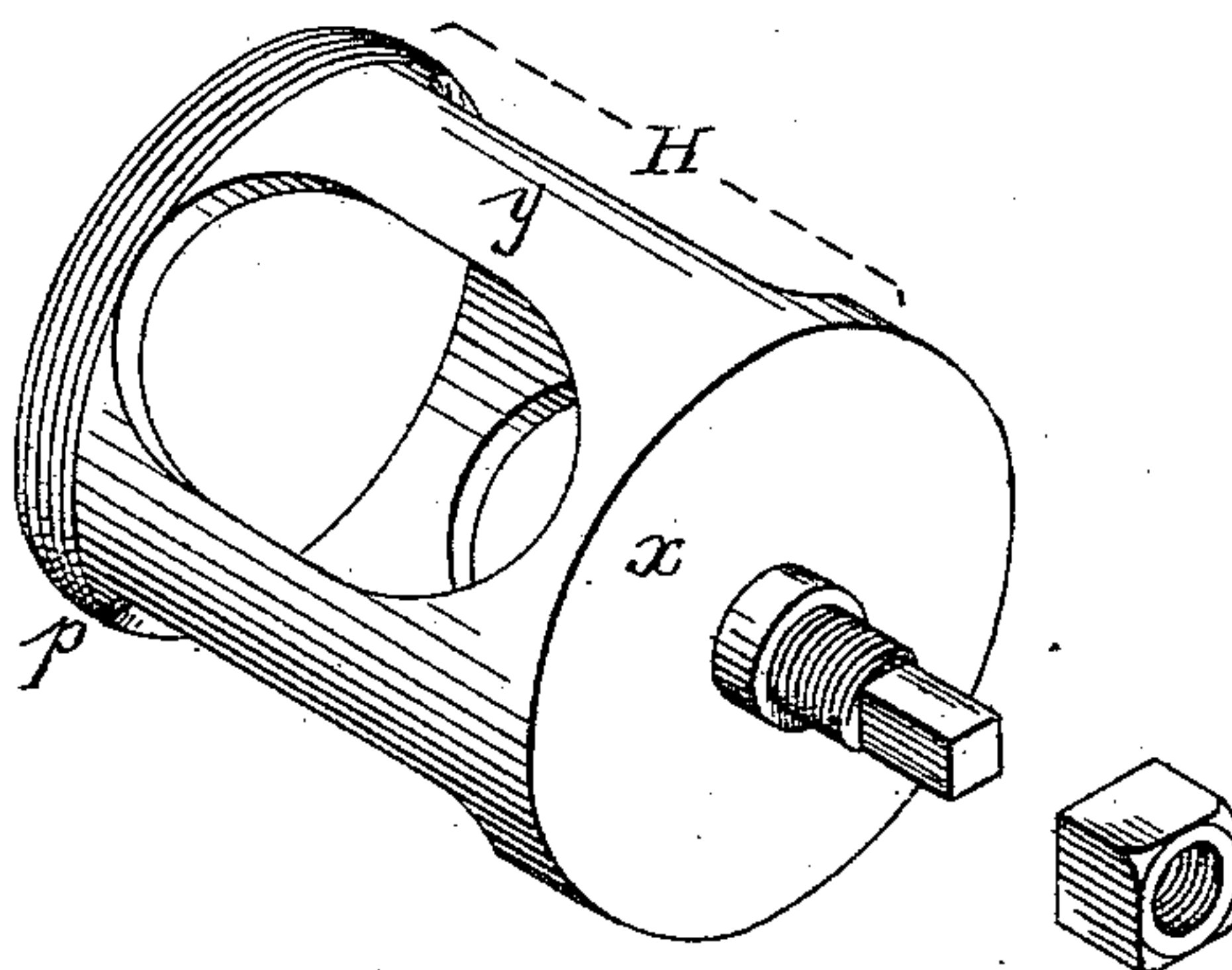


FIG. 2.



WITNESSES:

James I. Tobins  
Hamilton D. Turner.

INVENTOR:

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by his Attorneys  
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# UNITED STATES PATENT OFFICE.

JOHN HENWOOD, OF PHILADELPHIA, PENNSYLVANIA.

## DOUBLE-ACTING PUMP.

SPECIFICATION forming part of Letters Patent No. 277,279, dated May 8, 1883.

Application filed September 2, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN HENWOOD, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Double-Acting Pumps, of which the following is a specification.

My invention consists of an improvement, fully described hereinafter, in the packing device for pump-plungers, for which Letters Patent No. 247,642 were granted to me September 27, 1881, the object of my present invention being to tighten the packing of the plunger by direct pressure without turning the follower.

In the accompanying drawings, Figure 1 is a sectional plan of pump illustrating my improvement, and Fig. 2 a perspective view of the packing device.

A represents the pump cylinder or barrel; B, the front cover of the same; D, the rear cover; F, the plunger-rod; and E the plunger, which may either be hollow, as shown, or solid, a hollow plunger being preferred in pumps of the larger class.

G is the valve-chest, containing suction and exhaust valves, which need not be described, as they form no part of my present invention, and as they may be similar to the valves of ordinary steam-pumps.

In the pump described in my former patent the plunger reciprocated through two rings screwed into the threaded interior of the barrel, the packing being interposed between the said rings, one of which was permanent, the other being combined with a device by which the ring could be turned from the outside of the pump, so as to tighten the packing:

In my present invention there is within the barrel A, and preferably forming part of the same, an annular flange, *m*, and a follower, K, which can slide, but not turn, in the barrel, any suitable and well-known device being employed for preventing the turning of the follower.

There may, for instance, be a groove in the barrel adapted to receive a small lug on the follower, between which and the flange *m* is confined the packing *w*.

There is an internally-threaded flange, *n*, on the follower K, into which screws the tightening device H, which may be described as consisting of a threaded ring, *p*, connected to a disk, *x*, by arms *y*, the whole being cast in one piece; or the tightener may be described as a hollow cylinder closed at one end, *x*, threaded at the opposite end, and having openings at the side. It is immaterial, however, in constructing the tightener, how the disk and threaded ring are connected. The closed end of the tightener fits snugly, but so as to turn freely, in a recess in the inside of the rear cover, D, of the pump-barrel.

From the rear of the tightener projects a central pin, *i*, passing through and arranged to turn in the cover D, to which it is confined by a nut, *t*, the pin projecting beyond this nut, and being constructed to receive a suitable wrench by which the tightener may be turned, and the follower K thereby moved without turning either to compress the packing or to reduce the pressure against the same.

I claim as my invention—

The combination of the pump-barrel A, having an internal flange, *m*, the plunger E, the threaded follower K, and the tightener H, contained within the barrel, threaded so as to act upon the threaded follower, and having a pin, *i*, passing through the cover D, as set forth.

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

JOHN HENWOOD.

Witnesses:

HARRY DRURY,  
JAMES F. TOBIN.