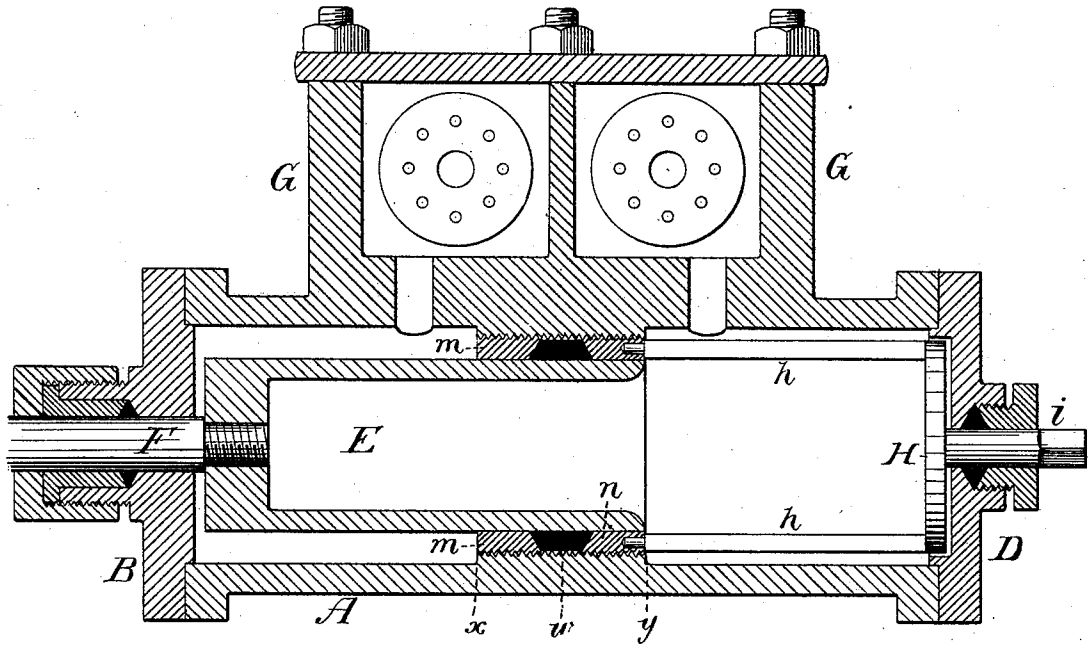
(No Model.)

J. HENWOOD.

DOUBLE ACTING PUMP.

No. 247,642. Patented Sept. 27, 1881.

Fig. 1.



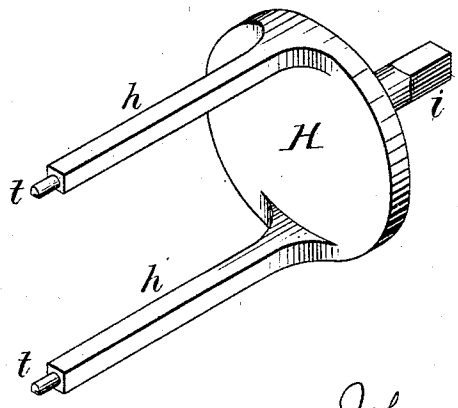


Fig. 2.

Witnesses
Hubert Howson
Harry Smith

Inventor
John Henwood
by his Attorneys
Howson and Sons

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN HENWOOD, OF PHILADELPHIA, PENNSYLVANIA.

DOUBLE-ACTING PUMP.

SPECIFICATION forming part of Letters Patent No. 247,642, dated September 27, 1881.

Application filed February 1, 1881. (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 relates to an improvement in that class of double-acting pumps having a single plunger and a single barrel with an internal packed partition, the object of my invention being to cheapen the construction of the pump and provide a simple means for effecting the periodical tightening of the packing from the exterior of the pump-barrel without removing any parts of the pump.

In the accompanying drawings, Figure 1 is a sectional view of the pump-barrel constructed according to my invention, and Fig. 2 a perspective view of the device for tightening the packing.

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

G is the duplex valve-chest, containing two sets of 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.

The barrel need not be bored, but it should be slightly contracted in the middle between the points *x* and *y*, and this contracted portion of the barrel is threaded for the reception of the threaded ring *m*, which is screwed tightly into its place, and forms the permanent base for the packing *w*, the latter being composed of any of the materials or compositions ordinarily used for packing purposes. The plunger E fits snugly, but so as to slide freely in the said ring *m*. Another ring, *n*, screwed into the contracted and threaded portion of the barrel, constitutes the follower, by which, in connection with the ring *m*, the packing is confined to its place.

A central packed partition is thus formed in the pump-barrel, the latter on one side of the partition communicating with one compartment of the valve-chest, while the other compartment of said chest communicates with the interior of the barrel on the opposite side of the central partition, thus forming, in connection with the plunger E, a double-acting pump.

The device for tightening the packing is shown in the perspective view, Fig. 2, and consists of a disk, H, from one face of which project two arms, *h h*, and from the other face a rod, *i*, having a square or other suitably-shaped end for receiving any appropriate instrument by which the disk can be turned. This disk may either fit freely into a recess in the inner face of the rear cover, D, as shown, or it may be nearly of the same diameter as the interior of the barrel and bear against a plane unrecessed face of the cover, pins *t t* at the end of and forming parts of the arms fitting into orifices of the follower *n*.

The rod *i* of the disk passes through a stuffing-box on the rear cover, D, the square portion of the rod projecting beyond this box, so as to receive the instrument for turning the disk.

It is not essential, however, that there should be a stuffing-box where the rod *i* passes through the cover, as the disk may be made to fit tight enough against the inner face of the cover to prevent leakage, or a packing may be interposed between the disk and the cover; but in making large pumps I prefer to use the stuffing-box shown. When said stuffing-box is used the arms *h h* may be connected directly to the rod *i*, instead of to a disk, H, thereon, if desired.

It will be seen that by turning the rod which projects through the cover the follower *n* can be turned and the packing tightened.

The usual pump-rod, F, is attached to the plunger, and passes through a stuffing-box on the front cover, B.

I claim as my invention—

1. The combination, in a double-acting pump, of the barrel A and plunger E, with the packing-follower *n*, adapted to the threaded interior of the barrel and to the plunger, and with a rod, *i*, passing through the cover D of the pump-barrel, and provided inside the barrel with arms having ends adapted to orifices in the said follower, all substantially as described.

2. The combination, in a double-acting pump, of the packing-follower *n*, adapted to the thread-

ed interior of the barrel and to the plunger, with the disk H, adapted to a recess in the cover D of the barrel, and having arms *h h* adapted to the follower, and a rod, *i*, passing through the said cover, all as set forth.

3. The combination of the plunger E, the pump-barrel having an internal threaded flange, the threaded ring *m*, adapted to said flange and forming an abutment for the packing, the threaded follower *n*, also adapted to said internal flange, and the rod *i*, passing through a central opening in the head D, and having arms adapted to orifices in the follower, as set forth.

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

JOHN HENWOOD.

Witnesses:
JAMES F. TOBIN,
HARRY SMITH.