(Model.)

J. F. & L. HESS.

PUMP.

No. 245,067. Patented Aug. 2, 1881.

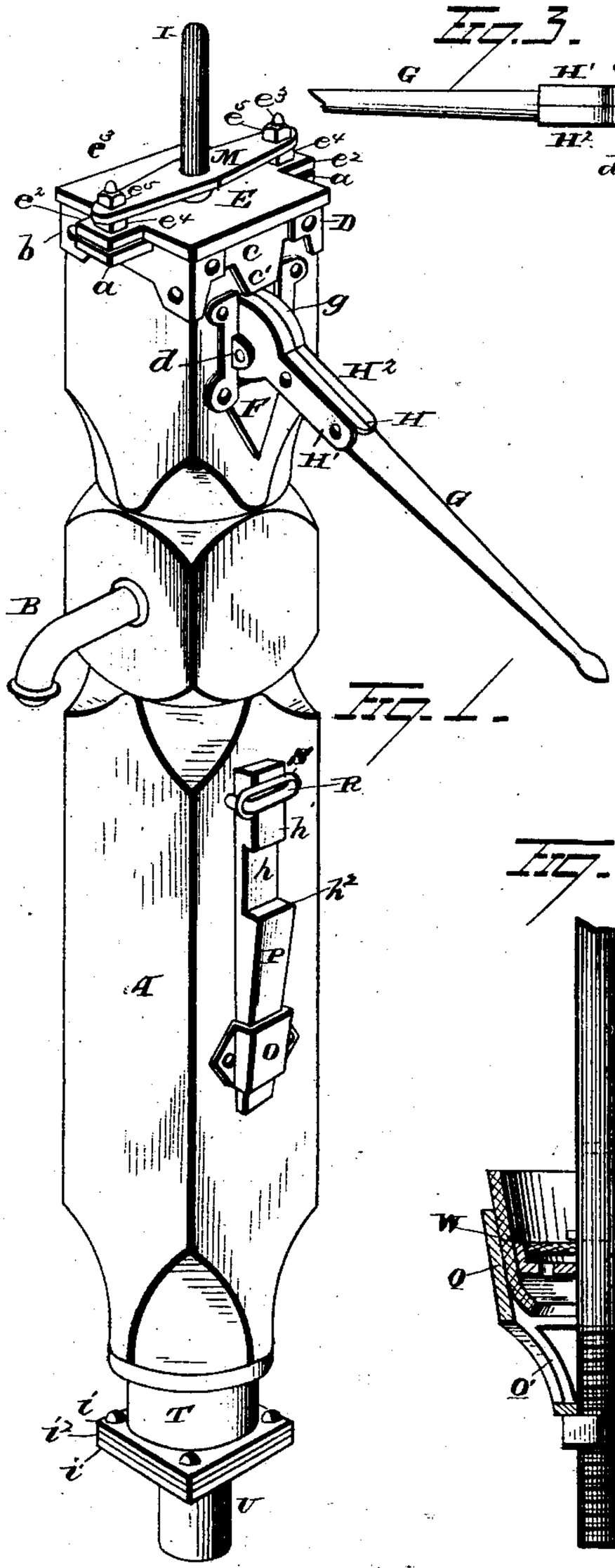

Fig. 1.

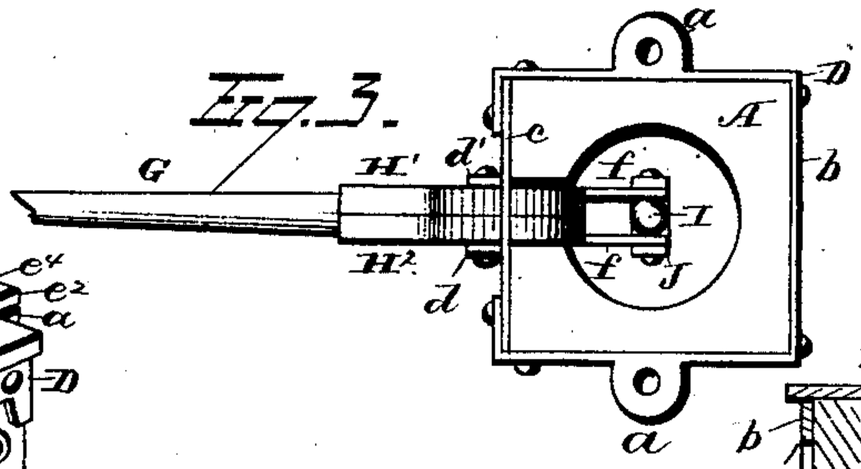

Fig. 3.

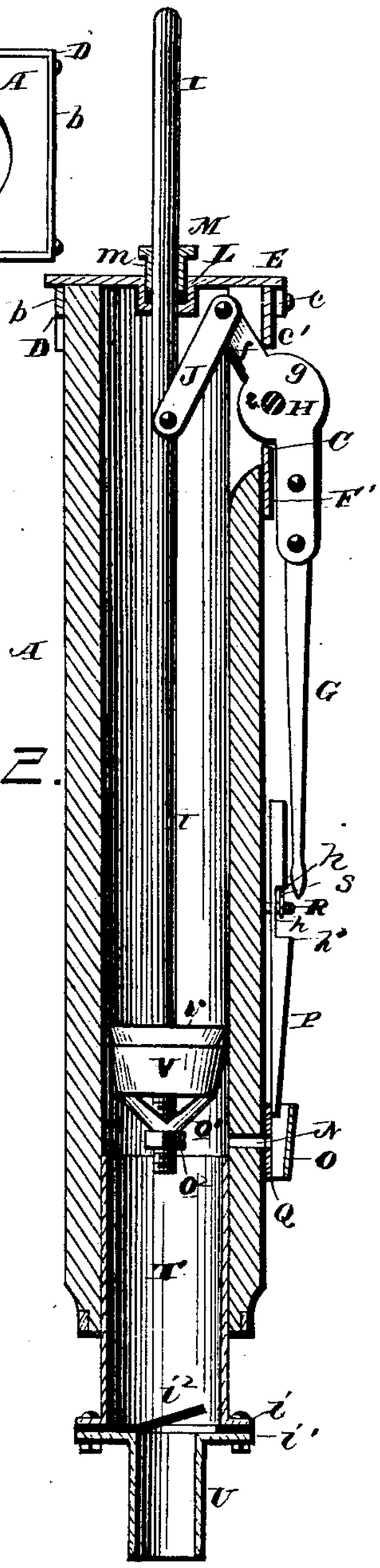

Fig. 2.

Fig. 4.

WITNESSES

Herman C. Moran.

E. L. Nottingham

INVENTOR

J. F. Hess,

L. and Hess.

By Lyon & Lyon ATTORNEY

UNITED STATES PATENT OFFICE.

JACOB F. HESS AND LENERD HESS, OF MASSILLON, OHIO.

PUMP.

SPECIFICATION forming part of Letters Patent No. 245,067, dated August 2, 1881.

Application filed June 13, 1881. (Model.)

To all whom it may concern:

Be it known that we, JACOB F. HESS and LENERD HESS, of Massillon, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Pumps; and we 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 drawings, and to letters of reference marked thereon, which form a part of this specification.

Our invention relates to an improvement in pumps; and it consists in certain details in construction and combinations of parts, as will be more fully explained, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of our improved pump. Fig. 2 is a longitudinal section of the same. Fig. 3 is a plan view with the cap removed, and Fig. 4 is a sectional view of the valve.

A represents the pump-barrel, which can be of any desired shape and size, having the water-discharge pipe or spout B communicating with the interior thereof, and a longitudinal slot, C, near the upper end, in which the pump-handle works, the said slot extending up to the top of the pump, which allows the plunger to be withdrawn with the handle without detaching same.

D is an annular rim or collar surrounding the pump-barrel A, and provided with ears *a* extending out at right angles thereto, which affords means for securing the cap E in position. This annular collar D is formed of two parts, the part *b* adapted to encircle the greater part of the barrel, while the part *c* is adapted to fill in the space between the opposite ends of the piece *b* and cover the upper end of the slot C.

The lower edge of the piece *c* is provided with a depending tongue, *c'*, adapted to extend down and cover the slot without interfering with the free working of the handle, while the sides and lower end of the slot C are covered by the bearing-plate F, which, together with the collar D, prevents the pump from splitting. This bearing-plate is composed of two parts, which, when placed around the handle in the slot, completely line the same, and at the same time is provided with ears *d* and *d'*, by which the handle is held up in position.

By constructing the bearing-plate in two parts and placing one ear on each part the handle can be taken out by simply removing one piece of the bearing-plate and the part of the collar *c* immediately over the slot.

The handle is composed of a wooden stock, G, and metallic end piece, H, the latter being made of two parts, H' and H², which, when placed in position, firmly clamp the upper end of the stock, to which they are secured. This metallic end piece, H, is composed of three parts, a neck which surrounds the end of the stock, and by which the two parts are secured together, a head having the pivot-bolt *e* passing through it, by which the handle is supported in position, and two arms, *f*, extending forward in a line nearly parallel with the line of the wooden stock. Each arm *f* is a continuation of the two-part metallic end piece, H, and they are separated far enough to allow the plunger-rod I, to which they are connected by the links J, to move freely in a vertical line between them.

The head *g* of the handle is provided with curved upper and under surfaces, the said curves being in the arc of circles of different diameters with the pivot-bolt *e* passing through, so that the upper or larger surface will move concentric with the tongue *c'*, while the lower or smaller surface moves concentric with the lower part of the bearing-plate F, thereby closing all the orifices and preventing the ingress of dirt or grease, while at the same time it allows the handle to make a full sweep and rest parallel with the pump at the limit of the down-stroke.

E is the pump-cap, adapted to fit over the top of the pump and prevent the ingress of any foreign matter, and at the same time form a guide for the plunger-rod and cause same to move vertically when operated by the pump-handle. This cap is provided with two tongues, *e²*, adapted to register with the ears on the collar, and is secured by the bolts *e³* passing upward through them, and nuts *e⁴* screwed on the bolts. The central portion of this cap E is cup-shaped, and is perforated centrally for the passage of the plunger-rod. The cup-shaped recess is adapted to receive the packing L, while

the same is prevented from working out by the bridge M, having a downwardly-projecting annular flange, *m*, which latter is adapted to bear on the packing, while the bridge is perforated inside of the flange for the passage of the plunger-rod. This bridge is adapted to span the top of the cap, and is provided with openings or bolt-holes, which register with the bolts holding the cap in position on the top of the pump. When the packing has been placed around the plunger-rod the bridge M is placed in position and the nuts e^5 screwed on the bolts e^3, which firmly holds the bridge thereon, and the pressure on the packing can be increased or diminished by simply tightening or loosening the nuts.

At any suitable distance below the well-cover an outlet or waste-opening is provided, through which the water contained in the pump-barrel is allowed to flow back into the well when it is not desired for use.

On the outside of the hole N a metallic plate, O, is secured, having a wedge-shaped or tapering recess extending vertically through it, into which the lower end of the slide P, which is beveled or wedge-shaped, fits. This slide is adapted, when down in position, to fit snugly up against a leather strip, Q, surrounding the outside of the outlet N and form a water-tight packing. The upper end of the slide P is recessed at *h*, the extremities of the recess terminating in shoulders h' and h^2, the lower shoulder being of sufficient size to prevent the slide from being withdrawn from the staple R, which, together with the metallic piece O, prevents the displacement of the slide, while the upper shoulder serves to retain the slide elevated by means of the catch S, fitted on the staple, and adapted to be slid under the shoulder h' when the slide is elevated and it is desired to allow all the water contained in the pump-barrel to run off.

T is a metallic cylinder adapted to fit closely the interior of the pump-barrel from the bottom thereof up to the opening N, the lower portion of the cylinder being provided with a flange, *i*, to which the pipe U, having a flange, i', similar to the flange *i*, is bolted, the valve i^2 being interposed between the flanges all around, which forms a water-tight joint, and the pipe U being of smaller diameter than the cylinder, a valve-seat is formed at the juncture thereof, on which the valve i^2 rests. This valve is made from a single piece of leather or rubber, weighted on top, and so cut that a continuous strip or collar is formed, which, as before stated, is interposed at the joint between the cylinder and pipe. This pipe can be of any size so as to snugly fit the tubing of the well, it only being necessary to have a flange at its upper end to register with the flange on the cylinder.

V is the plunger, the outer shell or casing of which is formed by a slightly-tapering annular ring, *o*, having two or more arms, o', formed integral therewith, tapering gradually downward and inward, where they unite to form a bearing, which rests on a nut, o^2, screwed onto the end of the plunger-rod.

On the inside of the annular ring a rubber or leather strip, *r*, is placed, with the upper edge thereof extending slightly above the said ring, and sufficiently inclined so as to bear on the inner surface of the cylinder T and form a water-tight joint between the outer shell, I', and cylinder, the said leather or rubber strip *r* being retained in place by the perforated bottom W, on which the flap-valve Y has a seat, the said flap-valve and seat being retained in place by the pin or projection *s* situated on the plunger-rod.

When it is desired to place the plunger above described on the plunger-rod the leather or rubber packing, perforated bottom, and flap-valve are first placed in position in the outer shell or casing, and the whole introduced on the end of the plunger-rod, the flap-valve and perforated bottom having openings for this purpose, and moved along until the valve Y strikes the pin or projection *s* on the plunger-rod I, when the nut o^2 is screwed onto the end of the plunger-rod and retains the parts thereon.

It is evident that slight changes in the construction and arrangement of the different parts of our improved pump might be resorted to without departing from the spirit of our invention, and hence we would have it understood that we do not limit ourselves to the exact construction of parts shown and described, but consider ourselves at liberty to make such changes as come within the spirit and scope of our invention.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a pump, the combination, with the pump-barrel, of a two-part collar adapted to surround the upper end of the pump-barrel, one of said parts having ears for attaching the cap, and the other provided with a depending tongue to cover the upper part of the slot for the handle, substantially as set forth.

2. In a pump, the combination, with a pump-barrel and two-part collar surrounding the same at its upper end, of a cap having a stuffing-box in its center, through which the plunger works, and a bridge having a depending annular flange adapted to fit in the stuffing-box, all of the above parts being secured substantially as set forth.

3. The combination, with a pump-barrel having a vertical slot in its upper end in which the handle works, and a two-part collar surrounding the upper end of the pump-barrel, one of said parts having a depending tongue to cover the upper part of the slot, of a two-part bearing-plate adapted to surround the remaining portion of the slot, and provided with ears for pivoting the handle thereto, substantially as set forth.

4. The combination, with a pump-barrel having a vertical slot in its upper end, of a two-part bearing-plate covering the sides and

lower end of the vertical slot, each part of the said bearing-plate being provided with an ear, in which the pivot-bolt of the handle has bearing, substantially as set forth.

5. A pump-handle composed of a wooden stock and two-part metallic end piece, the said end piece being composed of a neck, head, and arms, the said parts being constructed and operating substantially as set forth.

6. The combination, with a pump-barrel, of a handle composed of a wooden stock and two-part metallic end piece, the latter being constructed as described, and links connecting the end piece with the plunger-rod, substantially as set forth.

7. The combination, with a pump-barrel having an outlet opening for waste-water, the said opening being surrounded externally by a leather strip, of a slide having a tapering lower end and two shoulders of unequal size formed thereon, the lower end of the said slide adapted to fit in a metallic plate, and the upper end moving in a staple having a catch for retaining the slide in an elevated position, substantially as set forth.

8. The combination, with a cylinder adapted to fit in the pump-barrel, the said cylinder being provided with a flange around its lower end, and a pipe of smaller size than the said cylinder, having a flange at its upper end, of a valve constructed as described, and adapted to be interposed and secured between the flanges of the cylinder and pipe, substantially as set forth.

9. A plunger for pump-barrels, consisting of an outer shell or casing having radial arms depending therefrom, a rubber or leather packing secured inside and extending slightly above the outer shell or casing, and a perforated bottom adapted to secure the rubber or leather packing in position and form a seat for the flap-valve, substantially as set forth.

10. The combination, with a plunger consisting of an outer shell or casing, rubber or leather packing, perforated bottom, and flap-valve, the said parts constructed and operating as described, of a plunger-rod provided with means for retaining the plunger in position thereon, substantially as set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 3d day of June, 1881.

JACOB FREDRICK HESS.
LENERD HESS.

Witnesses:
F. EDW. SNYDER,
HENRY ROHR.