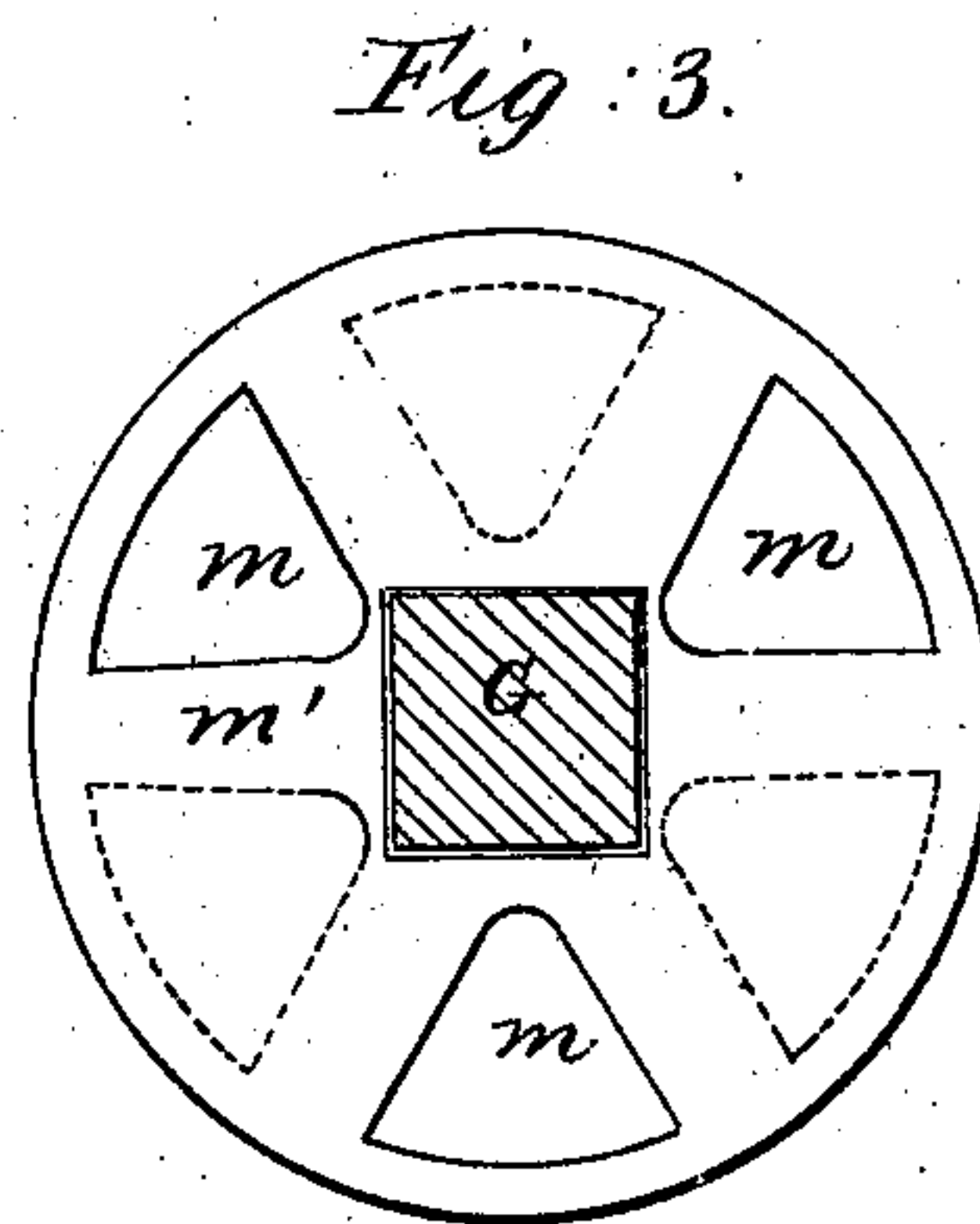
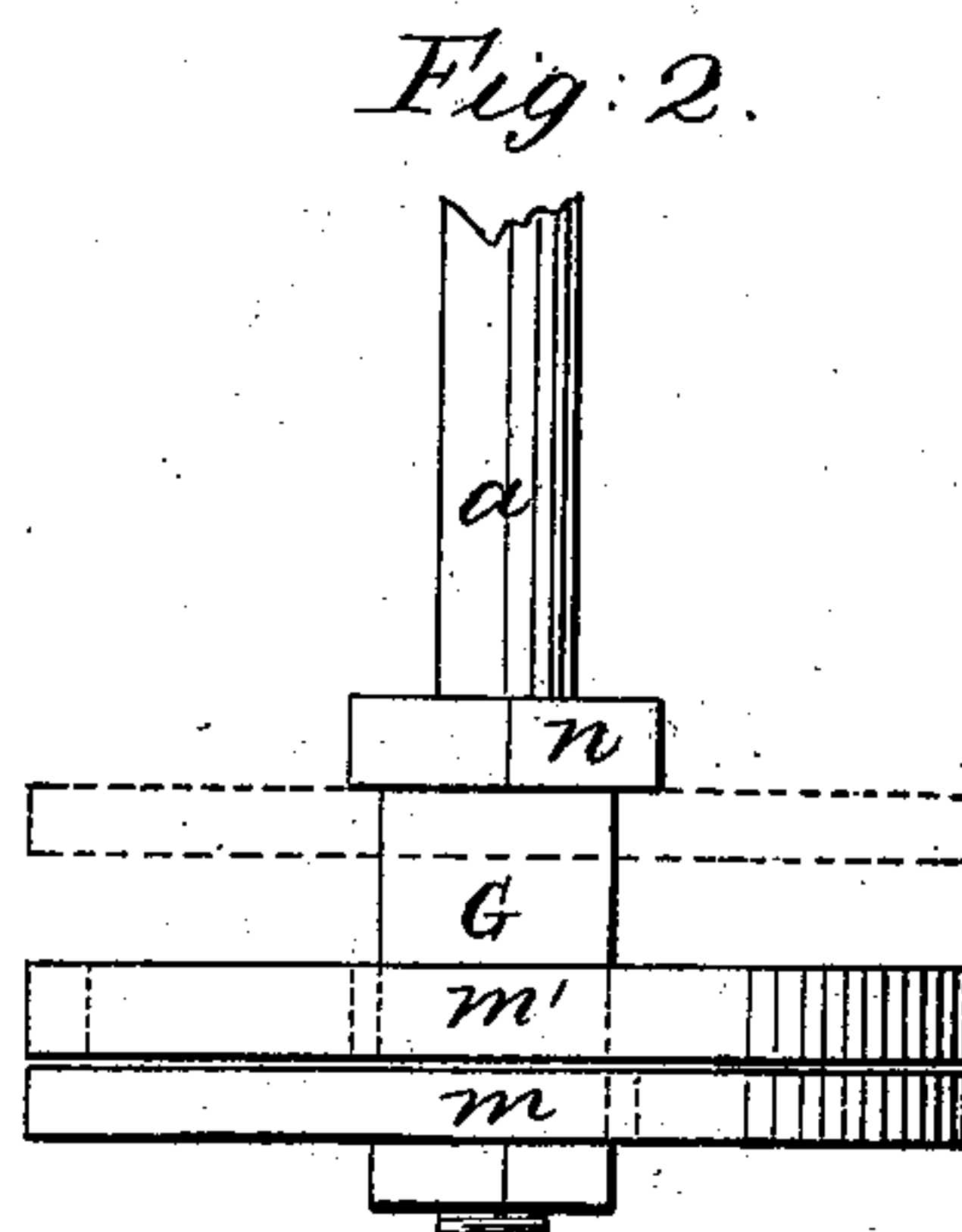
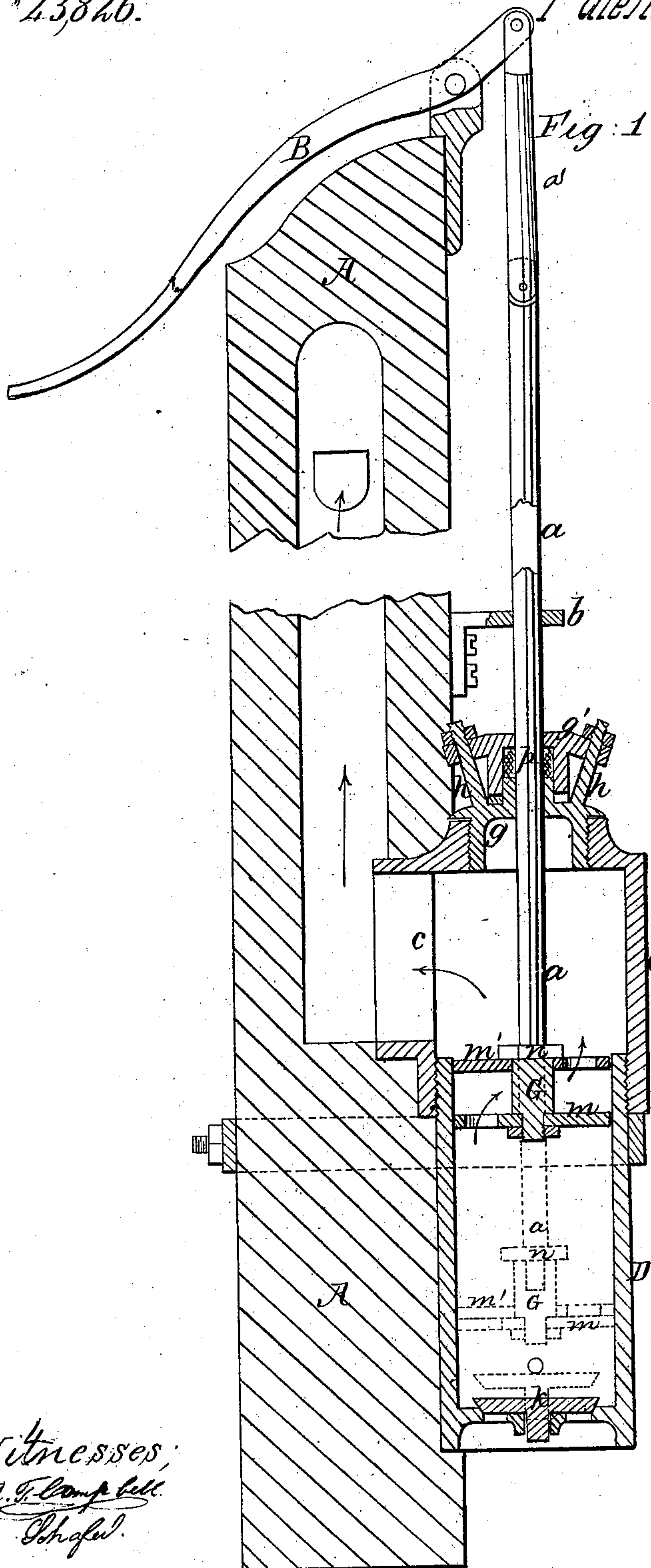


O. Baldwin, Pump Piston.

N^o 43,826.

Patented Aug. 16, 1864.



Witnesses,
R. T. Campbell
O. Schafel.

Inventor,
Oren Baldwin
by his Attys,
Mason, Fenwick & Lawrence.

UNITED STATES PATENT OFFICE.

OREN BALDWIN, OF SUMMITVILLE, IOWA.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. 43,826, dated August 16, 1864.

To all whom it may concern:

Be it known that I, OREN BALDWIN, of Summitville, county of Lee, and State of Iowa, have invented a new and useful Improvement in Pumps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical diametrical section through my improved pump. Fig. 2 is an enlarged side view of the pump valve or piston applied to its rod. Fig. 3 is a top view of Fig. 1 as seen by making a horizontal section through the valve-guide.

Similar letters of reference indicate corresponding parts in the three figures.

This improvement relates to that class of pumps which are submerged beneath the surface of the water when used; and the object of my invention is to obtain a submerged pump, which, while it is very simple and cheap, shall not be liable to get out of order under all ordinary usage, and which has its piston-valve so constructed that the use of packing is rendered unnecessary and its consequent evils avoided, as will be hereinafter described.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation.

In the accompanying drawings, A represents a hollow wooden shaft or penstock leading down to the bottom of the well; and B represents the lever-handle of the pump, which is suitably applied to the upper end of the penstock and connected to the piston of the pump by means of a jointed piston-rod, *a a'*, which is guided in its movements by the bracket *b*, that keeps the lower portion, *a*, always coincident to the axis of the pump-barrel and allows the portion *a'* to vibrate with the pump-handle.

The body of my pump is composed of two principal parts, C D, of which C is the upper portion or head, and D is the lower portion or pump-barrel in which the piston works. The upper portion, C, is constructed with an opening, *e*, through its side, which opening is surrounded by a flange or pipe that fits into a corresponding opening made in the side of the penstock A, and this pipe serves to form an attachment of the head C with the pen-

stock, and also as a communication between the bore of the penstock and the pump. The cap or upper end of the portion C has a hole through it concentric with the axis of this portion, and into this hole is screwed a tubular cup, *g*, which forms a part of the stuffing-box for the piston-rod *a*. The projecting tube of cup *g* receives an inverted cup, *g'*, which forms the other part of the stuffing-box, and which has ears formed on it, through which pass the fixed studs *h h*, that receive nuts on their upper ends for the purpose of forcing down and keeping in place the cup *g'*. The packing, whatever kind may be employed, is represented in Fig. 1 and lettered *p*. The lower part of the pump is secured to the head C by means of a male and female screw; but the two parts C and D may be put together by bolt fastenings, or in any other convenient manner, and at or near the bottom of the barrel D is a conical valve, *k*, which opens upward and allows the water to rush into the pump, but prevents it from escaping therefrom. This valve *k* may be arranged either below the piston, as I have shown, or above the piston at the upper end of the barrel D or within the penstock A.

The piston of my pump is constructed in the following manner: On the lowermost end of the piston-rod *a* an angular-sided stud, *G*, having a flange on its upper end, is secured, and on the lower end of this vertical stud a perforated disk, *m*, is suitably secured, as shown in Figs. 1 and 2. Between this disk and the flange *n*, at the upper end of the stud *G*, works another disk, *m'*, which is also perforated, as shown in Figs. 1 and 3. The lower disk, *m*, is adapted to fit snugly within the pump-cylinder D and to work up and down therein, so as to form a piston for drawing the water through the valve *k*. The upper valve-disk should be applied within the pump and to the stud *G* in such manner as to move freely on said stud as the piston is elevated and depressed. The openings through the two disks *m m'* are made in such relation to each other that those which are through the lower disk will be closed by that portion of the upper valve which is unperforated when this upper valve drops down, and when the two valves, or rather the piston-rod, is depressed the loose disk *m'* is thrown up against the flange *n* by the water

below it, and thus allows the water to rush through all the openings in both valve-disks. When the piston rod is again raised, the weight of water above the disk m' , together with its own gravity, will force it down upon the lower disk, m , thus closing the openings through both disks, as above described. The stud G is represented in the drawings as rectangular; but it may be made in any other shape which will be found most desirable, the object being to prevent the disk m' from rotating.

If desirable, the pump may be arranged as follows: Reverse the handle B and attach the barrel D to the penstock A , and let the rods a a' work through the center of the penstock, the valves being arranged as described, with suitable openings for the working of the rod at top and passage of the water at the bottom.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a penstock, A , with the head C , removable stuffing-box g g' and detachable cylinder D , constructed substantially in the manner described.

2. The construction of the valve or piston of the pump of two perforated disks, m m' , of the same diameter as the pump-cylinder, and with the apertures of one disk opposite solid portions of the other, these disks being applied to a stud, G , and operating substantially as described.

OREN BALDWIN.

Witnesses:

J. T. WRIGHT,
JACOB REINVALL.