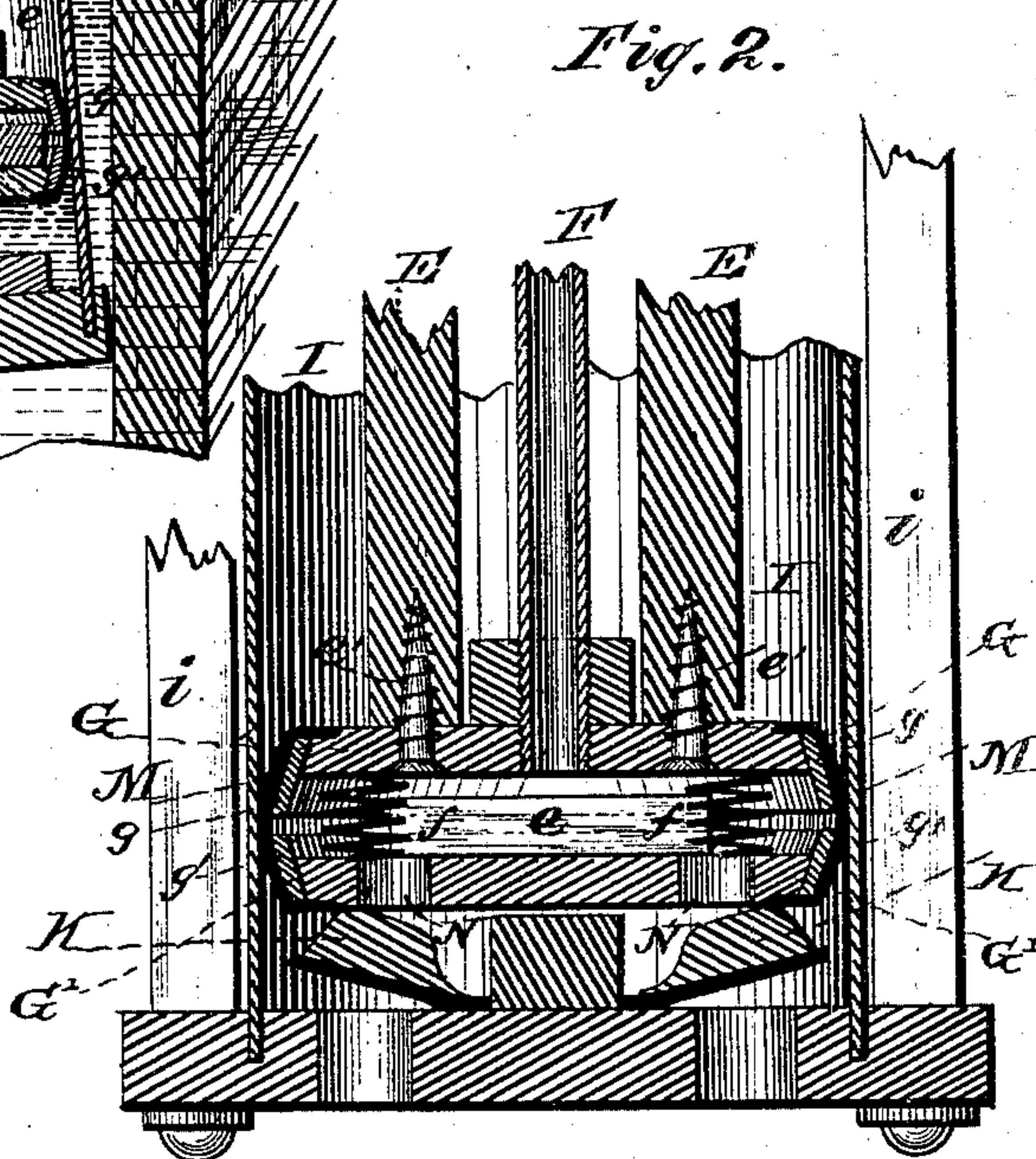
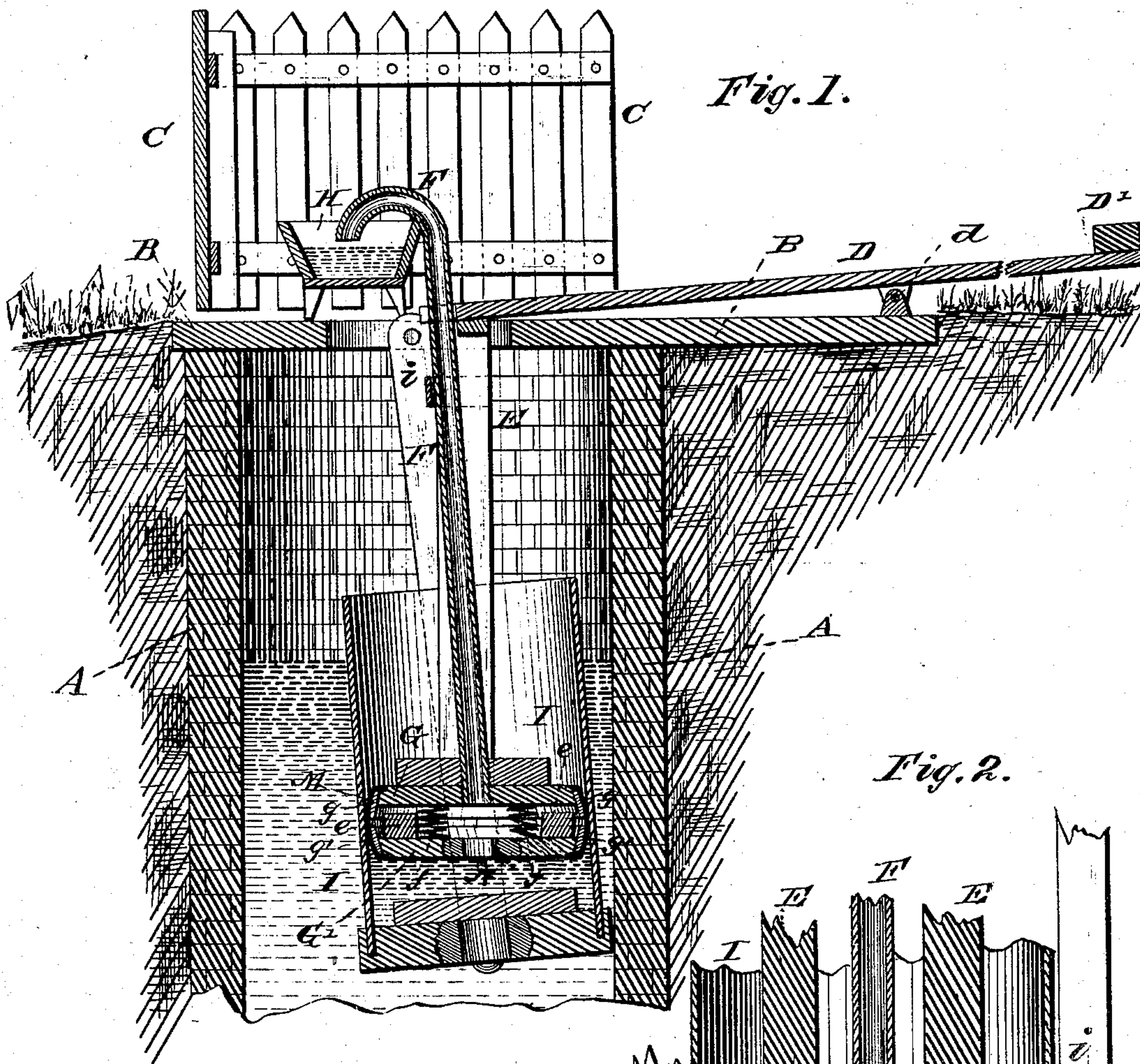


(No Model.)

E. HOOVER.
Cattle Pump.

No. 232,499.

Patented Sept. 21, 1880.



WITNESSES

P. Dieterich
Fred. G. Dieterich

INVENTOR:

Eli Hoover
by *Louis Bagger & Co.*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ELI HOOVER, OF WEST BRANCH, IOWA.

CATTLE-PUMP.

SPECIFICATION forming part of Letters Patent No. 232,499, dated September 21, 1880.

Application filed March 29, 1880. (No model.)

To all whom it may concern:

Be it known that I, ELI HOOVER, of West Branch, in the county of Cedar and State of Iowa, have invented certain new and useful
5 Improvements in Cattle-Pumps; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference
10 being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a vertical section of a cattle-pump embodying my improvement, and Fig. 2 is an enlarged diametrical section of the
15 plunger.

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

My invention has relation more particularly to that class of automatic cattle-pumps in
20 which a submerged pumping-cylinder is suspended by hinged or pivoted hangers from a base or platform covering the mouth of the well, the said cylinder being provided with a piston or plunger which is secured at the end
25 of a vibrating piston-rod pivoted at its upper end to the inner end of an oscillating platform that has its fulcrum at a distance from the well; and it consists in the combination, with the vibrating submerged pump-cylinder, of a
30 plunger of improved construction, having for its object to enable the pump to be operated by calves or stock of lighter weight than those required for the operation of this class of pumps as ordinarily constructed, substantially
35 as hereinafter more fully set forth.

In the drawings hereto annexed, A represents the well, the mouth of which is covered by the platform B, which is inclosed on all sides but one by a fence or cattle-guard, C.

40 D is the oscillating platform, which has its fulcrum at *d*, and to the inner end of which the piston-rod E is pivoted. This piston-rod consists, preferably, of two parallel bars, between which the well-tube F is inserted centrally into the plunger G, the said well-tube
45 extending up through an orifice in the oscillating platform D, its mouth being bent in over the trough or drinking-vat H, as shown in Fig. 1 of the drawings.

50 I is the pump-cylinder, which is suspended, by parallel hinged hangers *i*, from the under

side of the platform B. This cylinder is open at the top but closed at the bottom, where it is provided with two valves, K K, which open
55 upward into the cylinder below the plunger. The latter, to which my improvement relates, consists of two disks, G G', which are provided with outwardly flaring or beveled annular
60 flanges *g g'*, and united by four coiled springs, arranged in pairs, *f f'*. Disks G G' are prevented from coming too close together in operating the pump by blocks *e e*, which may be
65 affixed upon the inner face of either of the disks, as shown more clearly in Fig. 2 of the drawings.

M is the plunger-packing, which consists, by preference, of a leather band made of one or more thicknesses of leather, which is tacked
70 upon the rims of the disks G G' above and below their respective flanges *g g'*, the flaring form of which causes the packing to bulge out in the center. The bottom disk, G', has two
75 perforations, N N, which serve the double purpose of permitting water to enter into the hollow of the plunger and inserting and tightening down the screws or bolts *e' e'*, which
80 connect the parallel bars that form the piston-rod E to the plunger-head G. The plunger is operated by the pressing down of the rear end of the platform D by a weight, D', permanently
85 attached thereto, which causes the plunger to travel upward, and thereby to produce a suction that will fill the cylinder through its valves K K. As the animal, after having ascended
90 the platform, crosses its fulcrum *d* in approaching the trough the inner end of the platform is depressed, and with it the plunger-rod and plunger, which closes the valves K K, the
95 water in the cylinder entering the hollow plunger through the openings N N in its bottom, and thus expanding its packing M, so as to make a tight joint with the cylinder and prevent escape of the water from under the plunger, except through its hollow chamber and tube
100 F, up into the trough. This construction of the plunger gives it a bellows-motion during the operation of pumping, which admits of its expanding itself on the up and down strokes so as to fill the cylinder without, at the same time, involving too great a friction against its sides.

The coiled springs *f*, which connect disks G

G', give an easy and elastic motion to the latter, expanding on the upstroke and being compressed on the downward motion of the plunger, which causes this to be operated with
5 a minimum of wear and friction, so that a pump provided with my improved plunger (which is also adapted for pumps other than this class of cattle-pumps) can be used in deeper wells, and can be operated by younger and
10 smaller stock than this class of pumps as heretofore constructed.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

15 The plunger composed of the circular disks

G G', having beveled peripheries provided with flaring annular flanges *g g'*, flexible packing M, coiled springs *f*, connecting the said disks G G', resistance-blocks *e e*, well-tube F, and plunger rod or rods E, constructed and com- 20
bined to operate substantially as and for the purpose herein shown and described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ELI HOOVER.

Witnesses:

LEVI FORNEY,

JAMES C. McKERNAN.