W. Peck,

Pump Lift,

No. 22,743, Patented Jan. 25, 1859.

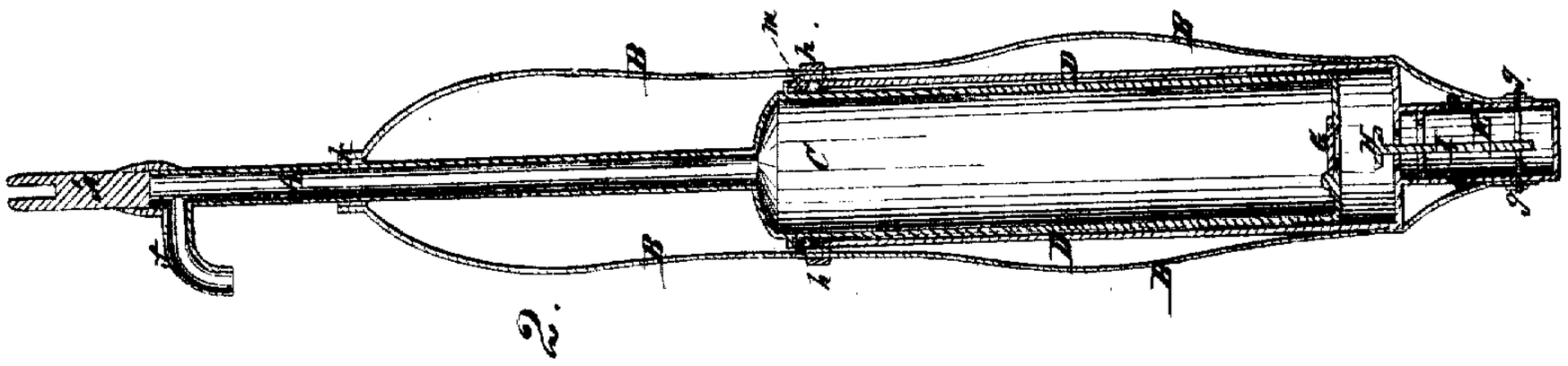

Figure 2.

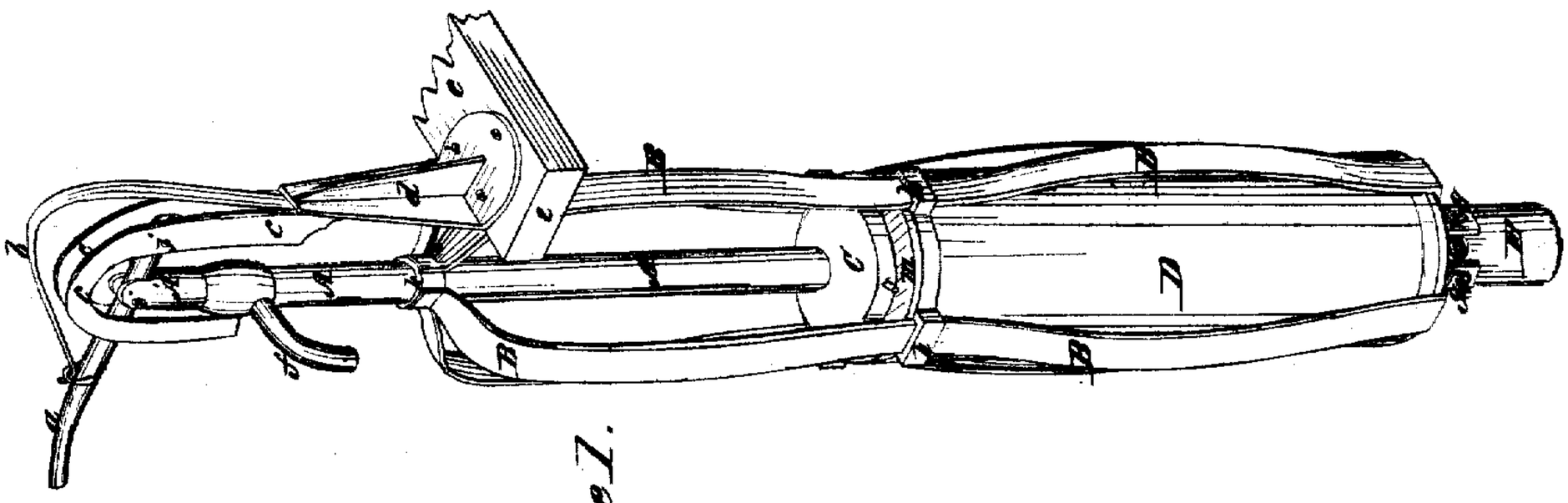

Figure 1.

Witnesses:

Benjamin Holt

William H Ogden

Walter Peck

UNITED STATES PATENT OFFICE.

WALTER PECK, OF ROCKFORD, ILLINOIS.

PUMP.

Specification of Letters Patent No. 22,743, dated January 25, 1859.

To all whom it may concern:

Be it known that I, WALTER PECK, of Rockford, county of Winnebago, in the State of Illinois, have invented certain new and useful Improvements in Pumps; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in certain improvements in pumps as hereinafter fully described.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation, referring by letters to the accompanying drawing and letters of reference marked thereon.

Figure 1, represents a perspective elevation of my improved pump and, Fig. 2, a vertical longitudinal section of the same.

D, represents the pump cylinder which is placed in the bottom of the well, and on the lower end of which is a short pipe E, projecting downward and perforated with holes *o*, *o*. In the bottom of said cylinder D, is arranged a conical valve H, having a stem I, playing in suitable bearings in the ordinary manner.

C, is a hollow plunger or drum fitting and working up and down in the cylinder D, said drum C, is furnished at its lower end or head, with an ordinary valve G, and to its upper end is connected a pipe A, which passes up through the center of the well and out at the top to any desired height; near the upper end of said pipe A is formed a nozzle or spout *f*, through which the water makes its exit as will be hereinafter fully described. The upper end A′ of said pipe A, is made solid and slotted out to receive the vibrating lever or handle, *a*, which is pivoted in said pipe by a pin, *i*; the short end of said lever is pivoted by a pin, *j*, into a stand, *c*, which may be secured at its base, *d*, to a board or other platform, *e*, while near the other end of said lever is formed on it a staple or loop, *r*, into which locks the end of a spring, *b*, which is secured at its butt to the stand, *c*. Projecting radially from the upper end of the cylinder, D, are four or more ears, *h*, through which pass and freely play a series of spring straps or bands, B, which are secured at their lower ends to the bottom of the cylinder, D, and at the upper to a collar, *k*, fitting loosely on the pipe, A. Fitting around the drum, C, and into the top of the cylinder, D, is a gland, *m*, the top of the cylinder, D, being dished out to form a stuffing box, which is filled with packing, and operates in the known way to keep the drum or hollow plunger, C, working water tight in the cylinder, D.

The operation of my pump will be readily understood.

The several parts being arranged together as seen at Fig. 1, and the pump placed in the well, and the stand *c* secured to a stationary platform, the water is made to flow up through the drum C, pipe A, and out of the spout *f*, in the following manner: the handle *a* is vibrated up and down, whereby the pipe A, with its drum C, are alternately elevated and let fall in a vertical line, the drum C works water tight in the cylinder D (by virtue of the stuffing box) as the drum C rises a vacuum is formed in the lower end of the cylinder, which is immediately filled with the water which is forced up and into said cylinder D through the perforations *o*, by the atmospheric pressure, the valve H being lifted by the column of water, as soon as the upward motion or stroke of the drum A ceases, the weight of the water in the cylinder closes the valve H, and the drum C then descends through the water in the cylinder, said water flowing up through the valve G; when the drum begins to reascend, the valve G is closed by the weight of the water and the water in said drum is lifted while another column rushes up into the cylinder as before, and so on until the water has reached the top of pipe A, when at each descent of said pipe the valve H closing, and the length of the whole tube being lessened, the surplus water must flow over or out at the spout *f*. It will be then understood that unlike an ordinary lifting pump, in my pump the water flows out at the spout at each descent of the pipe or hollow plunger A, or each ascent of the handle *a*. The object of the spring *b* is to support the weight of the pipe and drum as well as the bucket or other receiver, which may be suspended on the spout, all of which have to be alternately raised and let fall.

My improved pump is intended to be, and is, particularly applicable to deep, bored or drilled wells, of which the diameters are generally small, and with which the whole

pump fixture must be placed down through the mouth of the well; the object of the spring straps B is to hold the cylinder D at the bottom, or any other desired point in the well, and to support it and the pipe A centrally in the well, and though I have represented but one length or section of the said spring straps, the number may be increased, in proportion to the depth of the well, and a series of the loose collars *k* on the pipe A. It will be seen that these straps B passing and playing freely through the ears *h*, and having their upper ends attached to a sliding collar *k* are thus enabled to adjust themselves to all inequalities in the surface of the bore, and even form beds for themselves in the sides of the well, where the earth is soft, and that by this capacity of self adjustment they support the pipe A centrally and securely by its sliding collars *k*, which then form bearings for the said pipe A to work vertically up and down in.

It will also be seen that by the arrangement and construction of parts as described, to operate as set forth, that a very simple and effective pump is made to operate in very deep wells of small diameter.

I would state that I have placed one of my improved pumps in a well one hundred and ninety feet deep. and find all the parts to operate as herein described, and produce economically the desired result.

I am aware that hollow plungers have been made, and do not wish to be understood as laying any claim thereto, but

What I do claim as my invention and desire to secure by Letters Patent is—

1. The combined arrangement of the stationary standards *c*, vibrating lever *a*, and lifting spring *b* with the plunger A, as hereinbefore specified for the purposes set forth.

2. The combined arrangement of the hollow plunger A, having a cylinder C and spout *f* and attached directly to the handle *a*, with the stationary chamber D and steadying springs B, as herein specified.

WALTER PECK.

Witnesses:
WILLIAM H. OGDEN,
BENJAMIN HOLT.