

R. N. Allen,

Oil Pump.

N^o 57,840.

Patented Sep. 11, 1866.

Fig. 1

Fig. 2

Fig. 3.

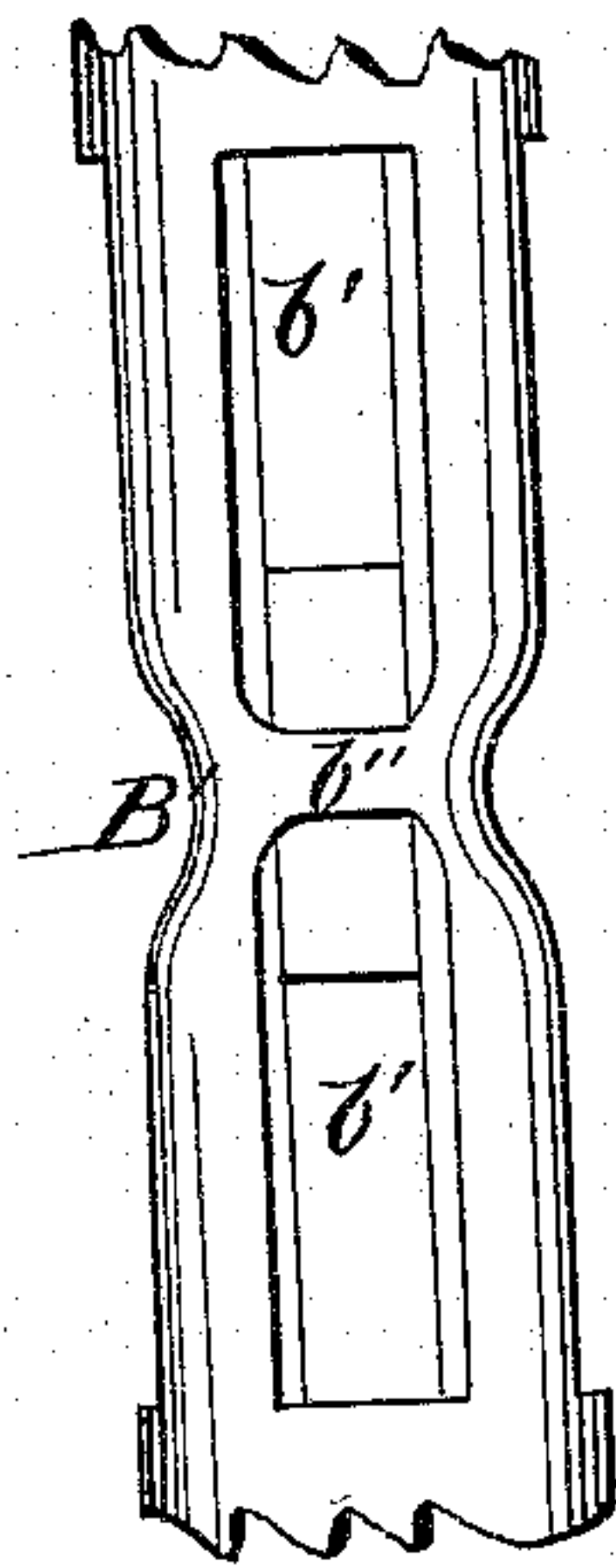
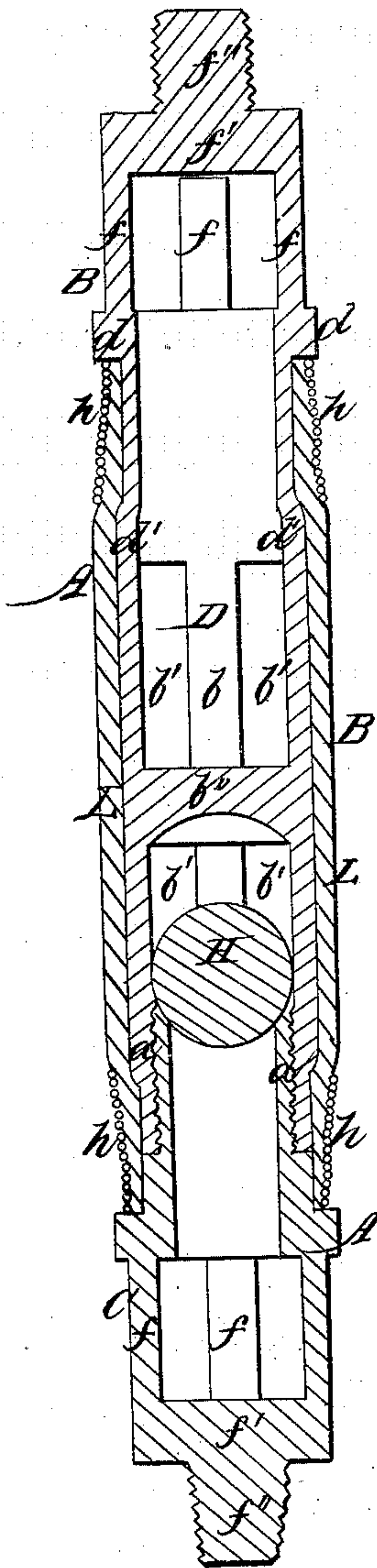
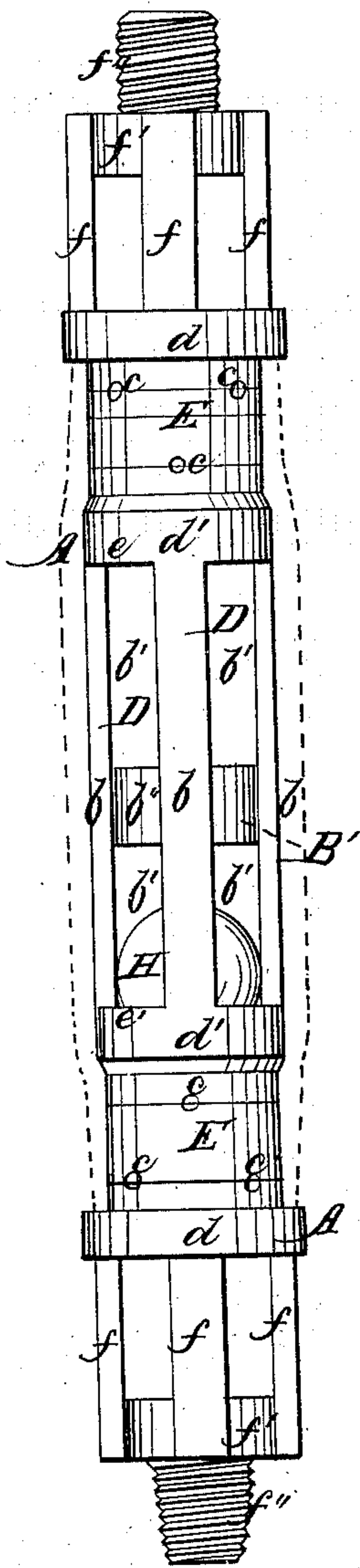
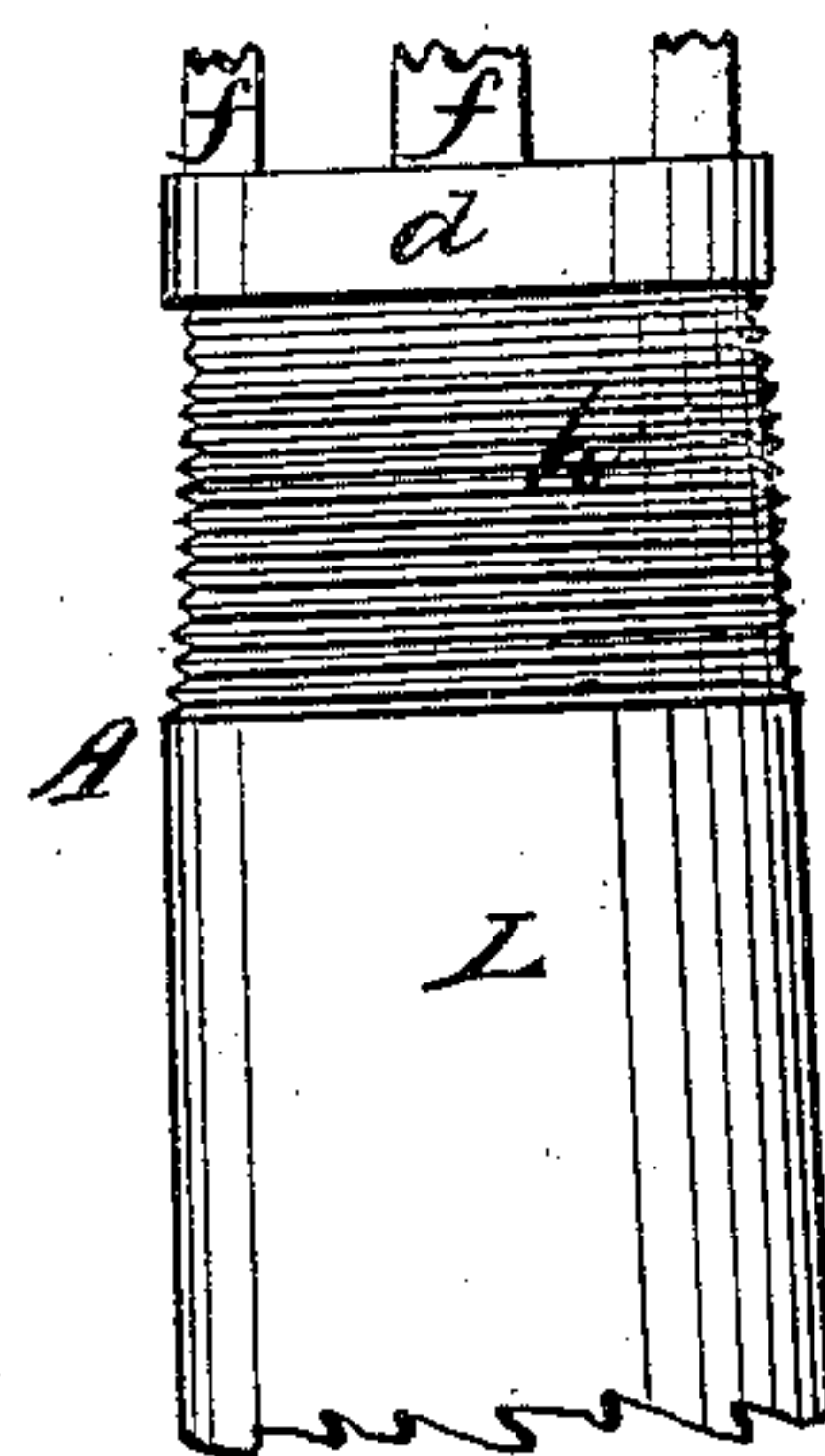


Fig. 4.



Witnesses.

W. H. Burridge
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Inventor.

R. N. Allen

UNITED STATES PATENT OFFICE.

R. N. ALLEN, OF CLEVELAND, OHIO.

IMPROVEMENT IN PISTONS FOR DEEP-WELL PUMPS.

Specification forming part of Letters Patent No. 57,840, dated September 11, 1866.

To all whom it may concern:

Be it known that I, R. N. ALLEN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Oil-Pump Plungers; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of the plunger. Fig. 2 is a vertical section. Figs. 3 and 4 are sectional views that will be referred to in the description.

Like letters of reference refer to like parts in the views.

My improvement relates to constructing a plunger with a covering of packing that is loose in the middle and fastened at the ends to said plunger, which is provided with a chamber or opening above the valve-check, so as to more readily admit the passage of oil, thereby making a durable and close-fitting plunger, that at the same time will work easily.

A, Figs. 1 and 2, represents the plunger of an oil-well pump, that consists of two sections, B and C, fitted and screwed into each other, as shown at *a* in Fig. 2, forming a close tight joint. The plunger is thus made in two sections for the purpose of putting in the valve; otherwise the plunger could be made in one entire piece.

From *e* to *e'* of the plunger extend bars *b*, between which are openings *b'*, as represented. There is a division, *b''*, across the center, forming a check for the valve. The space above this division or valve-check and the openings form a chamber, D, when surrounded with packing.

Above and below the bars and openings necks are formed on the plunger, as at E, on one side of which are collars *d*, and on the other side are shoulders *d'*. Above and below the collars are bars *f*, and from the solid ends *f'* project screws *f''*, on the upper one of which another plunger or the piston-rod may be attached, and the one below may be used for removing the lower valve from the pump.

The end of the section C that is screwed into the section B forms the valve-seat of the ball-valve H, as seen in Fig. 2.

On the plunger, between the collars *d*, is tubular leather packing L, that consists of a piece of leather put around and stitched together at the edges from end to end, or between the collars. Pins are then inserted through the leather and put into the necks of the plunger, through holes *c*, after which wire is wrapped closely and tightly around on the outside of the leather and pins, as represented at *h* in Figs. 2 and 4, whereby the packing is firmly held or fastened at the ends, and left free or loose in the middle, around the plunger.

In practical operation, as the plunger, thus constructed, descends into the well, the oil rising elevates the valve and passes up in the plunger, out at the opening *b'*, around the valve-check *b''*, into the chamber D above, and the weight of this oil, as the plunger ascends, on the packing will press it out against the pump-barrel, coming in smooth close contact with it, forming a tight joint that will work easily; for as the ends of the packing are confined and it is loose in the center, as before described, it will expand in the middle as the plunger rises, filling the pump-barrel, and contract as the plunger descends, producing but little friction on the packing, thereby rendering it more durable than it is in the ordinary way.

The plunger can be curved out at the center, as shown at B' in Fig. 3, making a larger opening for the passage of the oil around the valve-check, rendering the packing still more elastic, that expands, fitting close to the pump-barrel when discharging oil, as before described.

What I claim as my improvement, and desire to secure by Letters Patent, is—

The piston of an oil-pump, when constructed with two chambers separated by the valve-check *b''*, and a loose flexible packing, L, attached only at the upper and lower ends, with exterior spaces, B', for the passage of the oil around the valve-check, between the metallic cylinder and the packing, substantially in the manner and for the purpose set forth.

R. N. ALLEN.

Witnesses:

W. H. BURRIDGE,
A. W. McCLELLAND.