(No Model.) 2 Sheets—Sheet 1.

C. H. HUDSON & E. SMEDLEY.

STEAM PUMP.

No. 260,099. Patented June 27, 1882.

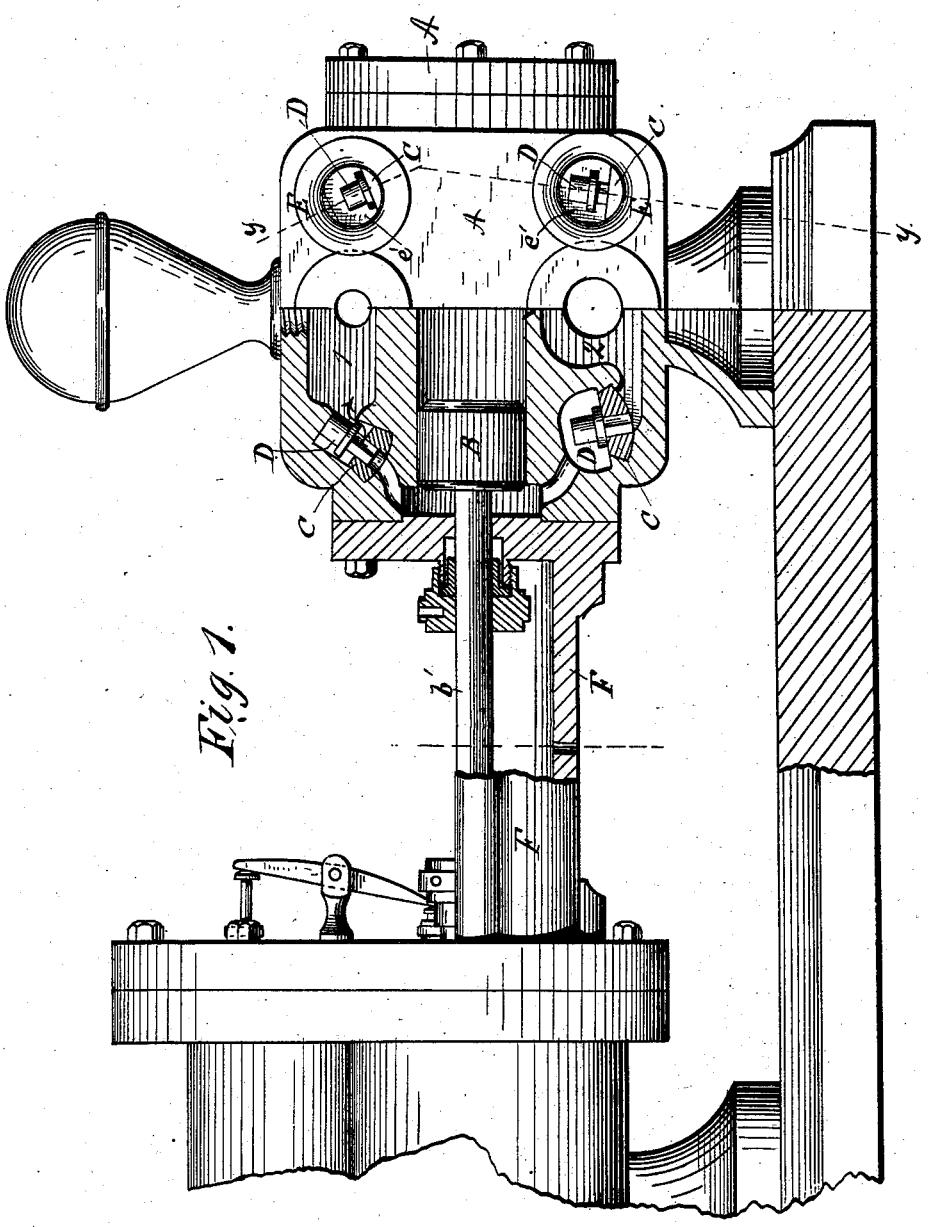

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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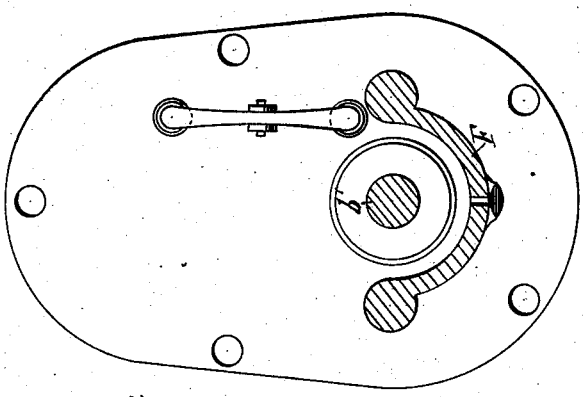

Fig. 4.

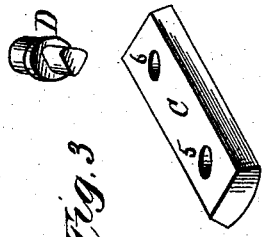

Fig. 3.

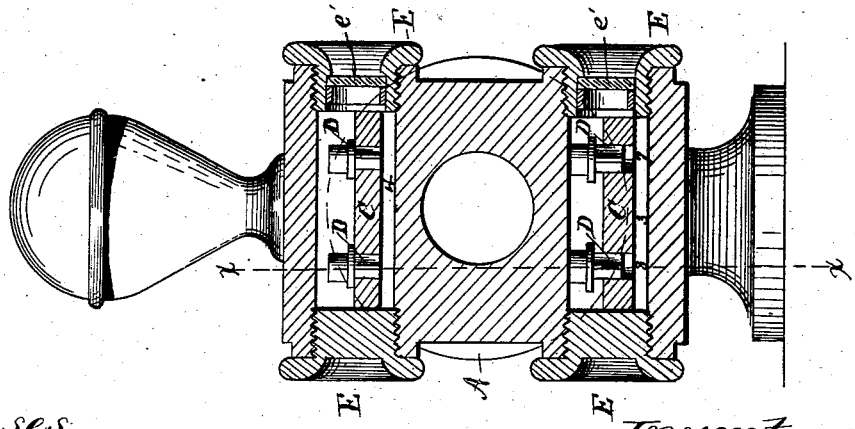

Fig. 2.

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UNITED STATES PATENT OFFICE.

CHARLES H. HUDSON, OF HINSDALE, ILLINOIS, AND EDWIN SMEDLEY, OF DUBUQUE, IOWA.

STEAM-PUMP.

SPECIFICATION forming part of Letters Patent No. 260,099, dated June 27, 1882.

Application filed February 10, 1882. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. HUDSON, of Hinsdale, Du Page county, in the State of Illinois, and EDWIN SMEDLEY, of Dubuque, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Steam-Pumps; and we 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 being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Our invention relates to a special construction of steam-pump, such construction having removable valve-seats and transparent caps or plugs, whereby the valve-seats and the valves may readily be removed or inserted, and whereby the action of the pump can also be seen without removing the top or cap of the pump, and to other particulars hereinafter more particularly set forth.

In the drawings, Figure 1 shows, partly in elevation and partly in vertical section through the line *x x* of Fig. 2, a pump made to embody our invention. Fig. 2 is a section of the pump in line *y y* of Fig. 1, and Figs. 3 and 4 are details.

A is a cylinder or casing of the pump, within which are the piston B, removable valve-seats C C, and valves D D. When the piston B (which is to be connected at the opposite end of the piston-rod *b'* to the steam-piston of a steam-engine) is worked backward and forward by the steam in the cylinder of such engine it forces the water in the pump through the respective passages 1 2 3 4, and the pressure raises the appropriate one of the valves D D D D, and thus the water escapes through the valve-openings 5, 6, 7, and 8, respectively, and then through the exit-passage.

The valve-seats C C, which are made of metal or other suitable material and are dovetailed, as shown in Fig. 3, enter corresponding grooves in the case A, so that the valve-seats may be slid in and out at pleasure, and thus do away with the necessity of removing the top of the pump or taking the casing apart when it is desired to clean the pump or repair the valves, &c. These valve-seats, also, are held in place by caps or plugs E, screwed or otherwise held on each side of the case A, which caps are preferably provided each with a glass pane, *e'*, as shown in Figs. 1 and 2, so that the action of the valves D D may be seen without removing these caps or plugs. The valve-seats have round or circular openings 5 6 7 8 to admit the valves, which latter we prefer to make of a somewhat triangular shape in cross-section, (see Fig. 3,) or having a flat side or sides, so that when raised ever so little the water will be permitted to pass between its sides and the periphery of the openings of the valve-seat. But we wish it to be understood that we do not limit ourselves to this particular form and shape, but we may use a valve of ball, wing, or other shape, and it may be of metal, rubber, or other suitable material.

A trough, F, may connect the pump to the engine which may be used to operate it, and it may extend under and parallel with the piston-rod *b'*, to catch any drippings and waste water or oil from this rod or adjacent parts. (See Figs. 1 and 4.)

We claim—

1. The removable valve-seat adapted to be slid to place in its bed and to be slid out from its bed through a side opening, substantially as shown and described.

2. In combination with the side openings for inserting and removing sliding valve-seats, the screw-caps for such openings having glasses or windows therein, all substantially as described, and for the purposes set forth.

3. In combination with dovetailed valve-seats adapted to be slid into and removed from beds having corresponding dovetailed grooves, removable caps serving to confine such seats to their position in the pump and to permit the removal therefrom of the seats and the valves, as shown and described.

4. In combination with the removable valve-seat and the valve carried thereon, a removable screw-cap, which, besides permitting the insertion and removal of the seat and its valve, serves also to hold the seat to place, as shown and described

CHARLES H. HUDSON.
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Witnesses:
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