

(No Model.)

C. M. HANSON.
PUMP PISTON.

No. 251,580.

Patented Dec. 27, 1881.

Fig 1

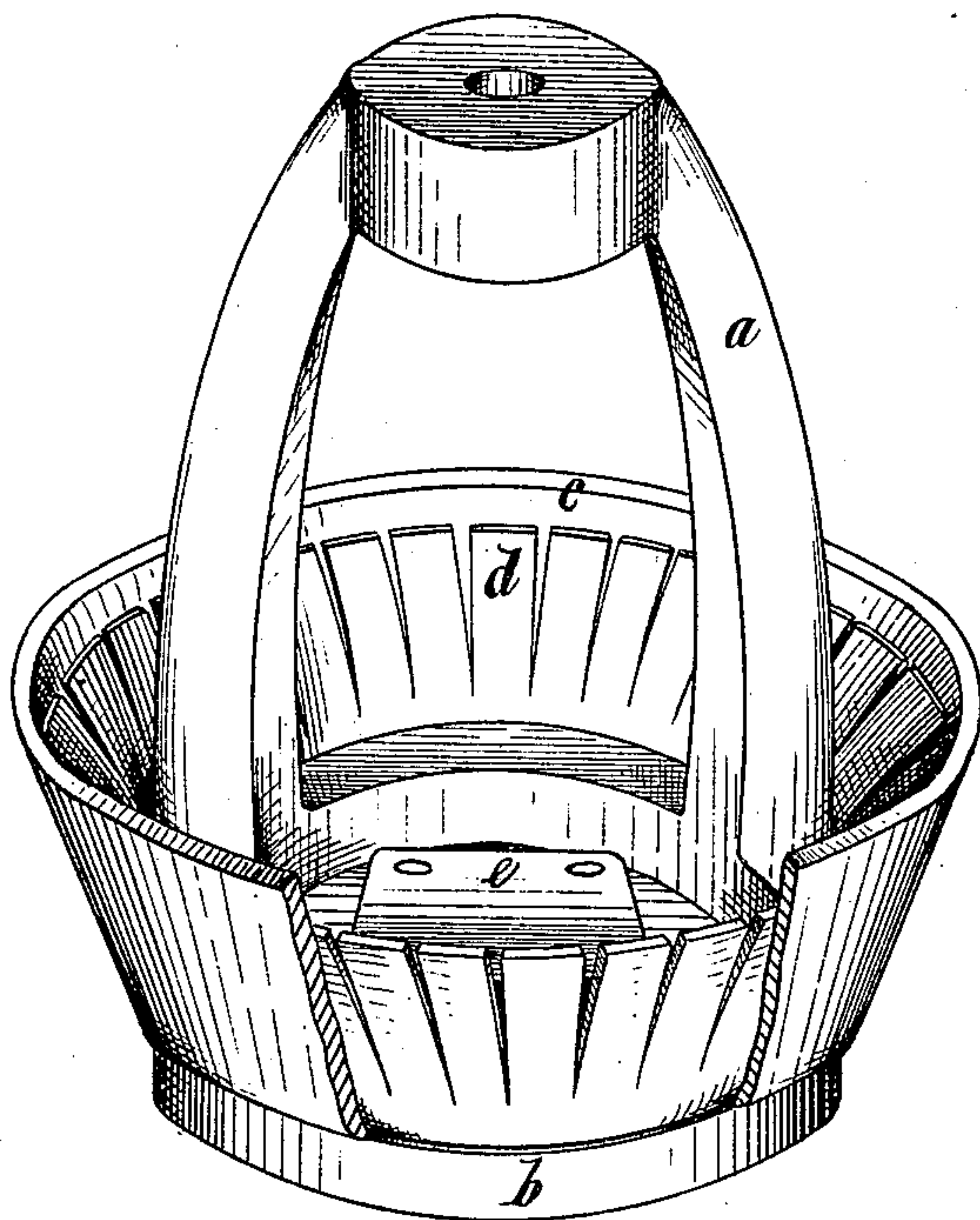


Fig 2

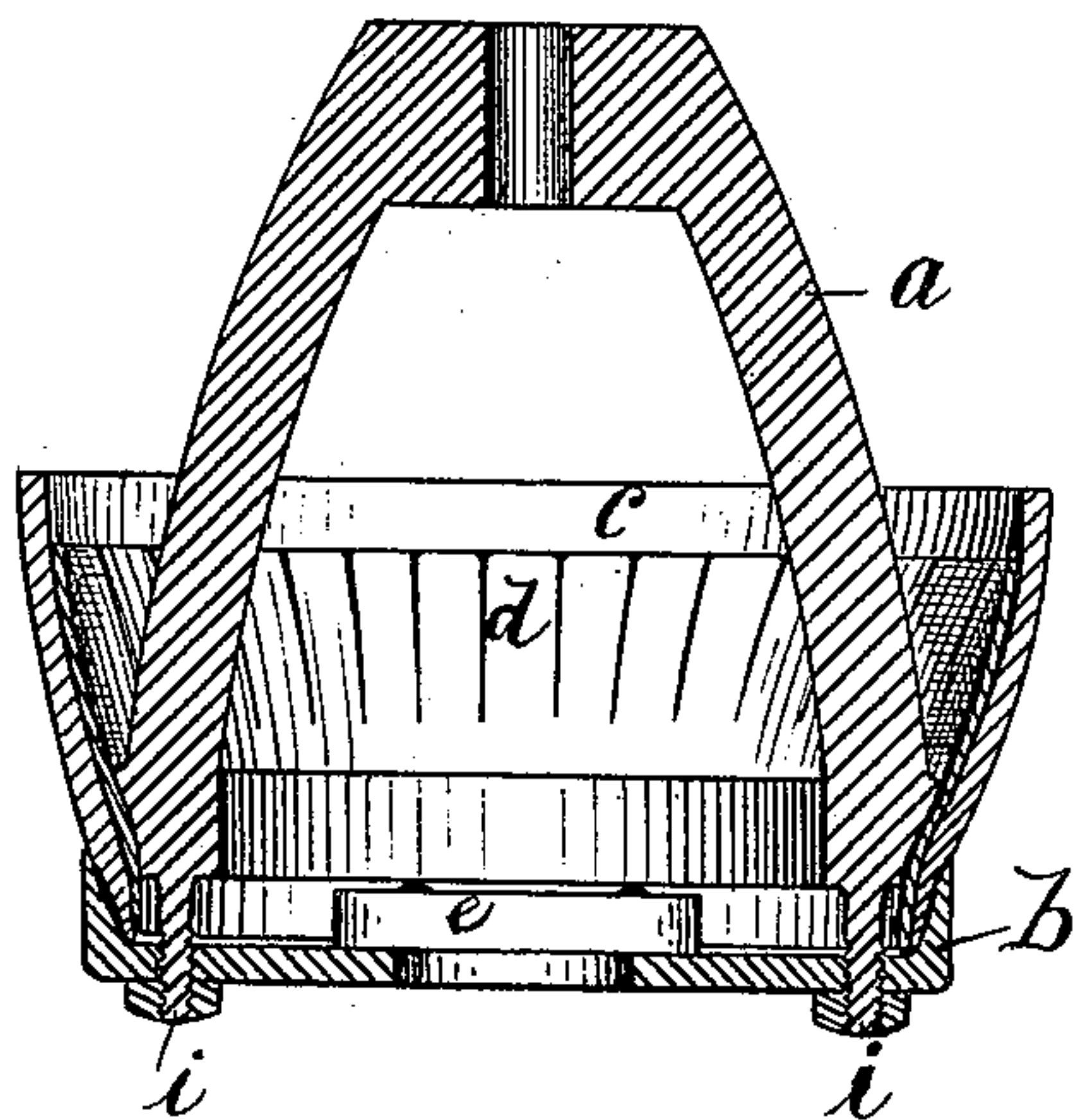
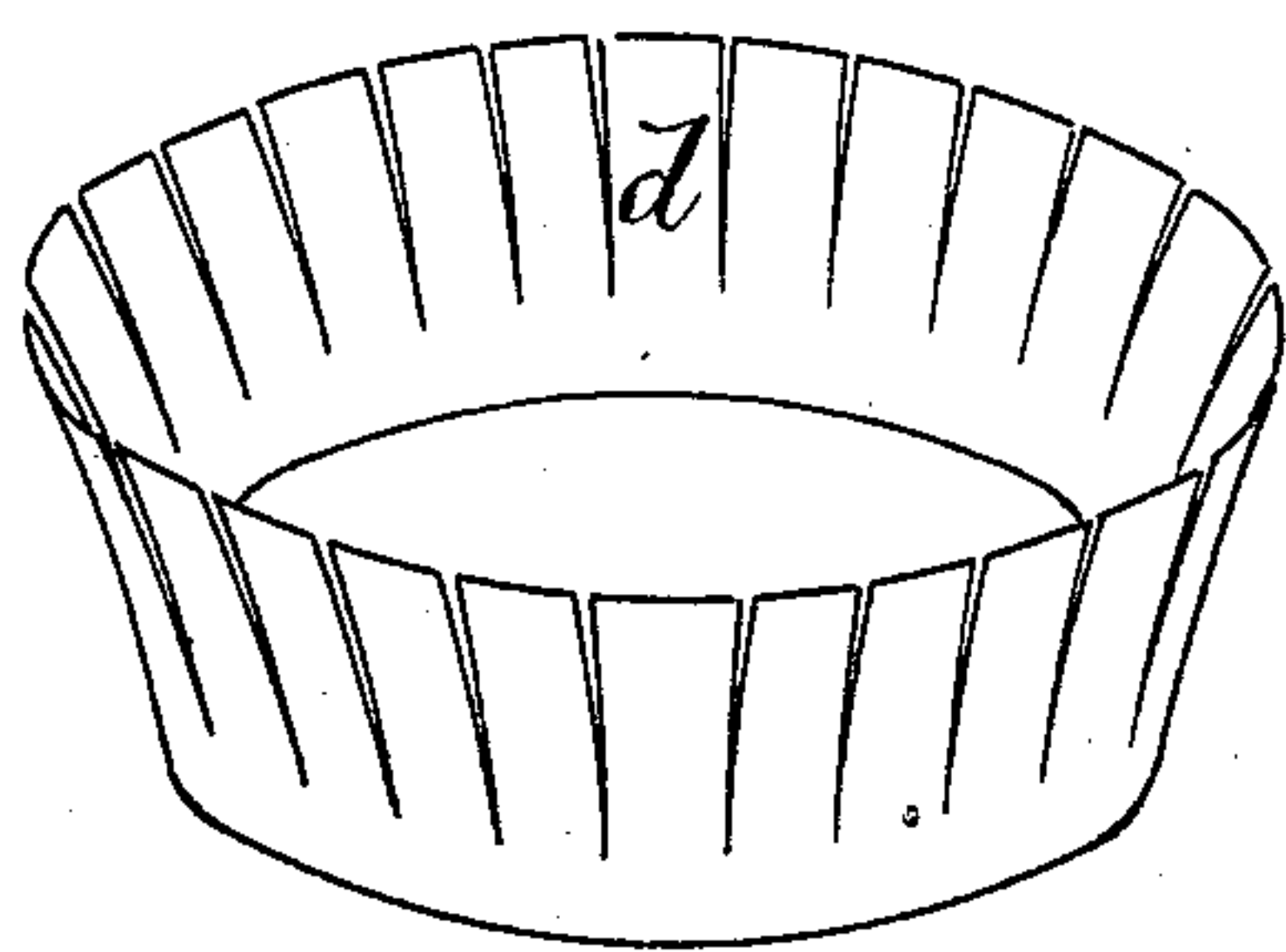


Fig 3



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UNITED STATES PATENT OFFICE.

CHARLES M. HANSON, OF PALMER, MASSACHUSETTS.

PUMP-PISTON.

SPECIFICATION forming part of Letters Patent No. 251,580, dated December 27, 1881.

Application filed May 16, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. HANSON, a citizen of the United States, residing at Palmer, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Pump-Pistons, of which the following is a specification.

This invention relates to improvements in the material or combination of materials used for packing pump-pistons to make them operate tightly in the barrels of pumps, and to improvements in the construction of pump-pistons to adapt them to firmly hold said packing, the object being to provide an elastic packing which will keep closely in contact with the inner surface of the pump-barrel after much of the thickness of the packing has worn away, thus rendering the operation of a pump more reliable, and obviating the frequent repairs of pump-pistons.

In the drawings forming part of this specification, Figure 1 is a view of a pump-piston constructed according to my invention, and having the packing broken away on one side to show a portion of the inner packing. Fig. 2 is a vertical section of said pump-piston. Fig. 3 is a view of my improved elastic metal packing-ring.

In the drawings, *a* is the piston-frame. *d* is the metallic elastic packing-ring. *c* is a ring or band of leather or other similar material. *e* is the clapper, and *b* is the clapper-plate.

The metallic packing-ring is made from a flat band of non-corrosive elastic metal, which is slitted from one edge inward at intervals to form a series of teeth therein, and subsequently said teeth have their ends curved outward, whereby they are separated all around said slitted edge of said band, so that said teeth will act as springs against any pressure to turn them inward. In some descriptions of pump-pistons said elastic ring would be made upon the turned-up border of a plate, which border would be slitted, as above described.

Projecting from the under side of the bottom ring to frame *a* are two screwed studs, *i*, on which are fitted nuts, as shown. The clapper-plate is perforated to fit on said studs *i*, and has an upwardly-projecting rim around its border.

The metallic band *d*, made as above de-

scribed, is placed inside of the leather band *c*, so that their bottom edges are about even, and in this position they are placed upon the bottom ring of frame *a*. The clapper-plate *b* is then placed up against the bottom of said frame, its upwardly-projecting border pressing against that portion of bands *c* and *d* which lies between the outer border of the frame-ring and said rim or border, and the nuts are firmly screwed onto the studs *i*, causing the said bands to be firmly clamped between said ring and border, so that the movement of the pump-box in the barrel of the pump cannot loosen them.

The pump-piston, constructed and packed as above described, possesses great durability, and when placed in the pump-barrel, which is of less diameter than the upper border of the combined rings *c* and *d*, ring *d* is compressed, and the spring of its slitted border outward against ring *c* forces the latter outward and causes the surface of the latter to be closely pressed against the sides of the pump-barrel and the piston to operate properly therein to draw water. When the outer surface of the band *c* becomes worn off by long use against the pump-barrel the elastic band *d* presses it still closely against the latter, the spring of its tooth-like border being sufficient to so press said outer band until it shall be quite worn away.

By the use of my improved metallic spring-band packing, as herein described, pumps can be started after the water has been let off from them without "priming" them, as it is called, or pouring water into them, so tight and equal is the fit of the packing in the pump.

The construction of the piston-frame *a* and the clapper-plate *b* provides most efficient and convenient means for properly securing said packing-rings to the piston.

What I claim as my invention is—

The within-described improved pump-piston, consisting of the frame *a*, the clapper-plate *b*, the metallic band *d*, having its border slitted vertically and curved outwardly, and the band *c*, all constructed and combined substantially as and for the purpose set forth.

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Witnesses:

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