

(No Model.)

D. C. HUNT.
OIL FILTER.

No. 575,508.

Patented Jan. 19, 1897.

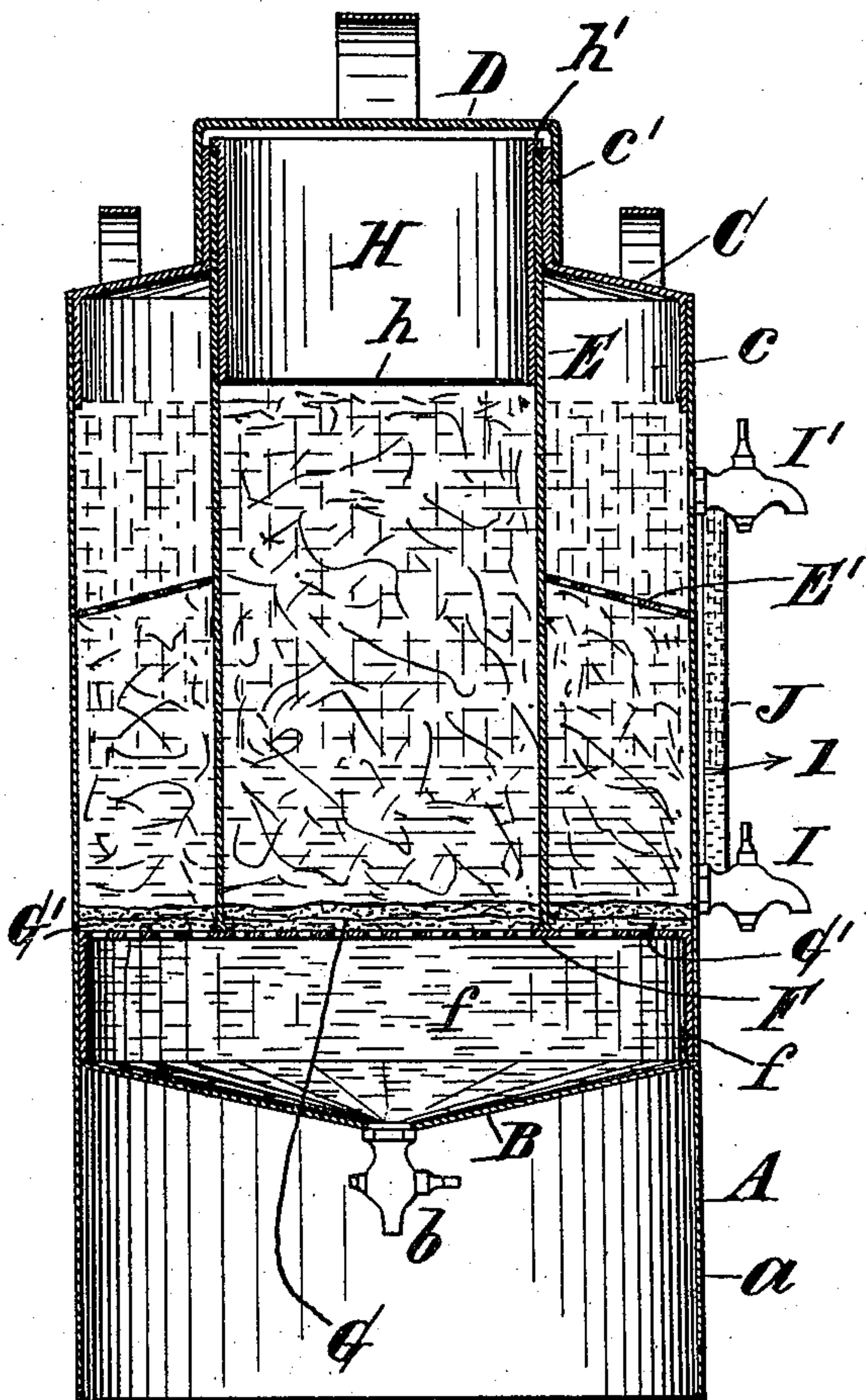


Fig. 1.

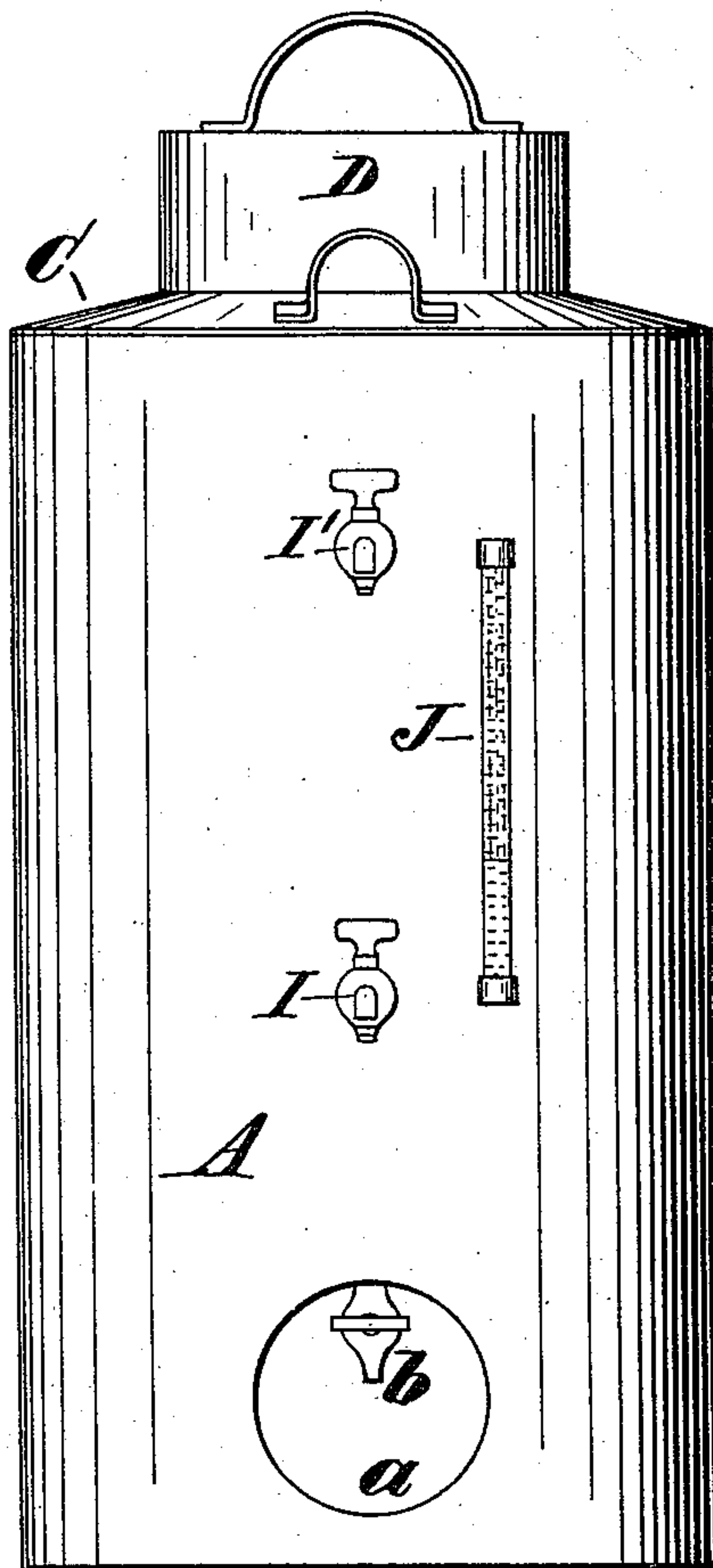


Fig. 2.

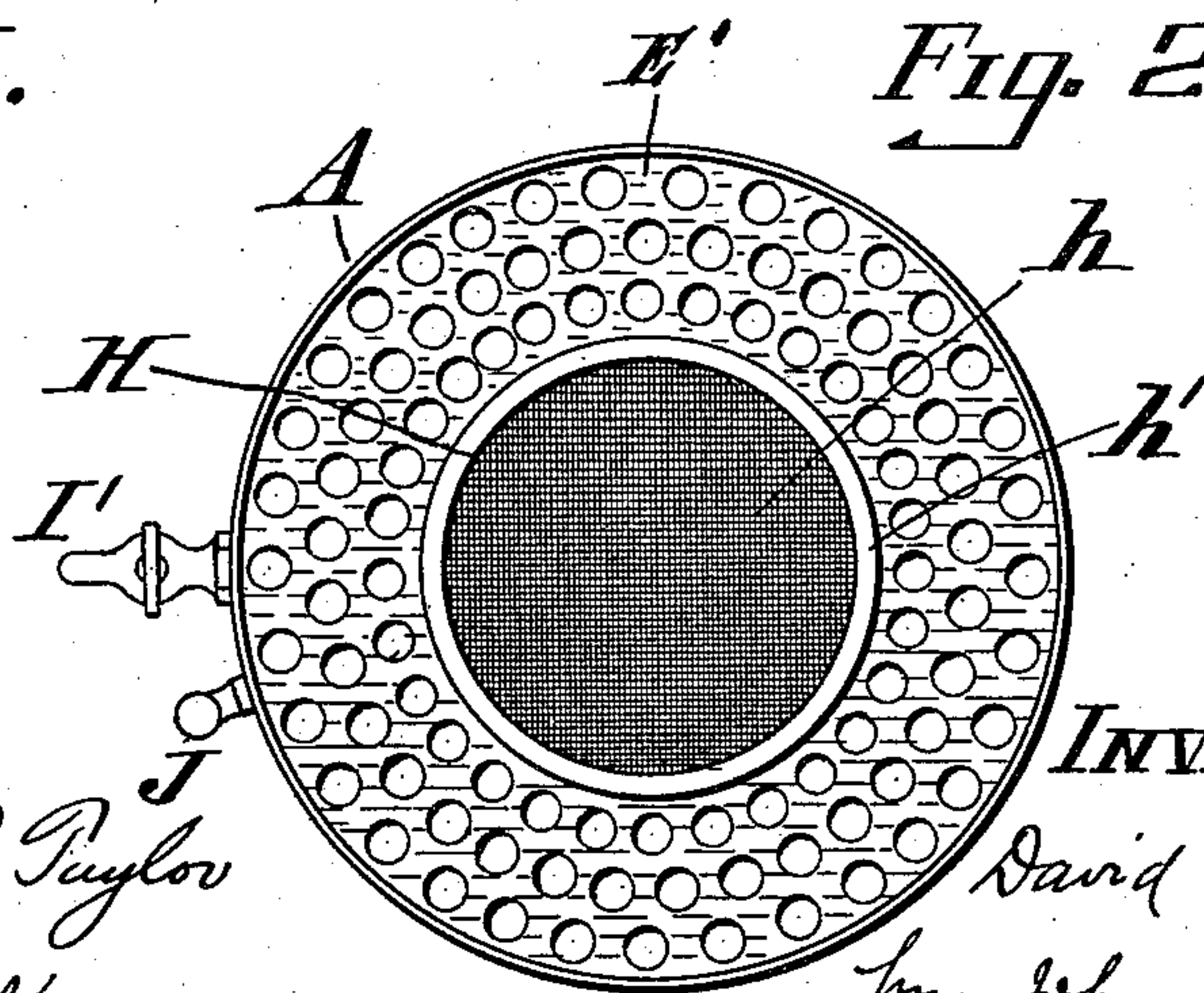


Fig. 3.

WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

DAVID C. HUNT, OF CINCINNATI, OHIO.

OIL-FILTER.

SPECIFICATION forming part of Letters Patent No. 575,508, dated January 19, 1897.

Application filed July 3, 1896. Serial No. 598,048. (No model.)

To all whom it may concern:

Be it known that I, DAVID C. HUNT, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Oil-Filters, of which the following is a specification.

My invention relates to an improvement in apparatus for filtering oil and the like, and especially the waste oil caught in the use of engines and other machinery; and it consists in the novel features of construction herein-after fully described, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a central sectional elevation of a filter embodying my invention; Fig. 2, a front elevation of the filter, and Fig. 3 a plan with the dome-cover and cap removed.

A represents the outer shell or casing; B, a conical or dished bottom, which is suitably elevated and supported within the shell, somewhat above its lower end, sufficient for the placing of a vessel for catching the partially-filtered oil or any sediment or water draining or passing through cock *b* when its plug is turned open therefor, and C an open-mouthed detachable dome-cover having a vertical bottom flange or rim *c*, fitting within the upper end of the shell A, and an upright top flange *c'*, which is engaged by a lid or cap D.

E represents an internal upright cylinder, open throughout and resting on a perforated disk F, the latter having a vertical bottom flange *f*, which fits tightly but removably within the shell A and rests on the periphery of the bottom B. The upper end of cylinder E terminates on a plane with the top of the upright flange *c'* of the dome-cover and fits snugly within said flange, all as best seen in Fig. 1.

G is a double layer of felt or flannel or other similar fine close filtering fabric lying flat on the perforated disk F in the bottom of the central chamber formed by the cylinder E, and G' is a ring of the same material lying flat on the disk F in the bottom of the annular chamber formed by and between the outer shell A and the internal cylinder E.

Cotton-waste or other similar loose filtering medium is placed in both the cylinder E and its surrounding annulus, an inverted-

dish-shaped ring E', suitably perforated, being placed upon the waste filling to hold it down in the filtering process, as the floating and rising action of the oil has a tendency to make the said filling rise, which would deter the filtering operation to a material extent and somewhat affect the final results.

H is a short cylinder or cup having a perforated or fine-mesh bottom *h*, and supported by a shallow lip or flange *h'* within the top of cylinder E, which it closely but detachably fits.

I and I' represent two cocks placed on the side of the main shell A, the one, I, being the lowermost and tapping said shell on a line just above that of the fabric G and the other one, I', being the uppermost and tapping said shell above the perforated holder-ring E'.

J is a glass gage, of the ordinary water-gage type, on the outside of the shell A and duly communicating with the interior for indicating the respective levels or heights of the fluids therein.

a is a hand-hole in the shell A for access to the bottom drain-cock *b* and inserting and withdrawing the vessel used under said cock.

In the operation of my filter the lid D is first removed and a suitable quantity of water or other similar washing fluid is poured into the upper strainer-cylinder H till the bottom is filled up to about a level as seen at 1 in the gage, Figs. 1 and 2. Then the unclean oil which is to be cleansed or filtered is introduced in said strainer-cylinder H, which retains the coarser impurities or foul matter. The lid is then replaced. The oil then slowly passes or oozes downward through the cotton-waste filling in the internal cylinder E and the fabric bottom G; thence through the central portion of the perforated disk F and the water into the peripheral portion or skirt of the said disk; thence (being lighter than the water and now almost fully cleansed) it rises upward through said skirt of the disk F; thence through the fabric rings G' into the cotton-waste in the annulus surrounding said internal cylinder E, and finally through the perforated ring E', floating upward into the upper part of said annulus, where it remains, in a thoroughly-filtered state, ready to be drawn off, when desired, through the upper cock I'. This operation is at once simple and

perfect, and the waste oil, which enters at the top in a very dense, dirty, and opaque condition, is drawn from said upper cock in a clear and clean condition, ready for use anywhere. The gage readily indicates the condition of the filtered oil, the quantity or amount in the annulus, and also the amount or height of water in said annulus. The lower drain-cock *b* permits ready cleaning of the filter at any time.

I claim—

In a filter for cleansing oil and the like, the combination of an outer shell or casing having a raised bottom which is supplied with a drain-cock, and partially filled with water or other similar cleansing and buoyant medium; a horizontal, perforated partition or disk supported within said shell, above its bottom with the water-chamber intervening; a central in-

ternal cylinder mounted on said perforated disk, within said shell; a fabric bottom and a cotton-waste filling within said internal cylinder; a fabric bottom and cotton-waste filling within the annulus surrounding said internal cylinder; a perforated ring on the cotton-waste filling in said annulus; a strainer, placed initially in the top of said internal cylinder; a dome-cover and cap; and suitable discharge-cock and gage devices; the whole constructed, arranged, and adapted to operate, substantially as herein set forth.

In testimony of which invention I have hereunto set my hand.

DAVID C. HUNT.

Witnesses:

JOHN E. JONES,
SHERWOOD R. TAYLOR.