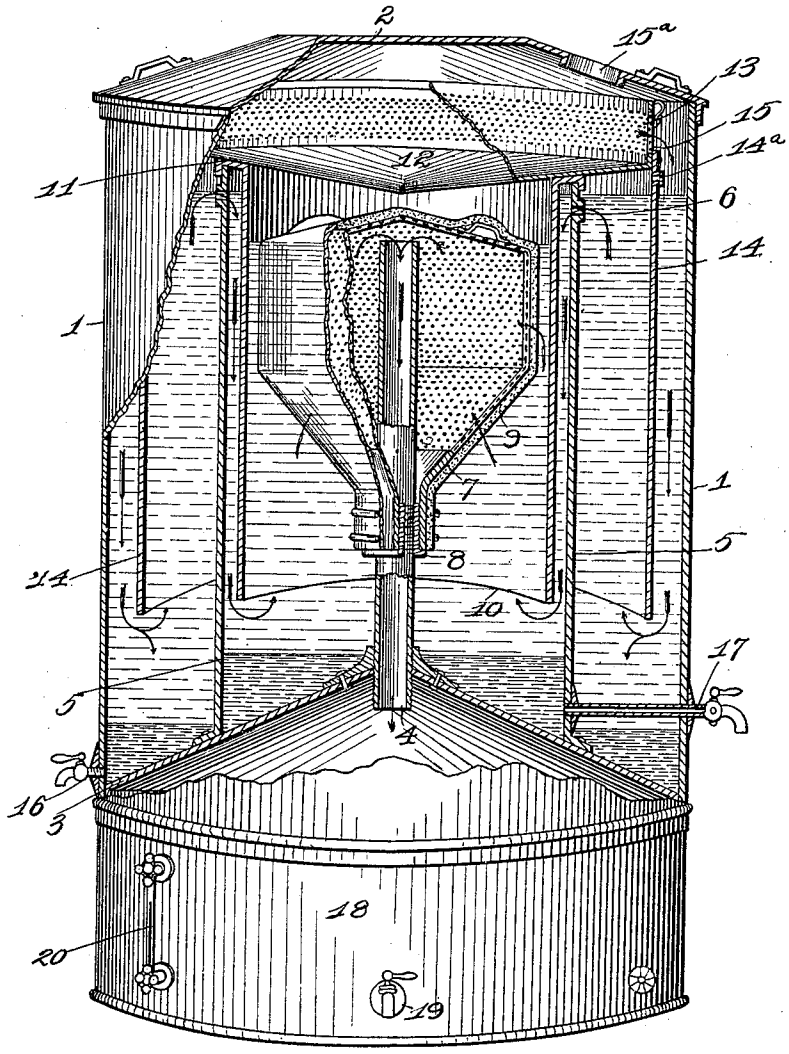
No. 681,477. Patented Aug. 27, 1901.

A. H. FRANKE.

OIL FILTER.

(Application filed May 27, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

AUGUST H. FRANKE, OF ST. LOUIS, MISSOURI.

OIL-FILTER.

SPECIFICATION forming part of Letters Patent No. 681,477, dated August 27, 1901.

Application filed May 27, 1901. Serial No. 61,983. (No model.)

To all whom it may concern:

Be it known that I, AUGUST H. FRANKE, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Oil-Filters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming a part hereof.

This invention relates to oil-filters; and it consists of the novel construction, combination, and arrangement of parts hereinafter shown, described, and claimed.

The object of this invention is to provide an improved oil-filter consisting of an outer settling-chamber and an inner settling-chamber, with a number of deflecting-shields supported within the said chambers around which the oil must pass to reach the filtering material, which is supported within the inner settling-chamber, and having suitable means for withdrawing the precipitated impurities from each of said settling-chambers.

The drawing shows the different parts of my invention.

In carrying out this invention I provide, first, a tank having an outer wall 1, provided with a conical bottom 3 and a removable top 2, the said conical bottom 3 having an opening at its center to receive the stand-pipe 4, which supports the filtering-head or filtering material. The wall 5 is mounted upon the bottom 3, and the space between the said wall 5 and the outer wall forms the outer settling-chamber, and the space within the said wall 5 constitutes the inner settling-chamber. The said wall 5 is provided near its upper end with a series of openings 6, through which the oil must pass to enter the settling-chamber within the said wall 5. The said wall 5 is provided with an opening at its base, through which the precipitated impurities within the wall 5 are withdrawn by means of the passage 17 continuing through the opening in the outer wall 1. The outer wall 1 is also provided at its base with a separate opening and passage 16 for withdrawing the precipitated impurities from the chamber between the outer wall 1 and the inner wall 5.

Within the wall 5 and supported by the stand-pipe 4 is the filtering-head 7, consisting of a metallic receptacle of suitable shape having a number of openings through which the oil may pass to enter the stand-pipe 4. This perforated head is removable and is threaded upon a sleeve 8, which in turn is secured upon the stand-pipe 4. The said filtering-head is completely covered by one or more layers 9 of filtering-cloth or other suitable material, through which the oil must first pass before entering into the filtering-head, or I may also otherwise interpose filtering-cloth or material between the said wall 5 and the upper opening of the stand-pipe 4.

10 indicates the inner deflecting-shield, which is supported within the inner wall 5 by means of the integral flange 11, extending outwardly from the upper end thereof, or the inner deflecting-shield 10 may be attached to and supported by the bottom 12. The oil after passing through the openings 6 must first pass below the lower end of the deflecting-shield 10 before it can reach the filtering material, and thereby gain access to the stand-pipe 4. Carried upon the upper end of the inner wall 5 is a removable strainer, which comprises the imperforate bottom 12, the same being in the shape of an inverted cone and having attached thereto a perforated wall 13. The outer deflecting-wall 14 is attached to the wall 15 and extends downwardly within the outer wall 1 below the openings 6.

14ª shows an air-vent in and near the top of the outer deflecting-wall 14, said air-vent being above the level of the opening 6 within the wall 5.

15ª indicates an opening formed in the top 2, through which the oil may be delivered onto the imperforate bottom 12. I provide an outlet 16 through the outer wall 1, directly above the bottom 3, for withdrawing the precipitated impurities from the outer settling-chamber. A similar outlet 17 leads from the inner settling-chamber for withdrawing the impurities which may be contained therein.

Below the bottom 3 is placed the separate oil-tank 18, which the purified oil eventually reaches after passing through the perforated filtering-head and through the stand-pipe 4. The oil may be withdrawn therefrom through the outlet 19. A glass gage 20 serves to show the amount of oil contained within the oil-tank. Said oil-tank 18 may also be placed alongside the oil-filter proper and said oil-filter proper may be supported by stands, and

the purified oil is then led from the lower projecting end of the stand-pipe 4 by pipes into the said oil-tank 18.

In operation the oil to be purified is passed through the opening 15ª onto the imperforate bottom 12, which retains the coarser impurities. The oil then passes through the perforated wall 13 and thence down toward the bottom of the outer settling-chamber, where a portion of the remaining impurities settle upon the bottom 3, whence they are withdrawn through the faucet 16. The oil then passes through the opening 6 and is deflected downwardly by the inner deflecting-shield 10, and the remaining impurities settle upon the bottom 3 within the inner wall 5, whence they are withdrawn through the passage and faucet 17. The oil then passes through the filtering material and enters the upper end of the stand-pipe 4, from which it passes into the oil-tank 18, whence it may be withdrawn through the outlet 19.

If preferred, the right-hand half of the wall 13 may be made imperforate, thereby causing the oil to pass out on the left-hand side and precipitate the impurities near the outlet 16. Also the oil may be made to pass through the opening 6 above the outlet 17, so that the dirt and impurities will be precipitated within the wall 5 near the said outlet, thus providing two precipitates, each near its own outlet.

The oil in the filter may be heated by the use of steam, electricity, or in any other desired manner.

I claim—

1. In an oil-filter, an outer inclosing wall, an inner wall, a filtering-head supported within the inner wall, and a number of deflecting-shields, around which the oil must pass before it reaches the filtering-head, substantially as specified.

2. The improved oil-filter, consisting of an outer wall, a filtering-head, and a number of deflecting-shields within the outer wall and extending below the filtering-head, around which the oil must pass before it reaches the filtering-head, substantially as specified.

3. The improved oil-filter, consisting of an outer wall, an inner wall, a deflecting-shield between the said outer and inner walls, a deflecting-shield within the inner wall, and suitable filtering material supported inside the inner wall above the lower end of the deflecting-shield, the oil being required to pass around the lower ends of the said deflecting-shields before it reaches the filtering material, substantially as specified.

4. In an oil-filter, a bottom attached to an outer wall, an inner wall supported by said bottom, a stand-pipe within said inner wall and supported by said bottom, filtering material interposed between said inner wall and said stand-pipe, and means for withdrawing the precipitated impurities from within the said inner wall, substantially as specified.

5. The improved oil-filter, consisting of an outer and first precipitating-chamber and an inner and second precipitating-chamber, a stand-pipe supporting filtering material within said inner and second precipitating-chamber, a deflecting-shield within said outer and first precipitating-chamber, a deflecting-shield within said inner and second precipitating-chamber, means for withdrawing the precipitated impurities from the inner and second precipitating-chamber, and means for withdrawing the precipitated impurities from the outer and first precipitating-chamber, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

AUGUST H. FRANKE.

Witnesses:
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