

(No Model.)

J. W. PARKER.
STEAM SEPARATOR.

No. 557,221.

Patented Mar. 31, 1896.

Fig. 2.

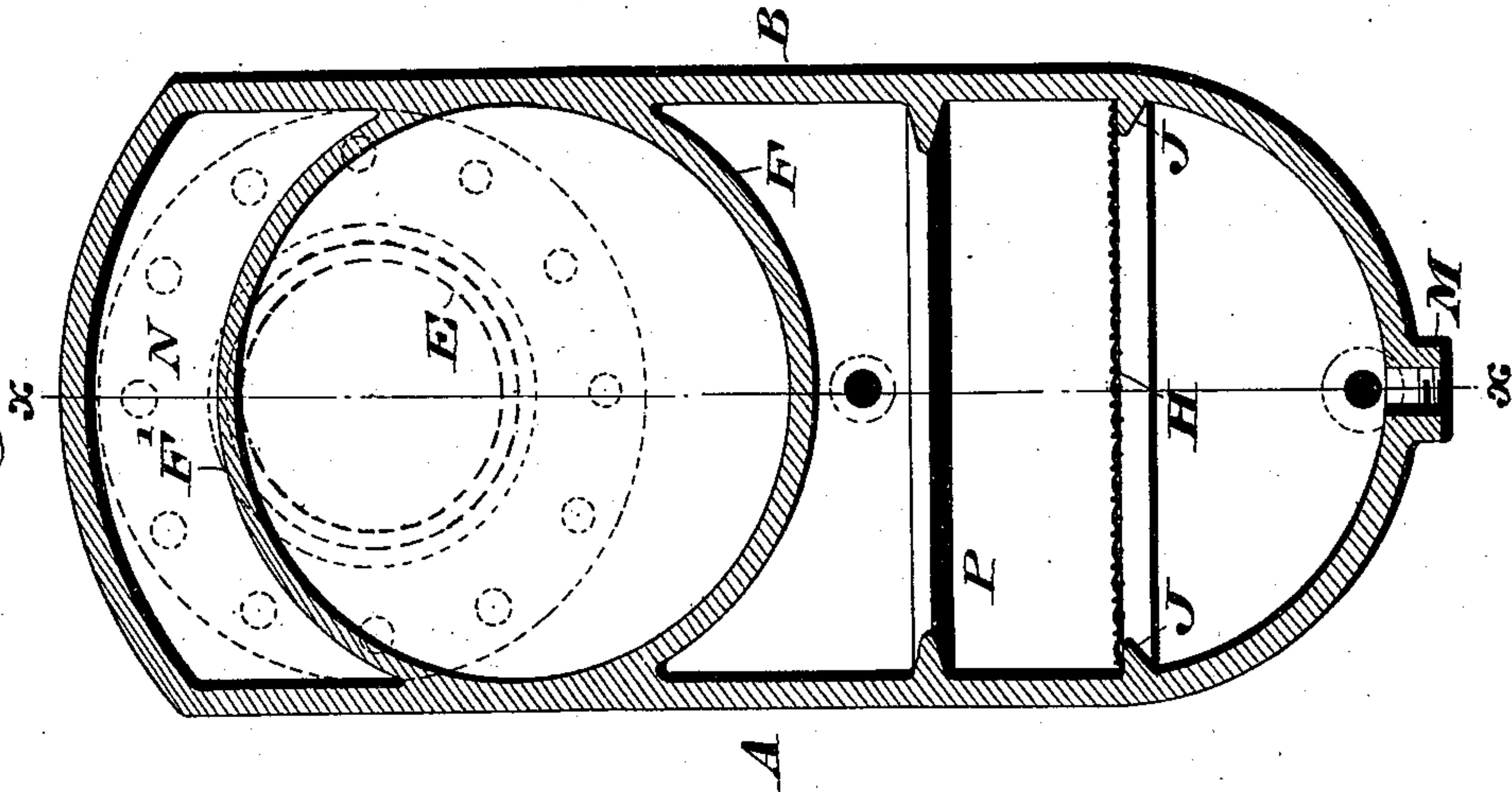
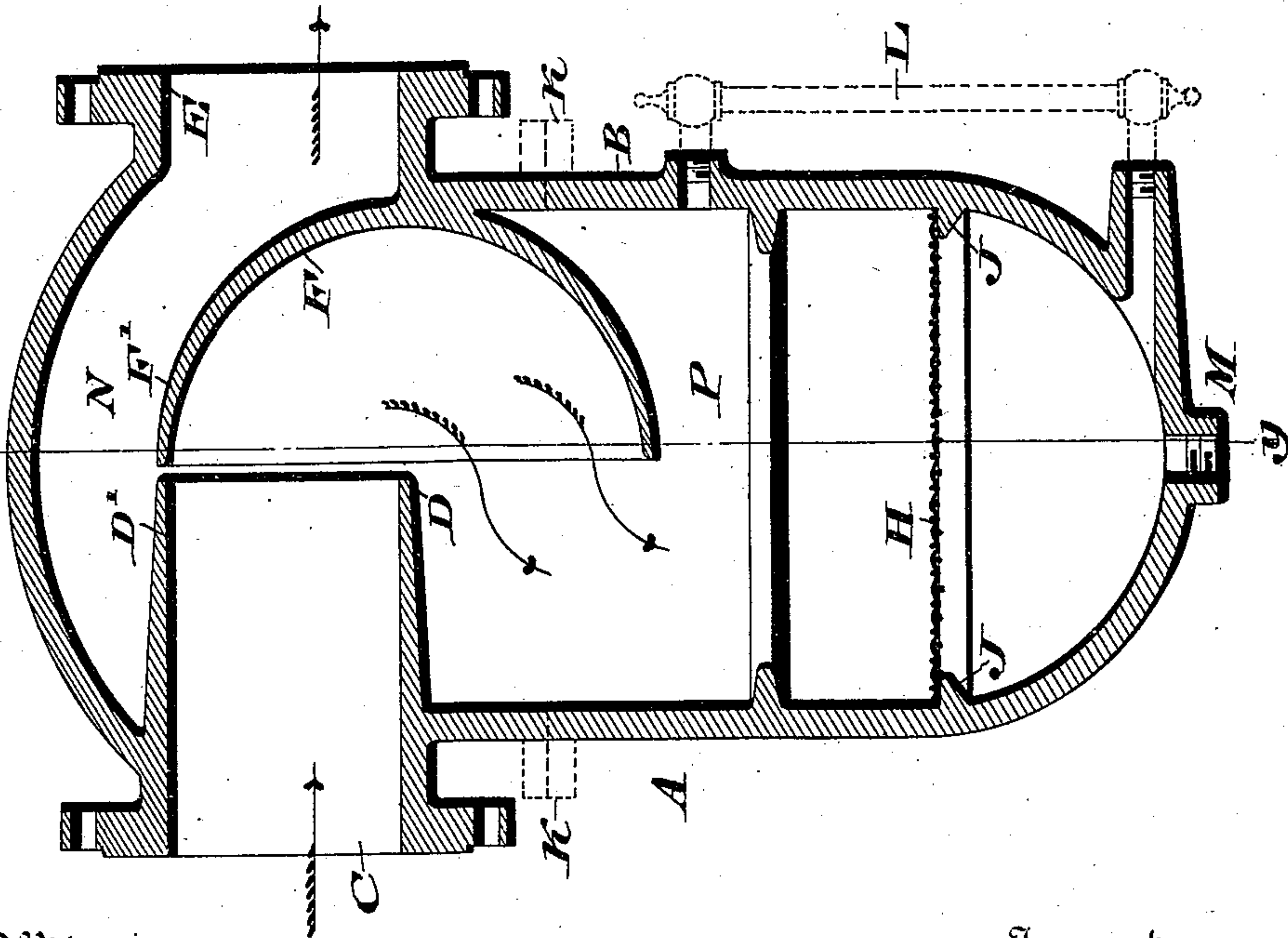


Fig. 1.



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Application filed September 7, 1895. Serial No. 561,788. (No model.)

To all whom it may concern:

Be it known that I, JUSTUS W. PARKER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Steam-Separators, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a novel construction of steam-separator in which the number of parts is reduced to a minimum and a casing of simple construction is employed, means being provided for effectively separating the entrained water, oil, &c., from the incoming steam by means of centrifugal action, the water being collected in the lower portion of the separator, while the purified steam passes from the upper portion thereof to any desired point, provision being also made for preventing undue agitation of said water.

It further consists of novel details of construction, all as will be hereinafter set forth.

Figure 1 represents a vertical sectional view of a steam-separator embodying my invention, the section being taken on line *xx*, Fig. 2. Fig. 2 represents another vertical sectional view, the section being taken on line *yy*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

Referring to the drawings, A designates a steam-separator, the same consisting of the casing B, having in the upper portion thereof the steam-inlet C, which has projecting inwardly therefrom the cylindrical or other shaped shell D, which extends in the present instance to substantially the center of the separator, the steam being discharged from the latter through the outlet E.

F designates a hemispherical or other shaped cup, which is located adjacent to said inlet C in such a way that the upper edge F' of the latter will be in substantial alinement with the upper portion D' of the shell D, while the lower portion of said cup projects inwardly to or beyond the axial line of the separator, it being especially noted that the axes of said inlet C and said cup F are eccentric with respect to each other, whereby the incoming steam will be given a centrifugal motion, the entrained water being thereby separated therefrom.

H designates a perforated plate or wire screen, the same being supported, if desired, upon the lugs J, although it is apparent that other suitable supporting means may be employed, if desired.

N designates a passage between the shell D, the cup F, and the top of the casing B, said passage N being freely in communication with the chamber P in the lower portion of the separator, as will be apparent.

L designates a suitable water-gage which is attached to the side of the casing B, whereby the height of the water in the separator can be at all times readily ascertained.

M designates an opening in the lower portion of the separator-casing, through which the water, oil, &c., collected therein can be readily withdrawn when desired.

In manufacturing large separators I may make the lower portion, which incloses the chamber P, separable from the upper portion, the parts being held together by means of the flanges K, as seen dotted, the lower portion, if desired, being made of wrought-iron pipe, although it is evident that the same may be a casting if desired.

The operation is as follows: The incoming steam as it passes through the inlet C impinges with great force upon the upper portion of the cup F, the steam being thence deflected downward in the direction of the arrows, whereupon a rapid centrifugal action is imparted thereto, the entrained water, oil, and heavier particles falling to the lower portion of the separator by reason of gravity, while the purified steam rises from the chamber P and passes around through the chamber N to the outlet E, and is thence conducted to the engine or to any other desired point. The perforated screen or plate H in the lower portion of the casing will prevent any violent agitation of the water, oil, &c., therein, as is evident, and will thus prevent the same from being caught up and carried away with the steam through the outlet E, as is evident.

It will of course be understood that the inlets and outlets are to be provided with suitable flanges and that the parts may be assembled or cast in various ways, so to come within the spirit of my invention, and I therefore reserve the right to make such changes as come within the scope of the same.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a steam-separator, a casing, an inlet
5 and outlet therefor, and a substantially hemispherically-shaped cup arranged within said separator intermediate said inlet and outlet, against which steam is adapted to impinge, the upper edge of said cup being in substan-
10 tial alinement with the top of said inlet-pipe, whereby substantially all of the incoming steam is received within said cup, as stated.

2. In a steam-separator, a casing, an inlet
15 and outlet pipe therefor, a substantially hemispherically-shaped cup located intermediate said inlet and outlet pipe, the axes of said inlet-pipe and said cup being arranged eccentrically to each other, whereby substantially every portion of the incoming steam is re-
20 ceived in said cup prior to its exit from the casing, substantially as described.

3. In a steam-separator, an inlet and out-
let, a hemispherical cup located intermediate
the above, the axes of said inlet and said cup
being eccentrically arranged relative to each
25 other, in combination with a perforated plate located in the lower portion of said casing, substantially as described.

4. In a steam-separator, a casing, an inlet
and outlet pipe therefor, a hemispherical cup
30 located intermediate said inlet and outlet pipe, the axes of said inlet-pipe and of said cup being eccentrically arranged relative to each other, the top of said cup being in substantial
alinement with the top of said inlet-pipe, a per-
35 forated plate located in the lower portion of said casing, and means for draining the latter, substantially as described.

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Witnesses:

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