

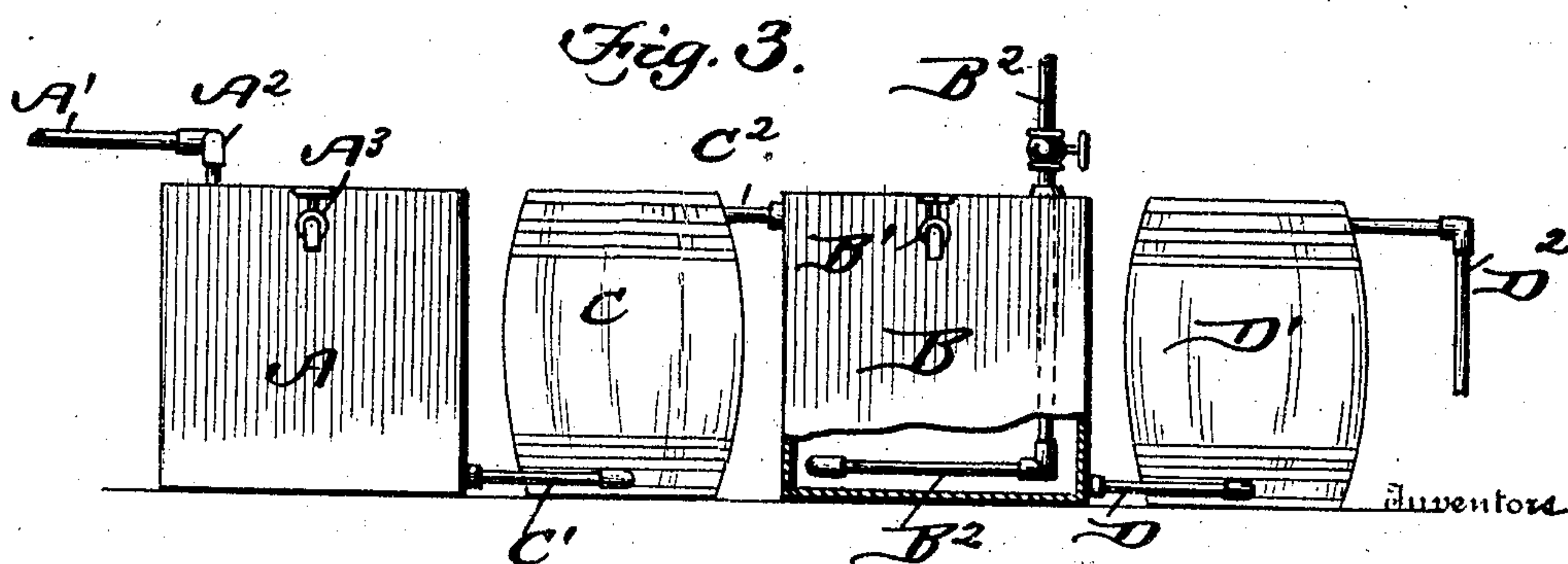
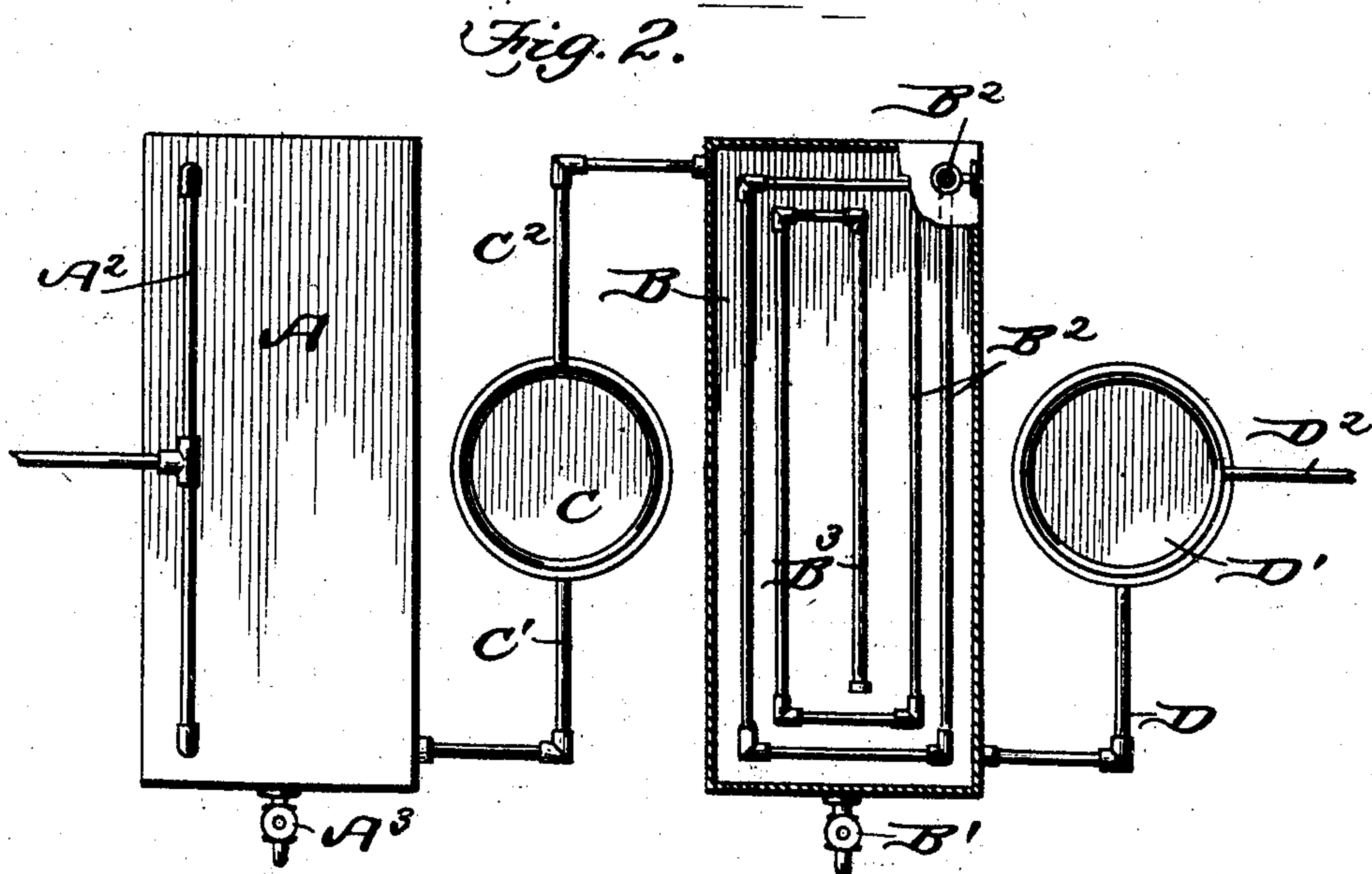
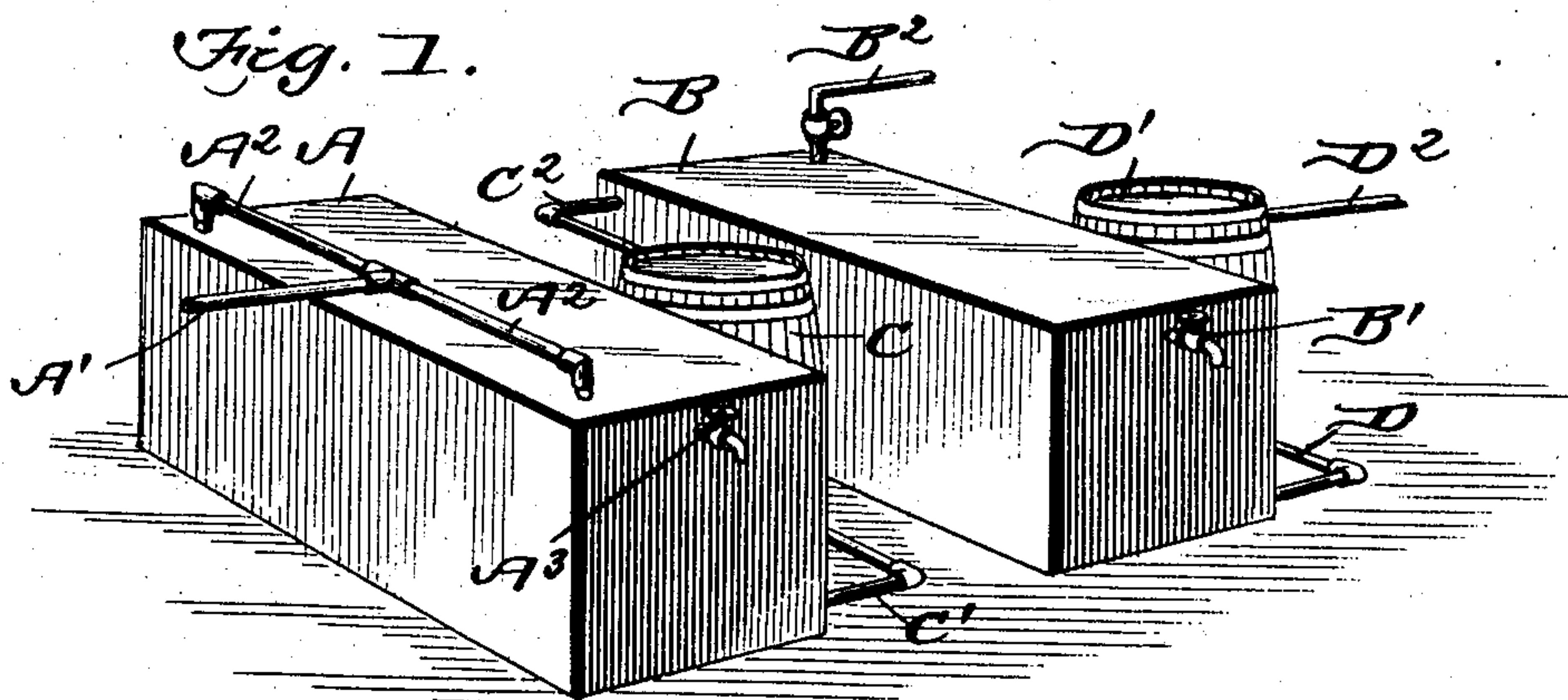
No. 780,855.

PATENTED JAN. 24, 1905.

J. W. BIDDLE & F. B. KEISER.

OIL SEPARATOR.

APPLICATION FILED AUG. 15, 1903.



Witnesses

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UNITED STATES PATENT OFFICE.

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THOMAS, ALABAMA.

OIL-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 780,855, dated January 24, 1905.

Application filed August 15, 1903. Serial No. 169,644.

To all whom it may concern:

Be it known that we, JOSEPH WILLIAM BIDDLE and FRANKLIN BERNHARD KEISER, citizens of the United States, residing at Thomas, in the county of Jefferson and State of Alabama, have invented a new and useful Oil-Separator, of which the following is a specification.

Our invention is an improvement in oil-separators and has for its object the saving of waste oils, and our apparatus can be used in the salvage of cylinder or lubricating oils of any kind. Where oil is fed into an engine-cylinder by steam or other means, it is usually carried out by the exhaust and lost.

Our invention therefore consists of the means for separating the oil from the exhaust-steam, hereinafter described, particularly pointed out in the claim, and shown in the accompanying drawings, in which—

Figure 1 is a perspective view of our apparatus. Fig. 2 is a plan view of our apparatus, the greater portion of the top of one of the tanks being removed. Fig. 3 is an end elevation, the end of one of the tanks being broken away adjacent the bottom.

In the drawings above referred to, A and B are tanks spaced apart and shown as rectangular in shape and as covered. Leading to tank A is a pipe A', exhausting from the cylinders and discharging said exhaust-steam, water, and oil into the tank A through the lateral branches A². A discharge-faucet A³ is arranged at an end of the tank, and any oil that may rise to the surface in this tank can be drawn off through this faucet.

A barrel C is arranged between the tanks A and B, and a pipe C' leads from the lower portion of the tank A and from adjacent one end of the same to the lower portion of the barrel C.

Leading from the top of the barrel C from the side opposite the pipe C' is a pipe C², which opens into the upper part of the tank B adjacent the rear end. A faucet B' is arranged in the front end of the tank adjacent the top. A valve-controlled cold-water pipe B² leads from any suitable and convenient source

of supply to the tank B and is arranged in a plurality of coils on the bottom of the tank. The inner coil of this pipe extends down the longitudinal center of the tank and is perforated on its upper side, as shown at B³, throwing jets of cold water upward in the tank. From one side of the front end extends a pipe D, leading to a barrel D' and opening into the barrel adjacent its bottom. An overflow drain-pipe D² leads from the top of the barrel D' and discharges the water, which has by this time been separated from the oil.

The tank A is supplied by the exhaust and contains hot water and waste oils. The barrel C being fed from the tank A likewise contains hot water mixed with oil. The tank B is fed by the cold-water pipe as well as by the pipe C², and in this tank the action of the spray from the perforations chills the hot water and serves to separate or wash it free of the oil, which collects at the top of the tank and is drawn off through the faucet B'. The chilled water sinks to the bottom and passes to the bottom of the barrel D' and is discharged through the drain-pipe D². A partial separation takes place in the barrel C, the oil rising more rapidly to the surface in the barrel than the water and being then drawn from the top to the tank B. By observing the surface of the water in the barrel D' it can be at all times ascertained whether a complete separation is being had in the tank B and the flow of water regulated accordingly.

If the pipe D led directly to the drain it would be impossible to determine whether clear water or oil and water were being drawn off, and the regulation of the amount of water allowed to flow into the tank B would be a matter of chance. If the supply were insufficient, some of the oil would be lost, and if too great the time required to complete the separating process would be unduly prolonged.

It is obvious that the term "barrel" is used herein to distinguish more clearly between the various receptacles, and where a large separator is used tanks of any size and shape can be substituted for the barrels.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

5 A device of the kind described comprising a receptacle, means for admitting oil into the upper portion of the receptacle, a perforated pipe arranged in the lower portion of the receptacle and adapted to discharge a liquid therein of a heavier specific gravity than oil,
10 a second receptacle, a pipe connecting the

lower portions of the two receptacles, and a discharge-pipe leading from the upper portion of the second receptacle, as and for the purpose set forth.

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