

J. J. GILCHRIST.

APPARATUS FOR RECOVERING ALCOHOL FROM THE LINING OF BARRELS, &c.

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951,110.

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Fig. 1.

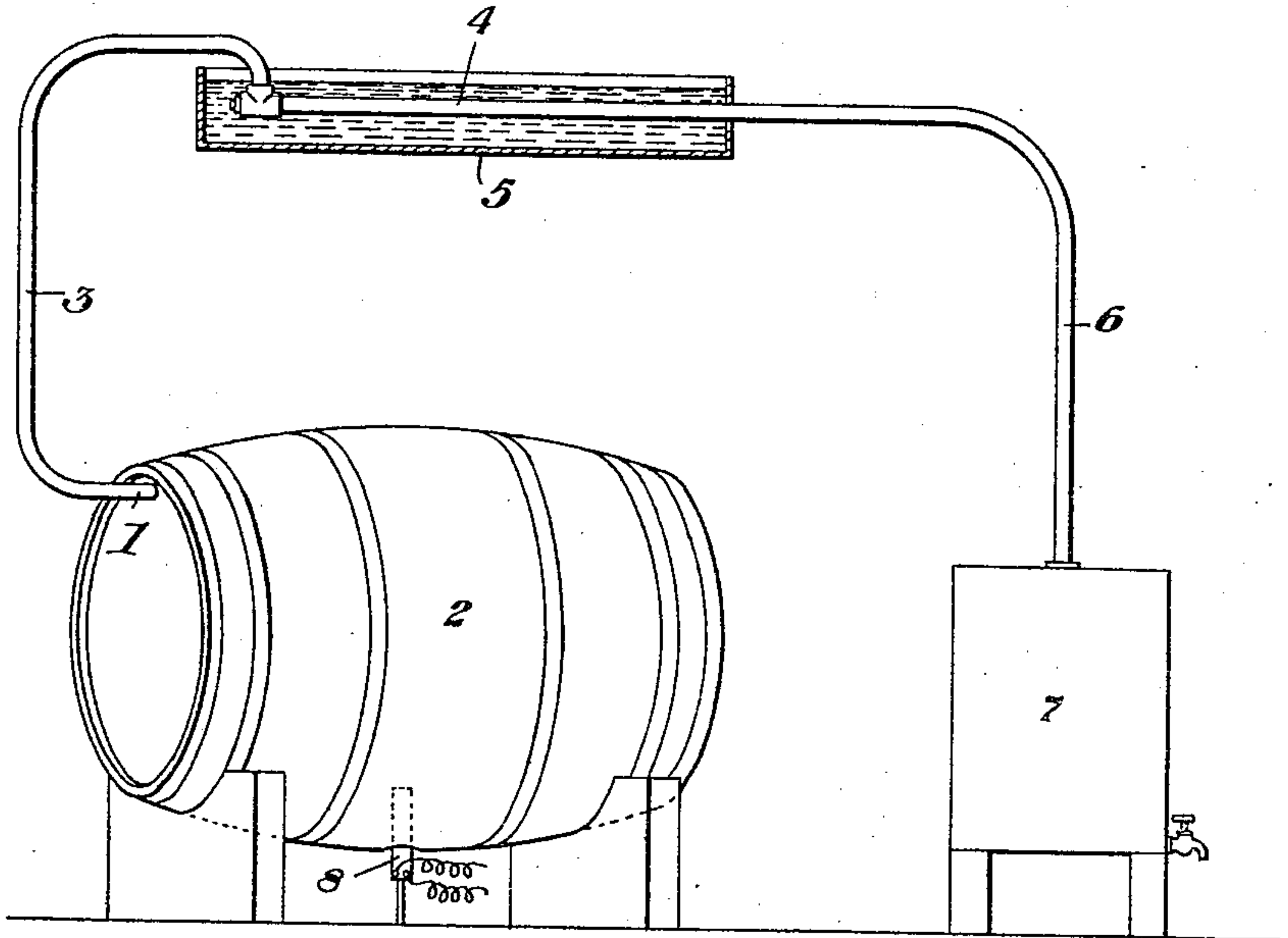


Fig. 4.

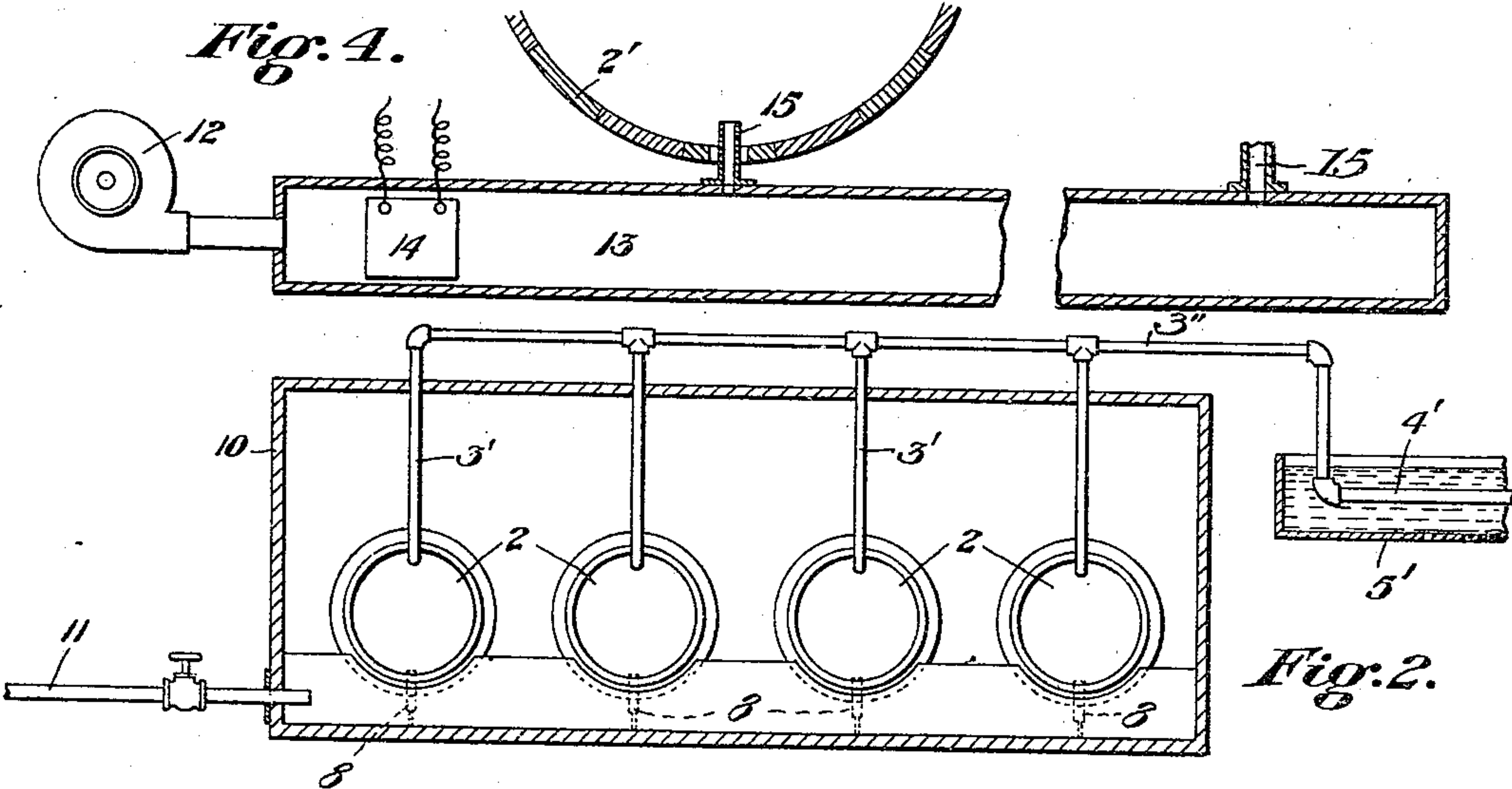
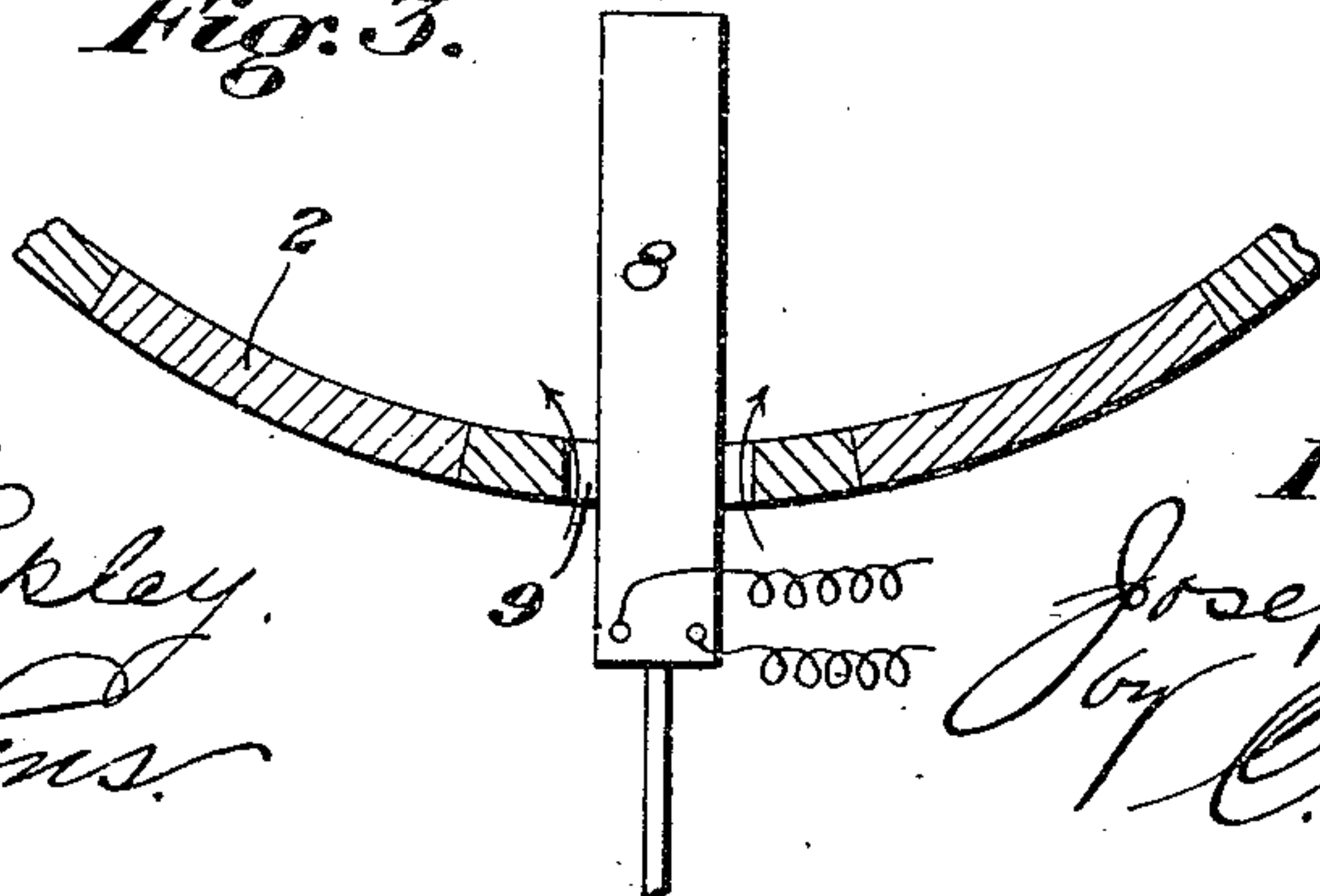


Fig. 2.

Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR RECOVERING ALCOHOL FROM THE LINING OF BARRELS, &c.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOSEPH J. GILCHRIST, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Recovering Alcohol from the Lining of Barrels, &c., of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to apparatus for recovering alcohol from the lining of barrels, etc., and consists of means for heating the interior of the barrel and for carrying off the vaporized alcohol through a condensing element to a collecting receptacle, as hereinafter more fully described.

In the drawings illustrating the invention:—Figure 1 is a view in elevation of a single barrel equipped with the apparatus. Fig. 2 is a sectional view through an inclosing casing containing a plurality of barrels and showing the application of a steam pipe. Fig. 3 is a cross sectional detail view illustrating the inserted heater. Fig. 4 is a sectional view showing a modification.

Ordinarily, barrels are provided with a bung hole and a tap hole and in the case of whisky barrels, a considerable portion of alcohol becomes soaked into the interior or lining of the barrel and is ordinarily lost unless recovered.

In my invention, I propose to heat the interior of each barrel by the introduction of a heating device of any suitable type, utilizing gas, electricity, or any other adaptable element, for the purpose of raising the temperature of the air within the barrel and vaporizing the alcohol.

In the drawings, the barrel 2 is mounted preferably with its bung hole at the lowermost position, and the tap hole 1 at the uppermost position, is connected with a collecting pipe 3 connected with a submerged pipe 4 within a condenser 5 of any suitable type. From said condenser the condensed alcohol is led outwardly by pipe 6 to a receptacle 7 of any suitable kind.

For the purpose of heating the interior of the barrel, I employ a heater of any suitable type as an electric heater 8 which is inserted within the interior through the bung hole as clearly indicated in Fig. 3, ample circulation space being provided around the heater for the entrance of air as indicated by the arrows. The heater is of a

suitable form as shown, for introduction through the bung hole, and its construction need not be necessarily further described, the range of heat for the purpose of vaporizing the soaked-in alcohol being of moderate degree, say from 130° to 140° F.

It will be seen that the application of the heat, either by the electric heater described or by the insertion of any other suitable device results in a dry heat. For the purpose of preventing injury to the barrel by drying out of its staves, I provide a casing 10 in which the barrels 2 may be mounted upon any suitable support and from which through the casing the vaporized alcohol may be led by the series of connected pipes 3' and a common pipe 3'' leading to a condensing pipe 4' in condenser 5'.

11 is a steam pipe preferably provided with a valve as shown and introduced into the interior of the casing 10, by means of which a sufficient amount of moist steam may be furnished to moisten the interior space surrounding the barrels, thus preventing their injury by undue heat.

In Fig. 4 the heated air is forced into the barrel or barrels by means of a blower 12 or compressor of any suitable construction adapted to produce a circulation of air through a conductor or box 13 around a heating device 14 of any suitable construction, the box being closed at its other end. The heated air is forced into the interior of each barrel 2' by a nipple connection 15 inserted through the bung hole as already described, the vaporized alcohol being taken off in the same way as in the other constructions shown.

The apparatus is very simple in construction, is efficient in operation and will result in saving practically all of the alcohol and recovering it. It will be understood that it may be applied to other vessels than barrels and may be adapted to such or otherwise modified in various details without departure from the scope of the following claims.

What I claim is:—

1. In apparatus for recovering alcohol from the interior of a vessel, the combination with said vessel having an air inlet opening at its lower portion and an outlet opening at its upper portion, of a dry heat-radiating device inserted through the air inlet opening, means for forcing a supply of air around said heat radiating device and into the in-

terior of the vessel through the air inlet opening, an outlet pipe connected with the outlet opening, a condenser for said pipe, and a collecting vessel, substantially as set forth.

2. The combination with a liquor barrel having a bung hole opening and a tap hole, of an electric heater inserted through the bung hole opening with a surrounding air circulation space, a condenser, a collecting vessel, and a collecting pipe leading off from the tap hole through said condenser to said collecting vessel, substantially as set forth.

3. The combination with a casing having a steam pipe connection to its interior, of a liquor barrel within the casing having a bung hole, a dry heat radiating device inserted through its bung hole into its interior, a condenser, a collecting vessel, and a collecting pipe leading from the upper interior portion of the barrel outwardly through the casing to said condenser and thence to the collecting vessel, substantially as set forth.

4. Means for vaporizing and recovering alcohol from the lining of a barrel having an outlet connection and a bung hole, consisting of a dry heat radiating device inserted through the bung hole with a surrounding air circulation space, and means for causing a circulation of air around said device to the interior of the barrel, substantially as set forth.

5. The combination with a barrel having a bung hole and an outlet connection, of an air casing, an electric heater inserted through the bung hole therein, a connection from the casing opening into the barrel through its bung hole, and means for forcing a supply of air through the casing around the heater and into the interior of the barrel, substantially as set forth.

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

JOSEPH J. GILCHRIST.

Witnesses:

H. M. WILLIS,
C. M. CLARKE.