C. B. HUTCHINSON.

APPLYING SOLUTIONS TO THE INTERIOR OF BARRELS.

No. 48,625. Patented July 4, 1865.

Fig. 1.

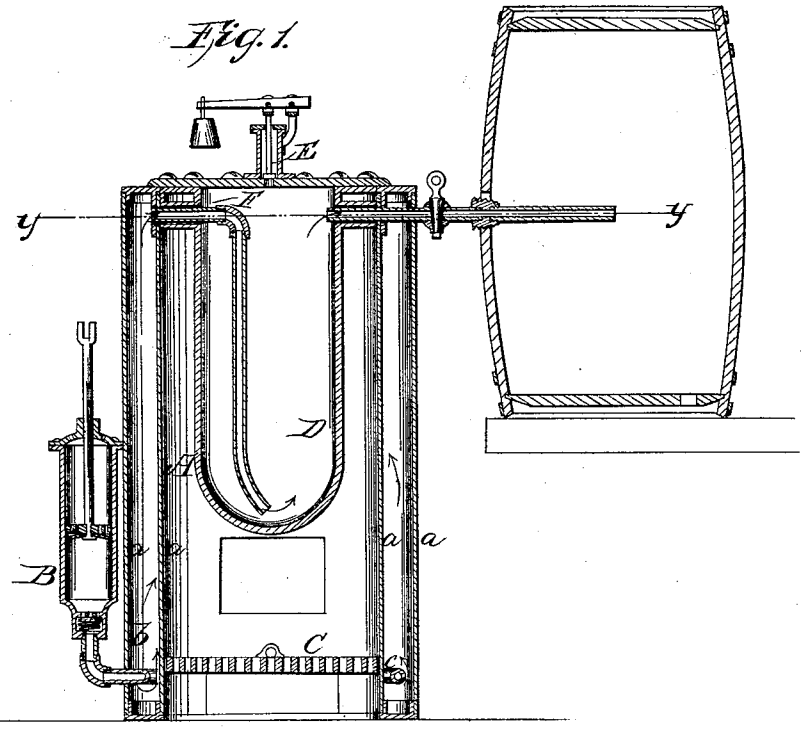
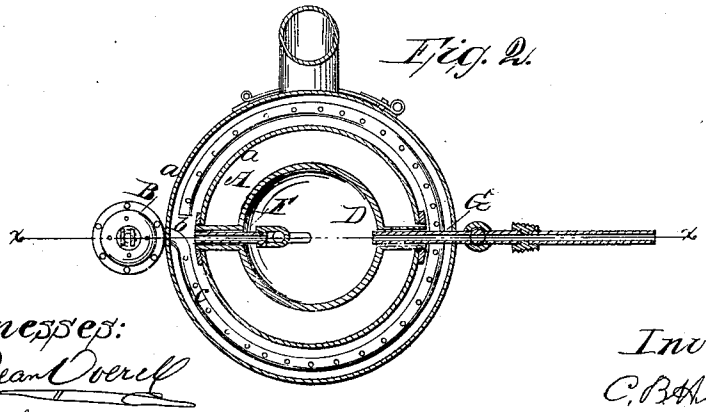


Fig. 2.



Witnesses:

H. Dean Overcell

M. McLivingston

Inventor:

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UNITED STATES PATENT OFFICE.

CHARLES B. HUTCHINSON, OF AUBURN, NEW YORK, ASSIGNOR TO HIMSELF AND J. H. WOODRUFF, OF SAME PLACE.

IMPROVED PROCESS FOR LINING OIL-BARRELS.

Specification forming part of Letters Patent No. **48,625**, dated July 4, 1865.

To all whom it may concern:

Be it known that I, CHARLES B. HUTCHINSON, of Auburn, in the county of Cayuga and State of New York, have invented a new and Improved Process for Applying Air-Tight Solutions to the Interior of Casks, Barrels, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical central section of the means employed for carrying out my invention; Fig. 2, a horizontal section of the same, taken in the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and improved mode for applying solutions to the interior of casks, barrels, &c., for the purpose of rendering them perfectly tight in order to prevent leakage and the evaporation of their contents. The invention is applicable to barrels or casks for holding coal-oil, turpentine, and all volatile substances which vaporize at a low temperature, and the storing of which for any considerable length of time is attended with material loss.

My invention consists in heating the interior of the barrel or cask by means of hot air forced into it by a pump or an equivalent device, and thereby drying the interior of the cask and opening the pores of the wood, the hot air, under pressure, permeating into every recess so as to effect this object thoroughly. After the cask or barrel is thus acted upon the solution, in a warm, liquid state, is poured into the cask or barrel and the latter turned, so that its interior surface will be perfectly coated, and the hot air is again forced into the cask or barrel, and by means of pressure forces the solution into the open pores of the wood and into every crevice and crack, the hot air at the same time keeping the solution warm and liquid, so that the pressure to which it is subjected will cause it to effectually close every opening and render the interior surface of the barrel or cask perfectly tight.

I will now proceed to describe the means I employ for carrying out my invention, although as other plans may be adopted this probably will be as cheap and desirable as any.

A represents an upright cylinder provided with double walls *a a*, having a suitable space, *b*, between them, with which an air-pump, B, communicates, the lower part of said space having a coil-pipe, *c*, within it, extending entirely around and perforated, and communicating with the air-pump. In the lower part of this cylinder there is a fire-grate, C, and in the upper part of said cylinder, above the fire-grate, there is placed an air-heating chamber, D, having a safety-valve, E, at its upper end. This chamber D communicates with the space *b* by means of a pipe, F, which enters the upper part of D and extends down within it to its lower end, as shown clearly in Fig. 1, and the upper part of said chamber has a pipe, G, communicating with it, which passes out through the side of the cylinder, and when the device is in operation is inserted in the cask or barrel being operated upon. This cask or barrel is shown in red in Fig. 1.

I will now proceed to describe the operation.

The pipe G is inserted in the bung-hole of the cask or barrel, but not tightly. If tight therein, a vent should be in the cask or barrel. The fire is then made in the cylinder A, and when sufficiently under way air, by means of the pump B, is forced into space *b* and up through said space into pipe F, and thence into the lower part of chamber D and out through pipe G into the cask or barrel. This air, which in its passage up space *b* and through chamber D becomes heated, forces, under pressure, the cold air out from the cask or barrel, and the vent or opening in the cask or barrel is then closed and the pipe G closely fitted in the bung-hole, so as to prevent leakage around it. The hot air is then again forced into the cask or barrel and the interior of the latter warmed or heated, so that the pores of the wood will be opened, the hot air, under pressure, penetrating into every crack or crevice, and acting in the most efficient manner to effect this end. After the interior of the cask or barrel is thus thoroughly warmed, dried, and the pores of the wood opened the cask or barrel is detached from pipe G and the solution poured into it and the cask or barrel turned, so that its interior will be thoroughly coated.

The pipe G is then inserted tightly in the bung-hole and hot air again forced into the cask or barrel, which keeps the solution warm and fluid, and, owing to the pressure of the pump, drives or forces the solution into the open pores of the wood and into every crack and crevice, causing the interior of the cask or barrel to be perfectly coated and every crack closed, so as to effectually prevent leakage and evaporation.

I would remark that, if necessary or desired, the space *b* between the walls *a a* may be filled with sand, metal filings, or other suitable material to more rapidly heat the air by causing the latter to be brought in contact with a greater area of heated surface, and the chamber D may also be supplied with a similar material for a like purpose.

As before stated, I do not confine myself to the precise means herein described for carrying out my invention, as that may be modified or varied in various ways and the same end attained.

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

The within-described process for applying solutions to the interior of casks, barrels, &c., to render them tight, so as to avoid the loss of their contents by leakage and evaporation—to wit, by heating and drying the interior of the cask or barrel and opening the pores of the wood by hot air forced into the same through the medium of a pump or its equivalent, and then applying the solution to the interior warm surface of the cask or barrel and forcing it into the open pores, cracks, and crevices by hot air under pressure—substantially as set forth.

C. B. HUTCHINSON.

Witnesses:

WM. DEAN OVERELL,

M. M. LIVINGSTON.