(No Model.)

F. S. CHURCH.

MACHINE FOR MAINTAINING A CONSTANT PRESSURE IN BEER BARRELS.

No. 488,985. Patented Jan. 3, 1893.

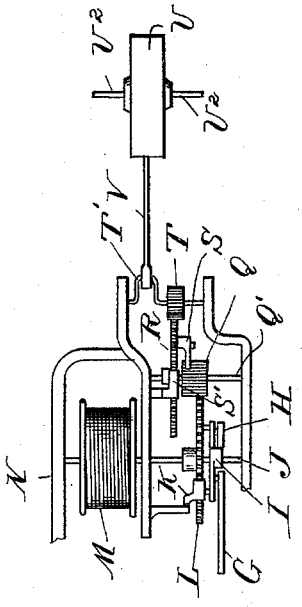

Fig 2.

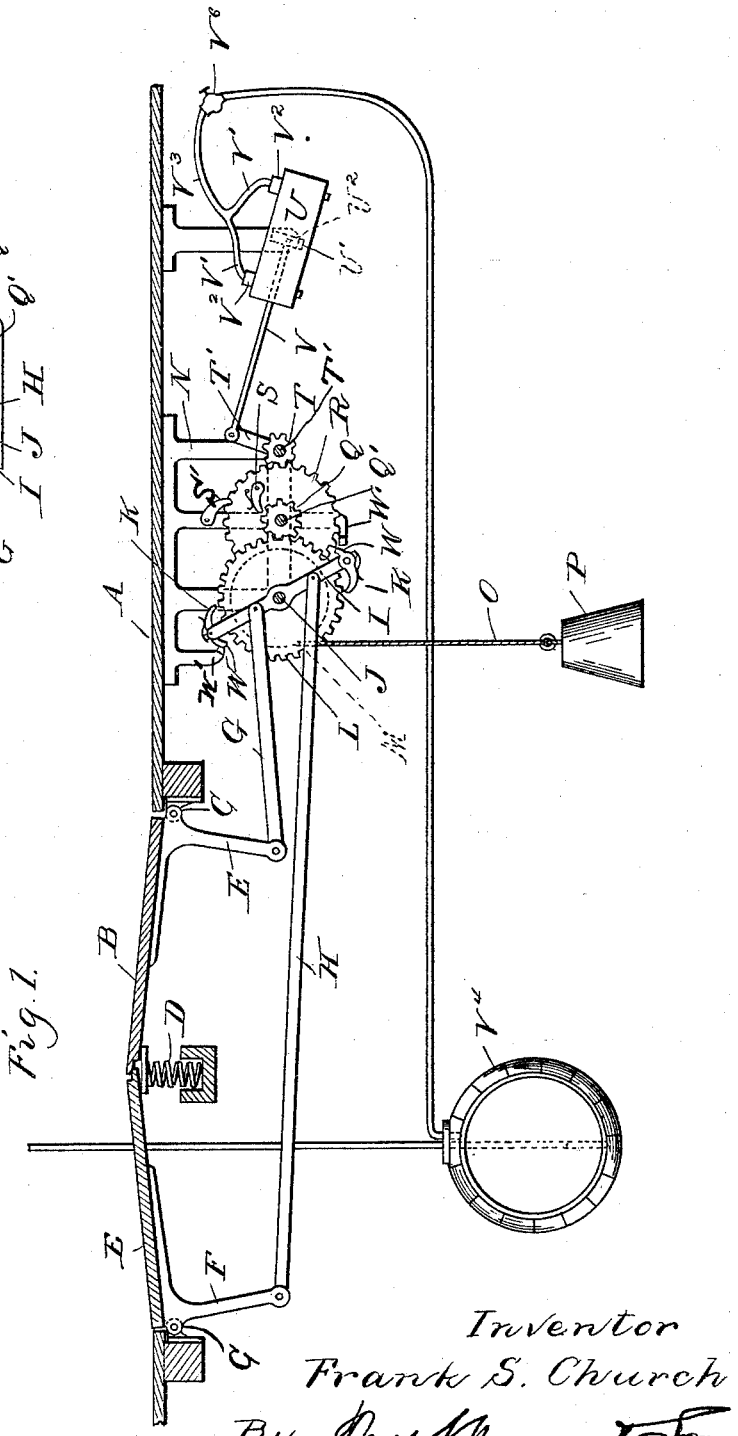

Fig 1.

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UNITED STATES PATENT OFFICE.

FRANK. S. CHURCH, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF TO WM. FITZ HUGH EDWARDS, OF SAME PLACE.

MACHINE FOR MAINTAINING A CONSTANT PRESSURE IN BEER-BARRELS.

SPECIFICATION forming part of Letters Patent No. 488,985, dated January 3, 1893.

Application filed January 25, 1892. Serial No. 419,143. (No model.)

To all whom it may concern:

Be it known that I, FRANK. S. CHURCH, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Machines for Maintaining a Constant Pressure in Beer-Barrels, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in machines for maintaining a constant pressure in beer barrels &c., and the invention consists in the peculiar construction, arrangement and combination of the various parts all as more fully hereinafter described.

In the drawings, Figure 1 is an elevation showing my invention applied to the floor of an ordinary bar, and connected to a beer barrel. Fig. 2 is a plan view thereof.

In drawing beer and other liquids under pressure it is desirable to maintain constant pressure upon the liquid for various reasons, and many devices have been employed for maintaining such pressure.

My invention is especially adapted for use in connection with beer barrels &c. and consists of a weight motor operating a pump, and so arranged that it will continue in operation until a desired pressure is reached sufficient to balance the weight of the motor, and further of a system of levers preferably made a part of the floor, which will wind up the weight when the operator steps upon them to draw the liquid from the barrel, and which when he steps off will release the weight to allow the pump to again operate and carry the pressure up sufficient to offset the liquid which has been withdrawn.

A is the floor in which I form the two hinged sections B pivoted upon the pins C beneath the floor and at their opposite ends slightly overlap, as plainly shown in Fig. 1. These hinged sections are preferably inclined upward from the outer ends toward the middle and are held normally in this inclined position by means of a spring D.

E and F are levers secured to the hinged sections near their pivotal points extending downward and adapted to be easily oscillated when the operator steps upon the central point of the hinged sections B. It is evident that the hinged sections B with the arms E and F form practically bell crank levers. The arms E and F are connected by means of the connecting rods G and H with the bar I pivoted upon the shaft J, the connections being at equi-distant points of opposite sides of the said bar. This bar is provided at its ends with the pawls K.

L is a gear wheel secured to the shaft J and M is a winding drum, also secured to said shaft, the shaft being supported in bearings in a suitable frame N. On this drum is wound a rope or cord O which sustains a weight P normally acting to rotate the shaft and gear wheel.

Q is a pinion loosely sleeved upon the shaft Q′ upon which is secured the gear wheel R.

S is a spring pawl on the gear wheel R, engaging with the pinion Q.

S′ is a pawl on the frame oppositely arranged to the pawl S engaged with the gear wheel R.

T is a pinion upon the crank shaft T′ which meshes with the gear wheel R.

U is a pump cylinder, U′ the piston therein. V the connecting rod connecting that piston with a crank on the shaft T′. This cylinder is preferably journaled upon trunnions U^2 and at each end it is provided with discharge pipes V′ for check valves V^2, so arranged that it acts as a double acting pump. These pipes V′ connect into a common discharge pipe V^3, which leads to the top of the barrel V^4, a suitable valve V^6 controlling that pipe.

The parts being thus constructed they are intended to operate as follows: The operator stepping to a proper point to draw the beer therefrom steps upon the hinged sections B, depressing the same, which oscillates the arms E and F, turning the bar I about its pivot and by means of the pawls K rotating the gear wheel L, winding up the cord O upon the drum M and correspondingly raising the weight. The rotation of this gear wheel in this construction does not affect the pump, as the gear wheel R is held from rotation by means of the pawl S′, while the pinion Q is free to rotate, lifting the pawl S as it turns.

As soon as the operator steps off, the spring D raises the platform, oscillates the arms E and F to their original position and returns the bar I to the position shown in Fig. 1, the arms W on the pawls K striking the stops W′ will be released from the gear wheels and allowing the weight to act, turning the drum N which will rotate the wheel L and by means of the pawl S and pinion Q will rotate successively the gear wheel R, pinion T, shaft T′ which reciprocates the piston rod V and thereby operates the pump, which continues in its movement until the pressure in the barrel has been sufficiently augmented to make up for the amount of liquid withdrawn.

What I claim as my invention is:

1. In an apparatus for maintaining a constant pressure on confined liquids, the combination with a platform, a pump, and a motor for actuating the pump, of a hinged section on the platform, a spring rest for the section, mechanism connected with the section and motor for winding up the motor upon the movement of the section, and means for disengaging the winding up mechanism from the motor when the platform is in its normal position, substantially as described.

2. In an apparatus for maintaining a constant pressure on confined liquids, the combination with a platform of a tilting section hinged thereto, a motor, a pump actuated thereby and a winding up mechanism engaging the section and arranged to engage with and be disengaged from the motor upon the movement of the section, substantially as described.

3. In an apparatus for maintaining a constant pressure on confined liquids, the combination with a pump and a motor for actuating the pump, of a vertically movable platform, winding up mechanism connected with the platform and motor and a spring and stops for disengaging the winding up mechanism from operative engagement with the motor, substantially as described.

4. In an apparatus for maintaining a constant pressure on confined liquids, the combination with the floor, of a hinged section comprising two members hinged respectively at opposite sides, a supporting spring for the sections located at the free adjacent edges thereof, a motor, a pump actuated thereby and a winding up mechanism connecting the motor and sections, substantially as described.

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

FRANK. S. CHURCH.

Witnesses:
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