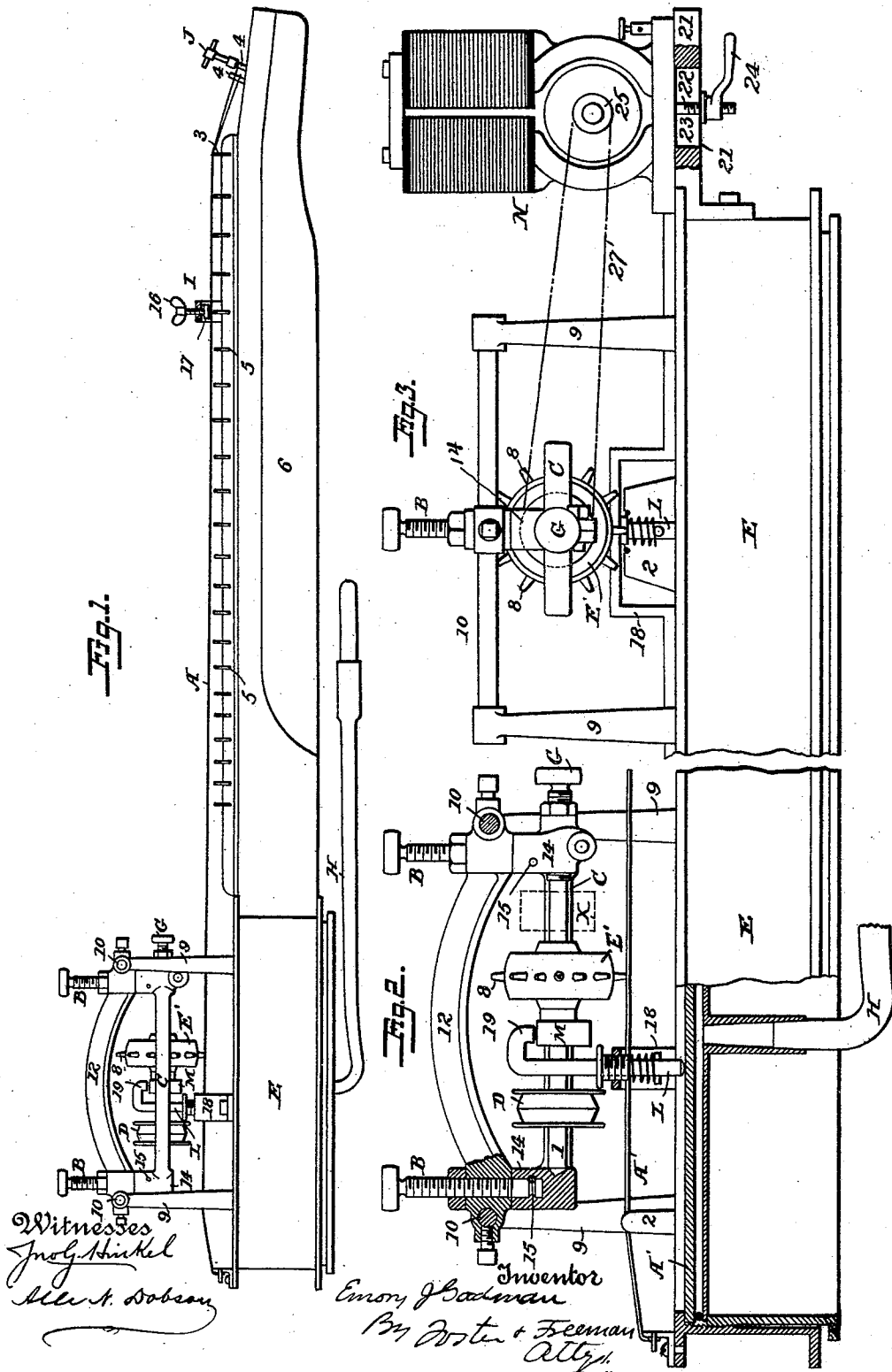


(No Model.)

E. J. GODMAN.
APPARATUS FOR TREATING DISEASES.

No. 499,786.

Patented June 20, 1893.



(No Model.)

4 Sheets—Sheet 2.

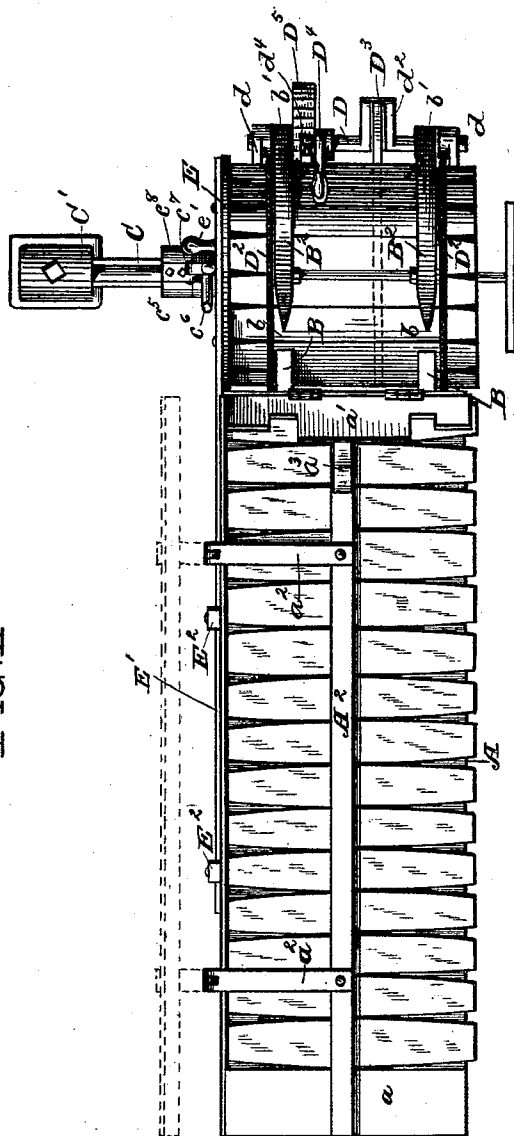
L. M. GREIF.

MACHINE FOR SETTING UP OR WINDLASSING BARRELS OR CASKS.

No. 499,787.

Patented June 20, 1893.

—FIG. II—



Witnesses:

J. C. Turner
J. M. Lester

Inventor:

S. M. Greif
By Hall and Fay
Attys.

(No Model.)

4 Sheets—Sheet 3.

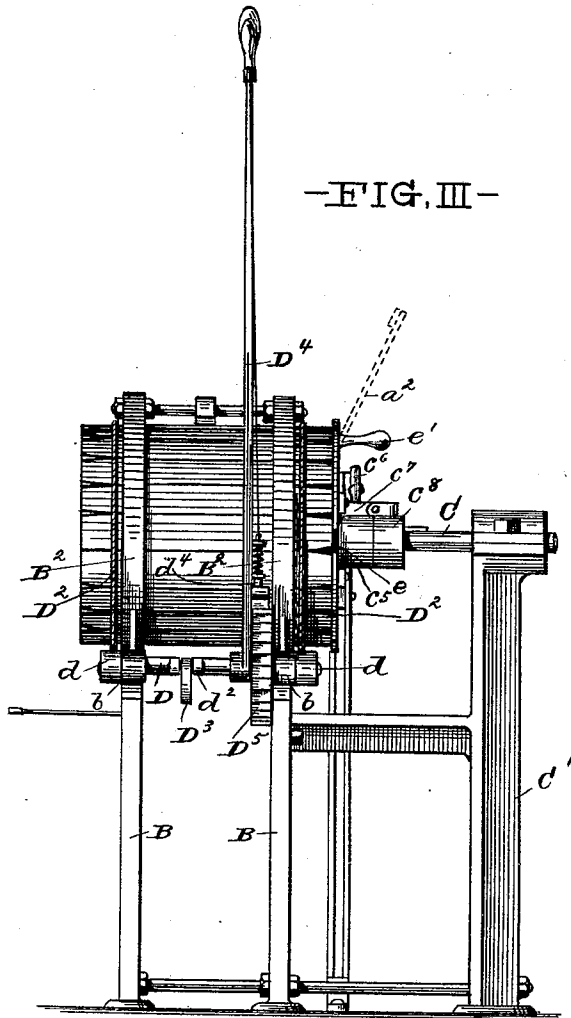
L. M. GREIF.

MACHINE FOR SETTING UP OR WINDLASSING BARRELS OR CASKS.

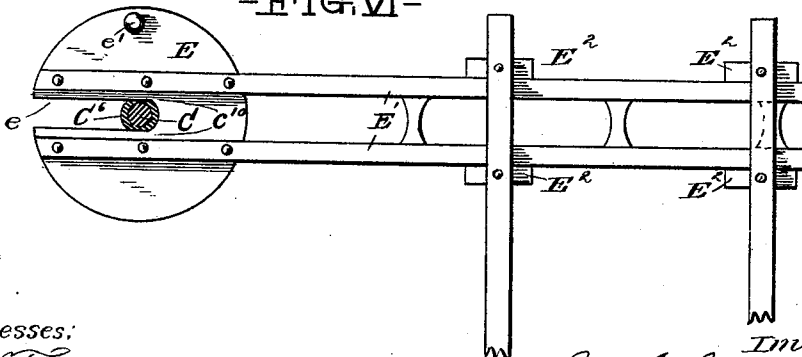
No. 499,787.

Patented June 20, 1893.

-FIG. III-



-FIG. VI-



Witnesses:

J. C. Turner
J. M. Lecher

(No Model.)

4 Sheets—Sheet 4.

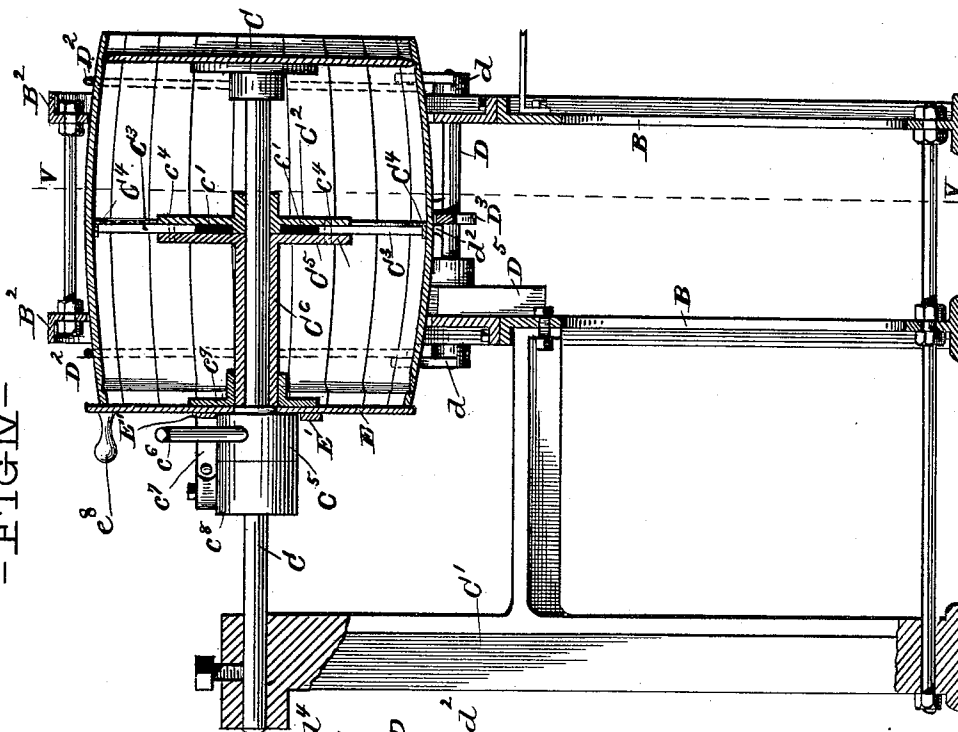
L. M. GREIF.

MACHINE FOR SETTING UP OR WINDLASSING BARRELS OR CASKS.

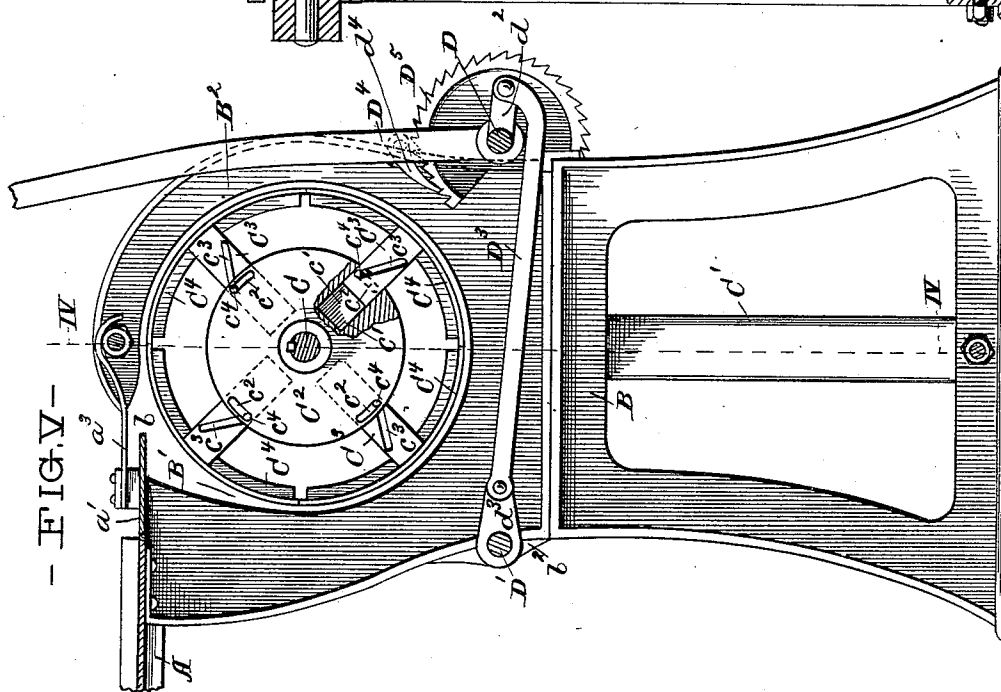
No. 499,787.

Patented June 20, 1893.

—FIG. V—



—FIG. VI—



Witnesses:

J. C. Turner
J. L. Lacher

Inventor:

S. M. Greif
By Hall & Pay
Attys.

UNITED STATES PATENT OFFICE.

LOUIS M. GREIF, OF CLEVELAND, OHIO.

MACHINE FOR SETTING UP AND WINDLASSING BARRELS OR CASKS.

SPECIFICATION forming part of Letters Patent No. 499,787, dated June 20, 1893.

Application filed November 12, 1891, Serial No. 411,658. (No model.)

To all whom it may concern:

Be it known that I, LOUIS M. GREIF, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Machines for Setting Up and Windlassing Barrels or Casks, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

The annexed drawings and the following description set forth in detail one mechanical form embodying the invention; such detail construction being but one of various mechanical forms in which the principle of the invention may be used.

In such annexed drawings:—Figure I represents a side elevation of my improved machine for setting-up and windlassing barrels, casks or similar packages; Fig. II, a top-plan view of the same; Fig. III, a front view of the machine; Fig. IV, a section taken on the line IV—IV, Fig. V, a section taken on the line V—V, Fig. IV, and Fig. VI, a detail side-view of the plate for evening the staves and of the support for said plate.

In the drawings the letter A indicates a table which is suitably supported upon legs, A', and upon which the staves to be set-up are placed, side by side, the table having a stop, a, at one end, and a hinged extension or bridge, a', at the other end, which parts serve as gages to regulate the length of the row of staves required for the package. A bar, A², is hinged by means of arms, a², to one edge of the table, and may be tilted down upon the row of staves resting at or about their middles, the bar serving as a top-guide for the staves when they are slid off at one end of the table into the cradle in which they are set up and windlassed. The bridge a' may be provided with a lip, a³, which may serve as a handle in swinging it, and which may rest against a cross-bar in the cradle, when the bridge is tilted down. This cradle is formed by two upright frame-pieces, B B, having circular openings, B', in their upper portions, of substantially the greatest external diameter of the package to be set up; and said openings have tangential slots, b, which form continuations of the sur-

face of the table, so that the cradle is bounded upon its outside by the two segmental arms, B², having beveled ends. A shaft, C, is secured at one end in an upright, C', arranged at one end of the cradle, and said shaft projects axially through the cradle and has a disk, c, at one end, against which disk the head of the package may be rested. A disk, C², is secured upon the shaft C at the middle of the cradle and is formed with radiating recesses or grooves, c', and with curved slots, c², in the outer ends of said grooves. Radiating arms, C³, slide in said grooves and have oblique slots, c³, which register with the slots, c² when moved in or out in the grooves. The outer ends of the arms are provided with segmental cross-heads, C⁴, which form an expandible, circular support for the bilge of the package. A disk, C⁵, is secured upon the inner end of a sleeve, C⁶, which turns upon the shaft C, and said disk has pins, c⁴, which project through the oblique slots c³ and curved slots c², so that by turning the disk C⁵ the arms C³ may be slid in or out, and the expandible bilge-support may be contracted or expanded. The sleeve C⁶ has a collar, c⁵, secured upon its outer end, and a handle, c⁶, projects from said collar, said handle serving to revolve the collar and sleeve. For the purpose of locking the handle in place and thereby locking the expandible bilge-support in its expanded position, a latch, c⁷, is pivoted upon a collar, c⁸, upon the shaft C, said latch being so pivoted that it will drop in front of the handle when it is tilted back and thus prevent it from moving forward. Two shafts, D and D', are journaled to rock in bearings, b', beneath, and in front of and to the rear of the cradle. Said shafts have arms, d and d', upon their ends, and wire-ropes, D², are secured with their ends to the arms; said ropes forming loops to fit around the ends of the package to be windlassed and having their ends crossed so that they will completely encircle the ends of the package in the cradle. The forward rock-shaft has a double crank, d², to which a connecting-rod D³, is pivoted, the rear end of which rod is pivoted to a crank, d³, upon the rear rock-shaft; said cranks and connecting-rod serving to connect the two shafts to rock simultaneously and in opposite directions. A lever, D⁴, is secured upon the forward rock-

shaft and has a latch, d^4 , which engages a toothed rack, D^5 , secured to the frame, so that the lever may be locked at any point of its sweep. A circular plate, E, has a radial slot, e , with which it may slide upon the sleeve C^6 , between the collar c^5 and a disk, c^9 , upon the sleeve, the radial slot e sliding preferably in grooves or notches, c^{10} , formed in the sleeve; and this plate E is secured to two parallel bars, E' , which slide in horizontal guides, E^2 , secured at the side of the table. The plate E has preferably a handle e^8 by means of which it may be slid forward or back.

In practice the top guide upon the table is first tilted back and the bridge a' tilted up so as to admit of the staves being placed side by side upon the table, the stop a and bridge a' serving as gages for the length of the row of staves required to make a package of a given size. The top-guide and the bridge are now tilted down and the row of staves may be pushed into the cradle, passing around the expanded bilge-support and filling the space between said support and the openings in the frame-pieces. The plate E has been brought into place before the staves are slid into the cradle and the staves are evened endwise by said plates so that their crozing will register upon all the staves and be in one circular line. The wire-ropes (which have been pushed aside while the cradle was filled with staves, one hanging down at one end of the cradle, and the other hanging over the bars of the end-evening plate E), are now slipped around the ends of the set-up staves in the cradle, and are thereupon drawn by means of the lever and rock-shafts; one head having been placed against the head-supporting disk c . When the wire-ropes have been sufficiently drawn to close the ends of the staves together in their proper taper, and the evening-plate E has been again drawn back, the end-hoops are slipped over the ends of the staves and the wire-ropes are released by releasing the lever. The handle c^6 which controls the expansible bilge-support is now turned so as to contract the bilge-support and the package with one head in and the end-hoops in place may be endwise withdrawn from the cradle for future hooping and finishing.

A considerable saving in staves is accomplished by bending the staves over a central support and from both ends at the same time, over the old way of setting up the staves and placing hoops upon one end and thereupon drawing the free ends of the staves together with a windlass. The staves are less liable to break by being simultaneously bent from both ends than being bent from one end only, as the strain upon the seasoned staves will be more distributed and less sudden and severe than in the old way of windlassing.

The expansible and contractible bilge-support admits of the staves being fully supported at their middles while being windlassed, and of said support being contracted when the package is removed from the cradle

so as to admit of the contracted end of the package passing the support.

Other modes of applying the principle of my invention may be employed for the mode herein explained. Change may therefore be made as regards the mechanism herein set forth, provided the principles of construction, respectively recited in the following claims are employed.

I therefore particularly point out and distinctly claim as my invention—

1. In a machine for setting-up and windlassing casks, the combination with a bilge support, of two rock shafts having arms upon their ends and cranks at their middles, a connecting rod between said cranks, means for rocking one of said shafts, and windlassing ropes having their crossed ends secured to the arms of the shafts so as to form contractible and expansible loops, substantially as set forth.

2. In a machine for setting-up and windlassing casks, the combination with a bilge support, of two rock shafts having arms upon their ends and cranks at their middles, a connecting rod between said cranks, windlassing ropes having their crossed ends secured to the arms of the rock shafts, a toothed rack concentric to one of said shafts, and a lever secured upon said shaft and provided with a latch engaging said rack, substantially as set forth.

3. In a machine for setting-up and windlassing casks, the combination of a cradle for the cask, a shaft rigidly supported in the axial line of said cradle, a disk secured upon said shaft, arms supported to slide radially in said disk and formed with oblique slots and with cross heads upon their outer ends, a sleeve turning upon the shaft and having a disk upon its inner end provided with pins engaging the oblique slots, a handle upon the outer end of the sleeve for turning the same, and a latch pivoted upon the shaft to engage said handle, substantially as set forth.

4. In a machine for setting-up and windlassing casks, the combination of a cradle for the support of the staves forming the cask, a shaft axially supported in said cradle and formed at its end with a disk against which the cask head may rest, an expansible and contractible bilge support upon the shaft, a movable plate for evening the ends of the staves, and suitable means for contracting the ends of the staves, substantially as set forth.

5. In a machine for setting-up and windlassing casks, the combination of frame pieces having circular openings formed with tangential slots, a circular bilge support arranged within and concentric with the cradle formed by said circular openings, a table arranged in a plane with the tangential slots and tangential to the openings in the frame pieces and formed with a stop at one end, a top-guide hinged to one edge of the table, and a bridge hinged at the end of the table to form a stop

when tilted up and a bridge into the tangential slots when tilted down, substantially as set forth.

6. In a machine for setting-up and wind-
lassing casks, the combination of a circular
cradle, a shaft axially-supported within said
cradle and having a head-rest at one end, a
circular, expansible and contractible bilge-
support upon said shaft and provided with
means for locking it in its expanded position,
a stave-evening plate movably-supported at
one end of the cradle, and loops arranged to

encircle the ends of the cask and connected
to be simultaneously tightened and to be
locked in their tightened position, substan- 15
tially as set forth.

In testimony that I claim the foregoing to
be my invention I have hereunto set my hand
this 2d day of November, A. D. 1891.

LOUIS M. GREIF.

Witnesses:

WM. SECHER,

WM. GREIF.