No. 621,774. Patented Mar. 21, 1899.

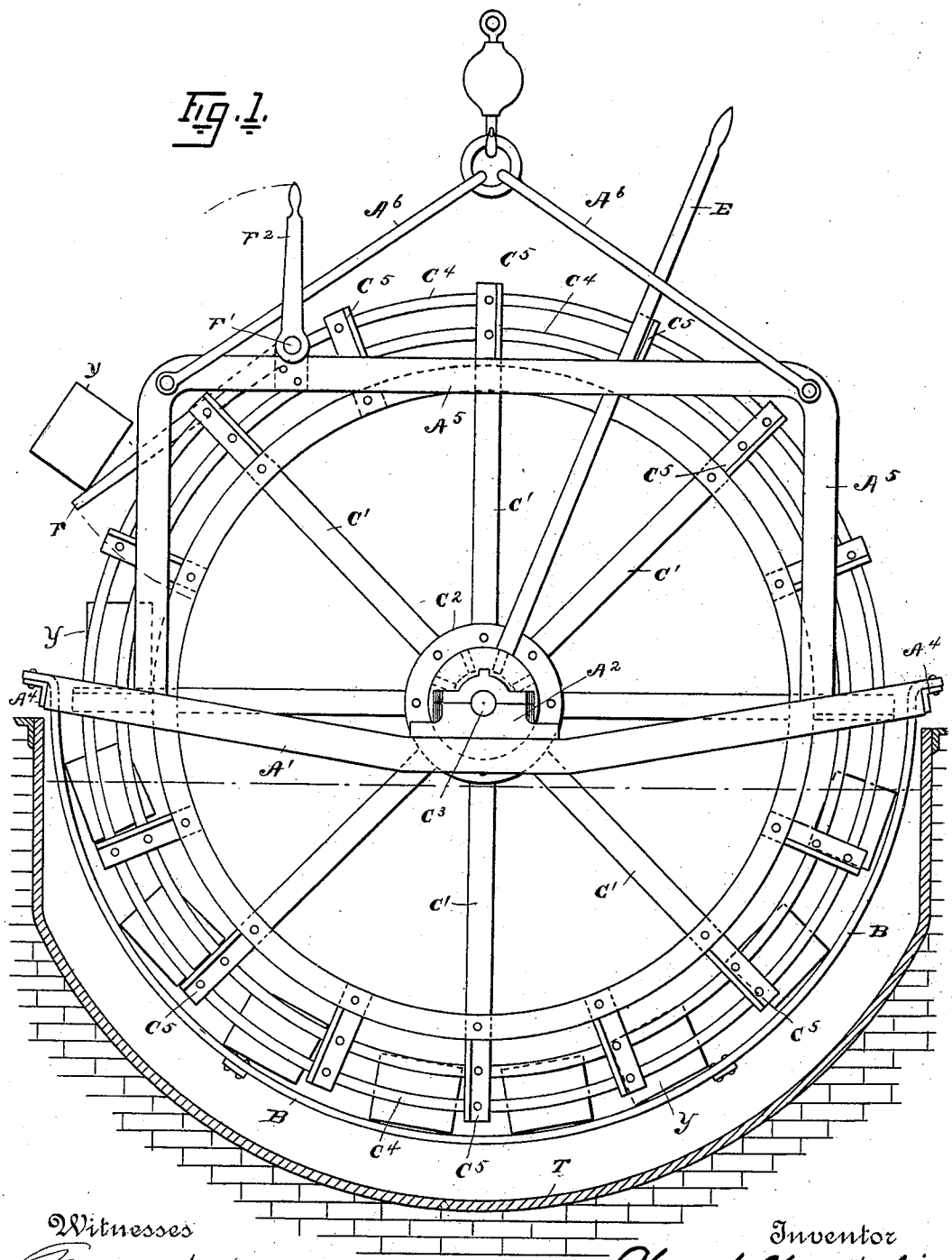
C. S. CHAMBERLAIN.

WOOD PRESERVING APPARATUS.

(Application filed Apr. 6, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



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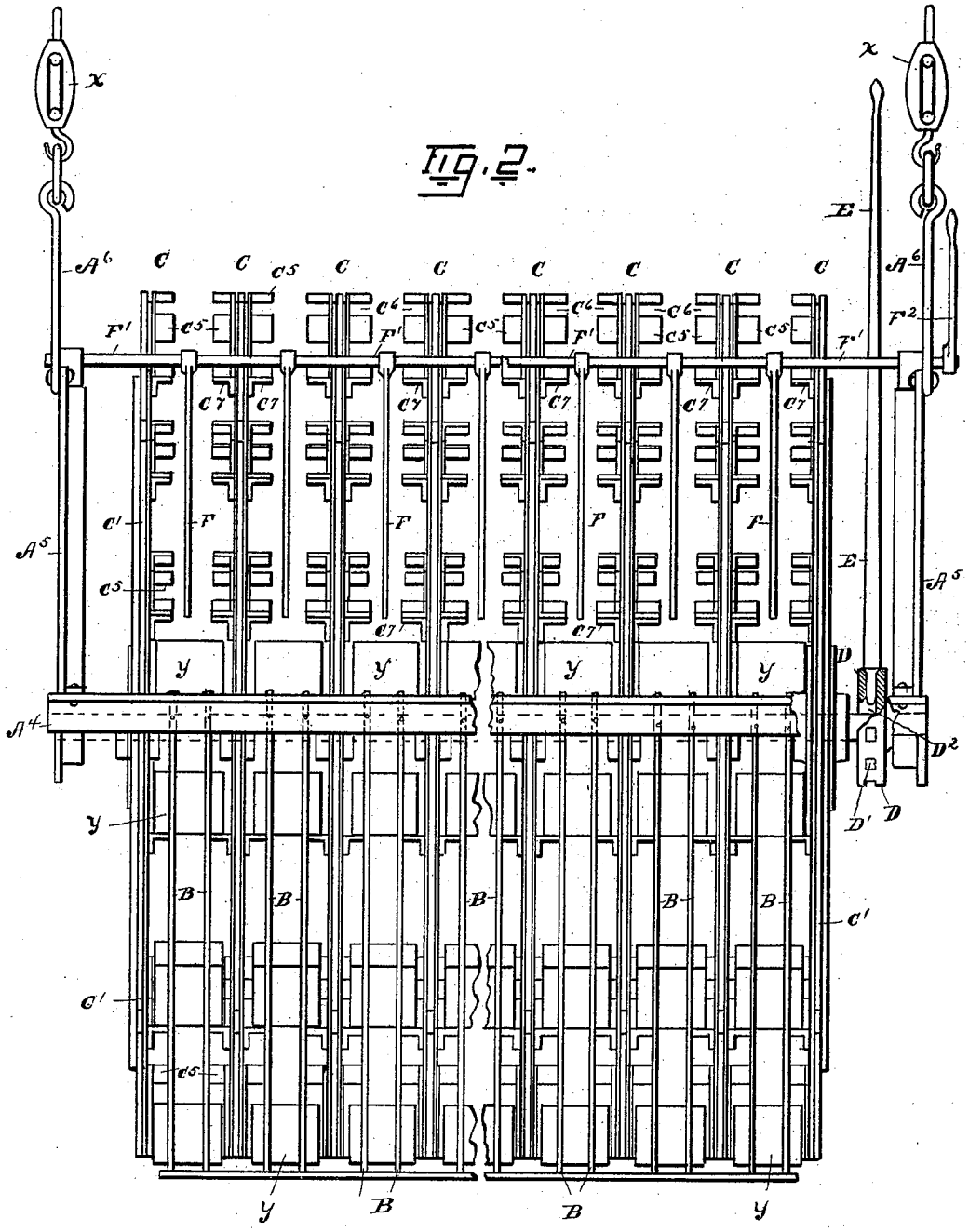
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Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES S. CHAMBERLAIN, OF OAKLAND, CALIFORNIA.

WOOD-PRESERVING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 621,774, dated March 21, 1899.

Application filed April 6, 1898. Serial No. 676,695. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. CHAMBERLAIN, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Machines for Treating Blocks of Wood with Asphaltum and Creosote; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

This invention relates to improvements in machines for treating blocks of wood with asphaltum, creosote, or similar material.

It consists in the novel construction and arrangement of a wheel or drum to receive the blocks and carry them into and under the liquid material with as small a proportion of surface contact between the said block and wheel as possible.

In the drawings, Figure 1 is a side elevation of a wheel or drum constructed in accordance with this invention. Fig. 2 is a front elevation of the same, the view being broken and contracted for the purpose of illustration.

The principal objects which it is designed to accomplish by means of this invention are to provide a rotary machine or device which will receive upon its outer surface or periphery a number of blocks of wood and submerge them fully in the filling or preservative material or compound, to expose as much of the total surface of the block to the action of the preservative as possible, and to deliver simultaneously a large number of the prepared blocks while yet heated and impossible to handle by hand.

I will describe this invention with reference to the accompanying drawings, the various parts or elements of the machine shown therein being designated by separate letters.

There is provided a frame having the side bars A′, which support journal-boxes A^2 to receive the bearings of the wheel or drum. The side bars A′ are connected each to the other by means of the end bars A^4. These are constructed of angle-iron and extend across the front and rear of the wheel or drum to serve the double purpose of connecting together the side bars A′ to give rigidity to the frame and the further purpose of supporting the guide-rods B B. These latter are bent or bowed round between the end bars and are concentric with the periphery of the wheel or drum. They are rigidly attached or fastened to the end bars A^4.

The frame is formed of the side yokes or cheek-pieces A^5, which extend above the side bars A′ and are connected rigidly thereto. They are connected to a lifting mechanism, of any desired form, connected to either side by a grab-hook or block X. As shown in the drawings, the frame is connected to the grab-hook or block X by means of a flexible connection consisting of the two converting-rods A^6 A^6.

When the frame is constructed and mounted as above described, it is apparent that it may be raised and lowered by means of the lifting attachment referred to. This is the design in the present invention, it being intended that the machine shall be raised and lowered from and into a vat containing asphaltum, creosote, or other preservative compound. By thus handling the machine it may be placed in the vat and withdrawn therefrom while the preservative material is hot.

Within the frame so formed is placed a skeleton wheel or drum. In constructing this wheel or drum the principal idea in view has been to so form it that there are produced pockets or receptacles wherein the blocks are placed and held firmly in position with a small proportion only of their surface being covered by the members or parts forming the pockets or receptacles. With this in view the wheel or drum is constructed from sets of arms C′, each set provided with or secured to a circular flange or hub C^2. The hubs or flanges C^2 are provided to fit upon the shaft C^3, the ends of which rest in the journal-bearings A^3 on the supporting-frame. The arms C′ are connected by small circular bands C^4. At predetermined distances a small section of angle-iron is bolted to the arm C′ or the bands C^4, one portion of the angle-iron extending downward. These dividing-sections are placed directly in line upon opposite sides of each set of radial arms.

When the sets of radial arms C′ are placed upon the shaft and secured rigidly thereon, they are so adjusted that the angle-irons C^5 are oppositely arranged and form between

each two of the adjoining sets partitions, which divide the space circumferentially into pockets. The angle-irons C^5, which are used to form these partitions, are provided with recesses C^6. The recesses C^6 are formed to remove all unnecessary material which would prevent the preservative covering the entire block. It will thus be seen that the pairs of recessed angle-irons form skeleton partitions—*i. e.*, partitions with portions of their surfaces cut away, so that only a small part of the surface of a block is in contact with a partition—thus permitting free access of the fluid to practically all portions of the block. The bottoms of the pockets are formed by short sections C^7 of angle-iron. These are constructed of as short a length as practicable and serve the purpose of preventing the blocks rising or floating upward in the fluid or liquid preservative rather than as a bottom to support the blocks when the wheel is in an upright position.

The shaft to the outside of the wheel or drum is provided with a collar D. This collar is provided with a number of radial perforations D′, which open downward into an annular recess D^2. The purpose of this construction is that if any of the preservative material falls upon the collar it would sink through the perforations instead of adhering to or being held in the bottom thereof.

The perforations D′ are provided to receive a lever E, with which the wheel or drum is rotated. This is accomplished by inserting the lever into the successive perforations and thereby throwing the wheel around its rotary center. While this manner of rotating the wheel is a preferred one, it is not essential to the invention, and there may be substituted for it a suitable form of motor-driving mechanism.

The blocks Y Y are placed in the various pockets of the wheel or drum on the descending side of the same. When they pass within the control of the guide-rods B B, they continue with the rotation of the wheel or drum down, under, and through the preservative material contained within the tank T, as shown in Fig. 1. They are ejected on the opposite side of the wheel from that in which they are placed in the pockets. This ejectment in the present construction is effected by means of a number of arms F F, which are rigidly mounted upon a cross-shaft F′, that extends between the cheek-pieces A^5 of the frame. Each of the arms F F extends between the adjoining members of the sets C C and below the so-called "bottoms" of the pockets. The outer end of the shaft F′ is provided with a hand-lever F^2, by means of which the shaft is rotated to raise the arms F to strike under and raise the blocks Y out of the pockets in which they have been resting and to throw them upon a platform prepared to receive them.

The number of parts or members C C constituting the wheel or drum may be increased or diminished to increase or diminish the capacity of the machine without altering this invention. Whether increased or diminished the ejecting-arms F operate simultaneously to eject or deliver all of the blocks contained in the line of pockets formed by the sets C at one operation.

By the use of a machine constructed as above described the operation of treating blocks with a preservative material is rendered rapid, economical, and easy of accomplishment.

Having thus described this invention, it is claimed—

1. A machine for immersing blocks of wood in a preservative liquid consisting in the combination of a rotary skeleton wheel, or drum, and provided on its periphery with pockets or partitions adapted to hold the blocks; with a suitable mechanism to rotate the said wheel or drum; and guide-rods arranged to maintain the said blocks in the said pockets, substantially as described.

2. A machine for immersing blocks of wood in a preservative liquid consisting in the combination of a rotary wheel having sets of radial arms connected in series and provided with skeleton partitions to form a receptacle for the said blocks which will permit the said liquid to circulate about the entire surface of the same; with a suitable mechanism to rotate the said wheel or drum, substantially as described.

3. A mechanism for immersing blocks of wood in a preservative liquid, consisting in the combination of a rotary wheel or drum and provided on the periphery with pockets to hold the said blocks; with a suitable mechanism to rotate the said wheel or drum; and a series of parallel ejecting-arms mounted rigidly on a common shaft and adapted to extend under the said blocks and eject the same by the rotation of the said shaft, substantially as described.

In testimony whereof I have hereunto set my hand this 24th day of March, 1898.

CHARLES S. CHAMBERLAIN.

Witnesses:
E. F. MURDOCK,
MAYNARD HANNS.