

No. 725,489.

PATENTED APR. 14, 1903.

B. F. SCHIRMER.
PASTEURIZER.

APPLICATION FILED JAN. 6, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

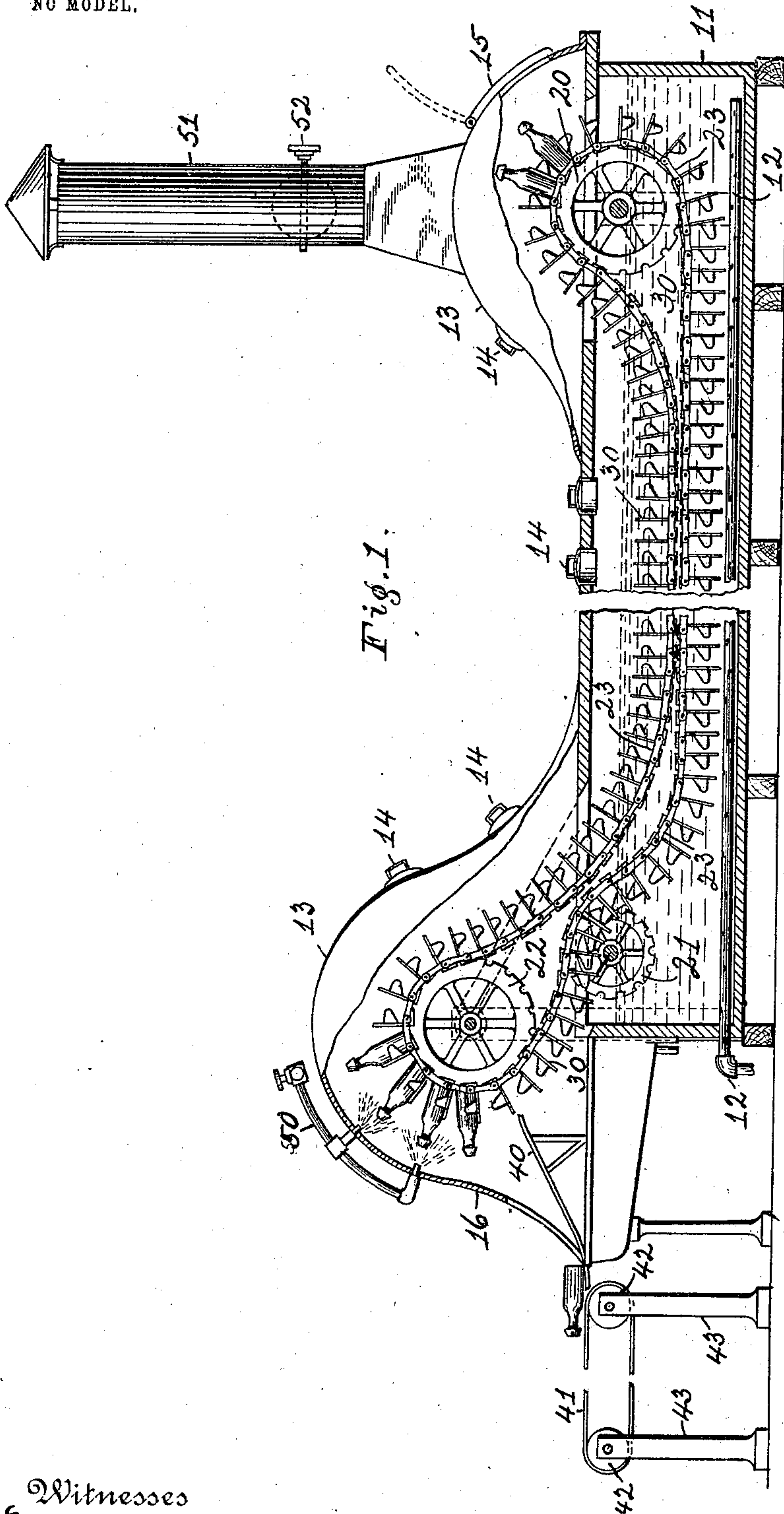


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

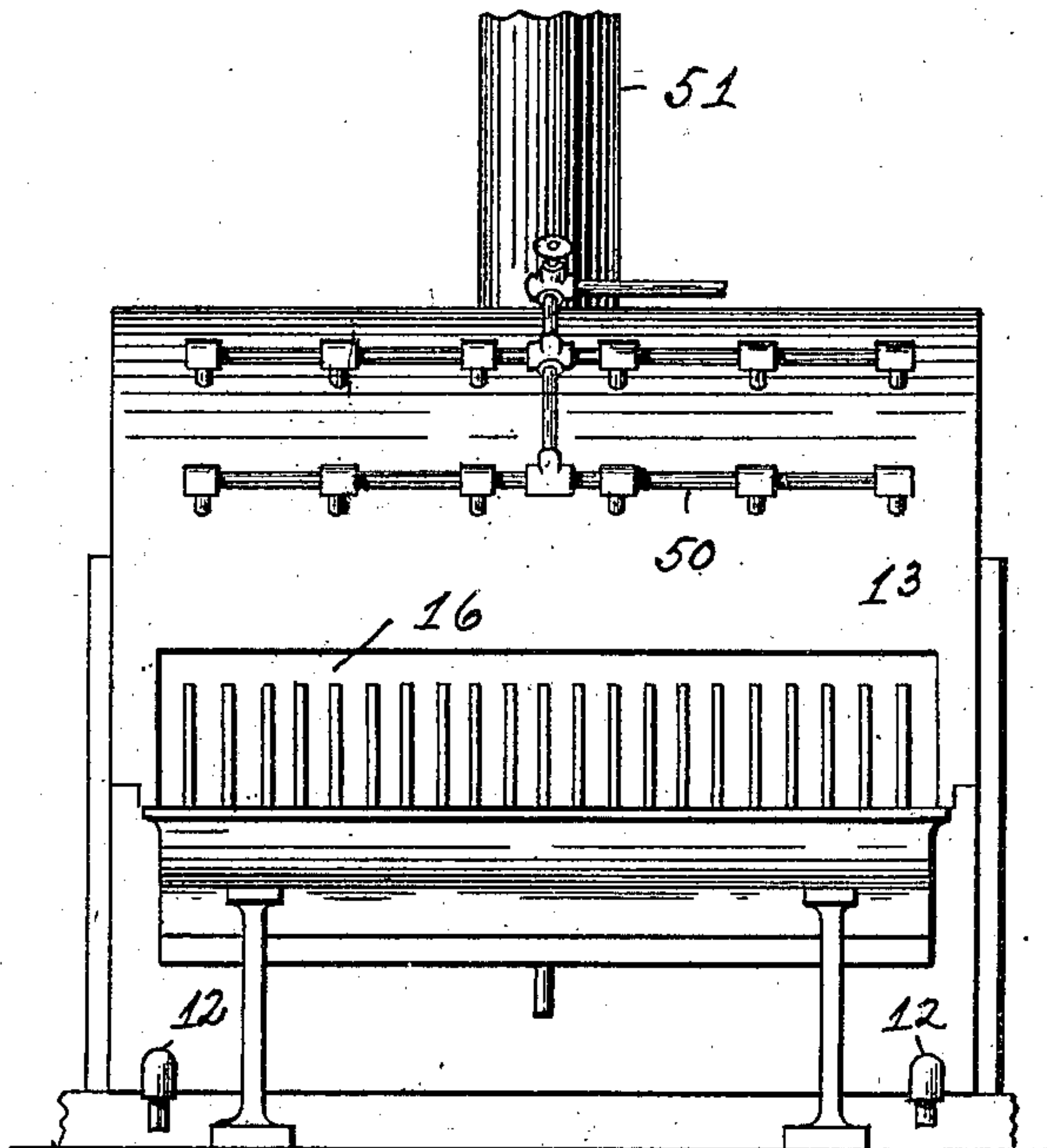


Fig. 3.

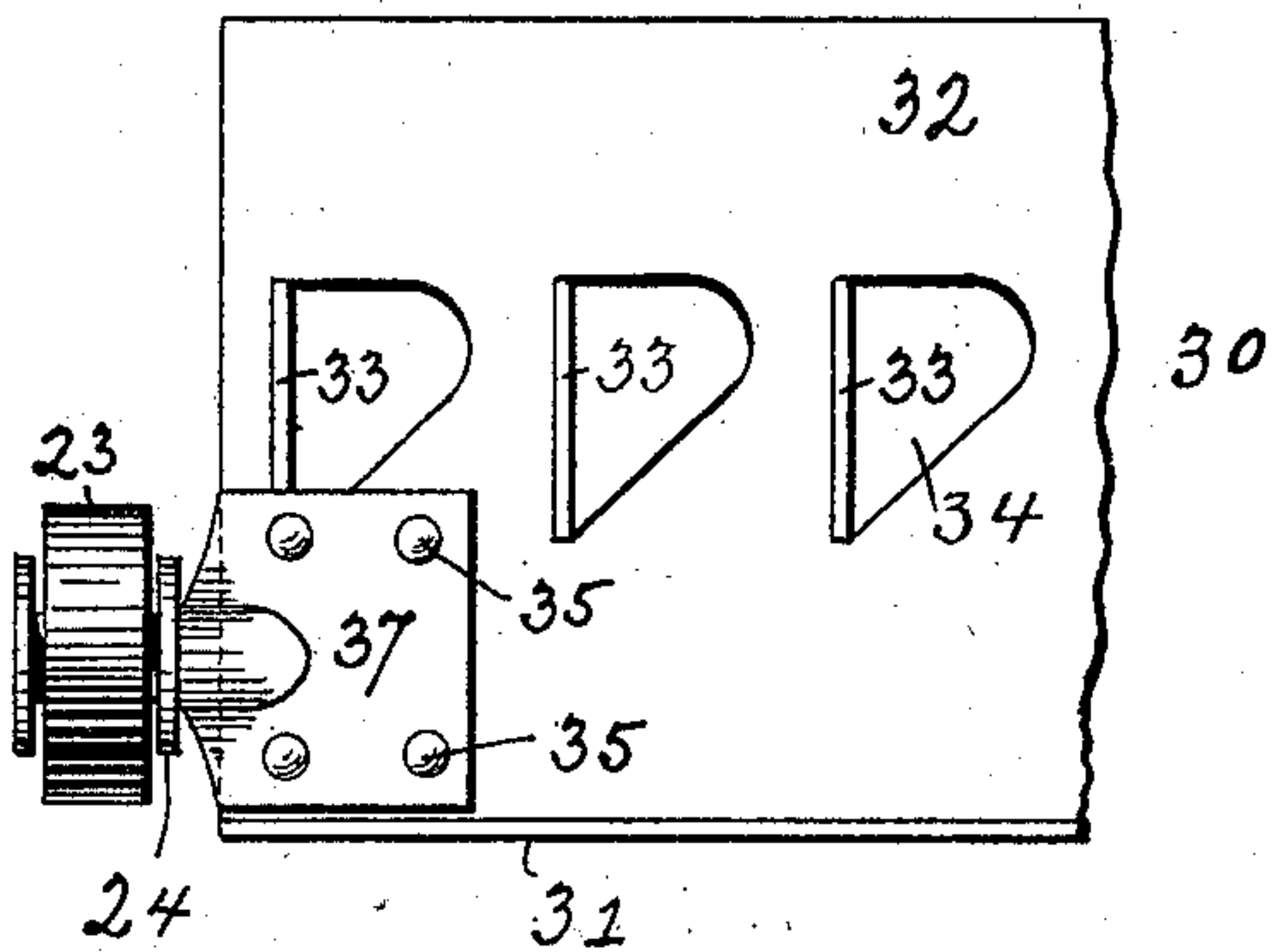
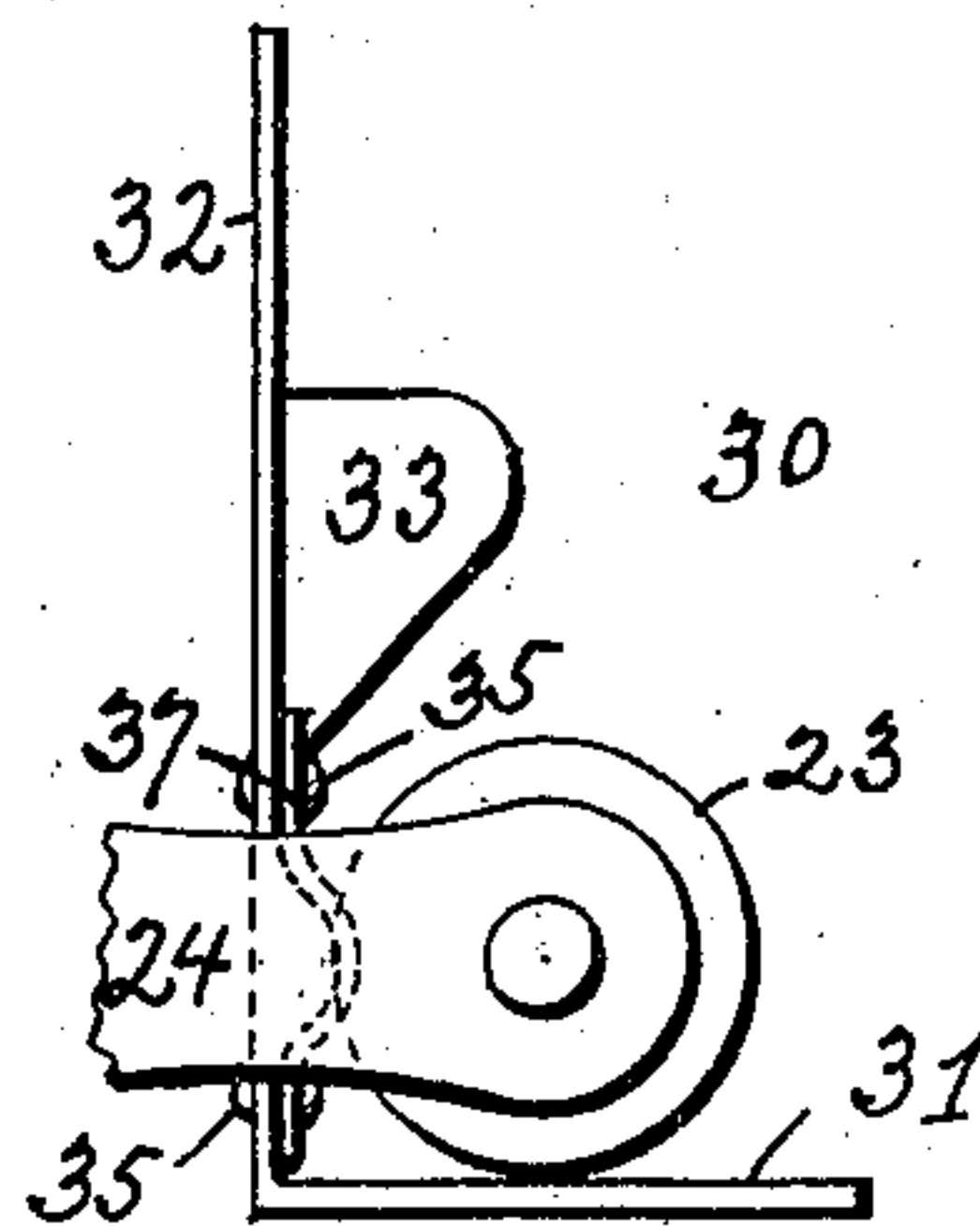


Fig. 4.



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UNITED STATES PATENT OFFICE.

BALDWIN F. SCHIRMER, OF CLEVELAND, OHIO.

PASTEURIZER.

SPECIFICATION forming part of Letters Patent No. 725,489, dated April 14, 1903.

Application filed January 6, 1903. Serial No. 138,056. (No model.)

To all whom it may concern:

Be it known that I, BALDWIN F. SCHIRMER, a citizen of the United States, and a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Pasteurizers, of which the following is a specification.

My invention relates to a pasteurizing apparatus for the treatment of beer-bottles and the like; and its novelty consists in the construction and adaptation of the parts, as will be more fully hereinafter pointed out.

In the drawings, Figure 1 is a central vertical longitudinal section and partial plan view of my improved apparatus, the center portion being shown cut away to permit of the illustration of the end portions on the one sheet of drawings. Fig. 2 is an end plan view looking toward the apparatus from the delivery end. Fig. 3 is an enlarged detail plan view of a part of one of the jaw-plates and chain to which it is attached, and Fig. 4 is a side view thereof.

In the drawings, 11 is a fluid-tank adapted to hold a quantity of water and provided with means for heating the same—for example, a steam-pipe 12 and its connections. It is closed at the top by means of a long hood 13, projecting upward at the receiving and delivery ends to permit of the elevation of the sprocket-wheels above the level of the top of the tank. This hood is provided with suitable openings closed by covers 14 14 along its upper surface and another opening closed by a door 15 at the receiving end and a similar permanent opening 16 at the delivery end of the apparatus.

Mounted in suitable bearings on each side of the tank 11 are three sets of sprocket-wheels 20, 21, and 22, which are adapted to be rotated by suitable mechanism from a source of power not shown and the nature of which is immaterial to the operation of the apparatus. Actuated by these sprocket-wheels are two sprocket-chains 23, mounted in parallel vertical planes. Transversely secured between these sprocket-chains is a series of jaws 30, constituting with the chains and sprocket-wheels an endless bottle-carrier. Each jaw consists of a transverse flat plate 31, adapted to receive the bottle in

an upright position. Rigidly attached thereto or made integral therewith is a second plate 32, substantially at right angles thereto. This plate 32 is provided with upwardly-extending flanges 33, struck out from the plate 32 by a die or embossing-roll, leaving an aperture 34 after the flange 33 has been bent upward. These flanges form guards between which the bottles are placed and which prevent their lateral motion. The plates 32 are secured by rivets 35 or otherwise to a flange 37, which is in turn secured to a link 24 of the chain 23. Each of these plates 32 is divided by the guards 33 into a series of pockets or compartments preferably adapted to hold six or twelve bottles across the width of the apparatus.

It will be observed that the sprocket-wheel 20 is so arranged that the bottles may be placed on the transverse jaws so as to stand upon the plates 31 in an upright position, access being had to the carrier by the opening in the hood when the door 15 is lifted. The endless carrier then dips down into the solution with which the tank is wholly or partly filled and is caused slowly to travel forward toward the delivery end of the apparatus. As it reaches a point near such end it is gradually caused to be elevated by reason of the elevation of the sprocket-wheel 22 above the upper surface of the tank. Turning around the sprocket-wheel 22 the several jaws of the carrier are reversed in position, so that the bottle no longer rests against the plate 31, but rests against the plate 32, and finally as the carrier continues to move forward the bottle drops out from the carrier by its own weight.

There is provided to receive it a sliding table 40, so placed that the bottles falling from the carrier will gently drop thereon and slide toward the delivery end thereof. At this point there is provided an endless belt or apron 41, mounted upon two rollers 42, supported upon brackets 43 of a suitable height and caused to be rotated by mechanism not shown. This traveling belt or apron carries the bottles away from the pasteurizing apparatus, moving each row forward and out of the path of the succeeding row delivered from the carrier.

Near the delivery end of the carrier the hood is provided with pipes 50, connected with a water-supply and suitably perforated, so as to deliver a stream of water upon the bottles in the form of a fine spray. This serves to cool the bottles after they have arisen out of the hot solution.

The carrier having delivered its load of bottles is caused to be returned through the tank toward the receiving end of the apparatus. At this end the hood is provided with a chimney 51, the opening in which is controlled by a suitable damper 52. This device serves to draw the vapors and steam arising from the heated solution in the tank toward the receiving end of the apparatus and to raise the temperature of the bottles as they are caused to be moved downward toward the solution, so as to prevent the shock arising from a sudden change in their temperature, and thus lessen the liability to breakage.

Each of the jaws 30 is so arranged upon the sprocket-chains that there is little more than sufficient space between any plate 32 and its neighbor in front or behind it to permit a bottle to stand upright. Consequently any plate 32 will limit the rearward movement of the bottle and prevent it falling out of the carrier from the pocket immediately in front of it.

My apparatus is made of simple materials, is strong in construction, is readily repaired, and is efficient in its operation.

What I claim as new is—

1. A jaw for a bottle-carrier consisting of a plate adapted to receive the bottles in an upright position, a second plate adapted to prevent their forward movement and a series of guards adapted to separate the bottles from contact with each other, the whole being made integral.

2. A jaw for a bottle-carrier consisting of a plate adapted to receive the bottles in an upright position, a second plate adapted to prevent their forward movement, and a series of guards struck out and bent up from one of said plates and adapted to separate the bottles from contact with each other, the whole being made integral.

3. A jaw for a bottle-carrier consisting of a plate adapted to receive the bottles in an upright position, a second plate adapted to limit their forward movement and a series of guards struck out and bent up from one of said plates dividing the plates into a plurality of bottle-receiving pockets, the whole being made integral.

4. The combination with an endless carrier, of a plurality of transversely-held bottle-holding jaws, each consisting of a plate adapted to receive the bottles in an upright position, a second plate substantially at right angles thereto and a series of guards struck out and bent up from one of said plates and dividing each of the jaws into a plurality of bottle-receiving pockets, the parts of each jaw being made in one piece.

5. In a pasteurizing apparatus, the combination with a fluid-tank having inlet and outlet openings at opposite ends, of an endless carrier, a plurality of transversely-held bottle-holding jaws each consisting of a plate adapted to receive the bottles in an upright position, another plate adapted to prevent or limit the forward movement of the bottles and a series of guards separating the bottles from contact with each other, means for propelling the carrier and means for inclosing the tank.

6. In an apparatus of the class described, the combination with a pair of sprocket-chains mounted to move in the same direction in parallel planes, of a plurality of transversely-held bottle-holding jaws each consisting of a plate adapted to receive the bottles in an upright position, a second plate adapted to limit the forward movement of the bottles and a series of guards adapted to separate the bottles from contact with each other, the plate which is adapted to limit the forward movement of the bottles serving also to limit the rearward movement of the bottles placed upon the jaw immediately in front of it on the carrier.

7. In an apparatus of the class described, the combination with a pair of sprocket-chains mounted to move in the same direction in parallel planes, of a plurality of transversely-held bottle-holding jaws each consisting of a plate adapted to receive the bottles in an upright position, a second plate adapted to limit the forward movement of the bottles and a series of guards adapted to separate the bottles from contact with each other, the plate which is adapted to limit the forward movement of the bottles serving also to limit the rearward movement of the bottles placed upon the jaw immediately in front of it on the carrier, means for moving the sprocket-chains and an endless traveling apron adapted to carry away the bottles at the delivery end of the carrier.

8. In an apparatus of the class described, the combination with a pair of sprocket-chains mounted to move in the same direction in parallel planes, of a plurality of transversely-held bottle-holding jaws each consisting of a plate adapted to receive the bottles in an upright position, a second plate adapted to limit the forward movement of the bottles and a series of guards adapted to separate the bottles from contact with each other, the plate which is adapted to limit the forward movement of the bottles serving also to limit the rearward movement of the bottles placed upon the jaw immediately in front of it on the carrier, means for moving the sprocket-chains and an endless traveling apron adapted to carry away the bottles at the delivery end of the carrier, and a slide placed intermediate the carrier and the traveling apron.

9. The combination with an endless carrier of a series of transversely-held bottle-holding jaws each consisting of a plate adapted to re-

ceive the bottles in an upright position, a second plate substantially at right angles thereto, and a series of guards adapted to separate the bottles from contact with each other, of
5 means for moving the carrier consisting of sprocket - wheels whereby the bottles are transported through a tank in an upright position and by a change of direction of the carrier are caused to rest upon the second plate
10 of the jaw and finally to slide therefrom at

the delivery end of the apparatus by the force of gravity.

Witness my hand this 3d day of January, 1903, at the city of Cleveland, in the county of Cuyahoga and State of Ohio.

BALDWIN F. SCHIRMER.

Witnesses:

LOUIS J. GROSSMAN,
ARTHUR H. LICHTIG.