

No. 875,444.

PATENTED DEC. 31, 1907.

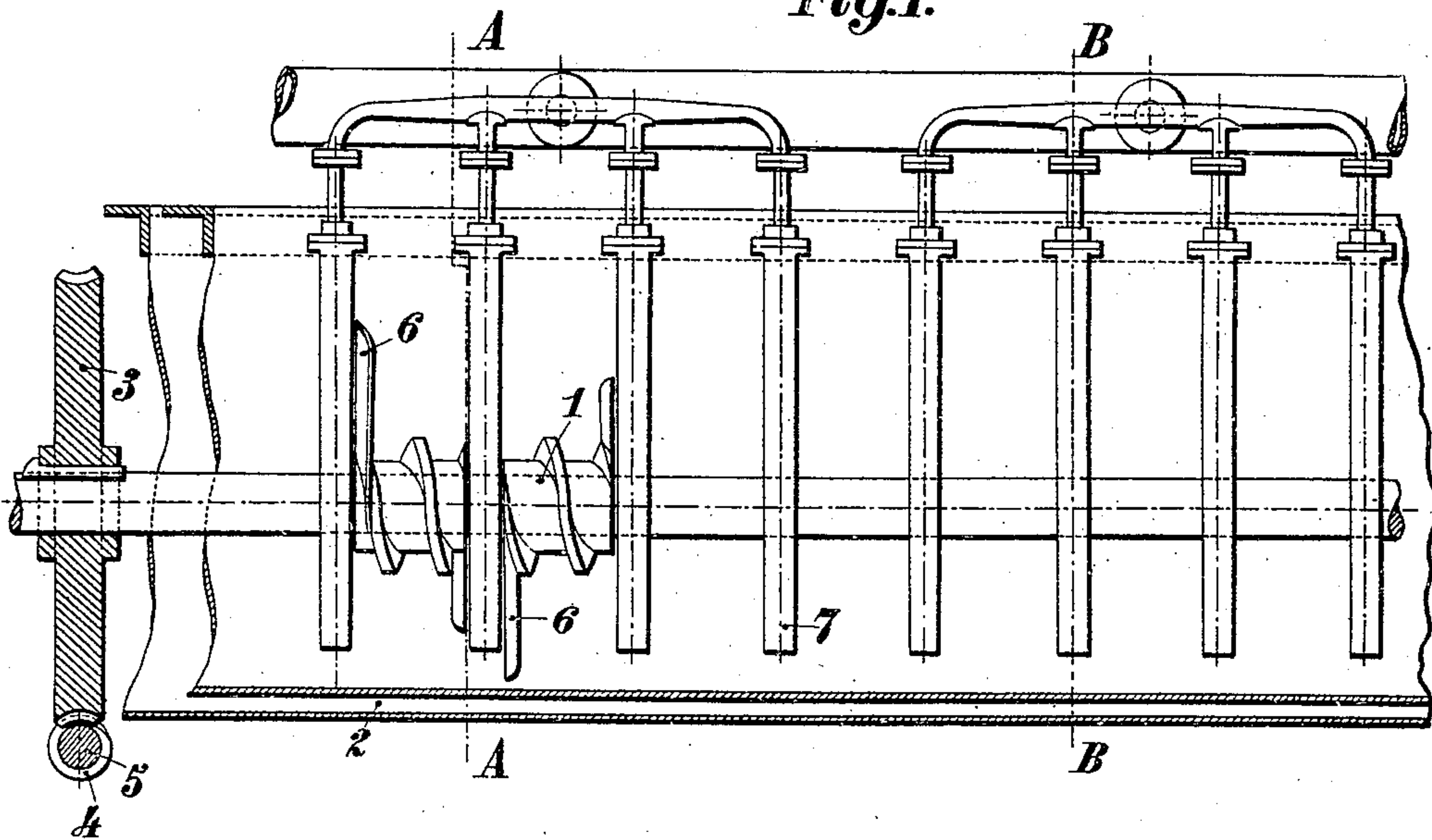
C. MASTAIN & A. DELFOSSE.

MIXING APPARATUS.

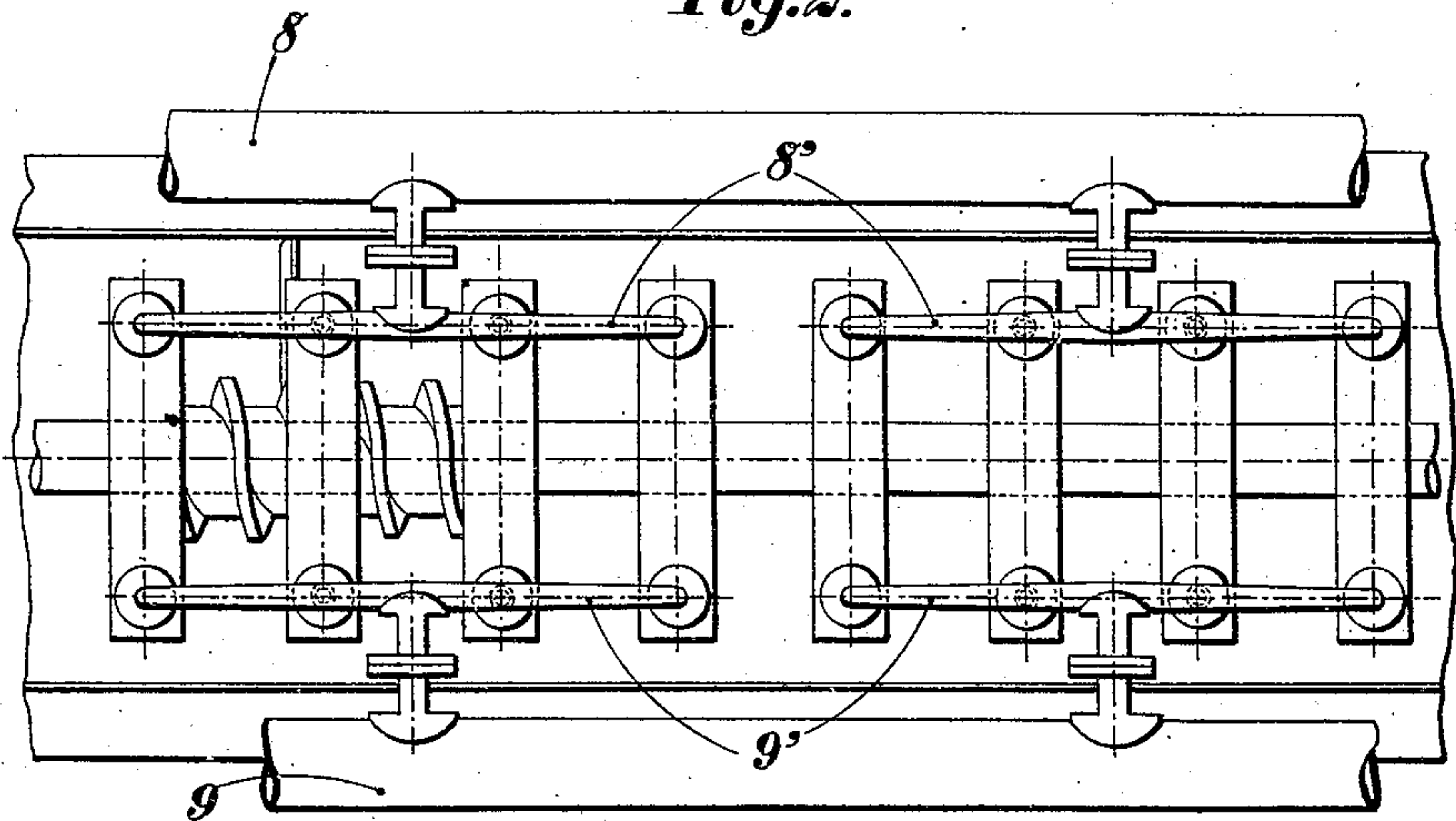
APPLICATION FILED AUG. 5, 1907.

2 SHEETS—SHEET 1.

*Fig.1.*



*Fig.2.*



Witnesses

*E. Weaver*

*C. D. Kessler*

Inventors

*Charles Mastain*

*Arthur Delfosse*

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*Atty*

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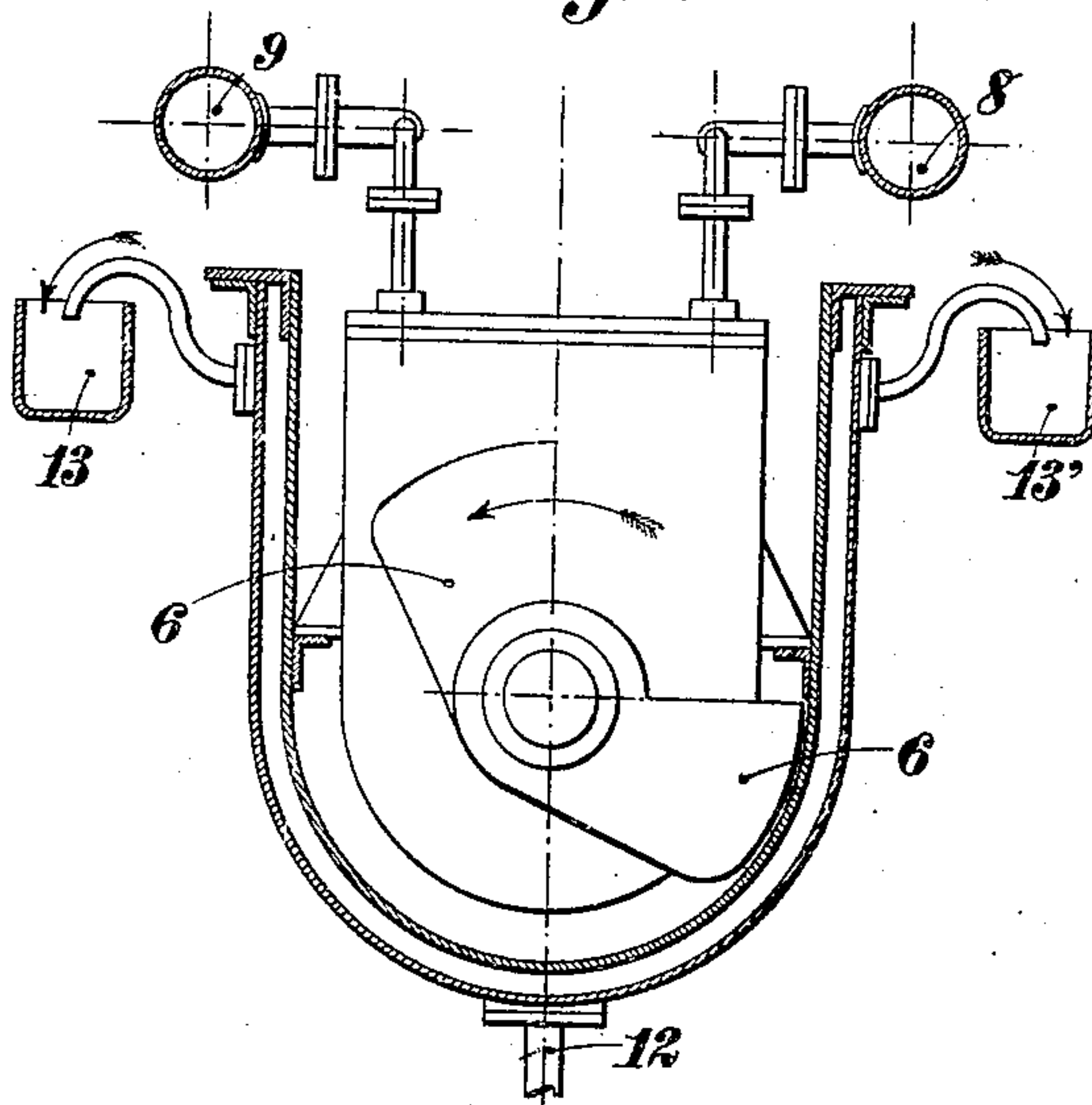
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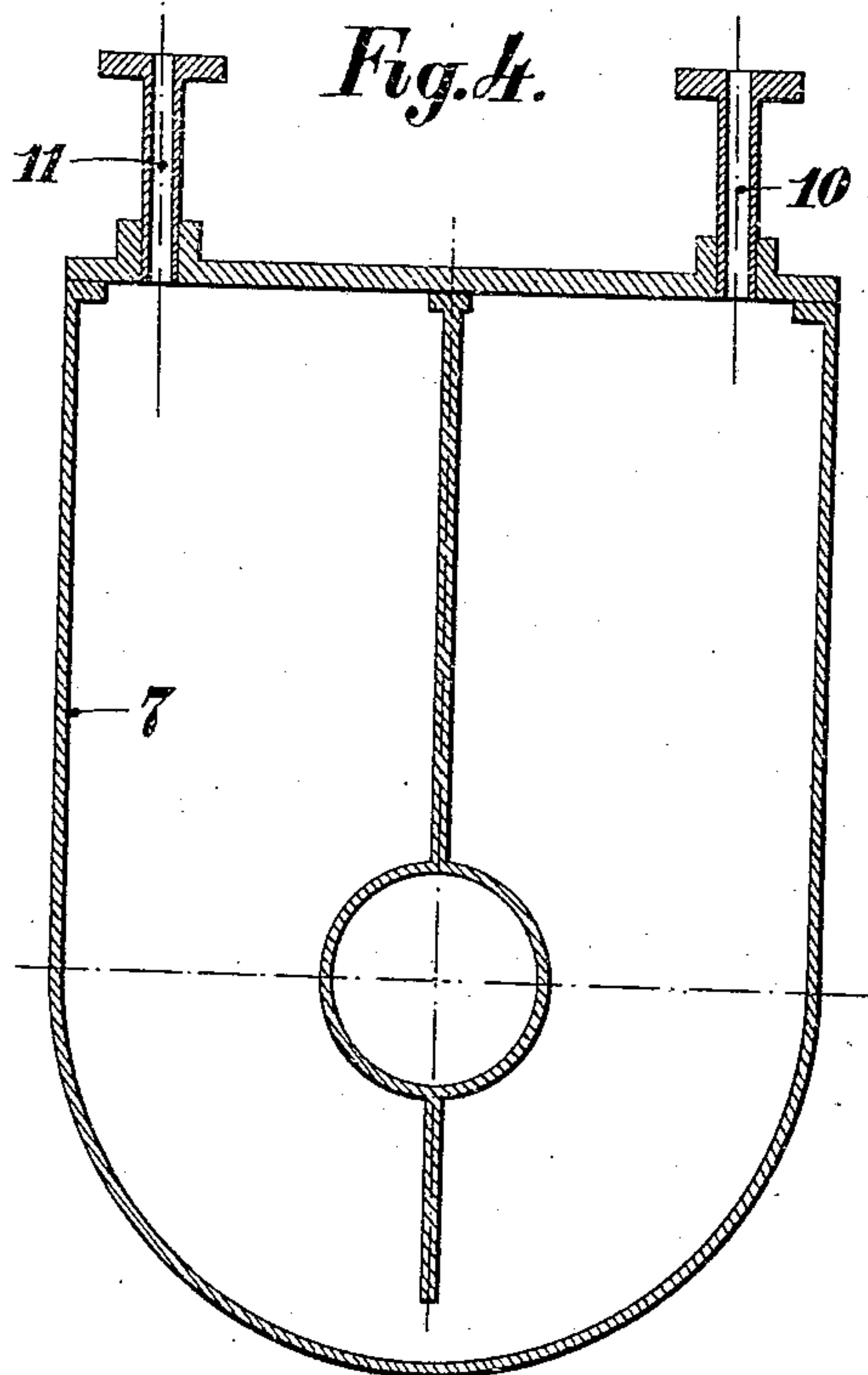
APPLICATION FILED AUG. 5, 1907.

2 SHEETS—SHEET 2.

*Fig. 3.*



*Fig. 4.*



Witnesses:

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# UNITED STATES PATENT OFFICE.

CHARLES MASTAIN AND ARTHUR DELFOSSE, OF PONT D'ARDRES, FRANCE, ASSIGNORS TO  
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## MIXING APPARATUS.

No. 875,444.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed August 5, 1907. Serial No. 387,128.

*To all whom it may concern:*

Be it known that we, CHARLES MASTAIN and ARTHUR DELFOSSE, both citizens of the French Republic, residing at Pont d'Ardres, Department of Pas-de-Calais, France, have invented certain new and useful Improvements in Mixing Apparatus for Use in Connection with the Manufacture of Sugar and Molasses, of which the following is a specification.

This invention has for its object a mixing apparatus constituted by a screw provided with blades which enables sugar and molasses to be obtained instantly and in a continuous manner without having recourse to any other mixing.

In the accompanying drawing: Figure 1 is an elevation. Fig. 2 is a plan view. Fig. 3 is a section on the line A—A of Fig. 1. Fig. 4 is a section through a frame on the line B—B of Fig. 1.

The apparatus consists of a screw 1 rotating in a jacketed trough 2 in which water of the desired temperature may be caused to circulate. The shaft of this screw is driven by a gear wheel 3 keyed upon it and itself driven by the endless screw 4 mounted on the driving shaft 5.

The screw 1 is provided with blades 6 which propel the mass to be mixed in the desired direction towards the outlet from the trough.

Inside the trough 2 a series of hollow frames 7, through which the shaft of the screw 1 passes, are arranged; water at the desired temperature may be caused to circulate in the interior of these frames. The circulation of the water is assured by the supply pipes 8 and return pipes 9 arranged on either side of the apparatus and communicating respectively with the orifices 10 and 11 of the frames by the intermediary of connecting pipes 8', 9'. The water of the pipe 8 enters the frames through the orifices 10 and leaves them through the orifices 11, passing into the pipe 9 by the intermediary of the connecting pipes 9'. The water circulating in the jacket of the trough 2 enters through the pipe 12 and then passes into the channels 13, 13'.

When the trough is filled with "masse cuite" and perfectly prepared for the mixing

operation, the screw is operated and by means of the water supplied through the pipes 8 and 12 the mass is brought to the appropriate temperature; in this manner sugar and molasses are obtained in a very simple way without the assistance of any other mixing operation and in a continuous manner.

This apparatus is adapted for all industries in which products are caused to crystallize by cooling, especially in the crystallization of super-saturated syrups.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:

1. A mixing apparatus of the character described, comprising a trough, a set of hollow heating frames arranged transversely thereof, and a mixing screw mounted longitudinally of the trough and extending through and revoluble within the said transverse heating frames.

2. A mixing apparatus of the class described, comprising a trough, a set of hollow heating frames arranged within the walls thereof, and a mixing screw mounted longitudinally of the trough and having portions extending through the said heating frames, and radially projecting blades carried by the screw and arranged in coöperative relation with the respective heating frames.

3. In a mixing apparatus of the class described, the combination with a trough surrounded by a heating jacket, and a set of hollow frames spaced longitudinally of the trough and lying in parallel planes transverse to the trough, of a mixing screw journaled in the trough and having portions extending through the hollow frames in a direction longitudinally of the trough, and radial blades projecting beyond the screw and arranged to operate between the respective heating frames.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

CHARLES MASTAIN.  
ARTHUR DELFOSSE.

Witnesses:

PAUL METILLO,  
DOUTHEMENT HENRI.