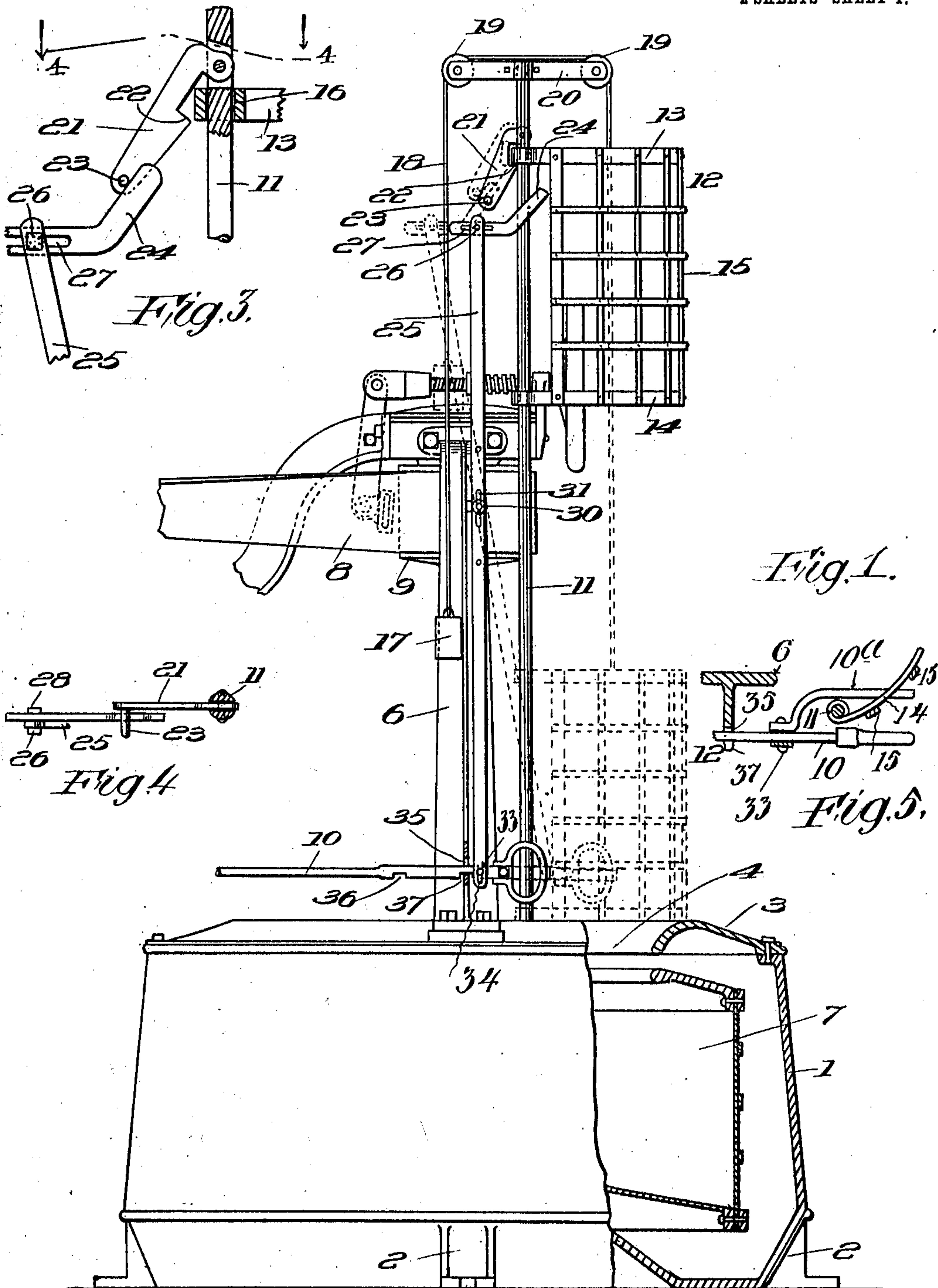


C. MILLER.
HYDROEXTRACTOR.
APPLICATION FILED APR. 12, 1910.

970,253.

Patented Sept. 13, 1910.

2 SHEETS—SHEET 1.



Witnesses:
W. R. Bonington
Marie J. Wright

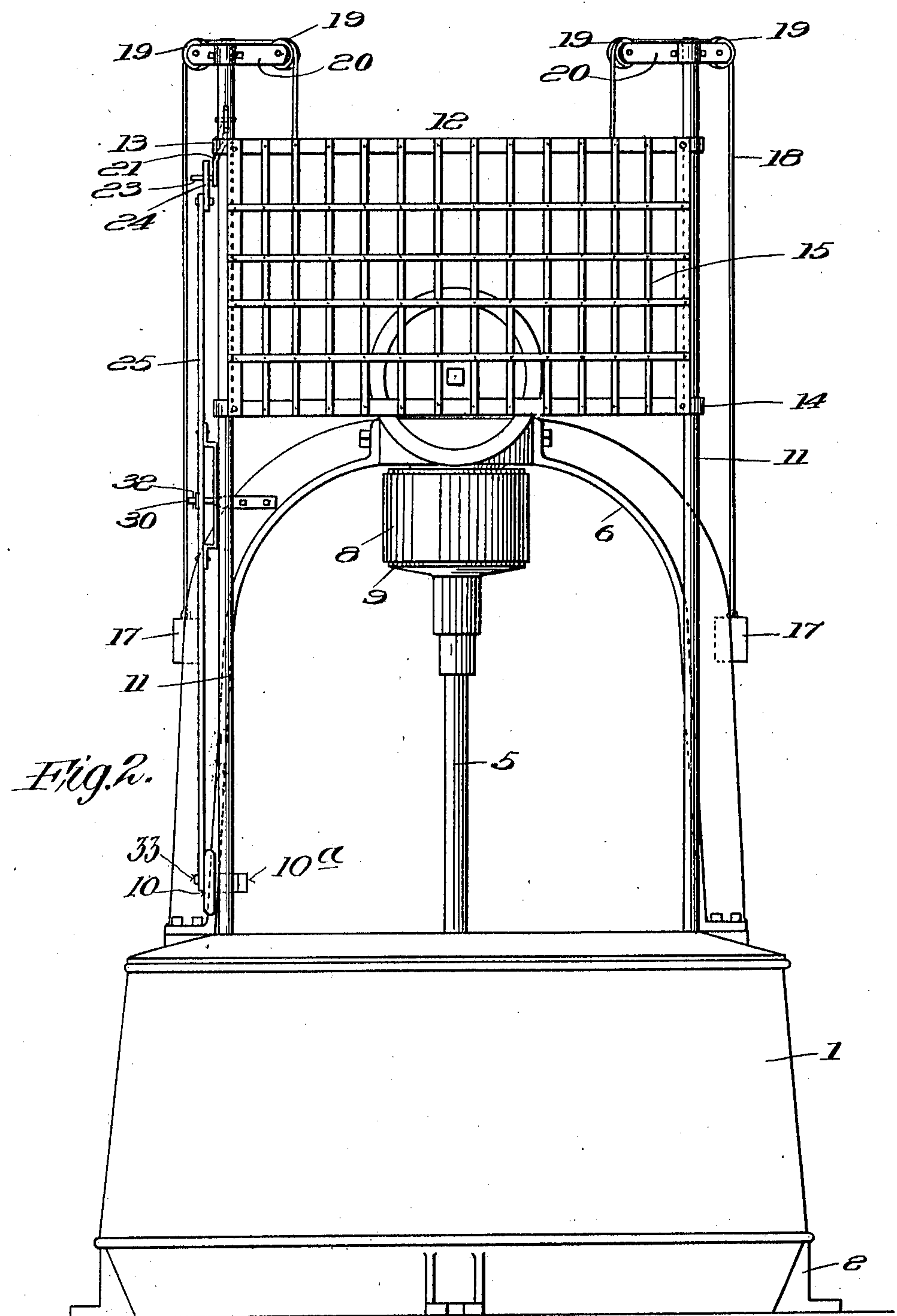
Inventor
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By his Attorney
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2 SHEETS—SHEET 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES MILLER, OF BROOKLYN, NEW YORK.

HYDROEXTRACTOR.

970,253.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed April 12, 1910. Serial No. 554,923.

To all whom it may concern:

Be it known that I, CHARLES MILLER, a citizen of the United States, and resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Hydroextractors, of which the following is a specification.

This invention relates to a safety device and is particularly adapted to be used in connection with laundry machines, although it is not restricted to such use.

In the use of laundry machines, of the type known as "hydro-extractors," having a rotating chamber into which the articles to be treated are placed through an opening, which is left uncovered during the operation of the machine, persons operating or working about the machine have sustained injuries by falling through said opening and coming in contact with said rotating chamber.

The general object of this invention is to provide means for protecting said opening when the machine is in operation, so as to prevent persons from falling through said opening and being injured.

A more particular object of the invention is to provide a gate adapted to be automatically brought into position to protect said opening in the machine upon the machine being set in motion, and which may be readily shifted out of such position when it is desired to remove the articles from the revolving chamber or to place articles therein.

Other objects will appear from the following description.

The invention consists in certain novel features of construction and arrangement of parts hereinafter described and pointed out in the claims.

A desirable embodiment of my invention is illustrated in the accompanying drawings in which the reference characters of the specification indicate the corresponding parts in all of the views.

Figure 1 is a side elevation of my invention shown attached to a "hydro-extractor" with the inclosing gate, shown in its upper position in full lines, and in its lower position in dotted lines. Fig. 2 is a front elevation of Fig. 1; Fig. 3 is a detail view of gate locking parts, Fig. 4 is a detail sectional view taken on the line 4, 4, of Fig. 3, and Fig. 5 is a detail of the gate locking device hereinafter explained.

In its present embodiment my invention is shown in connection with a laundry machine of the "hydro-extractor" type, which comprises a casing 1 having legs 2, by means of which the machine is supported, and a top plate 3 provided with an opening 4. Upon shaft 5 suitably journaled in the base of casing 1 and in the upper portion of frame 6 which is secured to the top plate 3, is mounted the rotating chamber 7, in which the articles to be treated are placed. The chamber 7 is rotated by belt 8 and pulley 9 keyed to the upper end of the shaft 5. The usual belt shifting arm 10 is provided to shift the power belt from the loose to the fixed or drive pulley, to set the machine in motion, or to stop the same, said power belt and pulleys being omitted as they are so well known in the art that illustration thereof is unnecessary. The above described parts constitute the principal structure of a well-known "hydro-extractor."

Supported in the casing 1 and extending upwardly from the top plate 3 at each side of the opening 4 and in front of the frame 6 are the vertical standards or guide rods 11. Slidably mounted upon the rods 11 and extending forwardly in front of said rods is a gate 12. This gate may be of any suitable construction but preferably comprises the upper and lower sills 13 and 14 to which is attached the mesh 15. The gate may be generally in the arc of a circle to substantially correspond to the circular opening 4, see Fig. 5. The ends of the sills 13 and 14 are provided with openings 16, through which said rods extend, thus providing for the sliding movement of the gate upon said rods. Weights 17 connected to the gate by means of ropes 18 which pass over sheaves 19, journaled in brackets 20 secured to rods 11, serve to relieve the weight of the gate so that it may be easily raised when access is desired to the interior of the machine; but the gate is of such weight that it will overcome the weight 17 and drop to the position shown in dotted lines in Fig. 1, when it is otherwise free to slide on the rods 11. The gate is so shaped that when it is in its lowermost position it will fit around the edge of opening 4 and inclose the same to prevent anyone from accidentally falling through said opening into the interior of the machine.

Pivoted at the upper end of one of the rods 11 is a catch 21, provided with a shoulder

der 22 adapted to engage the sill 13 of gate 12 when the gate is raised to its uppermost position, whereby said gate is held securely in such position. The catch 21 is also provided with a pin 23 adapted to be engaged by a trip dog 24 to disengage the catch from the sill 13 to release the gate so that it will drop to its lowermost position. The dog 24 is adjustably secured to one end of lever 25 by means of bolt 26 which extends through said lever and a slot 27 in said dog, and a nut 28 which screws on the end of the bolt. This adjustment provides for any variation which may appear in the movement of the lever 25. The lever 25 is pivoted to the frame 6 on pivot 30 which extends through slot 31 in the lever, and is provided with cotter pin 32 to prevent the lever from sliding off of the pivot. The lower end of the lever 25 is connected to belt shifting arm 10 by pin 33 which extends through slot 34 in said lever. The belt shifting arm 10 passes through an opening 35 in the web of the frame 6 and is provided with notches 36 and 37 adapted to be engaged by the lower edge of the opening 35, whereby the arm is locked in either of its two positions, namely that position it assumes when the belt is shifted to the fixed pulley, and the other position it assumes when the belt is shifted to the loose pulley. As a further protection and to prevent the operator from raising the gate while the machine is in operation, I provide a projection or stop 10^a from the belt shifting arm 10 adapted, when said arm is pulled forward to start the machine, to engage any suitable part of the gate, as for instance, the projection 10^a may extend over the sill 14. Thus, when the gate has been lowered, and the machine is running with the projection 10^a above sill 14, the gate cannot be raised until the belt shifting arm 10 is moved back to stop the machine.

The operation of my improvements is as follows: Assuming the machine to be at rest and the parts in the position shown in full lines in Fig. 1, and that it is desired to set the machine in motion, the belt shifting arm 10 is first grasped by its handle and lifted until the notch 37 of said arm is out of engagement with the lower edge of the opening 35; as the arm is raised it also lifts with it the lever 25, slot 31, in which the pivot 30 works, permitting such movement of the lever; the arm 10 is then pulled forward until the notch 36 is engaged by the lower edge of the slot 35, and the machine is then set in motion; as the arm 10 is pulled forward the lever 25 is swung on its pivot carrying with it the trip dog 24 until it engages the pin 23 on catch 21 and disengages said catch from the sill 13 of gate 12, whereupon said gate will drop automatically to its lowermost position and inclose the opening

4, and the stop 10^a will lock the gate in its lowered position, such position of the parts being shown in dotted lines in Fig. 1 of the drawing, the operator permitting the gate to drop to its seat before arm 10 is pulled fully forward so as to lock the gate in its lowered position.

When it is desired to stop the machine and remove the gate from the opening 4 so that access may be had to the interior of the machine, the arm 10 is first raised until the notch 36 is disengaged and is pushed backward releasing projection 10^a from the gate and until the notch 37 is engaged by the lower edge of the opening 35, whereupon the machine is brought to rest, the lever 25, dog 24 and catch 21 are again brought to the position shown in full lines in Fig. 1; the gate is raised to its extreme upper position, during which movement the sill 13 engages the forward inclined edge of the catch 21, forces said catch backward until the sill passes the shoulder 22, whereupon the catch swings forward again by gravity, and the shoulder engages the lower edge of the sill 13, and thereby locks the gate in its uppermost position out of use while the machine is at rest.

While I have described my invention as being applied to a laundry machine of the "hydro-extractor" type, yet it is obvious that it may be applied to advantage to many other machines and to other purposes.

I do not desire to limit myself to the exact construction herein shown and described, as it is obvious that variations may be made without departing from the spirit of the invention.

Having now described my invention what I claim is:

1. A safety device comprising guide members, a gate slidably mounted on said guide members, means for locking said gate in the position it assumes when not in use, power operating devices, and means to control the same and lock and release said gate.

2. A safety device comprising guide members, a gate slidably mounted on said guide members adapted to normally rest in the position it assumes when in use, and means for locking said gate in the position it assumes when not in use, power controlling devices, and means operated by said devices for supporting and releasing said gate.

3. A safety device comprising guide members, a gate slidably mounted on said guide members adapted to normally rest in the position it assumes when in use, weights connected to said gate to relieve its weight so that it may be easily raised to the position it assumes when not in use, and means for locking said gate in the position it assumes when not in use, power controlling devices, and means operated by said devices for operating said gate locking means.

4. A safety device comprising guide members, a gate slidably mounted on said guide members, a catch adapted to engage said gate when moved to the position it assumes when not in use, whereby the gate is locked in such position, a trip dog adapted to disengage said catch from said gate so that the gate may move to the position it assumes when in use, a lever connected to and operating said dog, and an arm for actuating said lever.

5. In a hydro-extractor the combination with a rotatably mounted chamber, and a casing surrounding said chamber and provided with an opening to permit access to said chamber, of guide members, a gate slidably mounted on said guide members adapted to protect said opening, means for locking said gate in the position it assumes when removed from said opening and out of use, and means for releasing said gate, so that it will move to the position it assumes when in use, and protect said opening when said chamber is set in motion.

6. In a hydro-extractor the combination with a rotatably mounted chamber, a casing surrounding said chamber and provided with an opening to permit access to said chamber, and a power controlling arm, of guide members, a gate slidably mounted on said guide members adapted to protect said opening, a catch for locking said gate in the position it assumes when removed from said opening and out of use, and a trip dog operatively connected to said power control-

ling arm adapted to engage said catch to release said gate, so that it will move to the position it assumes when in use adjacent said opening, when said power controlling arm is moved to set said chamber in motion.

7. In a hydro-extractor the combination with a rotatively mounted chamber, a casing surrounding said chamber and provided with an opening to permit access to the chamber, a gate adapted to protect said opening, means to guide the gate in its movements, means to retain the gate away from said opening, a power shifting arm, and means operated by said arm for releasing the gate holding means.

8. In a hydro-extractor the combination with a rotatively mounted chamber, a casing surrounding said chamber and provided with an opening to permit access to the chamber, a gate adapted to protect said opening, means to guide the gate in its movements, means to retain the gate away from said opening, a power shifting arm, and means operated by said arm for releasing the gate holding means, said arm being provided with means to retain the gate in the lowered position while the machine is in operation.

Signed at New York city, in the county of New York, and State of New York, this 8th day of April, A. D. 1910.

CHARLES MILLER.

Witnesses:

RALPH H. RAPHAEL,
T. F. BOURNE.