

N. LOMBARD.  
WASHING MACHINE.  
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944,736.

Patented Dec. 28, 1909.

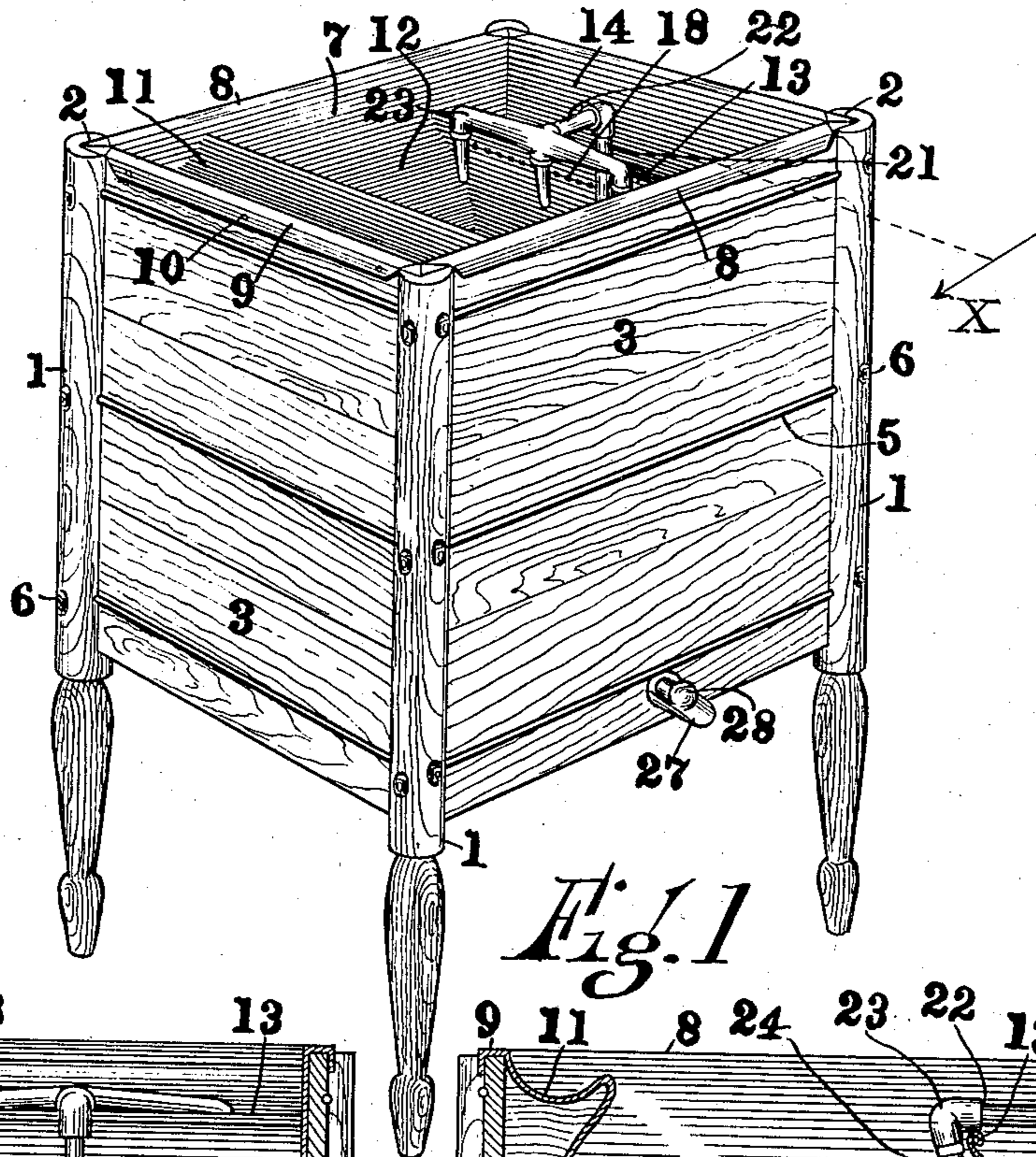


Fig. 1

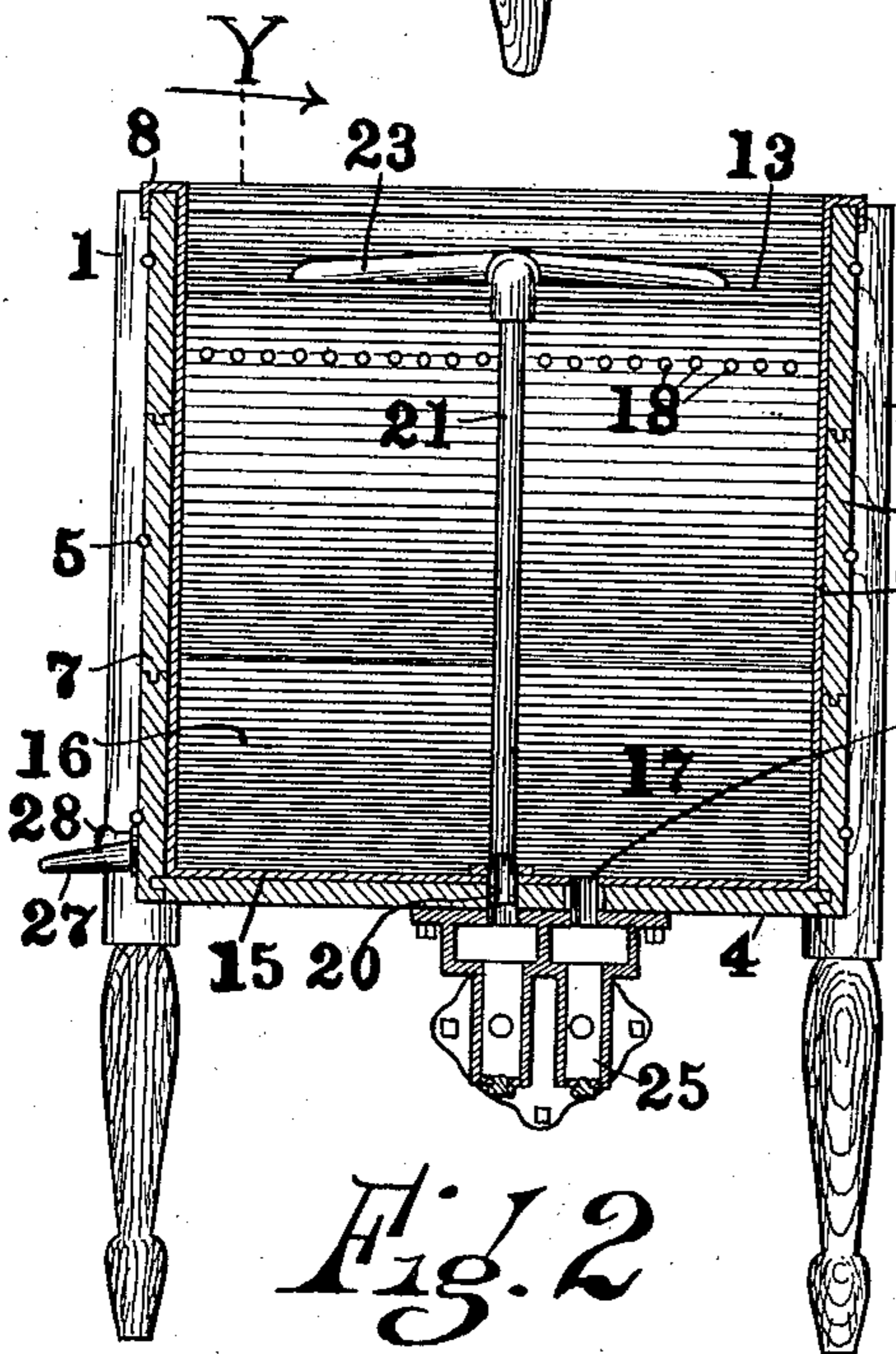


Fig. 2

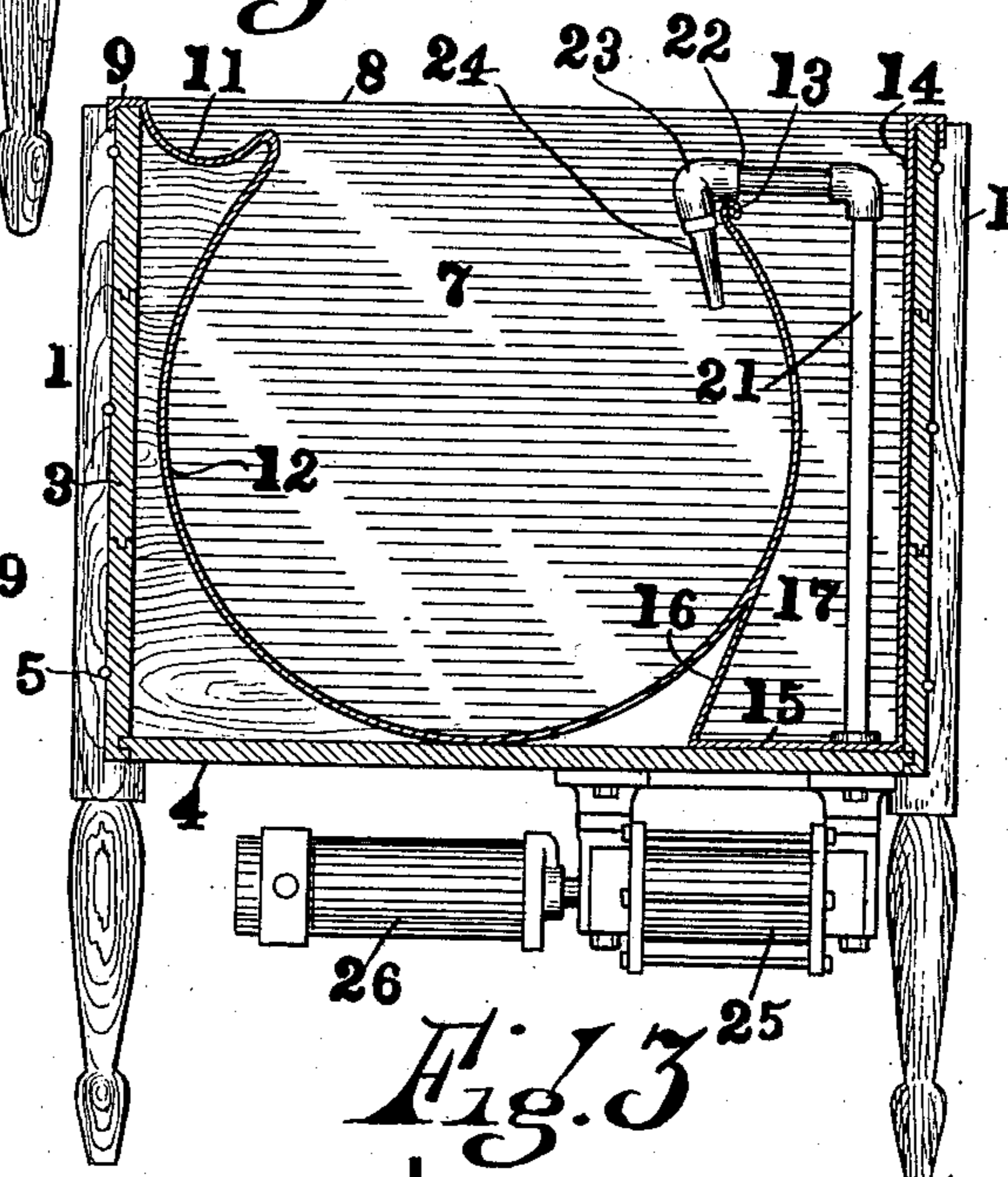


Fig. 3

Witnesses:

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# UNITED STATES PATENT OFFICE.

NATHANIEL LOMBARD, OF AKRON, OHIO.

WASHING-MACHINE.

944,736.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Application filed February 4, 1909. Serial No. 476,023.

*To all whom it may concern:*

Be it known that I, NATHANIEL LOMBARD, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented new and useful Improvements in Washing-Machines, of which the following is a specification.

This invention relates to washing machines.

The object of this invention is to produce a device comprising a receptacle adapted to contain an aqueous solution, preferably containing suitable chemical ingredients for the removal of the foreign matter contained in clothes, said receptacle being so shaped that the clothes during the washing process will be constantly subjected to agitation, by reason of the employment of means for producing a whirling motion of the aqueous solution.

The invention further contemplates providing a receptacle to contain an aqueous solution in which the clothes are deposited provided with means for constantly permitting the escape of the solution therefrom into a separate chamber which drains to a pump and from which it is forced upwardly into the receptacle through suitable nozzles so disposed as to produce a whirling motion of said solution, said solution constantly flowing through the vents or drains from said receptacle back to the pump, whereby the clothes are constantly subjected to agitation in a suitable solution prepared with a view of removing the dirt therefrom.

The invention further comprises a receptacle adapted to receive the clothes, capable of being filled with a solution which is adapted to be used continuously on the clothes until the desired cleansing effects have been produced and at the same time said solution will be pumped in a constant stream and so directed as to keep the clothes in constant motion or agitation by a whirling motion so that much better results will be obtained from the use of the solution in which they are placed than if this solution was constantly changed by an admixture of fresh water therewith, provision being made for drawing the solution from the receptacle at the termination of the cleansing operation.

A still further object is to construct a device of this kind adapted both for laundry and domestic purposes, wherein the clothes

will be thoroughly cleansed without rubbing or danger of tearing or disintegration of the fabric and in which the only agitation to which they are subjected is the agitation produced by constantly acting jets of cleaning fluid so directed as to keep them whirling in a suitable receptacle.

With the foregoing and other objects in view, the invention consists in the novel construction, combination and arrangement of parts constituting the invention to be hereinafter specifically described and illustrated in the accompanying drawings which form a part hereof wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claim hereunto appended.

In the drawings, in which similar reference numerals indicate like parts in the different figures: Figure 1 is a perspective view of a washing machine embodying this invention. Fig. 2 is a transverse sectional view of the device approximately on line X of Fig. 1; and, Fig. 3 is a vertical sectional view of a complete device approximately on line Y of Fig. 2.

Referring to the drawings in detail, the reference numerals 1 denote upwardly-extending corner posts constituting the supporting medium for the device. These posts are each provided with a longitudinally-extending groove or rabbet 2 having the side faces thereof formed at an angle of 90 degrees. Extending between the posts and adapted to be seated in the grooves 2 of the posts 1 are side pieces 3, 3, with their abutting ends mitered in order to properly seat in said grooves. The device is further provided with a floor 4. The pieces 3, 3, forming each side, are preferably connected by tongue and groove joints and the floor 4 is connected with the sides by similar joints.

In order to securely unite the entire device together, a plurality of horizontally-extending bolts 5 are employed which extend through the posts 1 and are provided with nuts 6 by which the side pieces 3 and floor 4 are tightly clamped into snug engagement with one another.

Mounted within the frame just described is a metallic receptacle comprising side plates 7 fitting snugly against the sides of the frame provided with lateral flanges 8 which overlap and are secured to the upper

faces of the members 3 by suitable holdfast devices. Extending between the side members 7 is a tank or receptacle adapted to contain an aqueous solution in which is placed the clothes to be cleaned, preferably constructed of sheet metal having flanges 9 at one end adapted to overlap the end of the frame and be there held by holdfast devices 10 and from thence it extends inwardly forming a trough 11 for a purpose to be later described. From thence it depends to form a cylindrical or pear-shaped receptacle 12 terminating on the opposite side with a rolled rim 13. The portion of the receptacle which terminates with the rolled rim 13 is spaced apart from its respective end of the frame, which is also covered by a sheet of metal 14, preferably formed integral with the side portions 7. The floor of the device between the receptacle 12 and the end which is covered by the covering 14 is also covered by a hollow member 15 united with the portion 14 and which also extends upwardly constituting a wall 16 which unites with the wall of the receptacle 12, as clearly shown in Fig. 3. This formation divides the space inclosed by the frame into a main receptacle 12 in which is placed the solution and the clothes to be washed and which is preferably cylindrical or pear-shaped as desired and also into a second receptacle, hereinafter designated as a chamber and referred to by the reference numeral 17. The wall of the receptacle 12 immediately below the rolled rim 13 is provided with a plurality of openings 18 through which the surplus solution contained in the receptacle 12 escapes into the chamber 17. The floor of the chamber 17 is provided with an opening 19, hereinafter designated as the outlet and a separate opening 20 in which is mounted an upwardly-extending pipe 21 connected with a laterally-extending pipe 22 to which is secured a transversely-extending head 23 provided with a plurality of downwardly-turned nozzles 24 which are so disposed that fluid issuing therefrom into the receptacle 12 will cause a circulatory or whirling motion of the liquid contained in said receptacle.

Secured to the floor 4 of the frame of the device is a pump 25 adapted to be operated by a motor 26. The pump 25 is in open communication with both the opening 19 in the floor of the chamber 17 and also with the upwardly-extending pipe 20 so that a fluid drawn or flowing by gravity from the chamber 17 into the cylinder of the pump will be forced upwardly by the action thereof through the upwardly-extending pipe 21 and outwardly through the nozzles 24 into the receptacle 12. Any form of motor and pump may be employed which will be deemed best for the purpose, but the drawings in this connection are largely diagram-

matic, for the reason that any preferred type of motor may be used, as has just been described.

The receptacle 12 is provided with a drainage tube 27 adapted to be closed by a suitable closure member 28, so that when it is desired to withdraw the contents of the receptacle 12, the stopper is removed and the fluid therein is permitted to escape through the medium of the tube 27.

The operation of this device is as follows: The receptacle 12 and chamber 17 are filled with a suitable fluid, containing, if desired, materials for effectually cleaning the clothes and the height of the fluid will be approximately equal to the position occupied by the openings 18. The clothes to be cleaned are then placed in the receptacle and the pump started which draws the water contained in the chamber 17 into the pump which forces it upwardly through the pipe 21 and out through the nozzles 24 into the receptacle 12 and the force of water issuing from the nozzles 24 will be sufficient to cause the clothes in the solution contained in the receptacle to move in a circular path with a whirling motion which causes the clothes to be tumbled and turned over by the whirling motion, causing all portions of the clothes to be subjected both to the cleansing action of the liquid and also to a certain extent to the action of the current of liquid from the nozzles 24, thereby effectually removing dirt and other deleterious matter therefrom. When the clothes have been completely cleaned, the closure device 28 is removed and the liquid contained in the receptacle 12 is permitted to escape, at the same time the operation of the pump is continued until all liquid which is contained in the chamber 17 has been forced therefrom and the chamber emptied through the nozzles 24 into the receptacle 12, from which it escapes by the tube 27. After the clothes have been thoroughly cleansed, the closure device may be replaced and the receptacle 12 filled with another liquid intended to rinse or to blue the clothes and further agitation continued. This method of subjecting the clothes to different liquids having different properties, necessarily employed in the cleaning of clothes, may be kept up indefinitely and in each instance the clothes subjected to the action of a prepared liquid of a desired strength and this liquid will not be reduced in strength or changed through the necessity of incorporating fresh water therewith, for the reason that the pump 25 will keep the solution contained in the receptacle and chamber 17 in constant agitation and no extraneous fluid need be employed; in other words, the clothes are whirled, tumbled and agitated in a definitely prepared liquid until they are cleaned from dirt or deleterious substances.

The trough-shaped portion 11 constitutes a receptacle for soap or any other substance or chemical used in the operation of cleaning clothes, and while this preferred form is part of the main device it may be entirely omitted if desired.

What I claim and desire to secure by Letters Patent, is:—

10 A washing machine comprising a frame containing a receptacle having curvilinear walls adapted to receive a cleansing medium and the articles to be cleaned, an overflow tank contained in said frame and arranged adjacent to said receptacle and adapted to receive the overflow of the cleansing medium from said receptacle, means for supplying

and forcibly discharging downwardly approximately parallel with one of the curvilinear walls a cleansing medium into said receptacle for imparting to said cleansing medium in said receptacle and the articles carried thereby a vertical whirling motion and a pump for exhausting the cleansing medium from said overflow tank and supplying it to said means.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

NATHANIEL LOMBARD.

Witnesses:

W. S. TRUE,  
C. E. HUMPHREY.