

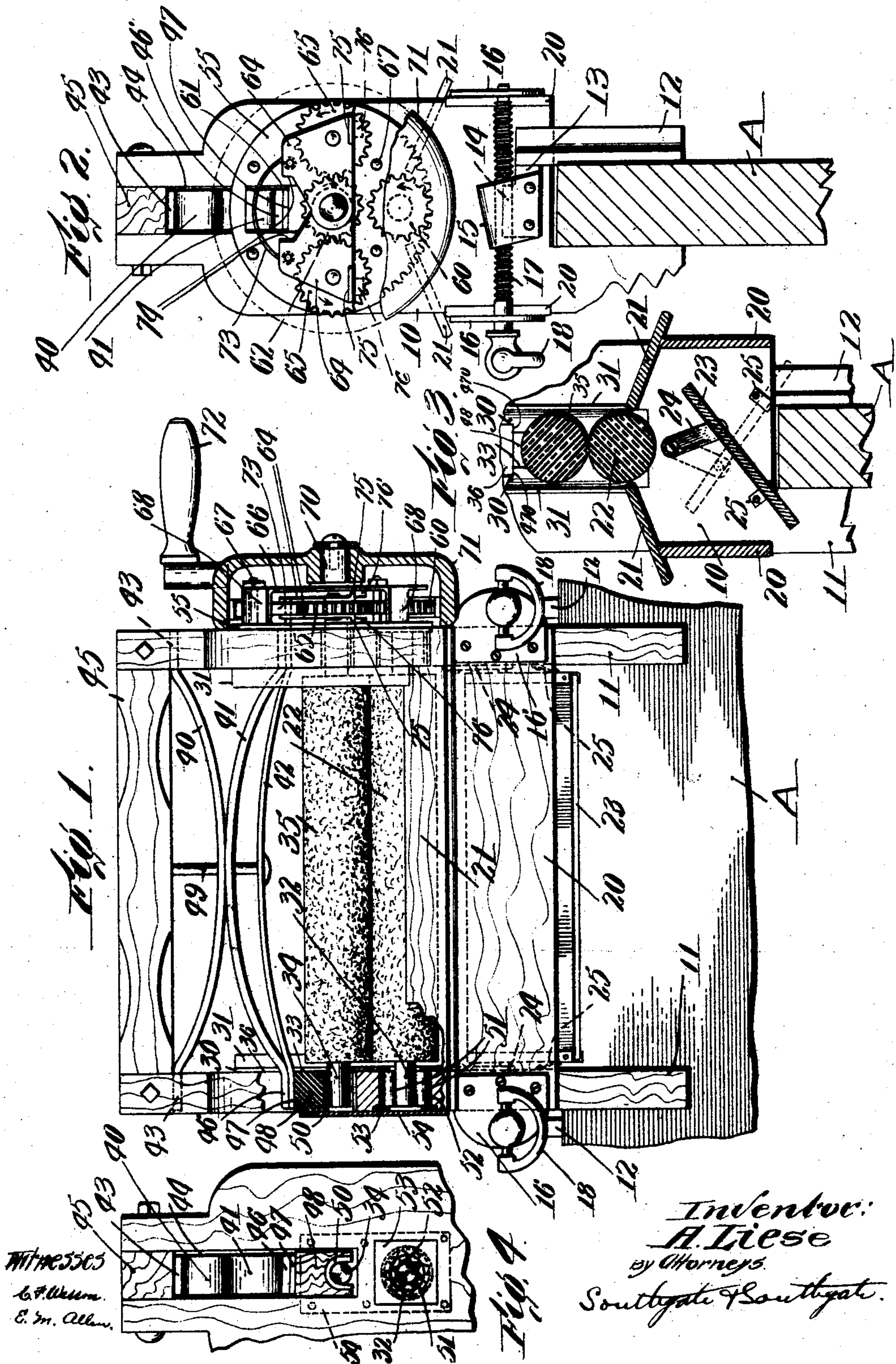
A. LIESE.

WRINGER.

APPLICATION FILED SEPT. 18, 1907.

906,904.

Patented Dec. 15, 1908.





# UNITED STATES PATENT OFFICE.

AUGUSTUS LIESE, OF SOUTH LANCASTER, MASSACHUSETTS.

## WRINGER.

No. 906,904.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed September 18, 1907. Serial No. 393,527.

*To all whom it may concern:*

Be it known that I, AUGUSTUS LIESE, a citizen of the United States, residing at South Lancaster, in the county of Worcester and State of Massachusetts, have invented a new and useful Wringer, of which the following is a specification.

This invention relates to a clothes wringer, the principal objects being to provide a construction in which a multiplication of power can be secured in a simple and convenient manner at the same time inclosing all the gearing so that it may not project in a position where it can catch in the clothing of the operator or in articles passing through the wringer; to provide means whereby one of the rolls may move away from the other when heavy pieces are passed through the wringer without interfering with the positive and constant transmission of power to both rolls; to provide means for positively driving both rolls at a constant speed irrespective of the relative positions; to provide an improved form of spring, pressing one roll toward the other; to provide improved means for directing the water from the wringer to the tubs, facilitating changing the direction of the drippings from one tub to the other; to provide improved means for fastening the wringer on the tubs; and generally to simplify and improve the construction of wringers.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings which show a preferred form of the invention, and in which

Figure 1 is a front elevation of the same with parts in section. Fig. 2 is an end view. Fig. 3 is a transverse sectional view through the center, and Fig. 4 is a view of the end of the machine opposite to that shown in Fig. 2.

The wringer is shown as comprising a frame 10 having a downwardly extending projection 11 integral with each side of the frame. This arm is designed to be set up against the edge of a tub A or the like, and the frame is intended to be secured in position thereon by means of a clamping member 12 which is provided with a projection 13, on the top of which is a partial nut 14. Over this nut extends a hood 15 having a slanting upper surface.

Mounted in bearing plates 16 on the opposite ends of the frame is a screw 17 which is free to rotate but not to move longitudinally. This screw meshes with the partial nut and is designed to move the nut and the clamping piece 12 back and forth. It will be observed that the screw not only bears on its lower side in the nut, but also bears on the lower edge of the inclined hood 15. This forms sufficient bearing to permit the turning of the screw to give a positive motion to the clamping piece, and yet when it is desired to move the clamping piece along the screw quickly, it is necessary merely to turn the same at an angle so that the nut will be moved out of engagement with the screw and the hood can be moved along the screw at will. This forms a positive clamping arrangement which can be thrown out of mesh and moved freely and rapidly from one end of the screw to the other as desired. The screw may be provided with any desired kind of an operating handle or the like 18.

The frame 10 may be made of wood or any desired material and is provided with vertical front and rear plates 20, at the top of which are slanting deflecting plates 21 which cover the lower part of the frame and terminate in close proximity to the lower wringing roll 22, so that the water from the clothing will flow over the top of one of the plates 21 into the tub. The water that passes between the rolls and these plates is intended to be intercepted by a plate 23 which is adjustable to direct the water in either direction so that it may flow into either one of the tubs. In the construction shown this result is obtained by means of a pair of depending links 24 suspended from pivots directly under the lower roll, and to which the upper part of the plate 23 is pivoted. Two pairs of springs 25 are mounted on the inside of the end pieces of the frame to hold the plate in the full line or dotted line position as indicated in Fig. 3 so as to direct the water in either direction.

Above the plates 21 the frame is provided with a pair of guard plates 30 having flanges on their front and rear edges extending inwardly. These plates are provided with perforations for receiving the spindles 32 of the roller 22 and with slots 33 for receiving the spindles 34 of the upper roll 35, to permit the upper roll to move vertically. It will be



seen that the flanges 31 extend inwardly in such position as to prevent articles passing through the wringer from being drawn toward the ends of the rolls and coming into the space between them and the sides of the frame. The side plates 30 are also provided with larger slots 36 above the slots 33 for receiving the ends of the springs for holding the upper roll yieldingly in position against the lower roll. These springs are shown as consisting of three pieces of resilient metal numbered respectively 40, 41 and 42. The spring 40 is bowed downwardly in the center, and its ends 43 extend into slots 44 in the end pieces of the frame and bear against the top piece 45 of the frame. The spring 41 is bowed upwardly at the center engaging the lower bowed portion of the spring 40. Its ends 46 are similar to the ends 43, but are at the bottom of the spring 41. These ends are also in the slots 44 and bear on the ends 47 of the spring 42 which is shown as lighter than the other two springs. It is bowed upwardly at the center, but not to such a degree as the spring 41. The ends 47 rest on blocks 48 which reciprocate in the end frames. These three springs are connected by a pin 49 which is firmly secured to the lower spring and passes freely through a hole in the centers of the springs 40 and 41. The upper end of this pin is fixed in the top cross-bar 45.

It will be seen that the spring 42 having the center of its upper bowed portion fixed in position by the rod 49 acts independently to press against the blocks 48 and hold the same down, while the ends 46 of the spring 41 co-act with the spring 40 to assist in accomplishing the same purpose, the springs 40 and 41 being supported by the ends 47. It will be understood that the blocks rest on bushings 50 carried by the spindle 34 and rise and fall with the roll 35, the springs operating to hold the roll down. The downward motion of the ends of the springs is limited by projections or shoulders 470 on the guards 30, so as to prevent excessive pressure on the lower roll.

The spindle 32 is mounted to turn in anti-friction bearings shown in the present instance as consisting of rollers 51 which are mounted in the casing 52. This casing is provided with a cover plate 53 which in turn is covered by a plate 54 on one end of the machine. On the other end of the machine the corresponding plate 53 is covered by a larger plate 55 which is preferably substantially circular in form, and is fixed to the end of the frame so as to be able to support the operating mechanism which will now be described. The spindle 32 at this end of the machine extends through the plate 55 and has a pinion or gear 60 thereon. The plate 55 also has a slot 61 therein through which projects the spindle 34 at this side of the

machine, which spindle is also provided with a pinion or gear 62. It, of course, being understood that the upper roll has vertical motion, it will be seen that this gear or pinion also will move vertically when the article to be wrung is especially thick or heavy. In order that these two pinions may be driven constantly and uniformly independently of the position of the upper roller, the following mechanism is provided.

Pivotaly mounted on the spindle 34 are a pair of frames 64 each having a slight oscillating motion. Each of these frames has bearings in which are mounted gears 65. As these frames swing about the axis of the upper roll, it is obvious that the gear 65 may be made of such size as always to mesh with the pinion 62 whatever the position of the frames 64. In order to drive the gears an outside plate 66 is mounted over the plate 55 so as to cover the mechanism thereon, this plate being held in position by screws 67 passing from the end piece of the frame through both plates, and having nuts thereon for fixing the outer plate in position. This outer plate has flanges 68 for engagement with the plate 55 to define and limit its position, and it is provided with a stud 70 on which is rotatably mounted an internal gear wheel 71. The stud, of course, is concentric with the roll 35 when in its lowest position. The gear wheel is provided with a handle 72, and when rotated its teeth constantly mesh with the pinion 60 and also with both of the gears 65 independently of their position.

The rise of the upper roll will raise the pivot on which the frames 64 swing. In order to provide for forcing the two gears outwardly to keep them in mesh with the teeth of the internal gear wheel, a spring 73 is mounted above the two frames 64 and formed into a bow-shape so as to yieldingly force them away from each other. It will be observed also that the end of the spring 42 projects through the slots 44 and 36, and that the frames 64 have upwardly extending projections 74 which engage the projecting end of the spring 42 so as to prevent the frames from rising above a certain point. It will also be observed that these frames have outwardly extending projections 75 at their lower ends which bear on lugs 76 on the inside of the frame 66, and on the outside of plate 55 so as to limit the motion in that direction. It will be seen, therefore, that the frames 64 while free to have a certain motion, are constrained to move within certain limits so that the pinions which they carry will always remain in mesh with the internal gear wheel, and that the rotation of the same independently of the position of the upper roll will be transmitted at all times to both of the rolls to rotate them constantly at the same speed.



While I have illustrated and described a preferred form of the invention, I am aware that many modifications may be made therein by any person skilled in the art without departing from the scope thereof as expressed in the claims. Therefore, I do not wish to be limited to the particular form shown, but

What I do claim is:—

1. In a wringer, the combination with movable bearing blocks, of an upwardly bowed spring having its ends resting on said blocks, a second spring bowed upwardly to a greater degree and having its ends resting on the ends of the first named spring, a third spring bowed downwardly in the center, and having at its ends stationary bearings, and the bowed portion resting on the bowed portion of the second spring, and a pin fixed to the first spring passing through the other two springs freely and having its upper end fixed.

2. In a wringer, the combination with the rolls of a pair of movable bearing blocks, and a spring therefor comprising a flat spring bowed upwardly at the center and resting at its ends on said blocks, and a second stronger and thicker flat spring bowed upwardly on an arc of smaller radius and resting at its ends on the first named spring, a third spring bowed downwardly and bearing on the center of said second spring, and means for fixing the center of the lower spring with respect to the ends of the top one.

3. In a wringer, the combination with a frame having vertical slots in the ends thereof, bearing blocks movable in said slots, an upwardly bowed spring having its ends resting on said blocks, a second spring bowed upwardly to a greater degree and having its ends resting on the ends of the first named spring, a third spring bowed downwardly and having its ends bearing against the top of the frame and the bowed portion resting on the bowed portion of the second spring, and a pin fixed to the first spring passing through the other two springs freely and having its upper end fixed to the frame.

4. In a wringer, the combination of movable bearing blocks, an upwardly bowed spring having its ends resting on said blocks, a second spring bowed upwardly to a greater degree and having its ends resting on the ends of the first named spring, a third spring bearing on the second spring, and a pin fixed to the first spring and passing freely through the other two springs having its upper end fixed.

5. In a wringer, the combination of an upwardly bowed spring, a pin fixed to the center thereof and extending upwardly therefrom, a spring above the first spring and bearing thereon, through which said pin freely passes, and a frame having a cross-bar above to which the upper end of said pin is fixed.

6. In a wringer, the combination of a frame having vertical slots in its ends, a roll having fixed anti-friction bearings below said slots, a second roll above the first, bearing blocks for the second roll movable in the slots, a spring having its ends extending into the slots and adapted to force said bearing blocks downwardly, and a pair of guards located on the inside of said frame each guard having outwardly extending flanges for preventing articles from being drawn toward the ends of the rolls, each guard having inwardly extending projections constituting a positive stop for said spring to limit the pressure thereof on the movable roll when the latter is in its lowest position.

7. A wringer having springs and stationary guards, said guards having horizontal inwardly extending shoulders below the springs against which the springs are adapted to engage, whereby the action of the springs is limited, and being provided with inwardly extending flanges on both sides for preventing articles from being drawn toward the ends of the rolls of the wringer.

8. A wringer having springs and guards, said guards having horizontal inwardly extending shoulders below the springs against which the springs are adapted to engage, whereby the action of the springs is limited, and being provided with inwardly extending flanges for preventing articles from being drawn toward the ends of the rolls of the wringer.

9. In a wringer, the combination of a centrally upwardly bowed spring, a pin fixed to the center thereof and extending upwardly therefrom a spring above the first spring bearing on the ends thereof, and a third spring bearing on the second spring, said pin passing freely through the second and third springs, and a frame to which said spring is fixed and against which the ends of the third spring bears.

10. In a wringer, the combination of movable bearing blocks, a spring having its ends resting on said blocks, a second spring having its ends resting on the ends of the first named spring, a third spring bearing on the second spring, and a pin fixed to the first spring and passing freely through the other two springs and having its upper end fixed.

11. In a wringer, the combination of a frame, rolls supported by the frame, a pair of links supported below the ends of said rolls, a deflecting plate connected with the lower ends of said links at a point near the upper end of said plate, and means for supporting the lower end of said deflecting plate in two different positions whereby said deflecting plate may be swung so as to carry drippings from the frame in either direction.

12. In a wringer, the combination of a pair of pivotally supported links, a plate con-

nected with the lower ends of said links, and  
springs located below said links and on oppo-  
site sides thereof, said springs being adapted  
to hold the lower end of said plate in two  
5 different positions whereby drippings can be  
carried out of either side of said wringer.

In testimony whereof I have hereunto set

my hand, in the presence of two subscribing  
witnesses.

AUGUSTUS LIESE.

Witnesses:

JOHN R. GILHAN,  
ROBERT N. DALZELL.