G. S. BLAKESLEE.

WASHING MACHINE.

APPLICATION FILED AUG. 23, 1918.

1,404,570.

Patented Jan. 24, 1922.

2 SHEETS—SHEET 1.

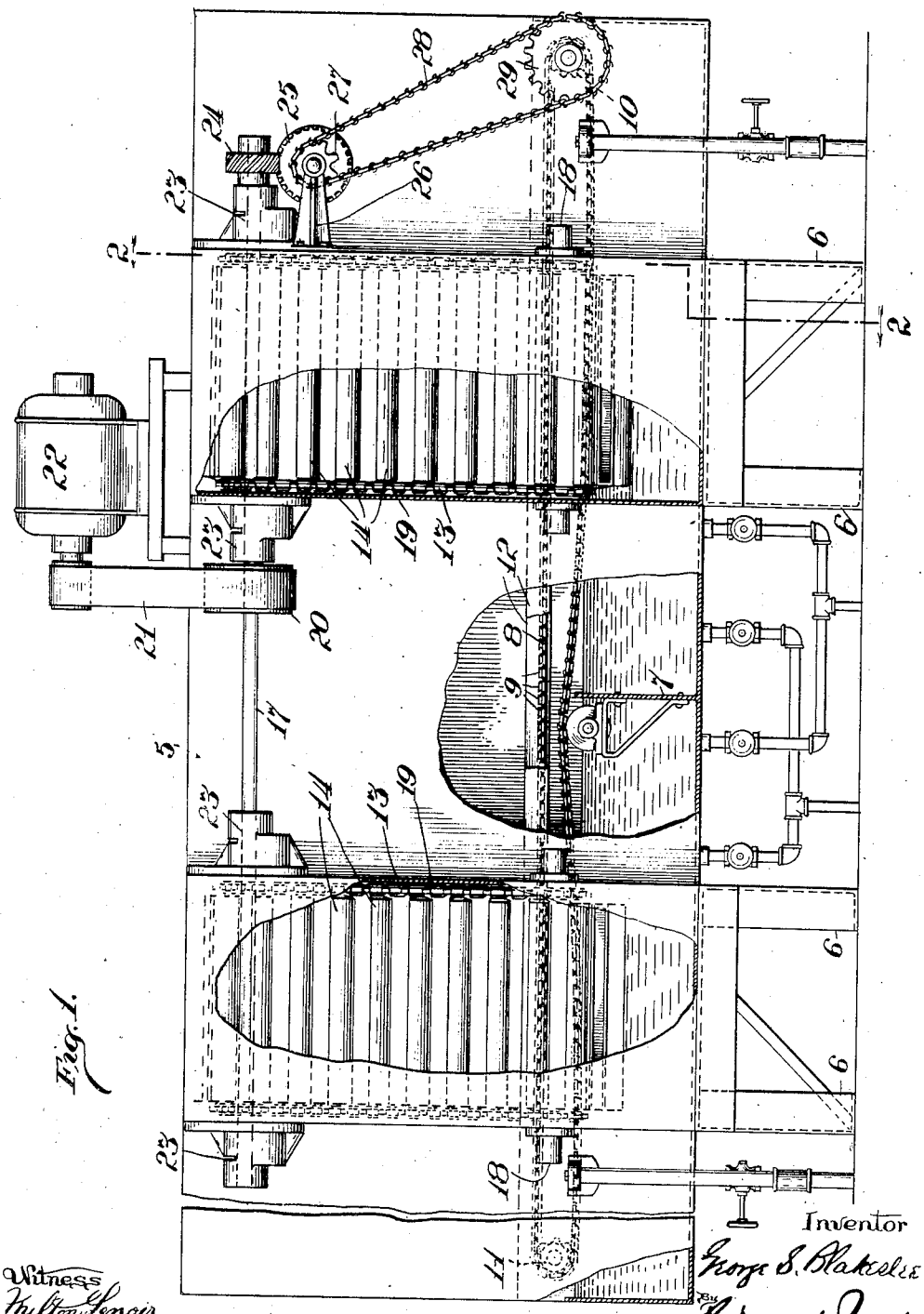


Fig. 1.

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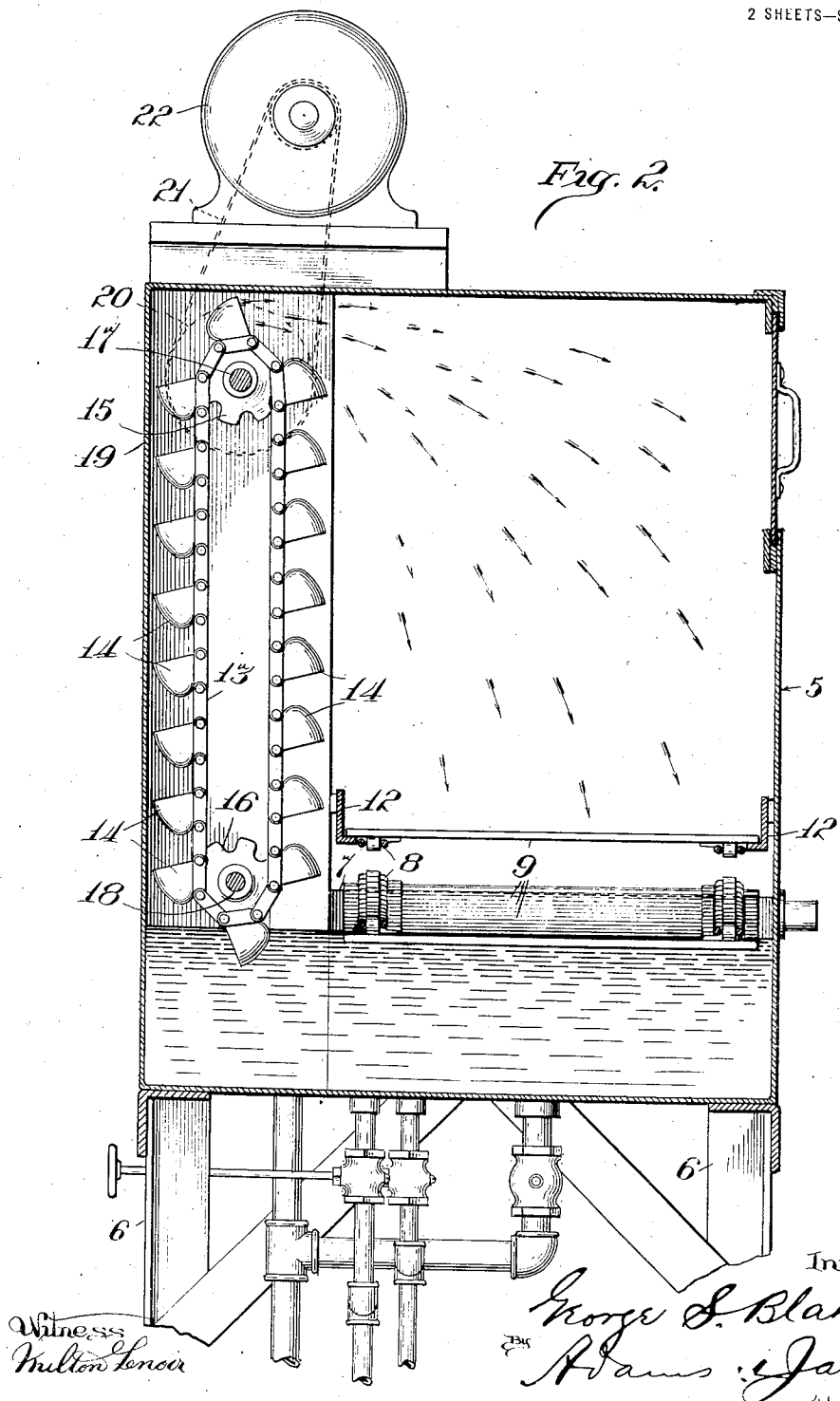
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2 SHEETS—SHEET 2.

Fig. 2.



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WASHING MACHINE.

1,404,570. Specification of Letters Patent. Patented Jan. 24, 1922.

Application filed August 23, 1918. Serial No. 251,132.

To all whom it may concern:

Be it known that I, GEORGE S. BLAKESLEE, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Washing Machines, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in machines for washing articles by throwing water on and against them as such articles are moved past the water-discharging means, and is applicable for washing a large variety of articles including dishes and heavy castings. As very generally constructed heretofore machines of the type mentioned have employed as the water elevating and discharging means one or more paddle-wheels, each located at one side of and adjacent to the line of travel of the carrier that supported the articles to be washed. Such paddle-wheel constructions have been found very effective, but in some situations the machines occupy more space than can be well spared for them. It is the object of my present invention to provide improved means for raising the water and discharging it over the articles, such means having advantages in various ways over the paddle-wheel construction. Briefly stated, the improvements made by me and some of the advantages derived therefrom are as follows: At one side of the closed tank through which the articles to be washed are moved I provide an endless conveyor comprising, in the construction shown, two endless link belts having secured between them a plurality of buckets, each of said belts passing over two sprocket wheels located one above the other, the lower one being so positioned relative to the body of water maintained in the tank that the buckets will be successively filled, the water so carried up being discharged as the buckets are turned over as the belts pass around the upper sprockets. With respect to the advantages of such construction over the wheel type of water elevator it is pointed out that my improvements enable the tank to be made much narrower than if a wheel having the same capacity were employed, for where a tank has to be constructed of considerable height to properly receive tall articles, such as some kinds of castings, the water elevating and discharging means can be made of any length desired so as to discharge the water over and on the top of such article without making the width of the tank or that part containing the water elevating means any greater than where a short elevating apparatus is employed, whereas with a wheel construction a wheel of large diameter must be employed to carry the water to the same height, and that will make necessary the use of a very large amount of floor space; it can be operated with less expenditure of power than a wheel of the same carrying capacity and the speed thereof can be graduated so that the water discharged over the articles will strike thereon at any desired distance from the point where the water is discharged from the elevating means. I accomplish the results stated by the devices and combinations of devices shown in the drawings and hereinafter particularly described, and those things which I believe to be new will be set forth in the claims.

In the drawings:

Fig. 1 is a rear view of a washing machine embodying my improvements, a portion of the rear wall of the tank being broken away to show portions of the operative mechanism; and

Fig. 2 is a vertical cross-section taken at line 2—2 of Fig. 1.

Referring to the drawings: 5 indicates a casing which is best made of sheet metal and approximately rectangular in shape. As shown, it is supported by legs 6. The lower portion of the casing is so formed as to hold a considerable body of water, as indicated, and this lower portion is divided by a transverse partition 7, as usual, thus dividing the tank into two water containing compartments, the water in one being that which is first used, as for washing purposes, and the other compartment containing the water that is used for rinsing purposes. Suitable pipe connections are shown which need not be particularly described, such connections supplying the two water compartments with hot and cold water. Each water compartment will also have a drain pipe that regulates the level of the water therein. An endless carrier extending substantially from end to end of the casing 5 is provided, upon which articles to be washed are placed and moved through the casing. Such carrier comprises belts 8, spaced apart, and a plurality of cross slats 9 secured thereto, the belts running over sprocket wheels 10—11,

respectively, and the upper part of the carrier being supported by fixed tracks 12.

Opposite the compartment through which the endless carrier moves is a water elevating and discharging apparatus that takes the water from the body of water in the lower part of the receptacle and discharges it near the upper wall of such receptacle over and upon such articles as may be placed upon the endless carrier. Such water elevating and discharging apparatus comprises two link belts 13, spaced a distance apart and connected together by a plurality of long buckets or troughs 14, said link belts each passing around sprocket wheels 15—16, placed one above the other, said sprocket wheels being secured respectively to shafts 17—18. In the construction shown, I have provided two of the endless water elevating devices just described, one being provided at each side of the partition 7 so as to act respectively upon the wash water and the rinsing water. Each water elevating device is located in a rectangular compartment formed with and extending out from the main body of the casing 5, and of a depth sufficient to prevent the bucket means 14 from striking against any articles that may rest on the endless carrier near the inner edge of such carrier. These projecting compartments, in which the two elevating mechanisms are housed, are each indicated by 19. So locating these water elevating mechanisms in the two outwardly projecting housings permits of a very desirable arrangement for a driving means common to the endless carrier 8—9 and the two sets of water elevating mechanisms. Such driving means comprises the shaft 17, before referred to, which is made long enough, as shown in Fig. 1, to serve as the support for the upper sprocket wheels 15 of both sets of water elevating mechanisms.

As shown, this shaft 17 extends across the space between the two housings 19, standing away from the rear wall of the casing 5 a sufficient distance to accommodate a pulley 20 that is made fast to the shaft, around which pulley passes a driving belt 21 driven from a pulley on the shaft of a motor, indicated by 22, that is mounted on top of the casing 5,—the support for such motor extending also, in the construction shown, over and upon the top of one of the projecting housings 19. 23 indicates bearings for the shaft, secured respectively to the side walls of the projecting housings 19. One end of the shaft 17 has secured to it a worm 24 meshing with a worm gear 25, the shaft of which is supported by a bracket 26, and upon such shaft is secured a sprocket 27, around which passes a sprocket chain 28 that also passes over another sprocket wheel 29 that is fast on the outer end of the shaft to which the carrier sprockets 10 are secured.

In operation, the endless carrier 8—9 and the water elevating and discharging devices will be simultaneously moved, as will be understood from the description of the foregoing driving means, and when so moved the trough-like buckets 14 will, of course, be successively filled with water and carried up and discharged into the main body of the casing 5, as indicated by the arrows in Fig. 2, such discharged water falling upon and cleansing such article or articles as may be borne by the carrier and moved opposite such discharging mechanism. With some articles it may be desirable to have the water dashed upon them with considerable force, and to also have the water thrown over near the front wall of the casing, while in other instances it will suffice to have the water discharged with less force and nearer the longitudinal center of the casing. Such variations as to force and distance can be provided for by the speed with which the water elevating mechanisms are moved. In many situations head room is more available than floor space, and my improvements are admirably adapted to be embodied in the construction of a machine that can be carried up to a considerable height, but where only a limited amount of floor space can be had. This is true because the endless water elevating mechanism can, of course, be carried to a very considerable height by increasing the height of the casing and without having to at all increase the floor space, whereas to provide a paddle wheel that would deliver the same amount of water and deliver it at the same height would require a very material increase in the floor space occupied by the machine.

What I claim as my invention and desire to secure by Letters Patent, is:

1. A washing machine comprising in combination a casing having a chamber for containing articles to be washed, an endless belt at one side of said chamber, a series of water buckets attached to said belt, and means for moving said belt to cause said buckets to successively discharge their contents upon the articles in said chamber.

2. A washing machine comprising in combination a casing having a chamber for containing articles to be washed, a water conveying and discharging mechanism at one side of said chamber, and means for moving said mechanism to discharge successive quantities of water upon the articles in said chamber, said mechanism comprising two endless belts and a plurality of buckets extending between said belts.

GEORGE S. BLAKESLEE.