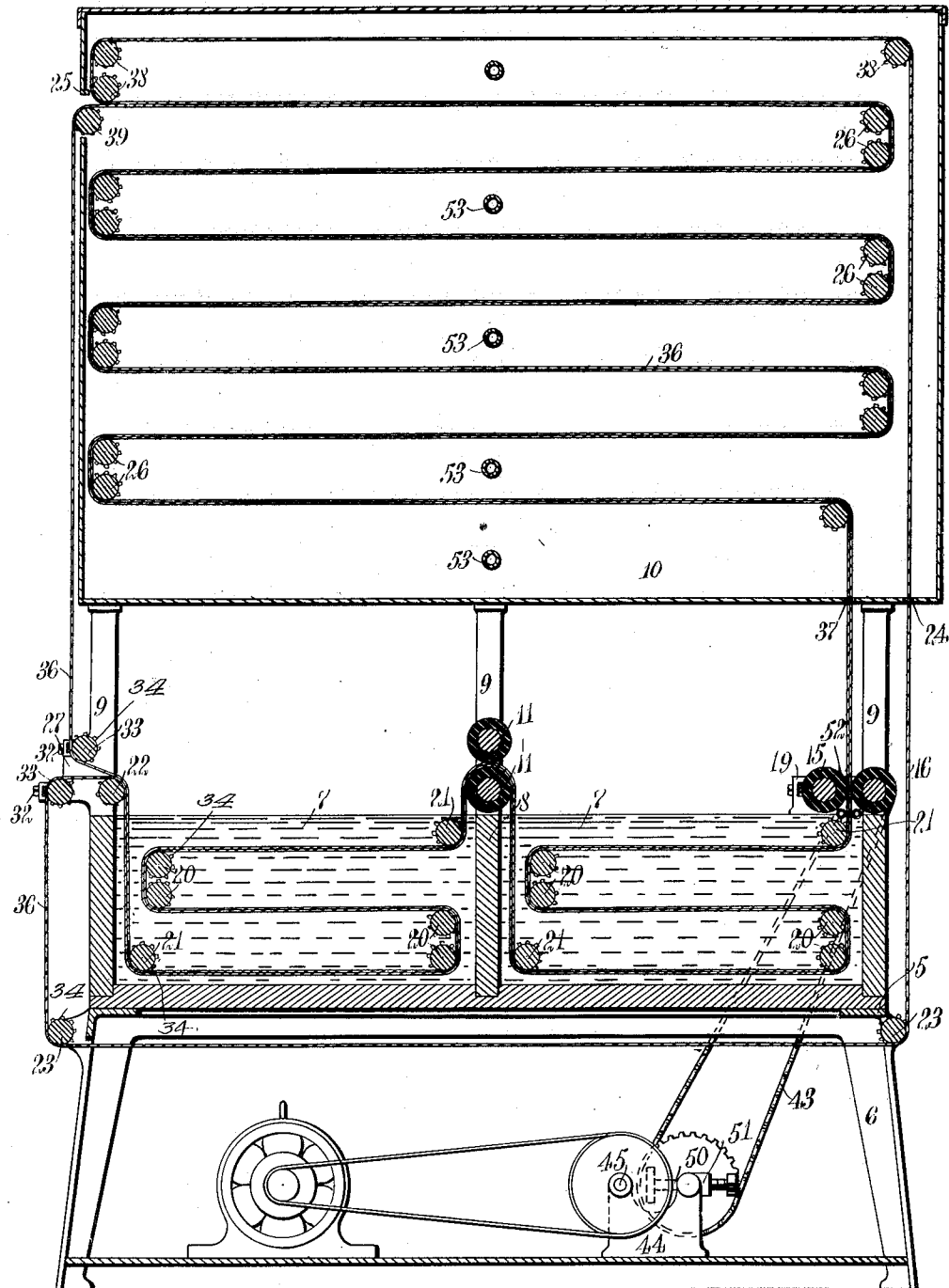


O. HOOPS.
 BLUE PRINT WASHING AND DRYING MACHINE.
 APPLICATION FILED AUG. 27, 1910.

1,005,430.

Patented Oct. 10, 1911.

2 SHEETS—SHEET 1.



WITNESSES:
 G. Robert Thomas
 E. B. Marshall

FIG. I.

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2 SHEETS—SHEET 2.

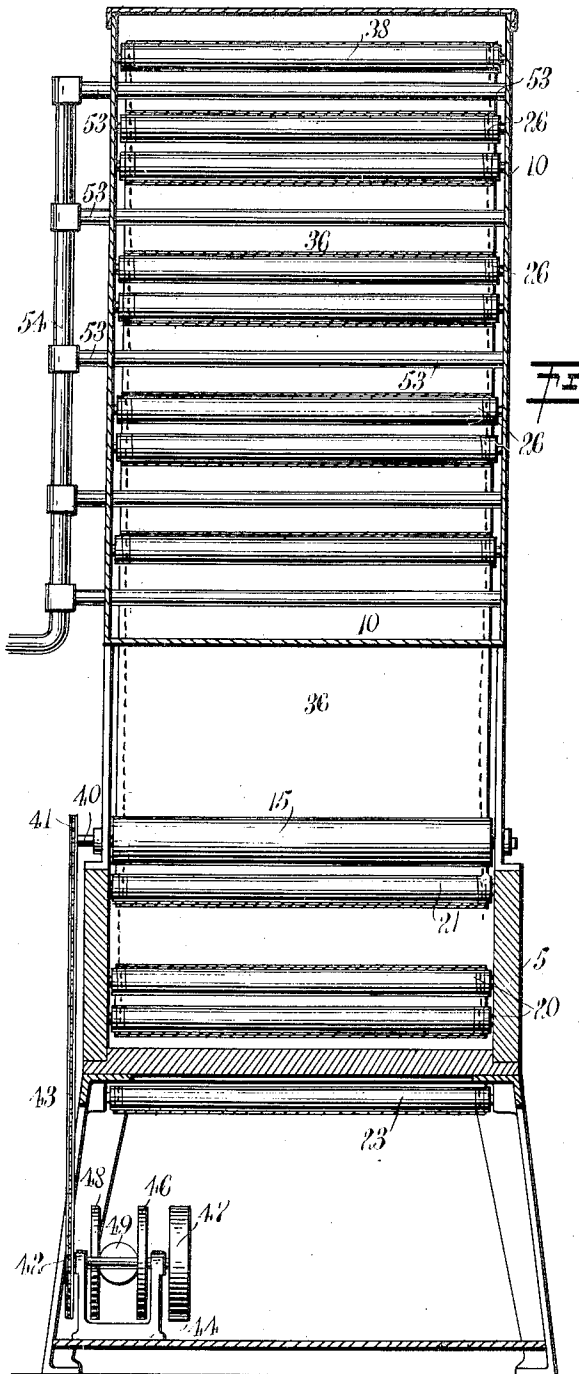


FIG. 2.

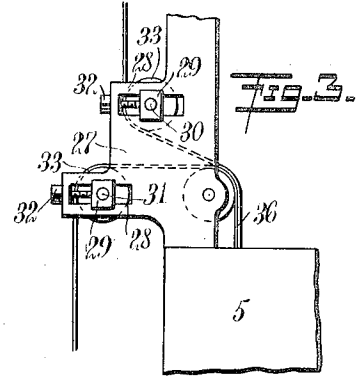


FIG. 3.

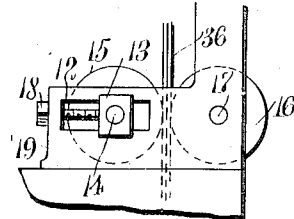


FIG. 4.

FIG. 5.

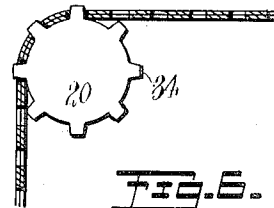
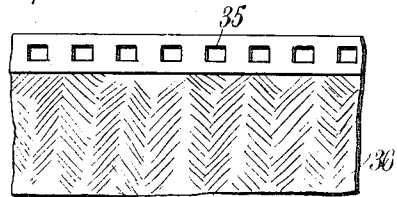


FIG. 6.

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UNITED STATES PATENT OFFICE.

OSCAR HOOPS, OF NEW YORK, N. Y.

BLUE-PRINT WASHING AND DRYING MACHINE.

1,005,430.

Specification of Letters Patent.

Patented Oct. 10, 1911.

Application filed August 27, 1910. Serial No. 579,258.

To all whom it may concern:

Be it known that I, OSCAR HOOPS, a citizen of the United States, and a resident of the city of New York, borough of the Bronx, in the county and State of New York, have invented a certain new and Improved Blue-Print Washing and Drying Machine, of which the following is a full, clear, and exact description.

My invention relates to blue print washing and drying machines, and it has for its object to provide one having two endless belts, having sprocket openings at their sides, which are disposed against each other, and which run over rollers with sprocket teeth journaled in a casing containing tanks, and a compartment for respectively washing and drying the blue prints. The blue prints are conveyed between the belts through the machine, and are introduced and removed at points outside the casing where the belts are spaced from each other.

Another object of the invention is to provide a tank in which rollers are disposed to rotate, a wringer being mounted on the tank through which the belts disposed over the rollers travel as they leave the tank, there being means for adjusting the members of the wringer. Pipes are disposed below the wringer for conveying water to the belts and the blue prints disposed therebetween.

Additional objects of the invention are to provide means for holding the belts taut, and means for regulating the speed of the belts through the machine.

Still other objects of the invention will appear in the following complete description.

The preferred form of my invention is illustrated in the drawings, and described in this specification.

In the drawings similar reference characters refer to similar parts in all the views, in which—

Figure 1 is a sectional elevation of the invention; Fig. 2 is a transverse sectional view of Fig. 1; Fig. 3 is an enlarged fragmentary view showing the means for keeping the belts taut; Fig. 4 is an enlarged fragmentary view showing the means for adjusting one of the wringer members relatively to its companion wringer member; Fig. 5 is an enlarged fragmentary view showing one side of one of the belts; and Fig. 6 is a view showing the sprockets on one of the rollers

engaging the openings at one of the sides of the belts.

By referring to the drawings it will be seen that a frame 5 is provided which is supported on legs 6, there being two tanks 7 in this frame 5, which are divided by a partition 8. Disposed above the tanks 7 on members 9 of the frame 5, there is a heating compartment 10. Journaled in bearings in the central members 9 there are two wringer members 11, which are spaced from each other. In the projecting portions 19 of the frame 5, at the right of the tanks, there are slots 12, in which are disposed bearing members 13, in which are journaled studs 14, secured to a wringer member 15. This wringer member 15 is adapted to co-act with a wringer member 16, the studs 17 of which are journaled in the frame 5. Screws 18 are disposed in threaded orifices in the ends of the projecting portions 19 of the frame 5, these screws being disposed against the bearing members 13 to press the wringer member 15 in the direction of its companion wringer member 16. In each of the tanks 7 there are two sets of rollers 20, which are journaled to the sides of the tanks. There are also two additional rollers 21 journaled to the sides of each of the tanks, and a roller 22 is journaled to the left-hand members 9 of the frame. Below the bottom of the compartment 7 there are two rollers 23 journaled at the frame 5, one to the extreme right, and the other to the extreme left. In the bottom of the compartment 10 there is an opening 24, there being also an opening 25 in the left-hand side of the compartment near its top. Rollers 26 are journaled in bearings in the side of the compartment 10. In the projecting portions 27 of the left-hand members 9 of the frame 5, there are slots 28, in which are disposed bearing members 29 in which shafts 30 and 31 are journaled. Screws 32 are provided which mesh in threaded orifices in the ends of the projecting portions 27, these screws 32 engaging the bearing members 29 to hold them toward the left. Rollers 33 are mounted on the shaft 30. All these rollers 20, 21, 22, 23, 26 and 33 have sprocket teeth 34 at their sides, the sprocket teeth 34 being provided to travel in the openings 35 at the sides of the belts 36. The belts 36 are two in number, and are disposed over the roller 22, under the left-hand roller 21 in the left-

hand tank 7, around the rollers 20 of the said left-hand tank, and under the right-hand roller 21 in the said tank. The belts are led between the wringer members 11 over the rollers 20 and 21 in the right-hand tank and between the wringer members 15 and 16. The belts are then disposed upwardly through an opening 37 in the drying compartment, one of the belts being led upwardly and to the right, over the rollers 38, thence downwardly through the opening 24 and under the rollers 23; the other belt being led out through the openings 25 and over the roller. One of the belts is thus led downwardly and the other led upwardly at the left of the frame, and these belts are disposed over the rollers 33 respectively, and thence over the roller 22, as has been described. These belts are two in number and through the tanks and through the greater portion of the drying compartment 10, they are disposed one over the other so that they may convey between them the blue prints which are to be washed and dried.

The belts 36 are manufactured of light material, through which the water may readily penetrate, and, if desired, openings may be made in the belts to permit the water to reach more freely the blue prints disposed therebetween.

To the wringer members 16 is connected a stud 40, which projects beyond the frame, a sprocket wheel 41 being secured to said stud. This sprocket wheel 41 is connected to a sprocket wheel 42, by means of a sprocket chain 43, the sprocket wheel 42 being mounted on a shaft journaled in a bearing member 44. A second shaft 45 is journaled in this bearing member, a disk wheel 46 and a pulley 47 being secured to the said shaft 45. A disk 48 is secured to the shaft, to which the sprocket wheel 42 is secured, these disks 46 and 48 being connected by a friction member 49 which rotates freely on the stud 50, the stud being threaded and meshing in a threaded orifice 51 in the bearing member 44. It will be seen that as the axes of the disks 46 and 48 are spaced from and are parallel to each other, the speed of the sprocket wheel 42 may be regulated by moving the stud 50 to the right or to the left, as may be desired, the friction member 49 being thereby moved relatively to the disks 46 and 48, with which it contacts.

As the wringer member 16 is rotated, it moves the belts 36 upwardly, at the right of the frame, the belts being drawn over the rollers 33 and over the roller 22 into the left-hand tank 7. The blue prints which are to be washed are introduced into the machine between the rollers 33 at the left of the roller 22, and the blue prints are conveyed between the belts through the left-hand tank 7, between the wringer members 11 to the right-hand tank 7, and then between the wringer

members 15 and 16, the pipes 52 being provided, with their terminals disposed one on each side of the belts 56 and just below the wringer members 15 and 16, so that the belts with the blue prints therebetween will be washed with fresh water before they are conveyed between the wringer members 15 and 16. The belts 36 move upwardly through the opening 37 into the drying compartment 10, and the blue prints are subjected to heat in the said compartment where they are dried. Any suitable means may be provided for heating the compartment 10. In the drawings I show a series of pipes 53, disposed in the compartment; and connected with a standard 54, by which means the compartment 10 may be heated by steam. When the belts 36 reach the rollers 38 and 39 one of the belts is moved upwardly over the rollers 38 and the other belt is led downwardly over the roller 39, and at this point where the belts are separated from each other, the blue prints are removed from the machine. The rollers 33 may be moved to the left by means of the screws 32, so that the belts 36 will be kept taut at all times.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a blue print washing and drying machine a frame having a tank and a drying compartment disposed thereabove, there being two slots in the bottom of the drying compartment and an opening in its side, a series of rollers journaled in the frame for conveying belts through the tank and the drying compartment, two belts, one disposed over the other for traveling on the rollers, the belts being led upwardly from the tank to the drying compartment through one of the said slots in the bottom thereof, one of the belts being led down through the other slot in the bottom of the drying compartment, the other belt being led out of the drying compartment through the opening in its side, both belts returning to the said series of rollers.

2. In a blue print washing and drying machine a frame having a tank and a drying compartment disposed thereabove, there being two slots in the bottom of the drying compartment, and an opening in its side, a series of rollers having sprocket teeth, journaled in the frame, for conveying belts through the tank, and the compartment, two belts, one disposed over the other for traveling on the rollers, the belts having openings in which the sprocket teeth are disposed, the belts being led upwardly from the tank into the drying compartment through one of the slots in the bottom of the drying compartment, one of the belts being led down through the other slot in the bottom of the drying compartment, the other belt being led out

through the opening in the side of the drying compartment, both belts returning to the said series of rollers.

3. In a blue print washing and drying machine a frame having a tank and a drying compartment disposed thereabove, there being two slots in the bottom of the drying compartment and an opening in its side, a series of rollers journaled in the frame for conveying belts through the tank, and the compartment, two belts, one disposed over the other for traveling on the rollers, the belts being led upwardly from the tank to the drying compartment through one of the said slots in the bottom thereof, one of the belts being led down through the other slot in the bottom of the drying compartment, the other belt being led out of the drying compartment through the opening in its side, both belts returning to the said series of rollers, there being a slot in the frame, a wringer member disposed in the slot means for holding the wringer member relatively to the frame, and a companion wringer member journaled in the frame, the belts being led between the two wringer members in their travel upwardly from the tank to the slot in the drying compartment.

4. In a blue print washing and drying machine a frame having a slot and a threaded orifice leading thereto, a bearing member dis-

posed for traveling in the slot, a threaded member meshing in the threaded orifice and engaging the bearing member, a shaft journaled in the bearing member, a series of rollers journaled in the frame, two endless belts disposed one over the other on the rollers, and two additional rollers, spaced from each other, one of the belts being led in one direction from a roller in the series, to and around one of the additional rollers, the other belt being led from one of the rollers in the series, to and around the shaft and the other of the said additional rollers.

5. In a blue print washing and drying machine a frame, a series of rollers journaled in the frame, sprocket teeth at each end of one of the rollers, two belts having openings at their sides disposed over the rollers, the sprocket teeth being adapted for engaging the belts in the sides of the openings, another roller over which one of the belts is disposed, and an additional roller spaced from said other roller, to which the other belt is led and around which it is disposed.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OSCAR HOOPS.

Witnesses:

FREDK. C. DEXHEIMER,
ARTHUR COHN.