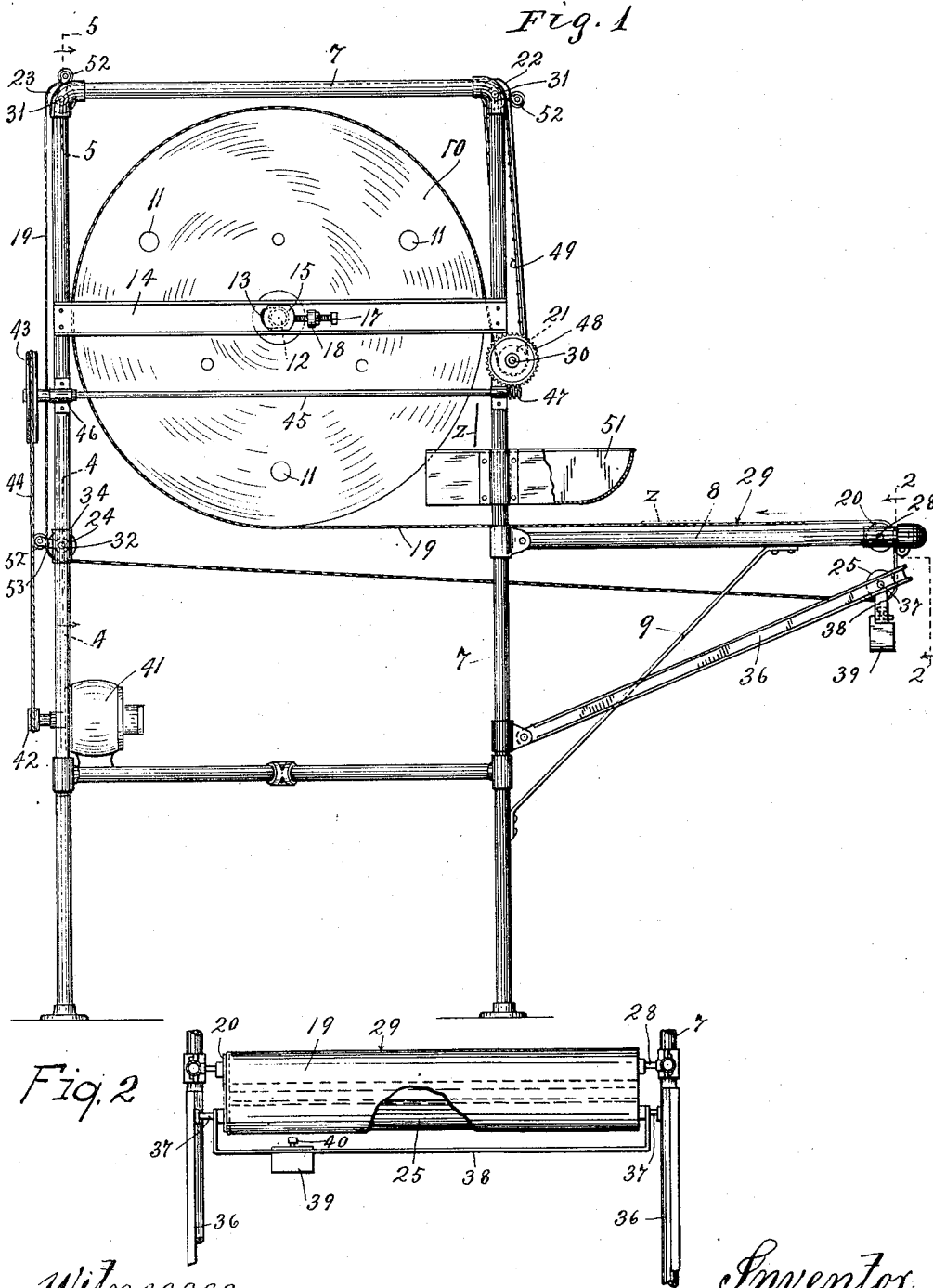


G. M. DYE.
MACHINE FOR DRYING PHOTOGRAPHIC PRINTS AND THE LIKE.
APPLICATION FILED JAN. 19, 1917.

1,277,202.

Patented Aug. 27, 1918.
2 SHEETS—SHEET 1.



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Fig. 3.

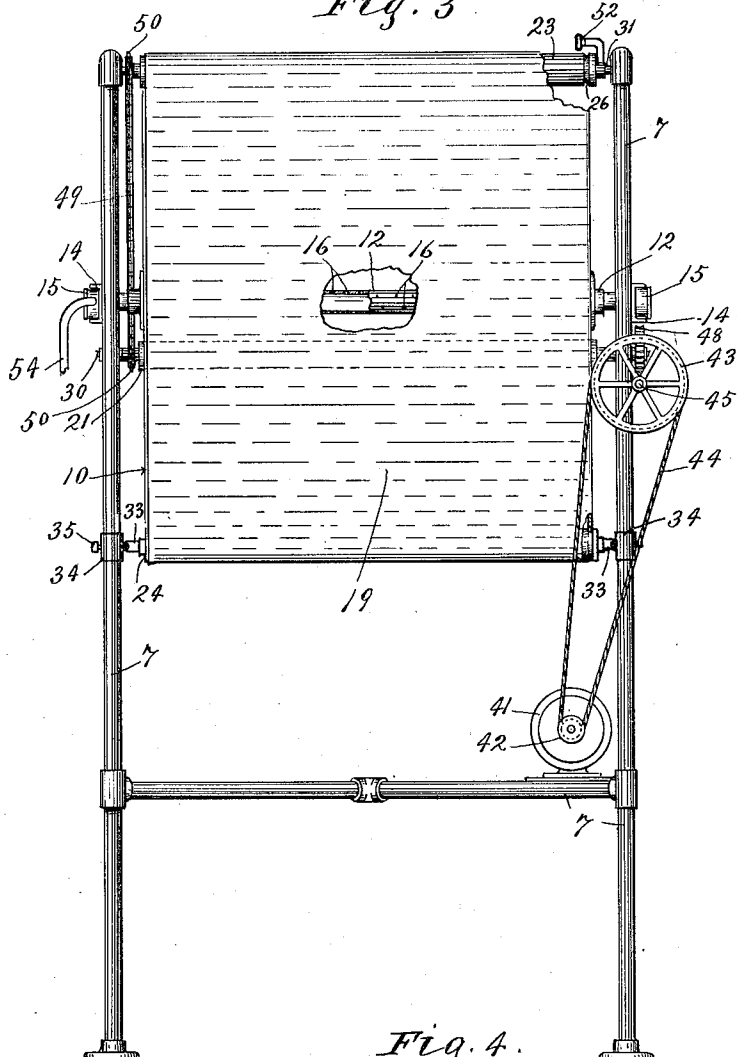


Fig. 4.

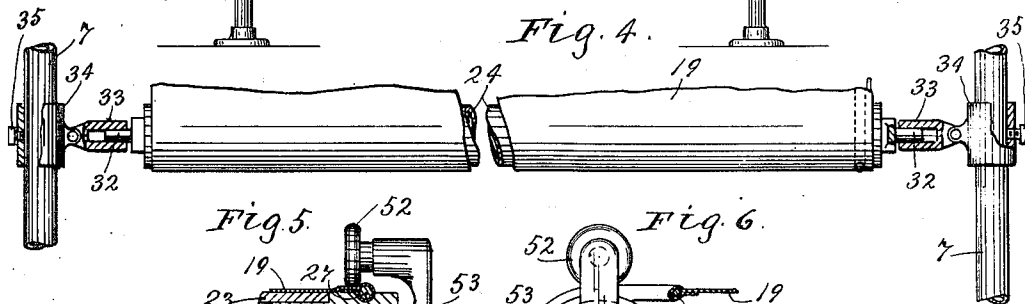


Fig. 5.

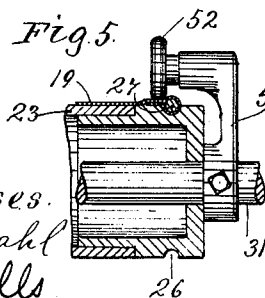
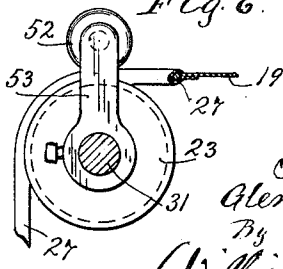


Fig. 6.



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MACHINE FOR DRYING PHOTOGRAPHIC PRINTS AND THE LIKE.

1,277,202.

Specification of Letters Patent.

Patented Aug. 27, 1918.

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To all whom it may concern:

Be it known that I, GLEN M. DYE, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Machines for Drying Photographic Prints and the like; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide a machine for drying photographic prints and the like; and, to this end, it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings,

Figure 1 is a left hand elevation of the machine;

Fig. 2 is a fragmentary view, partly in front end elevation and partly in vertical section taken on the line 2—2 of Fig. 1;

Fig. 3 is a rear end elevation of the machine;

Fig. 4 is a fragmentary detail view with some parts sectioned on the line 4—4 of Fig. 1, on an enlarged scale;

Fig. 5 is a fragmentary detail view, principally in section taken on the line 5—5 of Fig. 1, on an enlarged scale; and

Fig. 6 is an end elevation of the parts shown in Fig. 5.

The numeral 7 indicates a frame having a front extension 8 pivoted thereto for vertical movement. Oblique braces 9 rigidly connect the extension 8 to the frame 7 and support the same in a horizontal position.

Mounted within the frame 7 in a plane above the extension 8, is a relatively large cylinder 10 having a smooth periphery and air ports 11 in its head. This cylinder is loosely journaled on a horizontal burner pipe 12, which extends transversely through the frame 7 with its ends seated in horizontally elongated holes 13 formed in the webs of channel bars 14 secured to the sides of the frame 7, with their flanges turned outward. Caps 15 close the ends of the burner pipe 12 and their upper and lower surfaces

are flattened for engagement with the flanges of the channel bars 14 to prevent rotation of said burner pipe. Longitudinally spaced burner holes 16 are formed in the burner pipe 12. Long adjusting screws 17 have screw-threaded engagement with lugs 18 on the webs of the channel bar 14 and their ends impinge against the front faces of the caps 15.

An endless apron 19 of canvas, or other suitable material, runs over the cylinder 10 and guide rollers 20 to 25, inclusive. In the left hand end portions of the guide rollers 20 to 25, inclusive, are alined peripheral grooves 26 in which runs a bead 27 formed by hemming the left hand edge of the apron and placing therein a cord. The other edge of the apron 19 is loose and free to drift. As is well known, a relatively soft apron will tend to drift toward its loose or slack edge.

The roller guide 20 is loosely journaled on a rod 28, the ends of which are rigidly secured to the side members of the extension 8, quite close to the front or outer transverse portion thereof. This guide roller 20 is so located as to hold the apron 19, while approaching the cylinder 10, in horizontal position to afford a feeding table 29 on which the prints are placed emulsion side down. The guide roller 21 is secured for rotation with a shaft 30 journaled in bearings on the frame 7. This guide roller 20 and the guide roller 21 hold the apron 19 so as to engage the cylinder 10 throughout substantially three-fourths of its circumference. The guide rollers 22 and 23 are loosely journaled on rods 31 secured to the frame 7 over the front and rear uprights thereof, respectively. The guide roller 24 is located directly below the guide roller 23 in a plane below the cylinder 10 and is loosely journaled on a rod 32. The ends of this rod 32 have squared engagement with socket-like members 33 pivoted to sleeves 34 slidably mounted on the rear uprights of the frame 7. The members 33 are free for vertical movement but are held, by the sleeves 34, against horizontal movement. Set screws 35 hold the sleeves 34 where set on the uprights of the frame 7.

A pair of arms 36 are pivoted to the front uprights of the frame 7 for vertical swinging movement directly below the side members of the extension 8. The free or outer

ends of the arms 36 are flexibly connected by a rod 37 on which the guide roller 25 is loosely journaled directly below the guide roller 20. The arms 36 permit the guide roller 25 to assume different angular positions in a vertical plane.

An inverted bail-like bar 38 has its ends secured to the rod 37 and a weight 39 has sliding movement on the intermediate portion thereof. A set screw 40 holds the weight 39 in different adjustments. By reference to Fig. 1, it will be noted that the guide roller 25 is supported on the apron 19 and affords a tightener therefor. To cause the apron 19 to tend to drift laterally from its bead 27 and thereby hold the apron smooth without folds, wrinkles, or pockets, the guide rollers 23 and 24 may be made to converge, or the convergence thereof varied, at will, by adjusting one of the sleeves 34 vertically. The guide rollers 20 and 25 may also be made to converge, or the convergence thereof varied, at will, by adjusting the weight 39 on the rod 37. By adjusting the set screws 17, the cylinder 10 may also be set, with respect to the guide rollers, to tend to cause the apron 10 to drift toward its free edge. The apron 19, and hence, the cylinder 10 are caused to travel in the direction of the arrows marked thereon in Fig. 1 by driving the shaft 30 from a motor 41 secured to the frame 7 below the apron 19.

On the armature shaft of the motor 41, is a small grooved wheel 42 over which and a relatively large grooved wheel 43, runs a belt 44. The wheel 43 is secured to the rear end of a horizontal counter shaft 45 journaled in bearings 46 secured to the uprights of the frame on the left side thereof. A worm 47 on the front end of the shaft 45 meshes with a worm wheel 48 secured to the left hand end of the shaft 30. To further assist in driving the apron 19, the guide roller 22 is driven from the guide roller 21 by a sprocket chain 49, which runs over aligned sprocket wheels 50 on said guide rollers 21 and 22. A tray 51 is secured to the front uprights of the frame 7, directly below the guide roller 21, in position to receive the prints Z as they are discharged from between the cylinder 10 and apron 19.

The bead 27 is held in the aligned grooves 26 by small wheels 52 journaled on brackets 53 rigidly but adjustably secured to the left hand ends of the rods 28, 31, 32 and shaft 30. These wheels 52 overlie the apron 19, just inside of the bead 27 and at points where said apron is about to pass over the respective guide rollers. There is just sufficient room for the apron to freely pass under the wheels 52 but not enough to permit the bead 27 to be drawn from the grooves 26 by a lateral drifting movement of the apron. The pull of the apron 19 on said

cylinder 10, caused by the guide rollers 20 and 21, holds said cylinder against the set screws 17.

Gas is supplied from a suitable source to the burner pipe 12 through a hose 54, the delivery end of which has communication with said burner pipe 12 through the left hand cap 15. Of course, suitable air intake opening or openings, not shown, will be provided at a point where the gas enters the burner pipe 12.

The operation of the machine may be briefly described as follows, to wit:—

The prints Z are placed on the feeding table 29 with the emulsion side down and in wet condition, just as they are received from the washing. Under the traveling movement of the apron 19, the prints are carried on the feeding table 29, between the cylinder 10 and apron 19, which is kept at the proper temperature by the burner therein. By placing the prints on the feeding table 29, with their emulsion sides down, the backs thereof are in direct contact with the cylinder 10, during the drying process. The speed of the cylinder 10 is such as to give the prints, held thereon by the apron 19, sufficient time to dry before the same are deposited in the tray 51. The release of the prints Z from between the cylinder 10 and apron 19 is, of course, caused by said apron being directed therefrom by the guide roller 21.

It is, of course, highly necessary to keep the apron 19 smooth, in order that the prints may be held smooth on the cylinder 10, during the drying process, and this is accomplished, as previously described, by holding one edge of the apron 19 and creating a tendency for said apron to drift toward its free or slack side. Before shipping the machine, the same may be entirely assembled, with the exception of the braces 9, thus permitting the extension 8 and arms 36, with the apron 19 in position on the guide rollers 20 and 25, to be turned up into a vertical position at the front of the machine. With the said parts thus folded, the size of the machine is greatly reduced, which facilitates crating and shipping. When the machine reaches its designation, it is only necessary to turn down the folded parts and secure the braces 9 in position.

From the above description, it is evident that after the wet prints are placed on the feeding table 29, the action of the machine is entirely automatic and a large number of prints may be very quickly dried with very little work.

What I claim is:—

1. In a drying machine of the kind described, the combination with a frame, of a revoluble cylinder and guide rollers journaled on the frame, an endless apron arranged to run over the cylinder and guide

rollers, and means for holding one edge of the apron against transverse movement toward the other edge thereof but with freedom for longitudinal movement, said other edge of the apron being free to drift transversely and the cylinder and guide rollers arranged to be set to produce a tendency in the apron to drift transversely toward the free edge thereof.

2. In a drying machine of the kind described, the combination with a frame, of a revoluble cylinder and guide rollers journaled on the frame, at least one of which has a bead-engaging shoulder, and an endless apron arranged to run over the cylinder and guide rollers and having at one of its edges a bead engaging said shoulder, the other edge of the apron being free to drift transversely and the cylinder and guide rollers arranged to be set to produce a tendency in the apron to drift transversely toward its free edge.

3. In a drying machine of the kind described, the combination with a frame, of a revoluble cylinder and guide rollers journaled on the frame, certain of the guide rollers having at one of their ends alined peripheral grooves, and an endless apron arranged to run over the cylinder and guide rollers and having at one of its edges a bead arranged to run in said alined grooves, the other edge of the apron being free to drift transversely and the cylinder and guide rollers arranged to be set to produce a tendency in the apron to drift transversely toward its free edge.

4. In a drying machine of the kind described, the combination with a frame, of a revoluble cylinder and guide rollers journaled on the frame, certain of the guide rollers having at one of their ends alined peripheral grooves, an endless apron arranged to run over the cylinder and guide rollers and having at one of its edges a bead arranged to run in said alined grooves, the other edge of the apron being free to drift transversely and the cylinder and guide rollers arranged to be set to produce a tendency in the apron to drift transversely toward its free edge, and guides for holding the bead in said alined grooves.

5. In a drying machine of the kind described, the combination with a frame, of a revoluble cylinder and guide rollers journaled on the frame, certain of the guide

rollers having at one of their ends alined peripheral grooves, and an endless apron arranged to run over the cylinder and guide rollers and having at one of its edges a bead arranged to run in said alined grooves, the other edge of the apron being free to drift transversely and the cylinder arranged to be set to produce a tendency in the apron to drift transversely toward its free edge.

6. In a drying machine of the kind described, the combination with a frame, of a revoluble cylinder and guide rollers journaled on the frame, certain of the guide rollers having at one of their ends alined peripheral grooves, and an endless apron arranged to run over the cylinder and guide rollers and having in one of its edges a bead arranged to run in said alined grooves, the other edge of the apron being free to drift transversely and certain of the guide rollers arranged to be set to produce a tendency in the apron to drift transversely toward its free edge.

7. In a drying machine of the kind described, the combination with a frame, of a revoluble cylinder and guide rollers journaled on the frame, certain of the guide rollers having at one of their ends alined peripheral grooves, an endless apron arranged to run over the cylinder and guide rollers and having in one of its edges a bead arranged to run in said alined grooves, the other edge of the apron being free to drift transversely and certain of the guide rollers arranged to be set to produce a tendency in the apron to drift transversely toward its free edge, and guide rollers for holding the bead in said alined grooves.

8. In a drying machine of the kind described, the combination with a frame, of a pipe-like burner secured to the frame, a cylinder journaled on said burner, guide rollers journaled on the frame, an endless apron arranged to run over the cylinder and guide rollers, and means for angularly adjusting the burner and hence the cylinder to produce a tendency in the apron to drift toward one end thereof.

In testimony whereof I affix my signature in presence of two witnesses.

GLEN M. DYE.

Witnesses:

CLARA DEMAREST,
HARRY D. KILGORE.