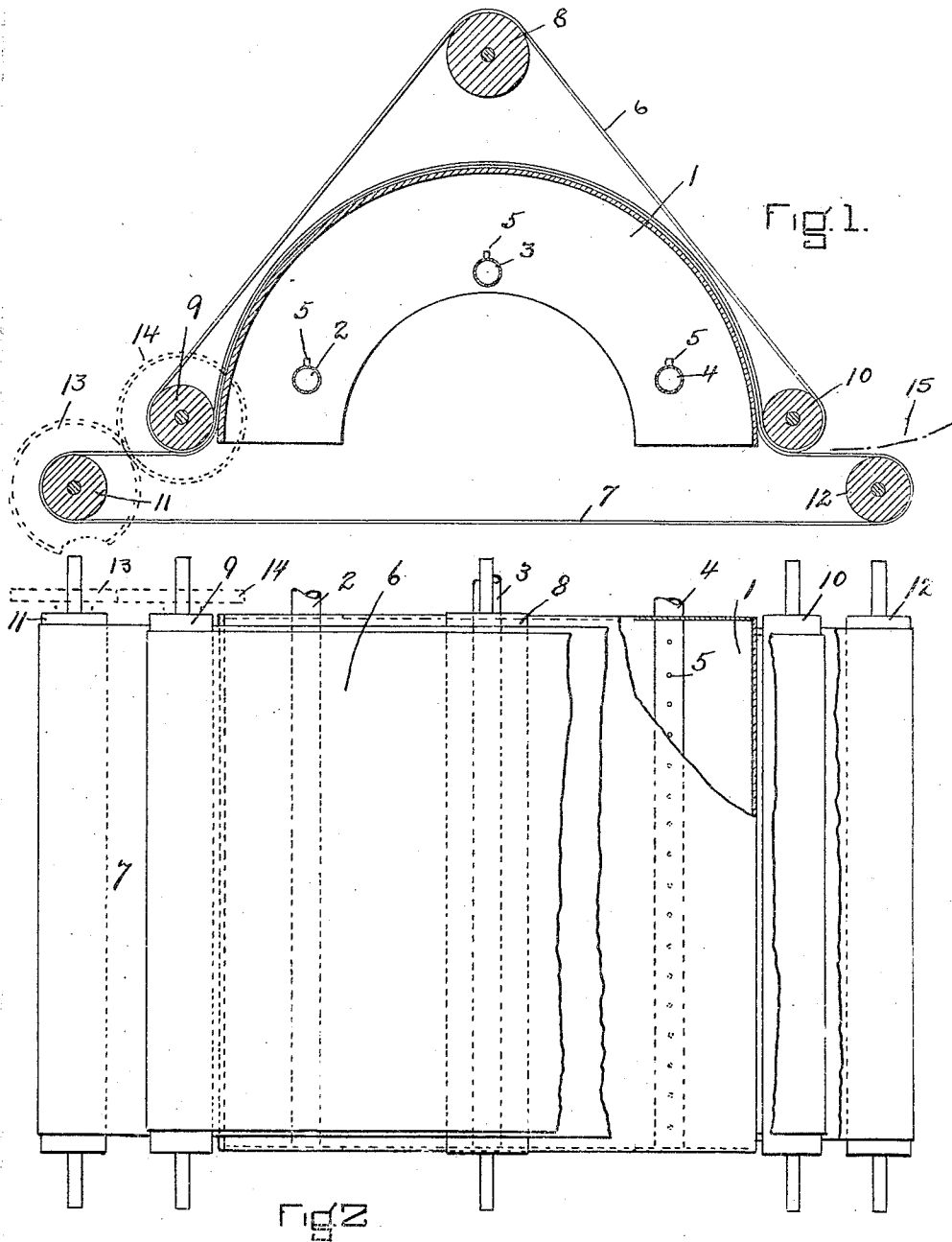


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 APPARATUS FOR DRYING SHEET MATERIAL.
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941,721.

Patented Nov. 30, 1909.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES E. MOSS, OF BOSTON, MASSACHUSETTS.

APPARATUS FOR DRYING SHEET MATERIAL.

941,721.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES E. MOSS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Apparatus for Drying Sheet Material, of which the following is a specification.

This invention relates to means for drying sheet material, such as paper, the invention having particular reference to means for drying blueprint paper after it has been exposed and developed, the paper being then saturated with water upon leaving the developing tank.

The invention has for its main object to provide a simple and effective machine for quickly drying such material, and at the same time keeping it in a smooth condition free from wrinkles, and preventing discoloration of the paper by the drying surface.

The invention consists in a heater having an extended surface and flexible conveyers between which the paper is held in a smooth condition, and by which it is carried over the heater.

Of the accompanying drawings, forming a part of this specification,—Figure 1 represents a sectional view of an apparatus embodying my invention. Fig. 2 represents a plan view of the same.

The same reference characters indicate the same parts in both figures.

The apparatus consists essentially of a heater in the form of a semi-cylindrical shell 1 which is fixed in a stationary position, and of which the convex outer surface is maintained in a heated condition, and furnishes the heat for drying the sheet material. Heat for maintaining the surface of this shell at a high temperature is furnished by means of gas pipes 2, 3 and 4 arranged within the shell and having burners 5.

The material to be dried is carried over the outer surface of the shell by means of endless traveling conveyers 6 and 7, of which the former passes around guide rolls 8, 9 and 10, and the latter around the rolls 11 and 12, and in contact with the rolls 9 and 10. The latter rolls are arranged in close proximity to the opposite sides of the shell near the ends of the heated surface thereof, while the roll 8 is arranged above the shell. The rolls 11 and 12 are arranged below and at a greater distance from the shell than the rolls 9 and 10. The belt 7

which passes around these latter rolls surrounds the heating shell and is guided by the rolls 9 and 10 so as to closely embrace the shell, and to lie in contact therewith over substantially the entire heating surface thereof. The belt 6 also is guided by the rolls 9 and 10 so as to surround the convex surface of the shell, and is held in contact with that part of the belt 7 which engages the shell. Thus, there is a stretch of each of the belts in contact, and these portions of the belt which contact with each other engage the shell.

The belts are driven at a uniform speed by suitable means, such as intermeshing gears 13 and 14 on the shafts of the rolls 9 and 11 which derive their motion from any appropriate source of power. Between the rolls 10 and 12, the belts converge and furnish a V-shaped throat into which the material to be dried, represented by the broken line 15, is inserted. In passing under the roll 10, this material is gripped between the belts and carried by them over the heated shell where it is dried, the material being meanwhile drawn in a flat condition and kept out of contact with the shell by the under belt. After passing over the heater, the dried sheets pass under the roll 9 and are released by the upper belt, being then supported by a horizontal stretch of the lower belt, and are carried thereby until they reach the lower level, from which they fall into a receptacle.

I claim:

1. An apparatus of the character described, comprising a pair of belts, guide rolls about which said belts extend, arranged so that a stretch of one belt is in contact with a stretch of the other, a stationary convex surface over which the contacting stretches of said belts are led, and in contact with said belts slide and means for heating said convex surface.

2. An apparatus of the character described, consisting of a stationary convex surface, means for heating the same, guide rolls adjacent each end of said surface, a guide roll above said surface, an endless belt passing around said guide rolls with one of its stretches thereby caused to travel over the convex surface, a second belt arranged between said first belt and the said surface, and guide rolls therefor arranged to extend said second belt beyond the first belt at each end of the apparatus.

3. An apparatus of the character described,

consisting of a convex shell held stationary, heating means inside said shell for heating the outer surface thereof, two endless belts, and guide rolls arranged to hold stretches of both belts in contact with each other against the convex surface of the shell, so that material to be dried may be grasped between such stretches and carried about the shell, the temperature of said shell being kept at so low a point as to prevent burning of the belts or material to be dried.

4. An apparatus of the character described, consisting of a stationary, convex, semi-cylindrical shell, means for heating the same, and for maintaining the temperature thereof below the destructive point, guide rolls closely adjacent the opposite sides of the shell, a second set of rolls adjacent the said first rolls, a belt passing around said second rolls, and the shell, and guided by the first roll so as closely to embrace the shell, and a second belt passing around the first guide rolls and over that part of the first belt

which embraces the shell, said belts being adapted to hold the material to be dried between them and carry it around the heated shell.

5. An apparatus of the character described, consisting of a stationary, convex shell, means for heating the same, endless traveling conveyor belts, and guide rolls over which second belts are passed arranged to bring stretches of the several belts together at each side of the shell, the belts diverging from one another beyond the shell at each side, whereby the material to be dried may be introduced between the belts at one side of the shell, grasped and carried by the belts about the shell, and released at the opposite side thereof.

In testimony whereof I have affixed my signature, in presence of two witnesses.

CHARLES E. MOSS.

Witnesses:

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