J. A. HANSEN.

BLUE PRINT EDGE PROTECTOR.

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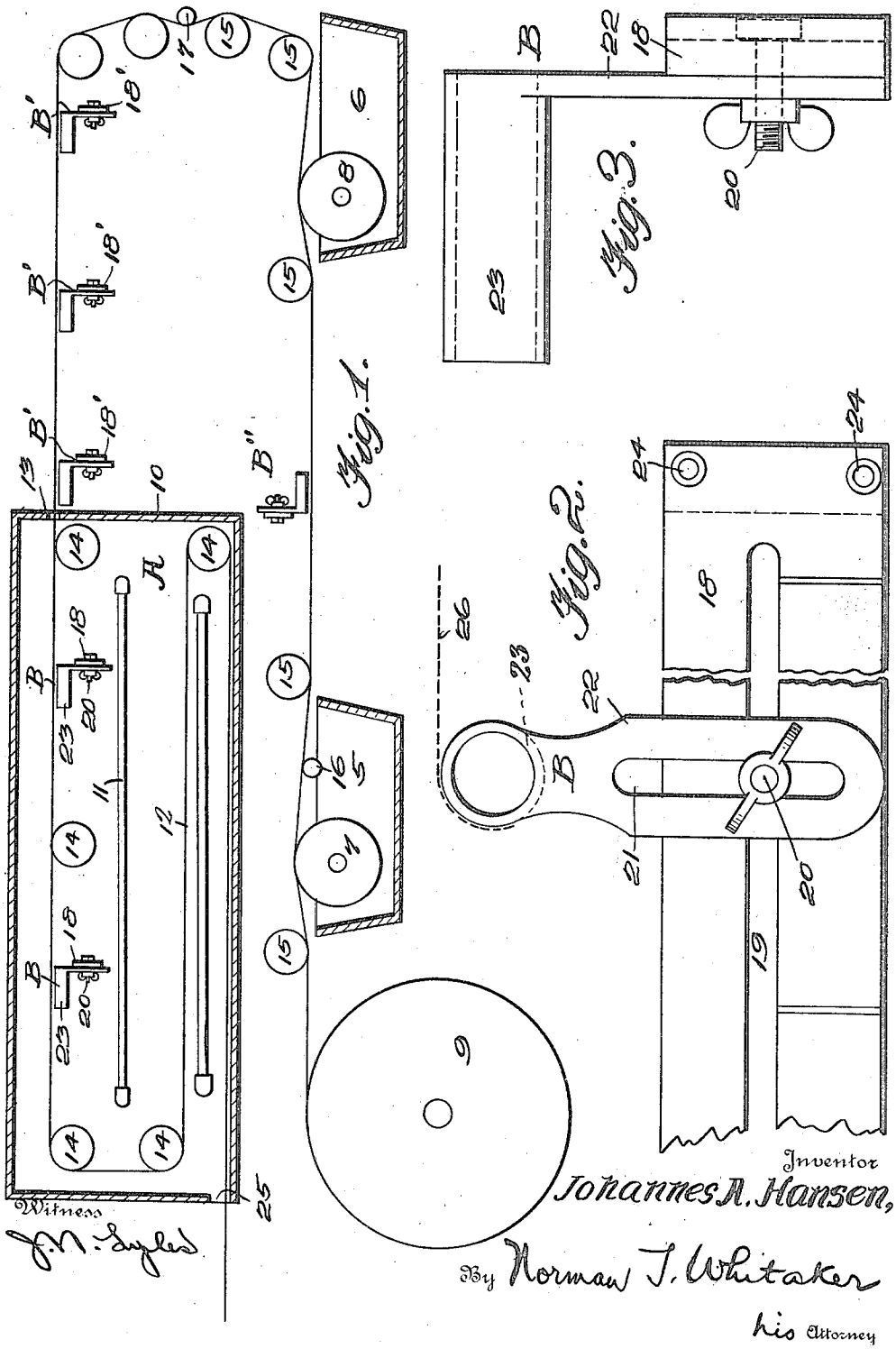


Fig. 1.

Fig. 3.

Fig. 2.

Witness

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BLUE-PRINT-EDGE PROTECTOR.

1,277,411. Specification of Letters Patent. Patented Sept. 3, 1918.

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To all whom it may concern:

Be it known that I, JOHANNES A. HANSEN, a citizen of the United States, and resident of New York, in the county of New York and State of New York, have invented new and useful Improvements in Blue-Print-Edge Protectors, of which the following is a specification.

Heretofore in the art of coating blue print paper great difficulty has been experienced in the drying of the paper by means of steam heated pipes contained within a drying apparatus through which the paper is passed immediately after its having passed through the various solutions necessary in the process of coating blue print paper. The difficulty lies in the fact that the longitudinal edges of the paper become soiled by their curling down and coming into contact with the steam heated pipes, contained within the heating apparatus, which curling down is a result of uneven shrinkage of the sides of the paper due to the moisture being driven from the side of the paper next to the steam heated pipes quicker than it is driven from the opposite side of the paper.

The spoiling of the paper as mentioned hereinbefore results necessarily in a waste of material as well as in a waste of time in removing the spoiled edges from the paper after it has been passed through the drying apparatus, and it is the object of my invention to provide a simple and effective means for protecting the edges of the paper against being soiled by their coming into contact with the steam heated pipes in the process of drying the paper subsequent to its being passed through the necessary solutions used in the process of coating blue print paper.

A further object of the invention is to provide a simple and effective means for preventing the edges of the paper from curling and thereby becoming mutilated by rollers over which the paper is designed to pass, which rollers are located both within and without a drying apparatus used in the process of coating blue print paper.

The above and other objects and advantages of my improvement will fully appear from the following description, taken in connection with the accompanying drawings, and be explicitly defined in the appended claims. I wish it understood, however, that this disclosure is illustrative only, and that the principles of my invention can be embodied in construction other than the one specified herein.

In the drawings,

Figure 1 is a diagrammatic view, showing blue print paper in the act of being passed through reservoirs adapted to contain solutions necessary in the coating of blue print paper, and my device as applied to a drying apparatus through which the paper is designed to pass subsequent to its having passed through the said solutions.

Fig. 2 is an end view of my device illustrating the manner in which the blue print paper, designated by the dotted lines, is supported, and

Fig. 3 is a side elevation of the apparatus.

Referring more specifically to the drawings, the numerals 5 and 6 indicate reservoirs adapted to contain solutions such as are used in the process of coating blue print paper, each of which has disposed therein coating rollers 7 and 8, respectively, over which is designed to pass a web of blue print paper supplied from a roller 9.

A drying apparatus A is located at a suitable distance from the reservoirs 5 and 6 and comprises a casing 10 having steam heated coils 11 and 12 disposed therein over which blue print paper is designed to pass after having entered the casing 10 through the opening provided therein and indicated by the numeral 13. The drying apparatus is provided with a plurality of rollers as indicated by the numerals 14 which serve as a means to guide or carry the paper in its course of travel through the drying apparatus A.

A plurality of rollers 15 are disposed without the drying apparatus A along the line of travel of the paper and serve as a means to guide the paper in its course of travel from the roll 9 over the coating rollers 7 and 8 and into the drying apparatus A.

A scraper 16 is associated with the reservoir 5 and serves to remove any surplus of coating which has been supplied to the paper in its course of travel by the roller 7. A scraper 17, similar to that indicated by the numeral 16, is disposed in the course of travel of the paper at a point an appreciable distance from the reservoir 6, which scraper serves to remove any surplus of coating which may have been supplied to the paper in its course of travel by the roller 8.

Within the drying apparatus A I have

shown a blue print paper edge protector B, mounted on a beam 18, disposed transversely between the rollers located in the upper portion of the drying apparatus. The beam 18 is provided with a longitudinal slot 19 which is adapted to receive a thumb screw 20 passed through a longitudinal slot 21 provided by the shank 22 of the edge protector B. The protector B is so disposed within the drying apparatus A as to bring the arm 23, carried by the shank 22, in parallel alinement with the web of paper as it travels through the drying apparatus A. The beam 18 may be secured within the drying apparatus A transversely with respect to the paper web by screws or bolts passed through the openings 24 provided in the ends thereof. It is apparent that due to the fact that the edge protector B is secured to the beam 18 by means of a thumb screw passed through the elongated slots 19 and 21 of the beam 18 and the shank 22, respectively, that the edge protector is susceptible to either a vertical or horizontal adjustment. The horizontal adjustment of the protector B would depend upon the width of the paper web designed to be passed over the same. The vertical adjustment of the protector would depend somewhat upon the weight of the coated paper in its course of travel.

Without the drying apparatus A and at desired intervals along the course of travel of the paper are disposed a plurality of protectors B′ identical with those shown within the drying apparatus A and more clearly shown in Fig. 2. These protectors are mounted on beams 18′ identical with those indicated by the numeral 18 and shown within the apparatus A. The protectors B′ serve as a means for supporting the lateral edges of the paper in its course of travel toward the apparatus A, thereby preventing the edges from curling and becoming mutilated by the rollers 14 in its course of travel over the same.

Disposed between the reservoirs 5 and 6 and in the line of travel of the paper is an edge protector B^2 identical with that shown in Fig. 2 and mounted upon a beam identical with that shown in Fig. 2 and indicated by the numeral 18. This protector is disposed above the paper web and serves to prevent the edges of the paper from curling upwardly and thereby becoming mutilated by the roller 15 disposed nearest the coating roller 8 in the line of travel of the paper web.

In the process of coating blue print paper, the paper designed to be treated by the process passes in its course of travel from the roller 9 over the coating roller 7, the coating roll 8 around the rollers 15, over the protectors B′, into the drying apparatus A, through the opening 13, over the rollers 14 and the edge protectors B and thence onwardly out of the apparatus through the opening 25 whereupon the paper in a dried state is rolled upon a roller by any suitable or desired means not shown. When the paper enters the heating apparatus A in its course of travel, as I have above described, and comes in contact with the heat therein, an uneven shrinkage of the sides of the paper then occurs due to the fact that one side of the paper is exposed to a greater heat than the other side, therefore, because of the fact that the paper is dried quicker on one side than on the other, its edges will have a tendency to curl downwardly into contact with the steam heated pipes 11 and 12, but it may be readily seen that this tendency will be overcome because of the fact that the edges of the paper are supported by the arms 23 of the protector B as indicated by the dotted line 26 of Fig. 2.

While I have shown and described my invention in connection with a blue print drying apparatus, it is to be understood that it is equally applicable to drying apparatus designed for the drying of paper in the process of its making, and other drying machines of an analogous character.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:—

1. The combination with a beam of a blue print edge protector comprising an elongated arm, so located as to support the longitudinal edge of a blue print, a shank secured at right angles thereto, and means permitting vertical and longitudinal adjustment of the blue print edge protector with respect to said beam.

2. The combination with a beam provided with an elongated slot of a blue print edge protector comprising an elongated arm, so located as to support the longitudinal edge of a blue print, a shank secured at right angles thereto and provided with an elongated slot, a thumb-screw passed through the first and second mentioned elongated slot, said screw being adapted to clamp the blue print edge protector to said beam, the first mentioned slot being adapted to permit a longitudinal adjustment of the blue print edge protector with respect to the beam, the second mentioned elongated slot being adapted to permit vertical adjustment of the blue print edge protector with respect to the beam.

JOHANNES ALEX HANSEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."