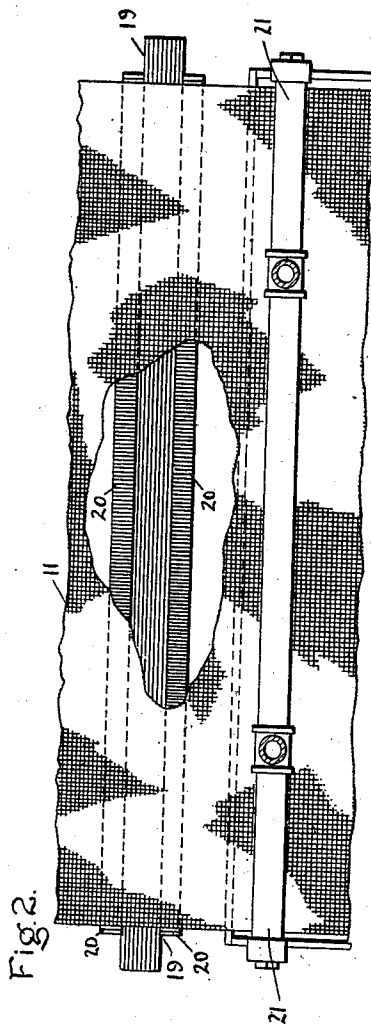
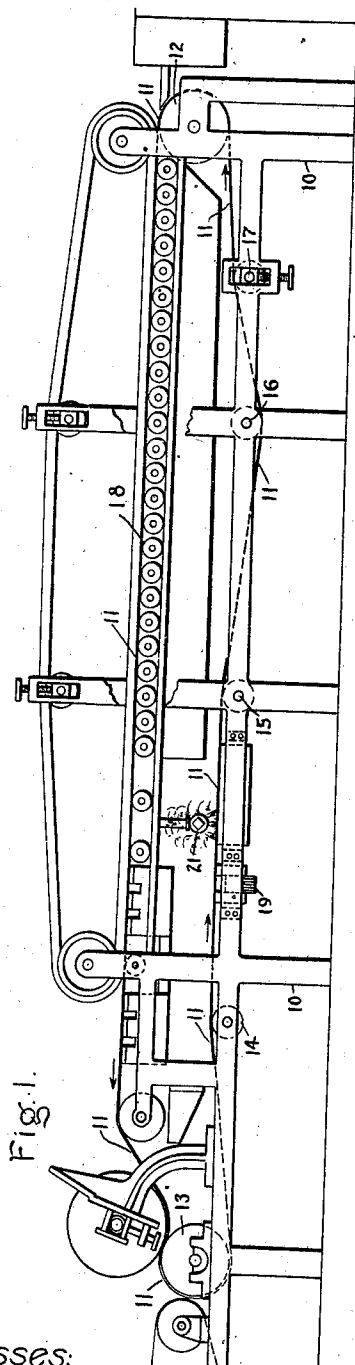


R. H. ROGERS.
 ANNEALING DEVICE FOR PAPER MAKING MACHINES AND THE LIKE.
 APPLICATION FILED FEB. 5, 1910.

996,428.

Patented June 27, 1911.



Witnesses:

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UNITED STATES PATENT OFFICE.

ROBERT H. ROGERS, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

ANNEALING DEVICE FOR PAPER-MAKING MACHINES AND THE LIKE.

996,428.

Specification of Letters Patent. Patented June 27, 1911.

Application filed February 5, 1910. Serial No. 542,313.

To all whom it may concern:

Be it known that I, ROBERT H. ROGERS, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Annealing Devices for Paper-Making Machines and the Like, of which the following is a specification.

This invention relates to improvements in paper making machines and the like and has for its object to prolong the life of one of the essential parts of machines of this character.

In paper-making machines there is commonly employed a metallic endless screen upon which the pulp is carried, drained and pressed into form. In the Fourdrinier machine, for instance, there is employed a "wire cloth" formed into an endless belt. These belts are made from very fine wire. The mesh is exceedingly fine and it is generally woven. Furthermore, the belt has considerable length and width and is therefore quite expensive. These wire cloths or screens are usually made of brass or similar material which has the property of hardening by continuous bending. When one of these wire cloths, therefore, has been used for any considerable length of time the metal becomes hard due to the bending over the rollers. The result is that in practice it frequently happens that the screen tears and becomes useless in a very few weeks.

It is the object of my invention to so organize a machine of the character above referred to that the cause of breakage may be neutralized and the life of the wire prolonged. To this end I employ a heater arranged in the path of travel of the screen so that the screen may be quickly and uniformly heated during its travel. Adjacent the heater I provide means for cooling the screen when it leaves the heater, thereby annealing the brass so as to render it soft and pliable. In order to provide a very efficient and uniform heat in a simple manner, I have employed an electric heater arranged underneath the screen at one point and extending its entire width and a spray of water is then arranged to be projected upon the screen, after it leaves the heater, to suddenly cool it.

In the accompanying drawings embodying one form of my invention, Figure 1 repre-

sents a paper making machine having my invention applied thereto and Fig. 2 is a fragmentary view of the belt showing the transformer for heating the same.

Referring to the drawings, 10 represents a portion of the frame of a paper making machine. The type of machine which I have shown is the well-known Fourdrinier machine, which illustrates the features necessary to an understanding of my invention. The essential feature of this part of the machine is the endless wire cloth screen or conveyer 11 which passes over the large end rollers 12 and 13 and over a series of intermediate supporting and tightening rollers 14, 15, 16, 17, etc. The upper side of the belt runs upon a series of parallel rollers 18 which are very close together. This latter portion of the belt receives the pulp and forms it into paper in the well-known manner, the belt traveling in the direction of the arrows. Arranged underneath the lower side of the belt is a heating device, which, for purposes of illustration, I have shown as a transformer 19, extending the entire width of the screen. The secondary of this transformer is arranged to be of the short-circuited type, the screen itself forming a portion of the secondary. In other words, the secondary has a U-shaped core mounted so that the screen will travel over the faces 20 so that it will complete the short circuit. It will be seen that as soon as suitable current is applied to this transformer the screen will be heated as it passes over the core. Moreover, the heat will be uniform throughout the width of the screen so that the delicate wires of the wire cloth will not be in danger of overheating. In order to cool the screen quickly so as to properly anneal it, I have provided suitable means for applying a cooling fluid thereto. This cooling means consists of a water pipe 21 arranged to sprinkle the water over the screen. This heater and cooling device may be connected permanently in place on the machine so that at intervals, say, for instance, two or three times a week, the screen may be annealed. In order to do this, it will simply be necessary to turn on the current and the water and start the machine.

It will be seen that I have provided a very simple and efficient means for annealing a screen of the character described, and, while

I have shown my invention embodied in concrete form for purposes of illustration, it should be understood that this arrangement is merely typical, since various modifications of the means and mechanisms for accomplishing the result will suggest themselves to those skilled in the art without departing from the spirit of my invention, the scope of which is set forth in the annexed claims.

What I claim as new and desire to secure by Letters Patent of the United States, is,—

1. A paper making machine comprising a frame, an endless metallic screen mounted thereon, an electric heater mounted adjacent the screen for heating the same, and a cool-

ing device located adjacent to the heater for cooling the screen.

2. A paper making machine comprising a frame, an endless metallic screen mounted thereon, a transformer having a short circuited secondary mounted adjacent said screen and extending throughout the width thereof, and a cooling device located in proximity to the transformer for cooling the screen.

In witness whereof, I have hereunto set my hand this 4th day of February, 1910.

ROBERT H. ROGERS.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.

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