

G. H. SAGAR.
SUCTION BOX.

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989,195.

Patented Apr. 11, 1911.

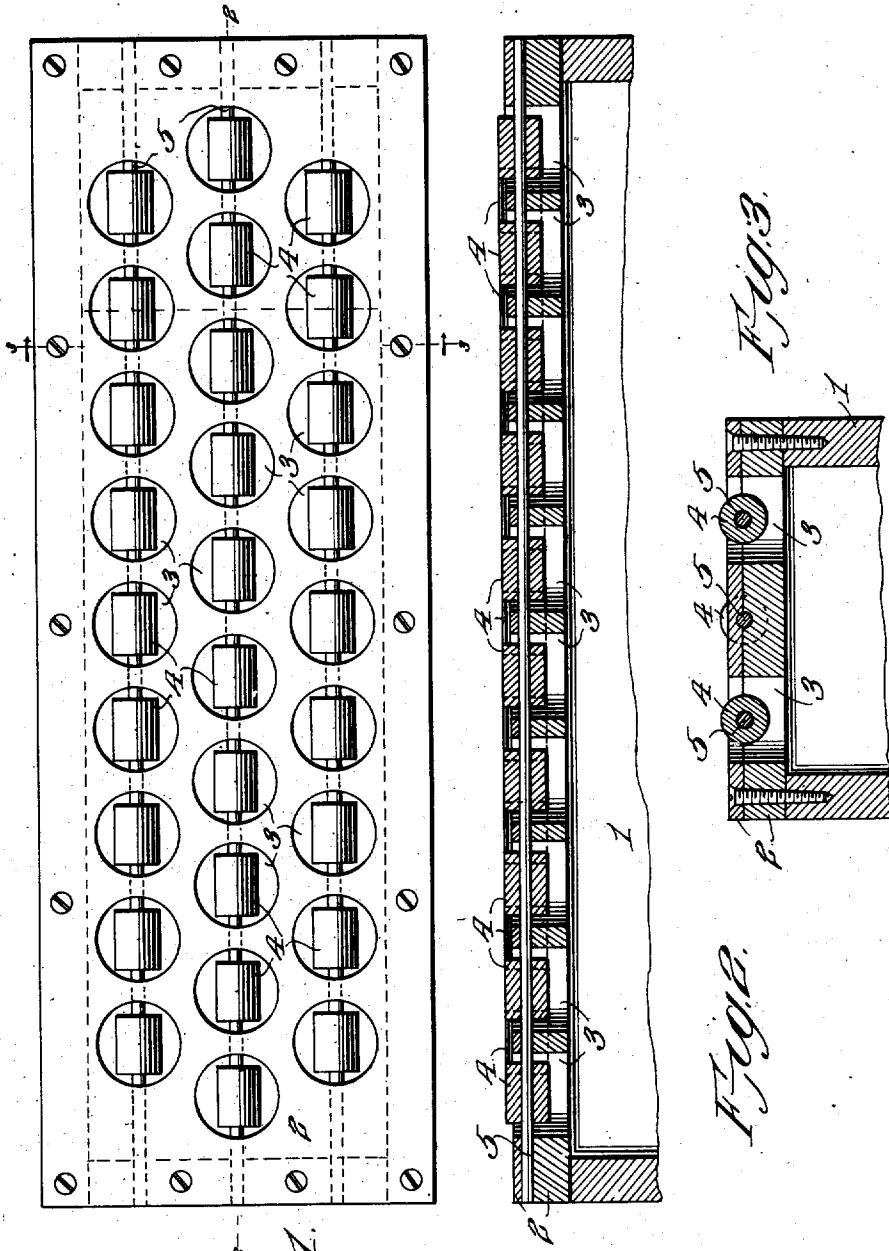


Fig. 1.

Fig. 2.

Fig. 3.

Witnesses
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GEORGE HENRY SAGAR, OF POMPTON LAKES, NEW JERSEY.

SUCTION-BOX.

989,195.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE H. SAGAR, a citizen of the United States, residing at Pompton Lakes, in the county of Passaic and State of New Jersey, have invented new and useful Improvements in Suction-Boxes, of which the following is a specification.

This invention relates to suction boxes for paper making machines, the object being to provide a suction box having a novel construction and arrangement of suction ports or openings and anti-friction bearing rollers arranged therein, whereby an efficient suction action is obtained to draw the water from the stock while at the same time the friction between and wear upon the opposing surfaces of the box and wire web or apron will be reduced to the minimum.

The invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a top plan view of a suction box embodying my invention. Fig. 2 is a vertical longitudinal section thereof. Fig. 3 is a vertical transverse section.

Referring to the drawing, 1 designates the body of the suction box, which may be of any suitable form and constructed of any suitable material, said box being provided with a removable top or cover 2 secured thereto in any desired manner. In the present instance I have shown a box of oblong rectangular form designed to extend lengthwise transversely beneath the upper run of the wire web or apron carrying the paper stock, which form of box is preferred.

The cover 2 is provided with a plurality of longitudinal series of openings 3, forming ports or passages communicating with the interior of the box, and through which the water sucked from the paper stock is drawn into the box, from which the accumulated water may be discharged in any preferred manner. Arranged within each of these openings is a friction roller 4, constructed of any suitable material, and revolvably mounted in any desired manner. In the present instance I have shown the rollers of each longitudinal series of openings mounted upon a common stationary shaft or axle 5 extending longitudinally through the

top or cover 2 and crossing the openings. While the anti-friction rollers are herein shown strictly as rollers, they may be in the form of balls or cones, and hence it is to be understood that the term roller will include any form of revoluble friction element for the purpose. In accordance with the invention, the rollers are mounted upon their respective shafts so as to lie mainly within the ports or openings 3 with the upper portions of their peripheries projecting only to a slight degree for contact with the underside of the run of the wire apron carrying the stock so as to allow said apron to come sufficiently close to the top of the box for effective suction action, while at the same time preventing it from coming directly into contact with the surface of the top, whereby friction and wear upon the opposing face of the box and apron will be reduced to a minimum. At the same time the friction rollers will adapt the apron to run freely over the box, thus enabling it to be easily driven and further reducing the friction and wear thereon. The ports or openings 3 of the several series are arranged in staggered relation, that is to say, the ports of any one roll or series are arranged on lines between the ports of the adjacent row or rows. By this construction an effective suction action upon all portions of the paper stock is insured, while at the same time the necessity of enlarging the openings to an objectionable degree and weakening the top of the box to secure the necessary suction area is obviated. Simplicity and inexpensiveness of construction with economy of production are thus secured, and a suction box of sufficient durability and strength for a maximum period of use is provided.

Having thus described the invention what I claim as new is:—

1. A suction box having its top provided with a plurality of longitudinal rows or series of openings, the openings of each row being arranged on lines between the openings of the adjacent rows, journals arranged within said openings, and friction rollers mounted upon said journals within said openings with portions of their peripheries projecting through the openings to a position slightly above the surface of the top.
2. A suction box having its top provided

with a plurality of longitudinal rows or series of openings, the openings of each row being arranged on lines between the openings of the adjacent rows, axles extending
5 longitudinally of each row of openings, and across the individual openings thereof, and friction rollers journaled on said axles within said openings and having their periph-

eries projecting through the openings to a position slightly above the top of the box. 10
In testimony whereof I affix my signature in presence of two witnesses.

GEORGE HENERY SAGAR.

Witnesses:

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