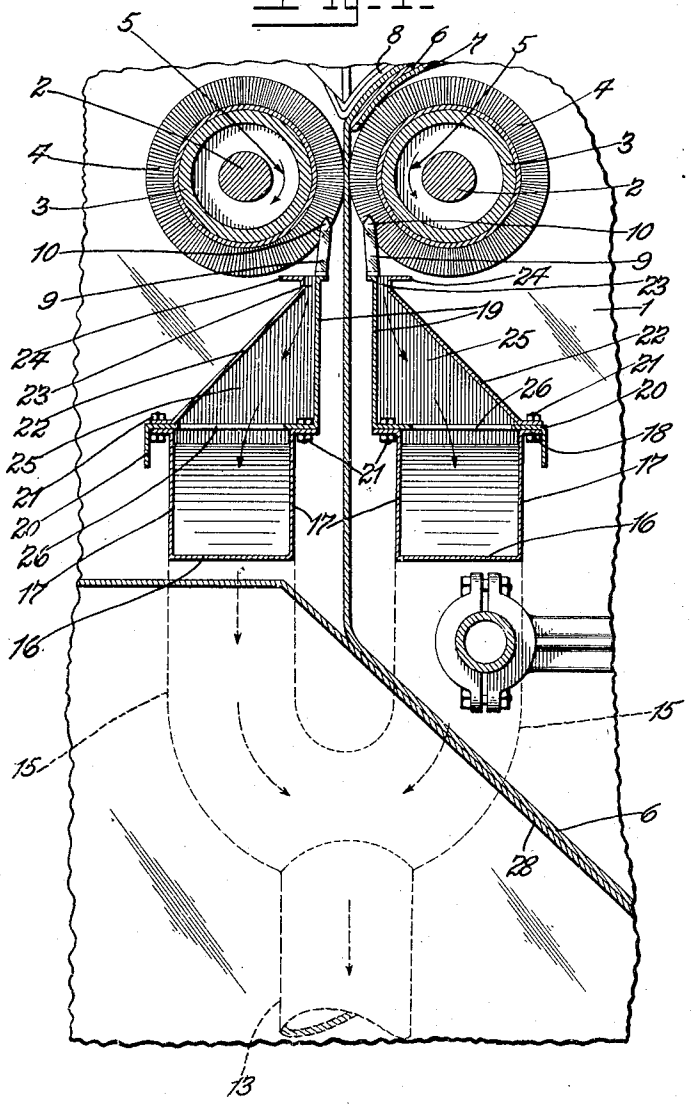
Feb. 11, 1930. A. O. SCHRAMM ET AL 1,746,798

MACHINE FOR RAISING NAP ON TEXTILES AND THE LIKE

Filed June 22, 1928 2 Sheets-Sheet 1

Fig. 1.



Inventor:
Albert O. Schramm,
John H. Schreiber,
by Kipper & Kingsland.
Their Attorneys.

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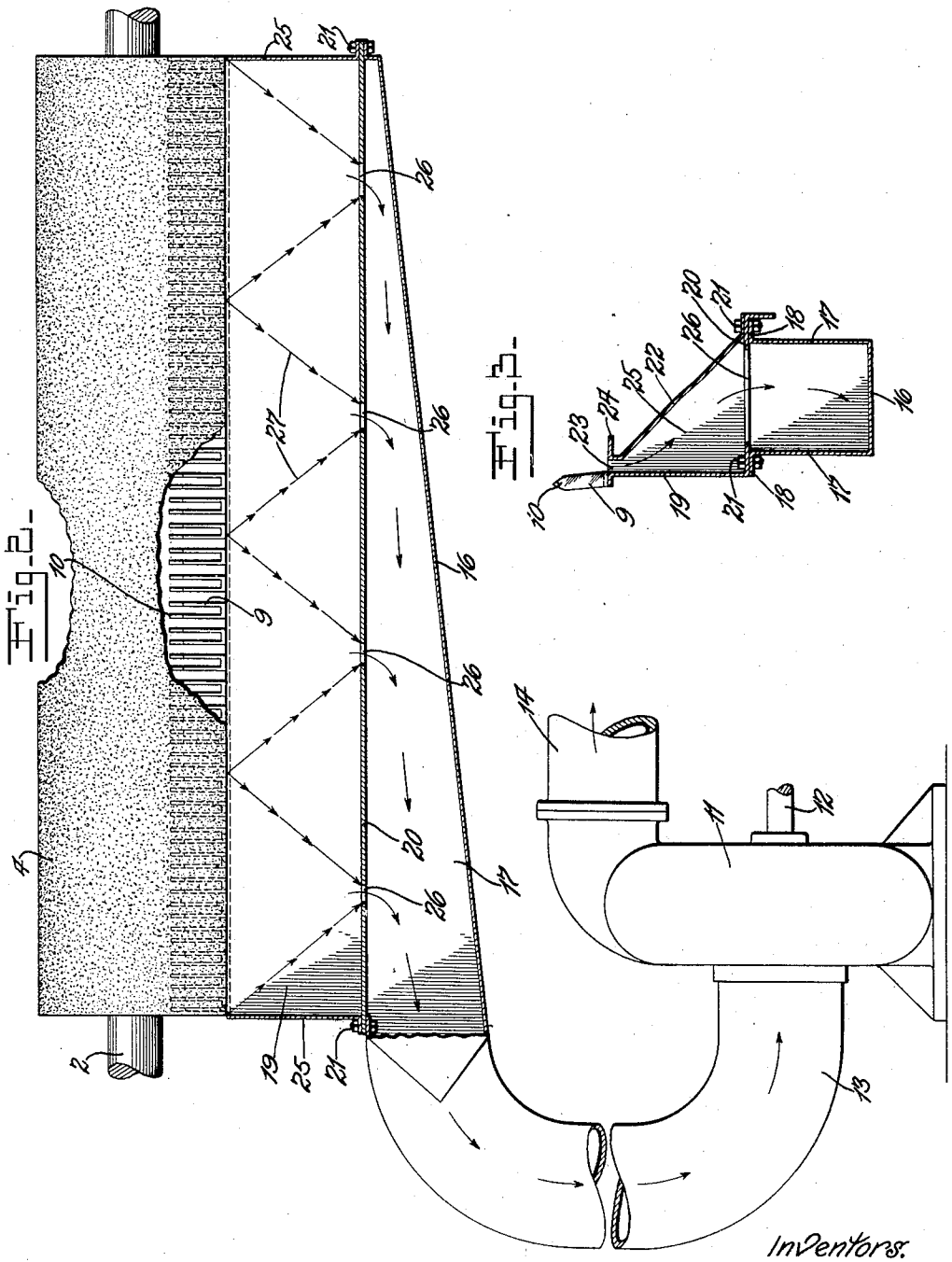


Fig. 2.

Fig. 4.

Inventors:
Albert O. Schramm,
John H. Schreiber,
by Kippey & Kingsland.
Their Attorneys.

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UNITED STATES PATENT OFFICE

ALBERT O. SCHRAMM AND JOHN H. SCHREIBER, OF ST. LOUIS, MISSOURI, ASSIGNORS, BY MESNE ASSIGNMENTS, TO THE AMERICAN LAUNDRY MACHINERY COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO

MACHINE FOR RAISING NAP ON TEXTILES AND THE LIKE

Application filed June 22, 1928. Serial No. 287,375.

This invention relates to machines for raising nap on textiles and the like.

An object of the invention is to equip a nap raising machine having brush rolls for raising the nap on fabrics and the like, with improved means for removing lint and other particles from the brush rolls and from the machine.

Another object of the invention is to provide a machine of the character described with an improved suction device for removing lint and other particles from the machine.

Other objects of the invention will appear from the following description, reference being made to the drawings, in which

Fig. 1 is a vertical cross sectional view of that part of the machine containing the present invention.

Fig. 2 is a longitudinal sectional view of the suction device.

Fig. 3 is a cross sectional view of the suction device detached from the machine.

The machine in which the invention is shown comprises a support 1 in which a pair of parallel rotative shafts 2 are supported. On each of the shafts 2 a roll 3 is mounted, and around each of said rolls a cylindrical carding brush roll 4 is secured. These brush rolls are rotated in opposite directions as indicated by the arrows 5, so that the fabric 6 delivered to said rolls by the feeding and retarding mechanism is subjected to a brushing action and passed downwardly between the rolls.

The fabric 6 is delivered to the rolls across an arcuate supporting table 7 by a feed belt 8. The brush rolls rotate at greater speed than the movement of the fabric so that the fabric is subjected to brushing action.

It is apparent that this brushing action of the brush rolls will remove the loose lint and other particles from the fabric and that certain quantities of such lint and other particles will adhere to the rolls unless removed.

In order to remove the lint and other particles from the rolls, we provide a rake for each roll comprising a series of rake teeth 9 having pointed extremities 10 extending upwardly into the respective rolls. Thus as the adjacent sides of the rolls rotate downwardly the adhering particles of lint and the like are removed from the rolls by the rake teeth. The rake teeth also function as guides to prevent the fabric from adhering to the brushes becoming rolled about the same during operation of the machine.

The present invention comprises suction devices for removing the detached lint particles, etc., from the machine, and one of such suction devices is provided below each brush roll. In the construction shown each suction device comprises a blower fan 11 of any suitable or known construction operated by a shaft 12. A suction pipe 13 extends to the blower fan and a discharge pipe leads therefrom.

The pipe 13 has branches 15, and each branch 15 is extended under one of the rolls 4 to provide a suction inlet portion comprising an upwardly inclined bottom wall 16 and a pair of side walls 17. Each of the side walls 17 has on its upper edge a laterally extended flange 18, all of which flanges are in the same horizontal plane and parallel with the axes of the rolls 4.

The rakes 9 are mounted on the upper ends of vertical walls 19 which extend upwardly from plates 20 seated upon the flanges 18 attached thereto by bolts 21. Inclined plates 22 have their outer lower margins seated on the plates 20 respectively, and extend inwardly and upwardly toward the upper edges of the plates 19, being spaced therefrom to provide suction inlet mouths 23 the full length of the rolls. The upper edges of the plates 20 are bent outwardly to form flanges 24 to aid in directing the lint and other particles into the mouths 23 when the suction device is operating. The end of the plate 22 is bent to provide an end wall 25.

From the foregoing it will be observed (Fig. 2) that the cross sectional area of the inlet portion 16—17 of each suction tube diminishes toward the end thereof. To equalize the suction so that the suction is distributed approximately equally throughout the length of the role, a series of transverse slots 26 is formed in the plate 20, and these slots are of gradually increasing width toward the end of the suction inlet. That is, the slot 26 that is above the larger portion of the suction tube 16—17 is of narrowest width, and the respective slots toward the end are of increasing graduated widths (Fig. 2). The theoretical draft toward the respective slots is indicated by the inclined arrows 27 (Fig. 2).

When the machine is in use it is intended that the suction or fan device 11 shall be operated concurrently with the rolls 4 when fabrics are being passed between said rolls. The fabric passing from the rolls is detached and guided therefrom by the rakes 9 and caused to pass downwardly between the respective suction devices to an inclined table or chute 28, and thence from the machine. The detached lint particles and the like are drawn to the suction device through the inlet mouths 23 and discharged through the discharge pipe 14. Particles dropping from the brushes beyond the rakes 9 may be caught upon the flanges 24 and drawn through the suction device.

The construction and arrangement of the parts may be varied within equivalent limits without departure from the nature and principle of the invention. We do not restrict ourselves unessentially, but what we claim and desire to secure by Letters Patent is:—

1. In a machine of the character described, rotative brush rolls, walls forming a suction inlet mouth below each of said rolls, suction tubes supporting said walls and being of tapering vertical width toward one end, and means forming a longitudinal series of passages from said mouths to said tubes and of increasing width toward the narrow ends of said tubes.

2. In a machine of the character described, rotative brush rolls, walls forming a suction inlet mouth below each of said rolls, suction tubes supporting said walls and being of tapering vertical width toward one end, means forming a longitudinal series of passages from said mouth to said tube and of increasing width toward the narrow ends of said tubes, and rakes supported by said walls at the adjacent sides of said mouths for removing particles from said rolls.

3. A machine of the character described, comprising a pair of rotative brush rolls, a suction inlet device below and adjacent to each of said rolls, a suction fan, a tube from said fan communicating with each of said inlet devices, and rakes supported by said inlet devices and extending into said rolls respectively.

4. In a machine of the character described, a pair of rotative brush rolls, walls forming a longitudinal suction inlet mouth below each of said rolls, a suction tube supporting said walls, and a wall separating said suction tube from the space between said first named walls and having a series of slots therethrough of gradually increasing widths toward the ends of said tubes.

5. In a machine of the character described, a pair of rotative brush rolls, a suction tube below each of said rolls and being of gradually decreasing vertical width toward their ends and having a series of slots in their upper walls of gradually increasing widths toward the ends of said tubes, and means forming a suction inlet device supported by each of said tubes adjacent to one of said rolls.

6. In a machine of the character described, a pair of rotative brush rolls, a suction tube below each of said rolls and being of gradually decreasing vertical width toward their ends and having a series of slots in their upper walls of gradually increasing widths toward the ends of said tubes, means forming a suction inlet device supported by each of said tubes adjacent to one of said rolls, and a rake supported by each of said means for removing particles from the adjacent roll.

7. In a machine of the character described, a pair of rotative rolls, a suction mouth device below and adjacent to each of said rolls, a rake supported by each of said suction devices and having its teeth extending into the adjacent roll, and a suction tube having communication with each of said devices through spaced openings.

8. In a machine of the character described, a pair of rotative rolls, a suction mouth device below and adjacent to each of said rolls, a rake supported by each of said suction devices and having its teeth extending into the adjacent roll, and a suction tube having communication with each of said devices through spaced openings of different widths.

9. In a machine of the character described, two adjacent horizontal rotative brush rolls for operating against opposite sides of fabrics passing downwardly between said rolls, suction inlet devices below said rolls and having a space between them through which pass the fabrics that pass from between said rolls, and a suction tube supporting each of said inlet devices and having inlet openings thereto from the inlet device supported thereby of increasing area toward the ends of said tubes.

10. In a machine of the character described, two adjacent horizontal rotative brush rolls for operating against opposite sides of fabrics passing downwardly between said rolls, suc-

tion inlet devices below said rolls and having a space between them through which pass the fabrics that pass from between said rolls, a suction tube supporting each of said inlet devices and having inlet openings thereto from the inlet device supported thereby of increasing area toward the ends of said tubes, and rakes supported by said inlet devices and projecting upwardly into said brush rolls.

ALBERT O. SCHRAMM.
JOHN H. SCHREIBER.