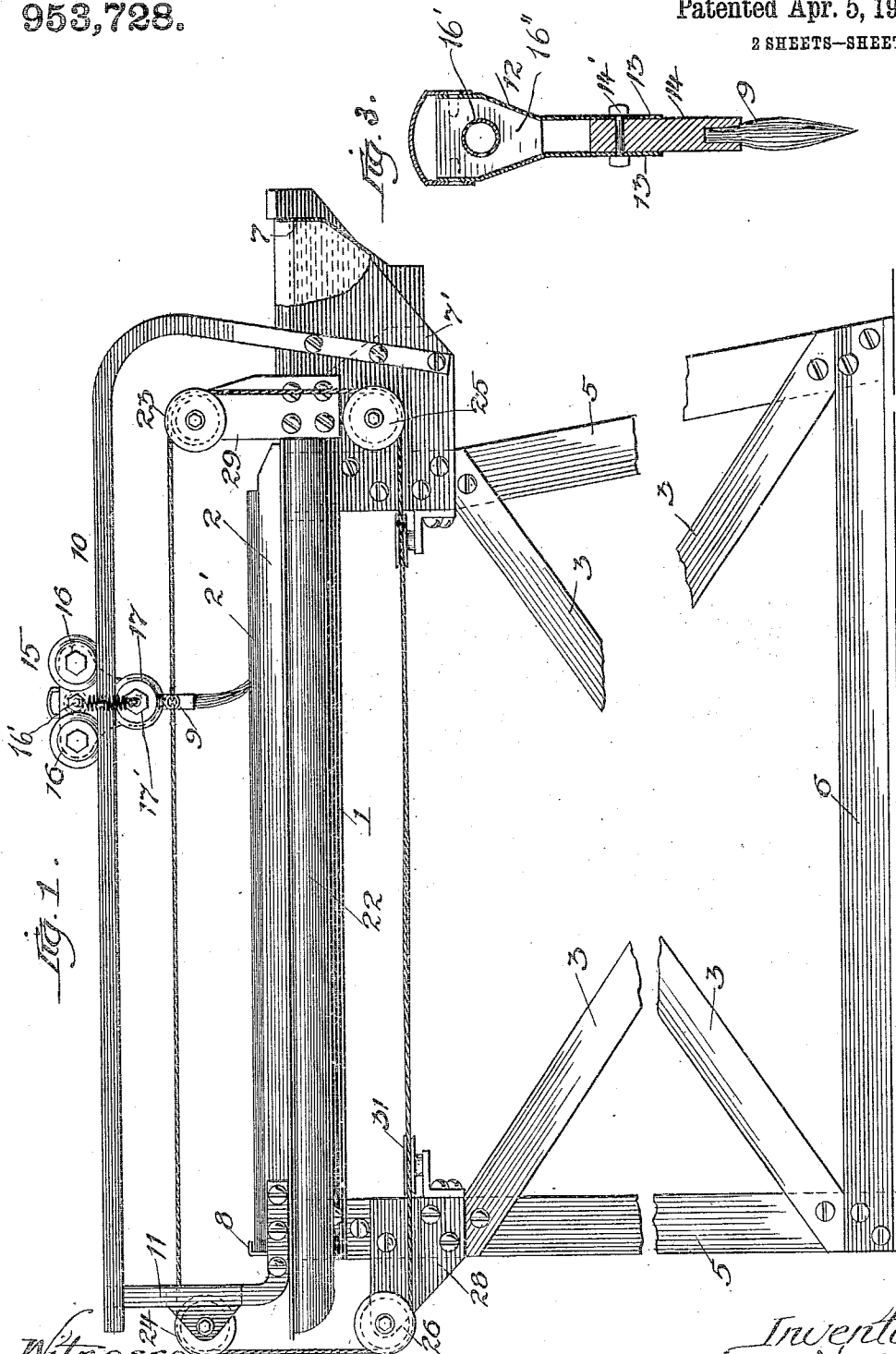


953,728.

2 SHEETS—SHEET 1.



Witnesses:
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Emilie Rose

Inventor:
Eugene Williams,
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E. WILLIAMS.
PAPER COATING MACHINE.
APPLICATION FILED MAY 31, 1907.

953,728.

Patented Apr. 5, 1910.

2 SHEETS—SHEET 2.

Fig. 2.

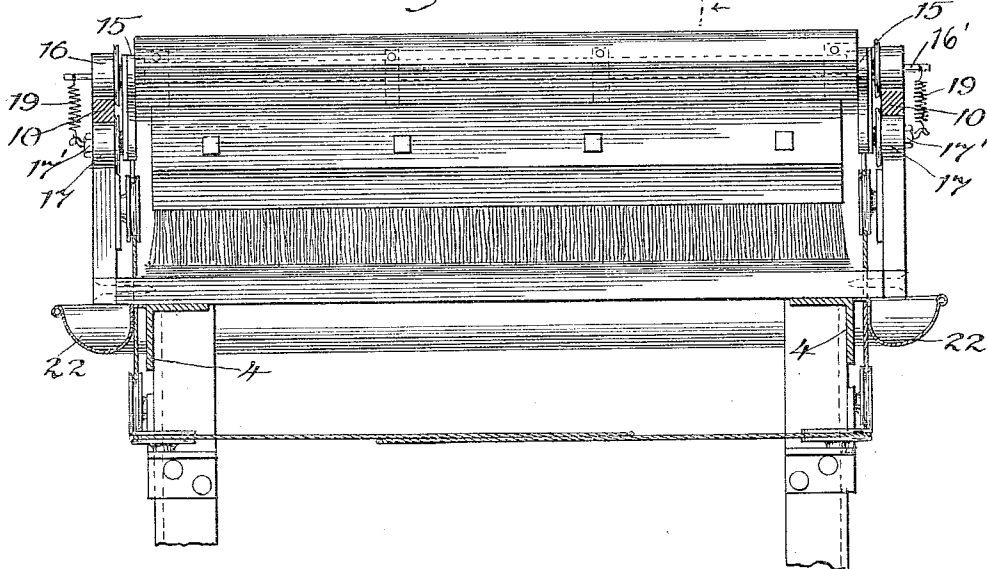
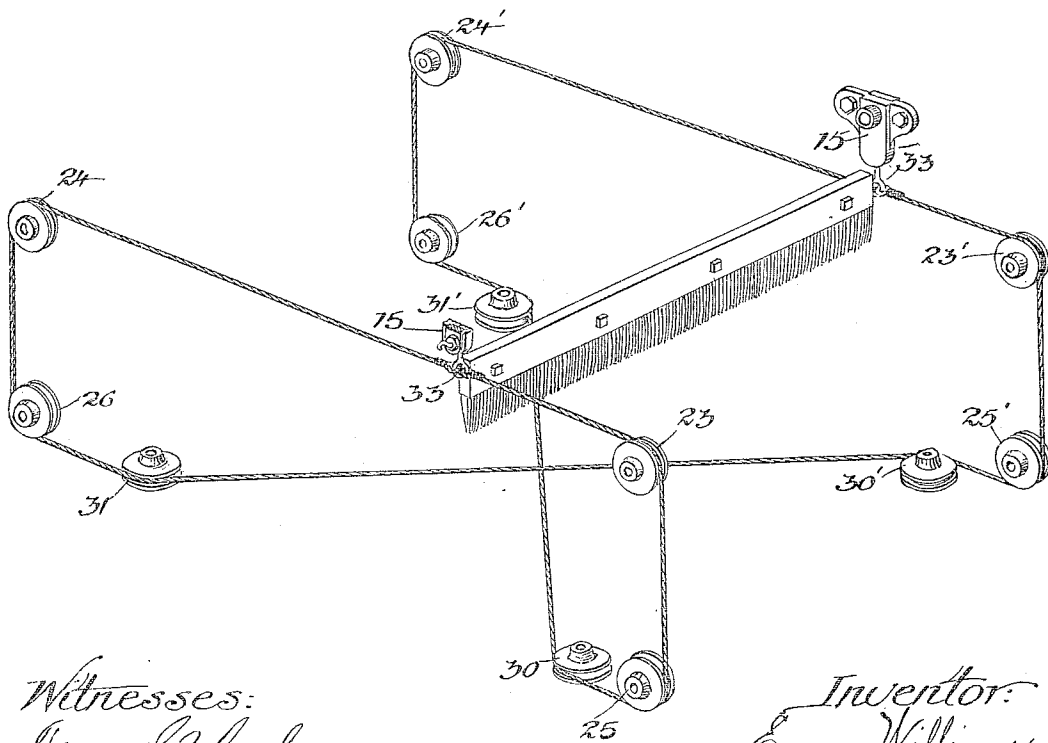


Fig. 4.



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UNITED STATES PATENT OFFICE.

EUGENE WILLIAMS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE RUBBER PAINT CO.,
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PAPER-COATING MACHINE.

953,728.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed May 31, 1907. Serial No. 376,432.

To all whom it may concern:

Be it known that I, EUGENE WILLIAMS, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Paper-Coating Machines, of which the following is a specification.

This invention relates to a coating apparatus for coating or painting sheets of paper or analogous material, and in general construction is similar to that set forth in my prior patent, No. 773840.

Among the salient objects of my invention are to provide a construction whereby the pigment or natural coloring matter may be universally and evenly applied to the paper; to provide a construction which permits the paper to be evenly coated with a minimum and definite number of sweeps of the brush; to provide a construction which prevents binding of the brush wheels upon their respective rails and at the same time maintains and insures a movement of the brush at right angles with the sides of the table; and in general to provide a simple and efficient construction of the character referred to.

The invention will be readily understood from the following description, reference being had to the accompanying drawings in which—

Figure 1 is a side elevation of my device, parts being broken away to reduce the size of the drawing and to show the interior of the color tank. Fig. 2 is an enlarged cross-sectional detail, showing the manner of supporting the brush and hangers on the trolley head. Fig. 3 is a transverse sectional view taken through lines 3—3 of Fig. 2 and looking in the direction of the arrows. Fig. 4 is a perspective view of the brush, showing diagrammatically the manner of arranging the guiding belt.

Referring to the drawings, 1 designates the table having a horizontal top 2, upon which the paper 2' to be coated is placed. In order to give the table sufficient stability, it is provided at either side with cross supports 3—3 and side rails 4—4, suitably secured to the table legs 5—5. The bottom rails 6 further add to its stability. At one end of the table is provided a fountain or color tank 7 for the paint or coating fluid, into which the brush end is adapted to be

immersed. On the top of the table at the opposite end is secured a metal strip 8 and bent inwardly at its top to form a stop plate against which the paper lies flush while it is being coated. The brush 9 is secured to the traveling carriage which is supported above the table and is adapted to travel across the track rails 10—10 which extend along either side of the table. At one end, the rails 10 are bent downwardly and secured to the plate 7' which serves also to support the fountain 7. At their other ends, the rails are supported by standards 11 secured to the table.

Describing now the brush carriage proper, 12 designates a trolley head which extends transversely of the table and has side plates which form depending jaws 13, between which the brush head 14 is clamped by suitable through bolts 14'. To each end of the trolley head is pivotally secured a triangular truck plate 15 by means of the supporting rod 16' extending through space plates 16'' secured in the head 12 as seen clearly in Fig. 4. Upon each plate 15 are journaled two upper wheels 16 adapted to ride in the upper sides of their respective track rails. A lower wheel 17 is journaled upon the stud 17' which is mounted to move vertically in a slide way (not shown) formed in its respective truck plate 15. In order to keep the lower wheels in constant bearing with their respective track rails, each stud 17' is provided with a spring 19 secured at one end of the stud and at the other to an extension of the rod 16'. It will thus be seen that the wheels can freely travel upon the track rails but at the same time the ends of the trolley head are kept in firm bearing with the rails.

At the sides of the coating table, are secured gutters 22 for receiving any drip or overflow of the coating fluid during the operation of the apparatus.

Heretofore in a device of this character difficulty has been experienced in preventing binding of the truck wheels upon the rails and also in securing a traveling of the brush at exact right angles to the sides of the table. To overcome these defects and as an important feature of my invention, I provide an endless belt fastened to either end of the brush and trained over a series of belt sheaves. Describing this construction in detail, vertically-disposed sheaves 23—23' are

journaled on supporting plates 29 which are secured at the top of the table at one end of the latter. At the other end of the table and in the same plane with the sheaves 23—23' are journaled a pair of similar sheaves 24—24'. Directly beneath the sheaves 23—23' are respectively journaled lower sheaves 25—25'. At the other end of the table are similarly journaled lower sheaves 26—26', except that they are placed slightly outside of the vertical plane of the sheaves 24—24'. In order that the lower sheaves 26—26' may be approximately beneath their respective upper sheaves, they are journaled to brackets 28 secured to the legs 5, as seen clearly in Fig. 1. In a horizontal plane approximately coincident with the lower peripheries of the sets of lower sheaves and at right angles thereto, are journaled, on brackets 32, four sheaves 30—30' and 31—31', two at each side of the table, as seen clearly in Fig. 4. The outer part of the periphery of each of the horizontal sheaves coincides with the lower part of the periphery of each of their respective vertical sheaves.

Describing now the manner in which the endless belt is trained over the sheaves and starting for example with pulley 23, the belt is trained from the latter over sheaves 24 and 26 to horizontal sheave 31, thence across to sheave 30', and around sheaves 25' and 23' to sheaves 24', thence downwardly to sheave 26' over sheave 31' across to sheave 30 and up over sheave 25 back to sheave 23. The upper laps of the belt are integrally connected to the truck plates 15 by suitable eyes 33—33 which are so arranged that the eyes may easily ride by the upper sheaves 23—23' when the brush is being immersed in the liquid. From the arrangement of the belt described it will be seen that as the brush moves across the paper it will at all times be at exact right angles to the sides of the table but will have oscillatory movement inasmuch as the truck plates 15 are pivotally connected to the trolley head 12. As hereinbefore stated this arrangement of the belt also prevents binding of the wheels upon their respective rails.

While I have shown and described a preferred embodiment of the invention, yet it will be understood that the details may be somewhat modified without departing from the spirit of the invention.

I claim as my invention:

1. In a paper coating machine, the combination with a table, of a pair of laterally separated track rails, a traveling carriage upon said rails, a coating brush supported by said carriage, a means for maintaining uniformity of movement of the two ends of said carriage comprising parallel rows of guides supported by the table, an endless belt secured to the opposite ends of said

traveling carriage and trained around said guides, said belt being crossed beneath the table by being trained around diagonally opposite members of said guides.

2. In a paper coating machine, the combination with a table, of a pair of track rails, a traveling carriage upon said rails provided at either end with journal extensions, a coating brush pivotally mounted on said carriage and means for maintaining uniformity of movement of the two ends of said carriage, comprising a series of belt sheaves arranged partly above and partly below the plane of the table, and an endless belt trained around said sheaves, crossed below the table and secured to the respective ends of said carriage.

3. In a paper coating machine, the combination with a table, of a pair of track rails arranged at opposite sides of the table, a traveling carriage upon said rails, a coating brush secured to said carriage and means maintaining uniformity of movement of the carriage, comprising two series of sheaves arranged in vertical parallel planes at the respective sides of the table, a third series arranged in a horizontally-disposed plane below the table, and an endless belt trained around all of said sheaves, crossed below the table by being trained around diagonally opposite members of said sheaves and secured to the respective ends of the carriage.

4. In a paper coating machine, the combination with a table, of a pair of track rails arranged at opposite sides of the table and bent downwardly at one end, a traveling carriage upon said rails, a coating brush pivotally secured to said carriage, a coating fountain at one end of said table into which said brush is adapted to be immersed, means for maintaining uniformity of movement of the carriage comprising two series of vertical sheaves arranged in parallel planes at the respective sides of the table, a pair of sheaves rotatably journaled in a plane at right angles to said other sheaves, and an endless belt trained around all of said sheaves crossed below the table by being trained around diagonally opposite members of said sheaves and secured at opposite ends of said traveling carriage.

5. In a paper coating machine, the combination with a table, of a coating fountain upon one end of said table, a pair of track rails arranged at opposite sides of the table and bent downwardly at one end toward said fountain, a traveling carriage upon said rails, a coating brush pivotally secured to said carriage, and means maintaining uniformity of movement of the carriage comprising an endless belt trained around suitable guides and secured at opposite ends of said carriage, said guides being so arranged that the belt descends downward at points

adjacent to the fountain whereby the brush may be immersed in the latter.

6. In a paper coating machine, the combination with a table, of a coating brush adapted to fit across the upper face of said table, and means for maintaining uniformity of movement of the two ends of said brush comprising parallel rows of guides supported by the table, an endless belt connected to the opposite ends of said brush and trained around said guides, said belt being crossed beneath the table by being trained around diagonally opposite members of said guides.

7. In a paper coating machine, the combination with a table, of a coating brush adapted to move across the upper face of

said table, and means for maintaining uniformity of movement of the two ends of said brush comprising two series of sheaves arranged in vertical parallel planes at the respective sides of the table above and below the latter, a third series arranged in a horizontally disposed plane below the table and journaled at right angles to said first sheaves, and an endless belt trained around all of said sheaves, crossed below the table by being trained around diagonally opposite members of said horizontally disposed sheaves, and secured to said brush.

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