No. 773,840. PATENTED NOV. 1, 1904.

E. WILLIAMS.

SHEET COATING MACHINE.

APPLICATION FILED MAR. 30, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 2.

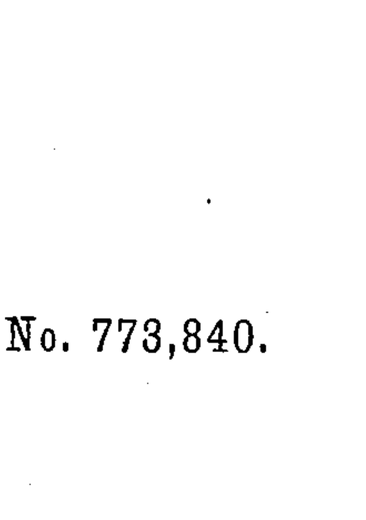
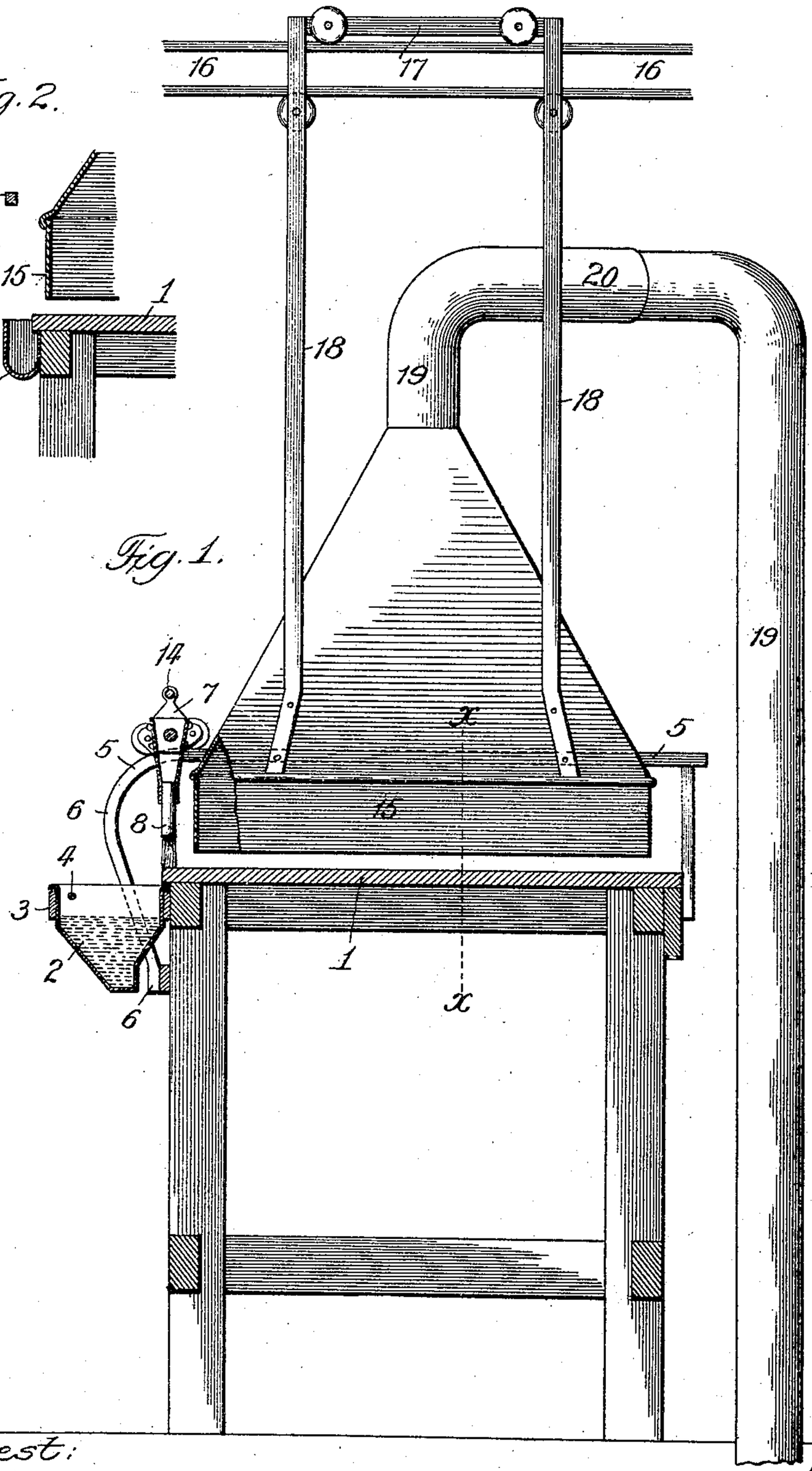


Fig. 1.



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No. 773,840. PATENTED NOV. 1, 1904.

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SHEET COATING MACHINE.

APPLICATION FILED MAR. 30, 1904.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

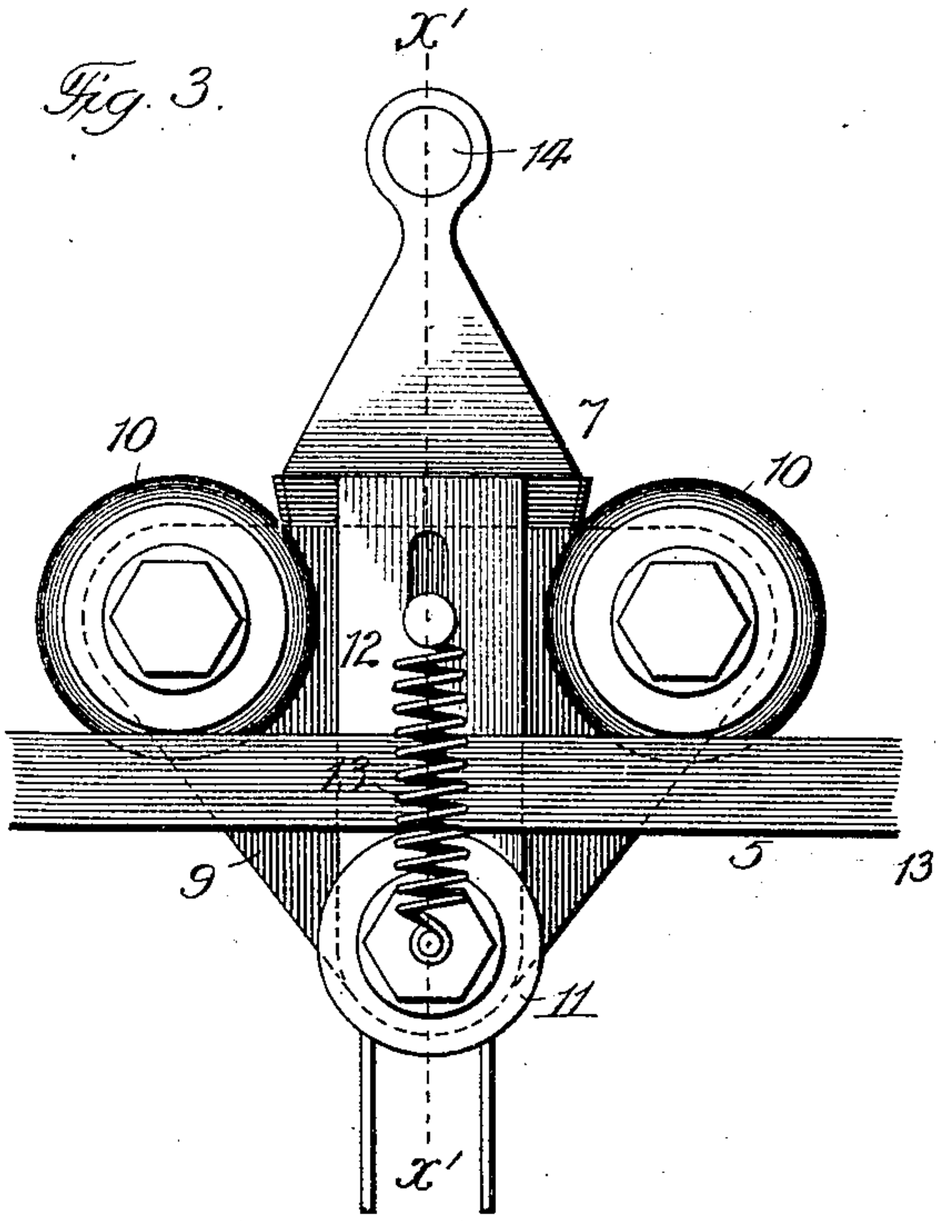


Fig. 4.

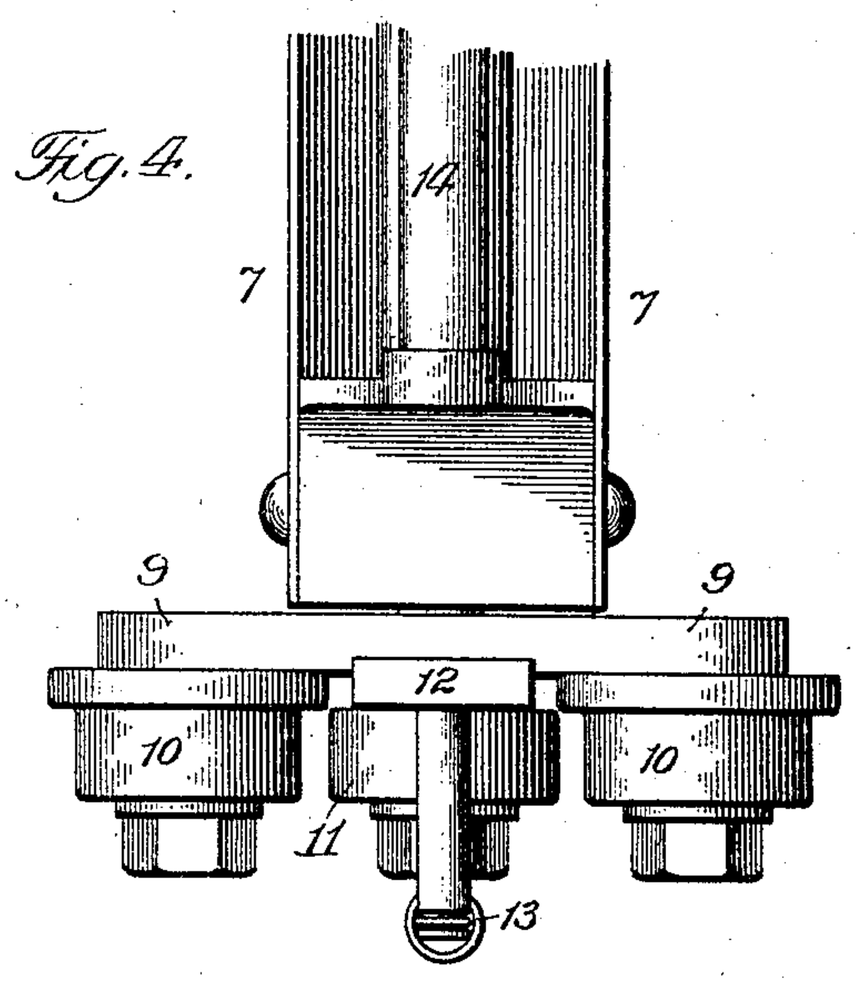


Fig. 5.

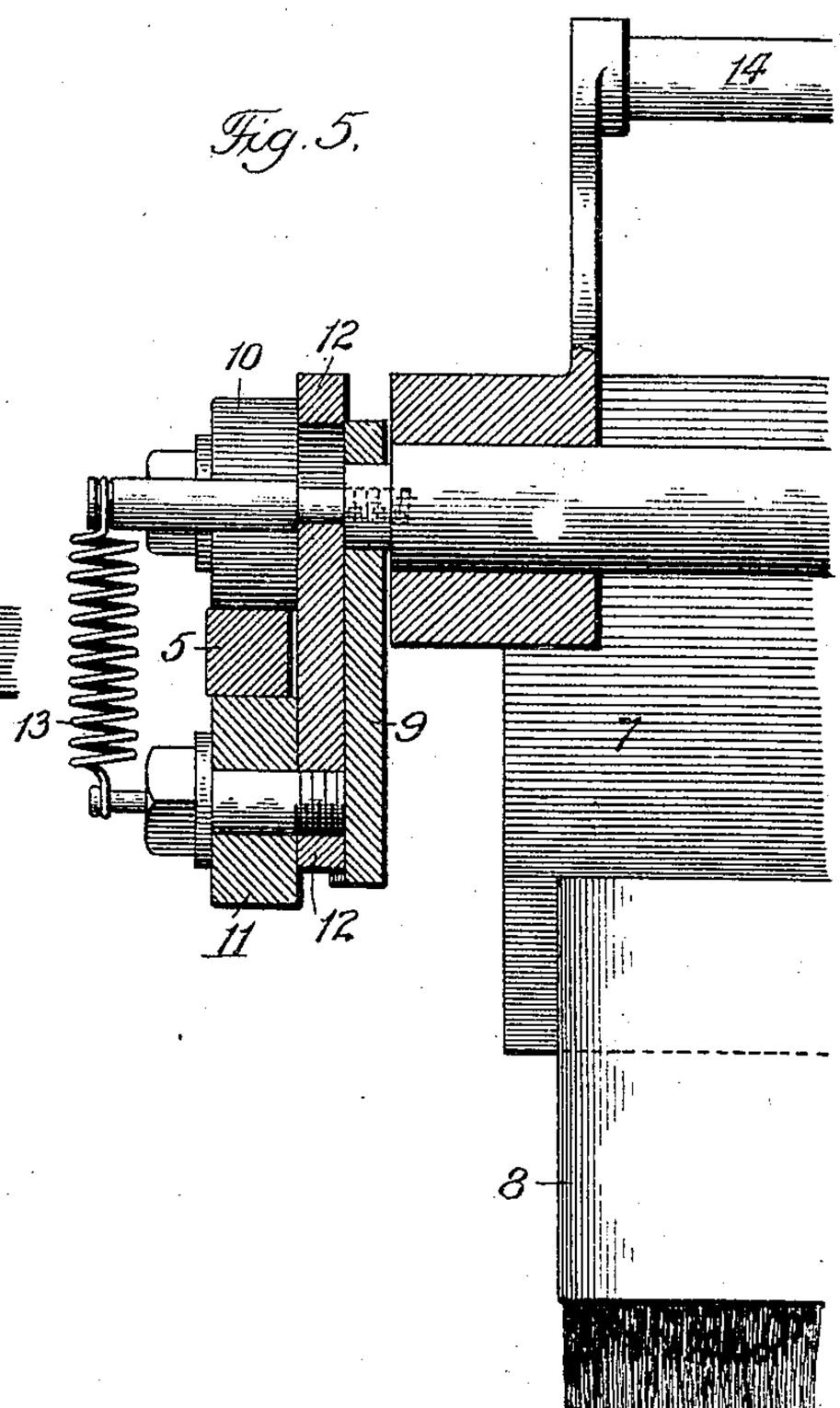
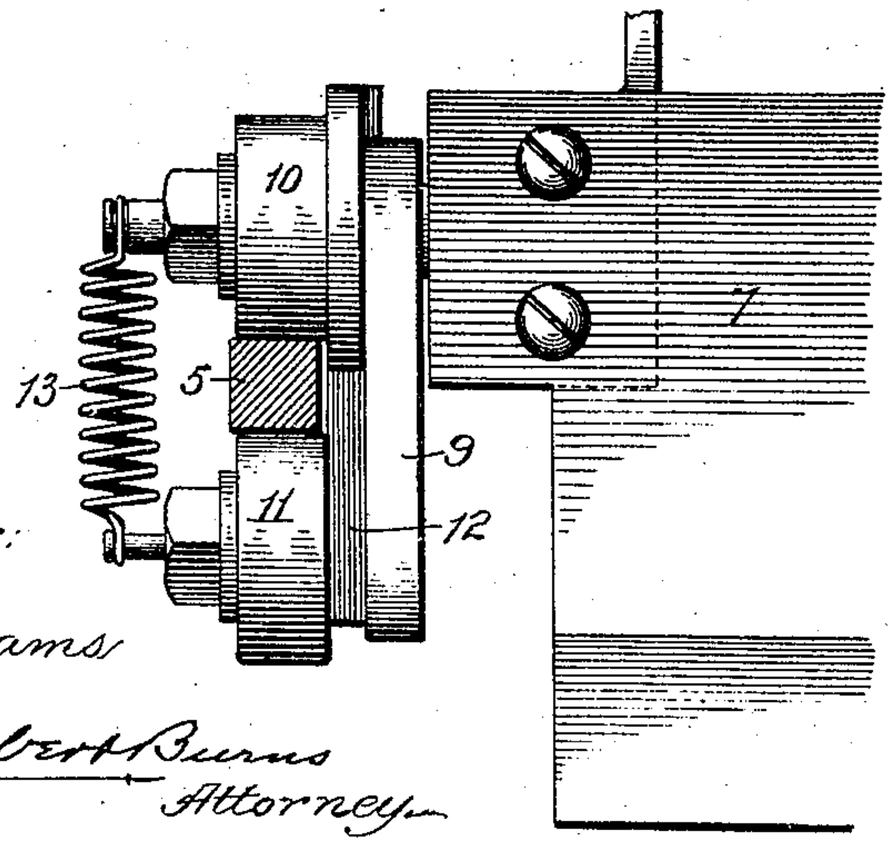


Fig. 6.



Attest:

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No. 773,840. Patented November 1, 1904.

UNITED STATES PATENT OFFICE.

EUGENE WILLIAMS, OF CHICAGO, ILLINOIS.

SHEET-COATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 773,840, dated November 1, 1904.

Application filed March 30, 1904. Serial No. 200,687. (No model.)

To all whom it may concern:

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

The present invention relates to a coating apparatus adapted for coating or painting sheets of paper and the like for sample color-cards, and has for its object to provide a simple and efficient structural formation and combination of parts whereby the paint or other coating fluid is applied and uniformly spread over the sheet in a rapid and economical manner, all as will hereinafter more fully appear and be more particularly pointed out in the claims.

In the accompanying drawings, illustrative of the present invention, Figure 1 is a longitudinal sectional elevation of a coating apparatus embodying the present improvements. Fig. 2 is a detail transverse section at line x x, Fig. 1. Fig. 3 is an enlarged detail end elevation of the brush-carriage and its guide-track. Fig. 4 is an enlarged detail plan of the same. Fig. 5 is an enlarged detail longitudinal section of the same at line x' x', Fig. 3. Fig. 6 is an enlarged detail side elevation of the same.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 represents a horizontal table or surface upon which is laid the sheet of paper or the like to be coated.

2 is a tank arranged at one end of the table 1 in a plane below that of said table and adapted to contain a supply of the fluid used in the coating operation.

3 is a fixed supporting yoke or bracket on the supporting-frame of the table 1, in which the tank 2 is removably supported, so that it may be removed and replaced in making a change of coating fluids.

4 is a horizontal bar or rod arranged in separated relation to an end wall of the tank 2 and near the upper end of said tank. Such bar or rod is adapted to act as a wiper in removing the surplus coating fluid from the coating-brush, hereinafter described.

5 represents a pair of track-rails extending lengthwise of the apparatus and arranged at opposite sides of the same and in a plane above the coating-table. Such track-rails are horizontal to the length of the coating-table, as shown, and are provided with downwardly-curved extensions 6 adjacent to the tank 2, for purposes hereinafter stated.

7 is a brush-carrying head arranged transversely of the apparatus and having holding-jaws at its lower end adapted to be clamped upon the head of a coating-brush.

8 is the coating-brush, having a width approximating that of the coating-table 1 and secured to the carrying-head 7, as above described, so that its bristle portion will have proper coating contact with a sheet of material carried upon the coating-table.

9 represents end truck-plates pivotally connected to the respective ends of the brush-carrying head 7 and provided with upper sets of track-wheels 10, having rolling engagement with the upper surface of the track-rails 5, and with single centrally-arranged track-wheels 11, having rolling engagement with the under surface of said track-rails. In order to permit the free travel of the series of track-wheels 10 and 11 around the curved extensions 6 of the track-rails, this central track-wheel 11 of each set is yieldingly supported upon its truck-plate 9 in any usual and suitable manner, preferably, however, in the manner shown in the drawings, in which—

12 is a slide moving in a guideway in the end truck-plate 9 and carrying the journal-pin or axle of a central track-wheel 11. 13 is a spring tending to draw said slide and wheel toward the companion pair of track-wheels 10.

14 is a handle on the brush-carrying head 7 for the convenient manipulation of the same by hand.

15 is an open-bottom blast-head of a size approximating that of the coating-table 1 and adapted to have movement in a plane above said table, so that it may be moved into a position immediately over the table or away

from said table in the cycle of operations of the present apparatus. The described movement of the blast-head 15 may be attained by any usual and suitable supporting mechanism, preferably, however, by means of an overhead horizontal track 16, upon which a carriage 17 has movement and to which carriage the hood 15 is connected by suspension-bars 18, as illustrated in Fig. 1.

19 is a blast-pipe connecting the blast-head 15 with a suitable source of air-pressure, such as a fan-blower, and 20 is a telescopic connection in a horizontal portion of said blast-pipe to permit of the movement of the blast-hood in a horizontal direction and in a rectilinear manner without breaking the connection between the stationary portion of said blast-pipe and the blast-hood.

21 represents gutters at the edges of the coating-table for receiving any overflow of the coating fluid during the operation of the apparatus and preventing the wastage of such fluid upon the floor.

In the operation of the present apparatus the operator by means of the handle 14 moves the brush-carrier along the inclined extension 6 of its supporting-track to effect an immersion of the bristle portion of the coating-brush 8 in the coating fluid contained in the tank 2. Owing to the pivotal connection of said brush-carrier to its truck-plates 9, the operator is enabled to swing the brush forward and backward in the coating fluid to effect a proper charging of the brush, as well as to bring the brush in contact with the wiper-rod 4 to remove any surplus coating fluid from the brush. The operator still grasping the handle 14 brings the charged brush to the middle of the sheet to be coated as said sheet lies in a horizontal position on the coating-table and moves the brush back and forth over said sheet, so as to coat the entire surface of the same. During such manipulation a movement in a horizontal plane is imposed upon the brush and its carrying-head by the track-rails 5 and connections heretofore described between said rails and the brush-plates of said carrying-head. With the completion of such fluid-applying operation the brush-carrying head is moved out of the way from over the coating-table and the blast-head 15 brought forward over the coated sheet and the air-blast turned on to effect a very even spreading of the coating while yet fluid upon the sheet. From extended practical test it has been found that the air-blast so applied produces a very even and uniform tint over the entire surface of the sheet. On the completion of such spreading operation the air-blast is shut off, the blast-head moved out of the way from over the coating-table, and the coated sheet removed and replaced by a fresh sheet ready for a repetition of the above-described cycle of operations.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a coating apparatus of the character herein described, the combination of a horizontal coating-table, a fluid-containing tank arranged at one end of and below the coating-table, a horizontal track having a downwardly-curved extension adjacent to said tank, a brush-carrier having sliding connection with said track, and a brush secured to the lower end of said carrier, substantially as set forth.

2. In a coating apparatus of the character herein described, the combination of a horizontal coating-table, a fluid-containing tank arranged at one end of and below the coating-table, a horizontal track having a downwardly-curved extension adjacent to said tank, a brush-carrier, truck-plates pivotally connected to the ends of the brush-carrier, track-wheels on said truck-plates and a brush secured to the lower end of said carrier, substantially as set forth.

3. In a coating apparatus of the character herein described, the combination of a horizontal coating-table, a fluid-containing tank arranged at one end of and below the coating-table, a horizontal track having a downwardly-curved extension adjacent to said tank, a brush-carrier, truck-plates pivotally connected to the ends of the brush-carrier, track-wheels on said truck-plates, a brush secured to the lower end of said carrier, and a horizontal wiper-rod arranged in the tank, substantially as set forth.

4. In a coating apparatus of the character herein described, the combination of a horizontal coating-table, a fluid-containing tank arranged at one end of and below the coating-table, a horizontal track having a downwardly-curved extension adjacent to said tank, a brush-carrier, truck-plates pivotally connected to the ends of the brush-carrier, upper and lower track-wheels on said truck-plates, and a brush secured to the lower end of said carrier, substantially as set forth.

5. In a coating apparatus of the character herein described, the combination of a horizontal coating-table, a fluid-containing tank arranged at one end of and below the coating-table, a horizontal track having a downwardly-curved extension adjacent to said tank, a brush-carrier, truck-plates pivotally connected to the ends of the brush-carrier, upper and lower track-wheels on said truck-plates, the lower track-wheels having yielding connection to the truck-plates, and a brush secured to the lower end of said carrier, substantially as set forth.

6. In a sheet-coating apparatus, the combination of a table adapted to support in a horizontal position a sheet or web to be coated, means for applying a fluid coating to said sheet or web while supported horizontally on said table, a downwardly-discharging blast-head arranged above said table and adapted

to effect a uniform spreading of the coating upon the sheet or web, and a blast-pipe connecting said blast-head with a source of air-pressure supply, substantially as set forth.

7. In a sheet-coating apparatus, the combination of a table adapted to support in a horizontal position a sheet or web to be coated, means for applying a fluid coating to said sheet or web while supported horizontally on said table, a downwardly-discharging blast-head removably supported above said table and adapted to effect a uniform spreading of the coating upon the sheet or web, and a telescoping blast-pipe connecting said blast-head with a source of air-pressure supply, substantially as set forth.

8. In a coating apparatus of the character herein described, the combination of a horizontal coating-table, means for applying a coating to a sheet of material on said table, a blast-head removably supported above such table, a blast-pipe connected to said head and to a source of pressure-supply, a telescopic connection in said supply-pipe, an overhead track, a carriage on said track and suspension-rods connecting the carriage to the blast-head, substantially as set forth.

9. In a coating apparatus of the character herein described, the combination of a horizontal coating-table, a fluid-containing tank arranged at one end of and below said table, a horizontal track having a downwardly-curved extension adjacent to said tank, a brush-carrier having sliding connection with said track, a brush secured to the lower end of said carrier, a blast-head removably supported above the coating-table, and a blast-pipe connected to said blast-head and to a source of air-pressure supply, substantially as set forth.

10. In a coating apparatus of the character herein described, the combination of a horizontal coating-table, a fluid-containing tank arranged at one end of and below said table, a horizontal track having a downwardly-curved extension adjacent to said tank, a brush-carrier having sliding connection with said track, a brush secured to the lower end of said carrier, a blast-head removably supported above the coating-table, a blast-pipe connected to said blast-head and to a source of air-pressure supply, and a telescopic connection in said supply-pipe, substantially as set forth.

11. In a coating apparatus of the character herein described, the combination of a horizontal coating-table, a fluid-containing tank arranged at one end of and below said table, a horizontal track having a downwardly-curved extension adjacent to said tank, a brush-carrier having sliding connection with said track, a brush secured to the lower end of said carrier, a blast-head removably supported above the coating-table, a blast-pipe connected to said blast-head and to a source of air-pressure supply, a telescopic connection in said supply-pipe, an overhead track, a carriage on said track, and suspension-rods connecting the carriage to the blast-head, substantially as set forth.

12. In a coating apparatus of the character herein described, the combination of a horizontal coating-table, a fluid-containing tank arranged at one end of and below said table, a horizontal track having a downwardly-curved extension adjacent to said tank, a brush-carrier, truck-plates pivotally connected to the ends of said carrier, track-wheels on said truck-plates, a brush secured to the lower end of said carrier, a blast-head removably supported above the coating-table, and a blast-pipe connected to said blast-head and to a source of air-pressure supply, substantially as set forth.

13. In a coating apparatus of the character herein described, the combination of a horizontal coating-table, a fluid-containing tank arranged at one end of and below said table, a horizontal track having a downwardly-curved extension adjacent to said tank, a brush-carrier, truck-plates pivotally connected to the ends of said carrier, track-wheels on said truck-plates, a brush secured to the lower end of said carrier, a blast-head removably supported above the coating-table, a blast-pipe connected to said blast-head and to a source of air-pressure supply, and a telescopic connection in said supply-pipe, substantially as set forth.

14. In a coating apparatus of the character herein described, the combination of a horizontal coating-table, a fluid-containing tank arranged at one end of and below said table, a horizontal track having a downwardly-curved extension adjacent to said tank, a brush-carrier, truck-plates pivotally connected to the ends of said carrier, track-wheels on said truck-plates, a brush secured to the lower end of said carrier, a blast-head removably supported above the coating-table, a blast-pipe connected to said blast-head and to a source of air-pressure supply, a telescopic connection in said supply-pipe, an overhead track, a carriage on said track, and suspension-rods connecting the carriage to the blast-head, substantially as set forth.

15. In a coating apparatus of the character herein described, the combination of a horizontal coating-table, a fluid-containing tank arranged at one end of and below said table, a horizontal track having a downwardly-curved extension adjacent to said tank, a brush-carrier, truck-plates pivotally connected to the ends of said carrier, track-wheels on said truck-plates, a brush secured to the lower end of the carrier, a horizontal wiper rod or bar arranged in the aforesaid tank, a blast-head removably supported above the coating-

table, and a blast-pipe connected to said blast-head and to a source of air-pressure supply, substantially as set forth.

16. In a coating apparatus of the character herein described, the combination of a horizontal coating-table, a fluid-containing tank arranged at one end of and below said table, a horizontal track having a downwardly-curved extension adjacent to said tank, a brush-carrier, truck-plates pivotally connected to the ends of said carrier, track-wheels on said truck-plates, a brush secured to the lower end of the carrier, a horizontal wiper rod or bar arranged in the aforesaid tank, a blast-head removably supported above the coating-table, a blast-pipe connected to said blast-head and to a source of air-pressure supply, and a telescopic connection in said supply-pipe, substantially as set forth.

17. In a coating apparatus of the character herein described, the combination of a horizontal coating-table, a fluid-containing tank arranged at one end of and below said table, a horizontal track having a downwardly-curved extension adjacent to said tank, a brush-carrier, truck-plates pivotally connected to the ends of said carrier, track-wheels on said truck-plates, a brush secured to the lower end of the carrier, a horizontal upper rod or bar arranged in the aforesaid tank, a blast-head removably supported above the coating-table, a blast-pipe connected to said blast-head and to a source of air-pressure supply, a telescopic connection in said supply-pipe, an overhead track, a carriage on said track, and suspension-rods connecting the carriage to the blast-head, substantially as set forth.

Signed at Chicago, Illinois, this 28th day of March, 1904.

EUGENE WILLIAMS.

Witnesses:
ROBERT BURNS,
M. H. HOLMES.