

H. W. DAY.
METHOD OF COATING AND TOOL OR APPLIANCE FOR APPLYING COATING.
APPLICATION FILED JULY 9, 1919.

1,369,520.

Patented Feb. 22, 1921.
2 SHEETS—SHEET 1.

Fig. 1.

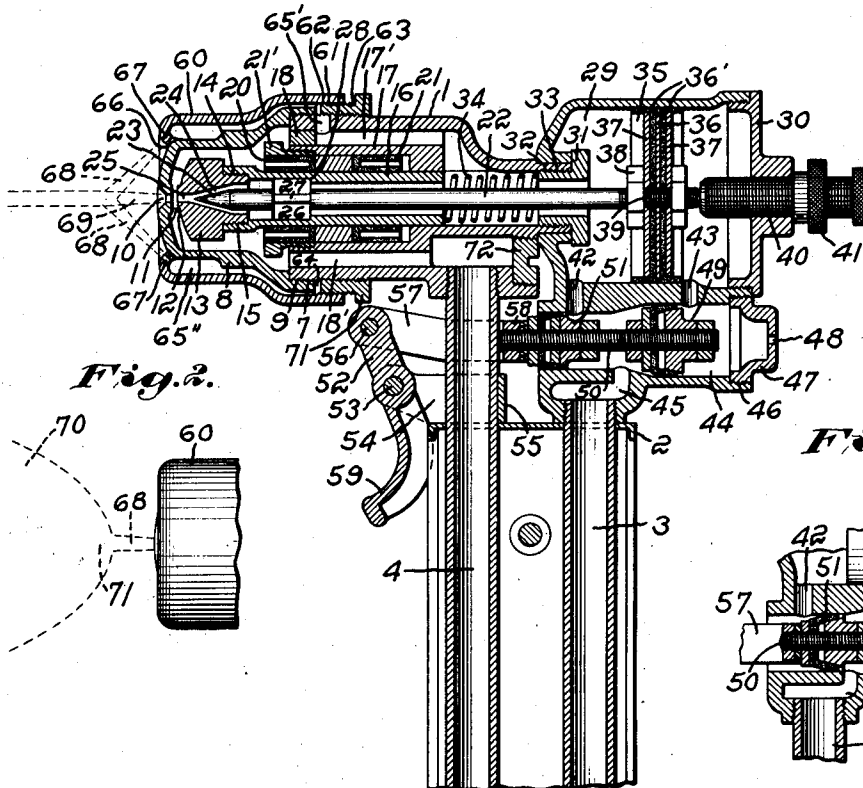


Fig. 2.

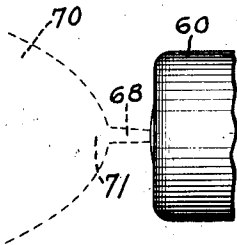


Fig. 1^a

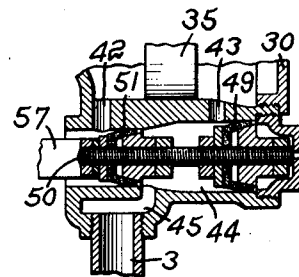
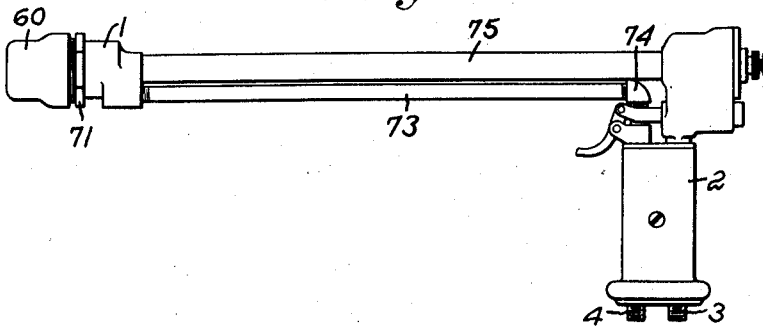


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

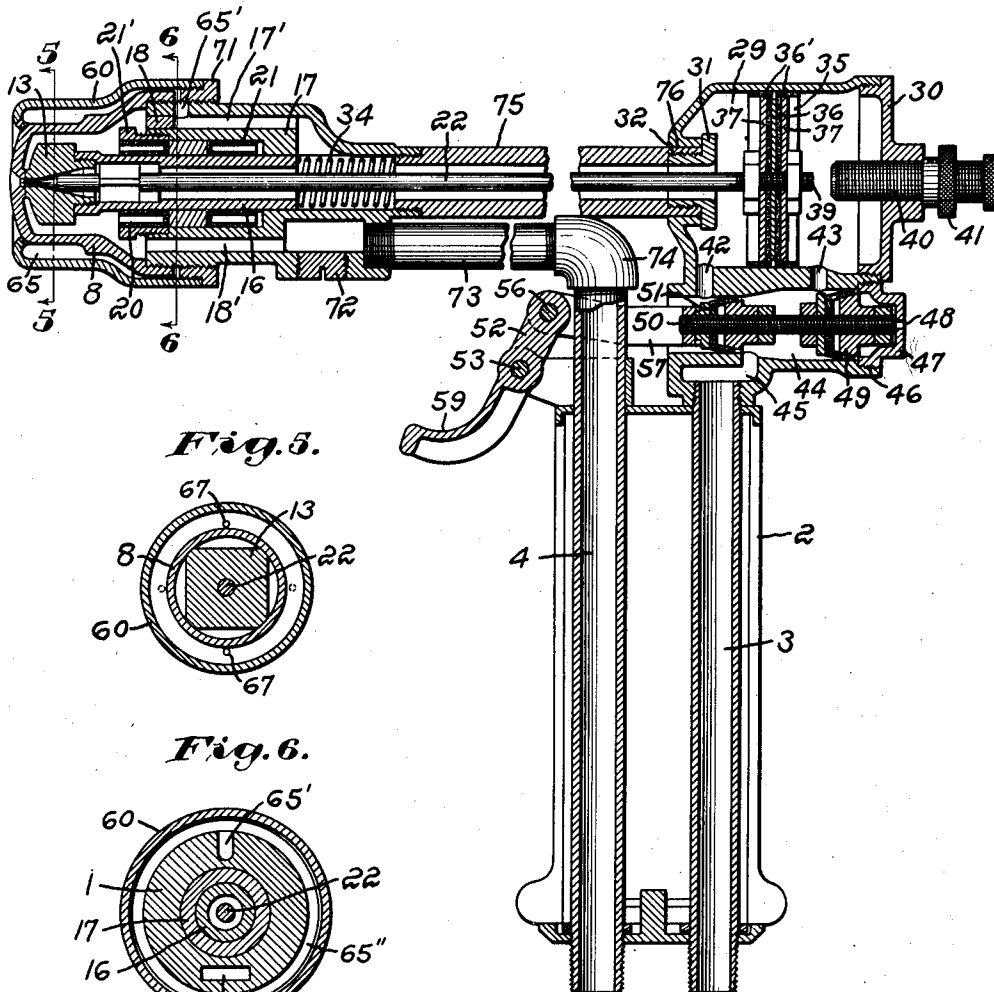


Fig. 5.

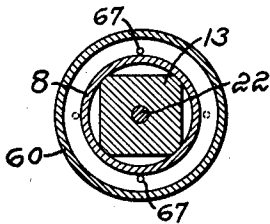
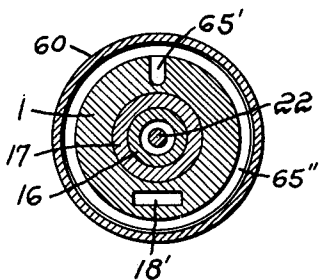


Fig. 6.



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UNITED STATES PATENT OFFICE.

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METHOD OF COATING AND TOOL OR APPLIANCE FOR APPLYING COATING.

1,369,520.

Specification of Letters Patent.

Patented Feb. 22, 1921.

Application filed July 9, 1919. Serial No. 309,692.

To all whom it may concern:

Be it known that I, HERBERT W. DAY, a citizen of the United States, and a resident of Wollaston, in the county of Norfolk and State of Massachusetts, have invented an Improvement in Methods of Coating and Tools or Appliances for Applying Coating, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to tools or appliances for applying coating to surfaces, and in certain aspects thereof it is an improvement upon the construction shown and upon the invention disclosed in my Patent No. 1,172,233, dated February 15, 1916, and also relates to an improved method of coating.

The coating, if a liquid, may be a paint, japan, varnish or any other suitable coating medium, or it may be a solid in powdered form, and the material or surface to which it is to be applied may be of any character, such, for example, as wood, metal or other material.

An important object of the invention is to provide an industrial tool which may be used not only in rough work not requiring a great nicety of manufacture or costly and delicate parts, but which may be used satisfactorily in fine work. Other objects of the invention may be set forth hereinafter.

Referring more particularly to the drawings, wherein I have represented a single embodiment of my invention—

Figure 1 is a vertical section of a tool constructed in accordance with my invention;

Fig. 1^a is a detail in vertical section showing certain of the valves in a different position from that represented in Fig. 1;

Fig. 2 is a detail more or less diagrammatic but in plan view and representing the approximate shape of the sheet discharged from the tool;

Fig. 3 is a detail in side elevation of a modified form of the tool of my invention;

Fig. 4 is a view generally similar to Fig. 1, but with parts broken away to accommodate the tool to that form of my invention shown in Fig. 3; and

Figs. 5 and 6 are details in vertical section upon the lines 5—5 and 6—6 of Fig. 4 and looking toward the left in said figure.

The tool or appliance may be of any suit-

able material, but is preferably metallic. The body 1 thereof may be of any suitable form, and preferably it is provided with a handle or extension 2 which may be integral therewith. The body and said handle are provided with a passage 3 for air or other suitable fluid under pressure and constituting the motive agent, and with a passage 4 for the paint or other coating liquid or powder, and which may also be supplied under suitable pressure, if desired, or through gravity.

To this end, I provide suitable pipes leading from sources of supply of compressed air and paint or other coating material.

The body 1 near its outer end is threaded as represented at 7 for the reception of a cap 8 internally threaded at 9 and provided with a discharge orifice 10 for the motive agent and the coating material. Preferably I provide interchangeable caps having different sizes or characters of opening 10 in accordance with the type of work upon which it is desired to use the tool.

In my said Patent No. 1,172,233, I have disclosed means for forming a film of the coating material which is broken up and discharged by the air or other motive agent, the film being constantly renewed by capillarity. In accordance with my present invention, I provide and maintain a film substantially the same manner between the inner surface of the cap 8 as at 11, and the outer surface 12 of a nipple 13 externally threaded at its inner end as indicated at 14 and received upon the internally threaded end 15 of a sliding sleeve 16. For sake of clearness, I have somewhat exaggerated the space between the surfaces 11, 12 when the parts are in open position. It is to be understood that the surfaces are in open position in such relation to each other as to secure the formation and re-formation of a film substantially as disclosed in my said patent, but which in this embodiment of my invention is to be discharged as a sheet rather than as a mass of general conical form. The sliding sleeve 16 is positioned with a suitable sliding fit within the inner part 17 of the body 1, as clearly indicated in Fig. 1. If desired, I may provide packing between the part 17 and the sleeve 16 as indicated at 20, 21, the packing here shown consisting of annular strips of leather folded upon them-

selves into substantially U-shape in cross section and so positioned that fluid tending to enter between the folds of the material operates to effect a tighter relation between the packing and the metallic surfaces adjacent thereto. If desired, and as here shown the forward end of the part 17 may be provided with a separate piece such as the nut-like part 21', here shown as threaded into the part 17. The body 1 is provided with a suitable passage 17' for the compressed air or other motive fluid, and I have herein represented the forward end of said passage as closed by a plug 18, this constituting the preferred mode of manufacture. The said body is also represented as provided with a suitable passage 18' with which the paint passage 4 communicates and by which the paint or other coating material is led to the point of ultimate discharge.

Within the sliding sleeve 16 I position the spindle valve 22 having a tapered forward end 23 adapted to enter the tapered portion 24 of the axial opening 25 extending through the nipple 13 and to close said passage 25 when the spindle 22 is in its forward position. The spindle 22 is provided with an integral formation or attached part 26 having longitudinal passages 27 permitting the flow of air along the spindle 22. This construction may be secured by forming the part 26 as a collar having in effect radiating teeth.

At some suitable point, the inner surface of the sliding sleeve 16 is provided with an annular shoulder 28 against which the part or collar 26 is adapted to take when in the position shown in Fig. 1.

The body 1 at its rear end is shown as having an air chamber 29, preferably of relatively large diameter and closed at the outer end by a threaded cap 30. The chamber 29 which may be formed separately from the main part of the body 1 is secured thereto by means of a nut 31 externally threaded as indicated at 32 to engage the interiorly threaded part 33 of the body 1, as clearly indicated at Fig. 1. Between the inner end of the nut 31 and the adjacent end of the sliding sleeve 16 is a coiled spring 34 tending constantly to move the sliding sleeve forward or toward the left, viewing Fig. 1, and therefore through the engagement of the shoulder 28 with the part or collar 26 to move the spindle 22 in the same direction.

Suitably secured upon the spindle 22 within the chamber 29 is a piston-like member 35 herein shown as consisting of a middle disk 36, leather disks 36' here shown as having folded over rims, and two outer metallic disks 37, all held in face to face relation by nuts 38, 38 upon the threaded end 39 of the spindle 22.

Threaded into the cap 30 of the chamber 29 is a screw 40 having a lock nut 41. The screw 40 constitutes a lock when moved in-

ward sufficiently to hold the spindle 22 in closed position and in such position of the parts the tool or appliance cannot be operated. The screw 41 also constitutes a limiting means for the movement toward the right of the spindle 22.

Leading into the air chamber 29 are two passages 42, 43 extending from an air chamber 44 in communication with the air passage 3 through the port 45. The air chamber 44 is internally threaded as indicated at 46 and receives a threaded plug 47 having an opening 48 for the escape of air from the chamber 44 to the atmosphere.

Within the chamber 44 is a valve 49 mounted upon a suitable stem 50 and adapted to govern the port or passage 43. Also mounted upon said stem 50 is a valve 51 controlling the port or passage 42. While each of the valves 49, 51 may be constructed in any manner desired, I have for the purpose herein represented them as composed of a series of nuts or washers threaded onto the stem 50 which for that purpose is threaded throughout its entire length.

In order to operate the valves 49, 51, I provide any suitable means, as, for example, a lever 52 pivoted at 53 upon the arm 54 herein shown as extending from a collar 55 fast upon the upper part of the air passage 4. At the upper end of the lever 52 is pivoted at 56 a yoke or other suitable member 57 herein shown as having a threaded connection 58 with the stem 50. The lever 52 is provided with an operating handle 59 permitting convenient manipulation by a finger or thumb of the user of the tool. When the tool is in closed position, the surface 12 of the plug 13 is in contact with the inner surface 11 of the cap 8, thus entirely cutting off the flow of the paint or other coating material at substantially the point of ultimate discharge. The tapered end 23 of the spindle 22 is at the same time seated against the inner tapered surface 24 of the axial opening 25 in the plug 13, thus cutting off the supply of the compressed air or other motive fluid. When it is desired to open or operate the tool, the lever 52 is pressed by the finger or thumb of the operator into the position shown in Fig. 1, thus cutting off the flow of air through the passage 43 and opening the passage 42 to the flow of air against the left hand face of the piston 35. The air which was in the air chamber 29 to the rear of the piston 35 at the same time escapes through the orifice 48 to the atmosphere. The spindle 22 is thereupon moved to the right into the position shown in Fig. 1, and thus the passage 25 for the air is opened, the air passing thereto along the collar or part 26. The movement of the spindle 22 to the right brings the part or collar 26 into engagement with the shoulder 28, and thereupon the sliding sleeve 16 is moved to the

right, viewing Fig. 1, against the tension of the coil spring 34. The further movement to the right of the spindle 22 causes a movement in the same direction of the sliding sleeve 16 through the engagement of the said part or sleeve 16 and the shoulder 28, and thus the paint or coating passage between the adjacent surfaces of the cap and the nipple 13 is opened. So long as the parts are maintained in the position shown in Fig. 1, a film of the coating material is constantly formed between the adjacent surfaces 11 and 12, and is constantly broken by the stream of air passing through the axial passage 25. When it is desired to stop the operation of the tool, the pressure of the thumb or finger upon the lever 52 is released, and the air pressure moves the valves 49, 51 into the position shown in Fig. 1^a, and thereupon the spring 34 forces the sliding sleeve 16 forward or toward the left viewing Fig. 1, so as to close the paint or other coating passage between the surfaces 11 and 12. The spindle 22 is caused to move with the sliding sleeve 16, because of the engagement of the part 26 and the shoulder 28, the sliding sleeve and spindle moving as a unit until the paint or coating passage is closed. The valves 49, 51 having been moved into the position shown in Fig. 1^a, the passage of air through the port 42 is cut off and the air enters through the port 43, and acting upon the right hand face of the piston 35, viewing Fig. 1, it forces the spindle 23 farther forward until the tapered end 23 thereof comes into engagement with the tapered inner surface 24 of the passage 25 through the nipple 13.

Thus it will be observed that both the coating material and the motive fluid are cut off at substantially the point of ultimate discharge, and that the coating material is cut off before the flow of the motive agent is cut off. In moving the parts of the tool into operative or open position, the air passage 25 is opened first and very shortly thereafter the paint or coating passage is opened, and the formation of the film is instituted and continued as already described. The motive fluid tends to cut off the flow of such fluid when directed against the right hand face of the piston 35, and it tends, with the co-operation of the spring 34 as already set forth, to cut off the flow of the coating material. The paint passage is opened against the action of the spring 34, but the initial opening of the air passage is not opposed by said spring.

In my Patent No. 1,172,233, I have disclosed means whereby the film is discharged as a mass of general conical form. In accordance with my present invention, I transform the disrupted film into a sheet at or in close proximity to the point of ultimate discharge. While this may be accomplished

in any suitable way, I preferably effect the same by the provision of supplemental jets or supplies of the motive agent which is desirably compressed air. Such motive agent in the form of jets or otherwise impinges upon the disrupted film as the latter is discharged through the opening 10 and reduces the same to sheet form.

For this purpose, in Fig. 1, wherein I have shown one form of means for practising my method, I have represented an outer cap 60 which is internally threaded at its rear end as represented at 61 and is received upon the outer threaded surface 62 of a short collar 63, the inner surface whereof is threaded as indicated at 64 and is received upon the outer threaded surface 65 of the member 1. The two threads 62 and 64 are preferably differentially related to each other, the thread 62 being the finer. Between the inner end of the cap 8 and the outer edge of the short collar 63, air is permitted to pass into the space 65' and thence into the annular passage 65'' between the inner cap 8 and the outer cap 60.

At its forward end the cap 60 has a large opening 66 which fits upon the forward end of the cap 8, and adjacent to the cap 8 it is provided with any suitable-number of perforations 67. For the purpose I have herein represented two such perforations, the air or other motive agent being discharged therethrough in two streams 68, 68 diametrically indicated in dotted lines in Fig. 1. The said streams impinge upon the stream 69 of the disrupted film slightly in advance of the point where the latter issues from the orifice 10, and the direction of the opening 67 is such that the streams 68, 68 expand or widen to the same extent as the stream 69, so that the entire width of the upper and lower surfaces of the stream 69 are subjected to the action of both the streams 68 of compressed air, with the result that the entire stream is flattened into a sheet, such as indicated in dotted lines at 70 in Fig. 2. This sheet is of relatively narrow width at its base 71, but widens as indicated in said figure. The cap 60 may be rotated through any desired portion of the circle, so as to change the angular relation of the openings 67 with respect to the vertical axis of the tool. The effect of this is similarly to change the plane of the sheet 70.

In Fig. 5, I have represented two different positions of the outer cap 60, by means of full and dotted lines, but it will be understood that the cap 60 may be rotated to any desired extent, so as correspondingly to change the plane of the sheet of coating material.

While I may provide any desired means for effecting the adjustment of the cap 60 upon the cap 8, I have herein disclosed the differential threads upon the collar 63.

With the described construction, in order circumferentially to adjust the cap 60, I preferably apply a wrench to the polygonal end 71 of the nut 63, and rotate it in such a direction as to move the cap 60 forward along the cap 8, thus slightly separating the adjacent ends of the two caps. Then by reason of the fine thread 62, I may turn the cap 60 to change the position of the perforations 67, and hence change the plane of the sheet, and thereupon I turn the collar 63 in the opposite direction, so as to tighten the said cap 60 upon the cap 8.

The amount of air admitted into the space 65'' is governed by the position of the collar 63, which may be moved to vary the size of the space 64 between it and the end of the cap 8.

The collar or nut 63 thus acts as a type of reducing valve to vary the amount of air that is permitted to enter into the annular space 65'' through the annular space 65'. In order to vary the size of the space 65' by manipulation of the nut or collar 63, the outer cap 60 is turned, say, 180° or 360° in a forward direction, thus removing the forward end of said cap from contact with the outer face of the cap 8. This allows sufficient space for the rotative adjustment of the nut or collar 63, if, for example, it be desired to enlarge the space 65' so as to permit more air to pass therethrough and to be discharged supplementally upon the atomized coating material. The movement of the nut or collar 63 for this purpose will through the thread 62 restore the cap 60 to contact at its outer edge with the cap 8.

The coating material is supplied desirably by capillary action to the space between the cap 8 and the cap 13 and lies across the discharge opening 25 of the cap 13. The main supply of air under pressure is discharged transversely against the film so positioned, and the effect of discharging the air against a film or body of coating material so positioned (instead of discharging the same against a body of material positioned in ring form, as, for example, between the inner surface of a passage and a valve within that passage) is to discharge the coating material from the tool or appliance in an atomized condition, but nevertheless at such a low velocity and with such pressure that it is possible further to atomize the discharged coating material by subjecting the same to the action of the supplemental air jets through the openings 67, 67.

While it has heretofore been proposed to discharge supplemental air jets upon atomized coating material so as to change the shape of the discharged mass to sheet form, the result in practice has not been further to atomize the discharged material, and so far as I am aware, I am the first to effect such further atomization. Such further at-

omization is of extreme importance, as it permits the coated material to enter small interstices or cracks.

It will be observed that at or substantially at the point of ultimate discharge from the tool or appliance, I have provided means not only to vary the thickness of the film and also entirely to interrupt or destroy the same for the time being, but I have provided means for cutting off or regulating the main air supply at such point. Thus I am permitted not only to obtain the desired thickness of film substantially at the point of discharge, but I can at such point provide for an additional air supply.

In Figs. 3 and 4, I have shown a slightly modified form of tool constituting a part of my invention. It will be observed that in the form of tool shown in Fig. 1, I have provided a removable plug 72 closing a passage in the inner end of the body 1 adjacent the upper end of the coating pipe or passage 4. When I desire to use the tool constituting that form of my invention shown in Fig. 4, I remove the plug 72 and insert in place thereof a tube 73 which may be of relatively great length, as indicated in Fig. 3. The plug 72 which I have removed, I insert in the position indicated in Fig. 4, so as to close the threaded opening in the body 1 previously entered by the upper end of the paint pipe or passage 4. Upon the opposite end of the inserted pipe 73, I preferably provide an elbow 74 threaded thereonto and also onto the upper end of the paint pipe or passage 4.

I have stated in describing Fig. 1, that the body 1 is secured to the chamber 28 by a nut 31. In adapting the nozzle shown in Fig. 1 to that form of my invention shown in Fig. 4, the nut 31 is removed and a tube 75 of suitable length is substituted in its place, the inner end of said tube being received in the opening 76 in the chamber 29, after which the nut 31 is inserted within the inner end of the tube 75, so as to secure together said tube 75 in the chamber 29. These changes may be quickly made and adapt the tool for work upon surfaces otherwise difficult of access or impossible to reach.

My invention comprehends not only a tool or appliance for applying coating in sheet form, but also a method of application of coating material in sheet form as contradistinguished to its application in a mass of general conical form of relatively great diameter at the base.

In accordance with such method, the coating material is discharged from the tool through any suitable sized or shaped opening 10 which, however, may be circular and substantially immediately thereafter I transform the discharged mass into a sheet.

Having thus described one illustrative embodiment of my invention, I desire it to

be understood that although specific terms are employed, they are used in a generic and descriptive sense and not for purposes of limitation, the scope of the invention being set forth in the following claims.

Claims:

1. Means for applying coating comprising means for maintaining a film of coating material, means for causing a motive agent to break through and discharge said film, and means to effect the transformation of the discharged film into a sheet for application as such to the surface to be coated, whereby further atomization of the discharged film may be effected.

2. Means for applying coating comprising means for maintaining a film of coating material, means to cause a motive agent to break through and discharge said film, and means to discharge the motive agent supplementally upon the discharged film to transform the latter into a sheet, whereby further atomization of the discharged film may be effected.

3. Means for applying coating comprising inner and outer cap like members each perforated and having surfaces in juxtaposition, means to admit coating material between said members for the formation of a film, and to admit the motive agent through the inner member, and means to discharge the motive agent supplementally upon the discharged coating material to transform the latter into a sheet for application as such to the surface to be coated, whereby further atomization of the discharged film may be effected.

4. Means for applying coating comprising means for maintaining a film of coating material, means for causing a motive agent to break through and discharge said film, means for effecting the supplemental discharge of the motive agent so as to impinge upon the discharged coating material to transform the latter into a sheet, whereby further atomization of the discharged film may be effected, and means to change the plane of such sheet.

5. Means for applying coating comprising means for maintaining a film of coating material, means to cause a motive agent to break through and discharge such film together with means for providing first a free flow of the motive agent and then a free flow of the coating material, and means for transforming the mass of the discharged film into a sheet for application as such to the surface to be coated, whereby further atomization of the discharged film may be effected.

6. Means for applying coating comprising means for maintaining a film of coating material, means for causing a motive agent to break through and discharge said film, and means to project supplemental supplies

of the motive agent upon opposite surfaces of the discharged film, thereby to flatten the same into substantially sheet form, whereby further atomization of the discharged film may be effected.

7. A tool for applying coating as a sheet comprising a body having inner and outer cap-like members each perforated and having surfaces in juxtaposition, means to supply the coating material as a film between said surfaces and to supply a motive agent through said cap-like members and an outer member having provisions for discharging a supplemental supply of the motive agent upon a discharged film, thereby to flatten it into substantially sheet form, whereby further atomization of the discharged film may be effected.

8. A tool for applying coating comprising a body having inner and outer cap-like members each perforated and having surfaces in juxtaposition and between which a film is adapted to be maintained, means for supplying coating material and motive agent to and through said members, and whereby the motive agent is directed against and discharges said film, and an outer cap-like member 60 having perforations 67, 67 and suitably connected with the source of supply of the motive agent.

9. Means for applying coating comprising inner and outer cap-like members 8, 13, each perforated and having surfaces in juxtaposition, means for supplying the coating material between said cap-like members for discharge through the outer cap-like member 8, means for supplying motive agent to and through the inner cap-like member 13, and a rotatable cap 60 having perforations 67 to effect the impingement of a supplemental supply of the motive agent upon the discharged coating material to flatten it into sheet form.

10. That method of applying coating comprising maintaining a film of coating material, disrupting and discharging said film by a suitable motive agent and further atomizing and transforming the discharged film into a sheet for application as such to the surface to be coated.

11. That method of applying coating comprising maintaining a film of coating material, discharging a motive agent against said film at substantially right angles to the plane of the former so as to disrupt and discharge said film and further atomizing and flattening said discharged film into sheet form for application as such.

12. That method of applying coating comprising providing a film of coating material, discharging compressed air against said film, thereby disrupting the same and discharging it as a mass or cloud, and discharging compressed air upon said mass or cloud so as further to atomize it and to flat-

ten or transform it into substantially sheet form for application as such to the sheet to be coated.

13. Means for applying coating comprising inner and outer cap like members each perforated and having surfaces in juxtaposition and between which a film of coating material is adapted to be maintained, means to admit coating material between said members and to admit the motive agent through the inner member to be projected against said film to discharge the latter, and means to discharge the motive agent supplementally upon the discharged coating material to transform the latter into a sheet for application as such to the surface to be coated, whereby further atomization of the discharged film may be effected.

14. Means for applying coating comprising inner and outer cap-like members 8, 13, each perforated and having surfaces in juxtaposition and between which a film of coating material is adapted to be maintained, means for supplying the coating material between said cap-like members for discharge through the outer cap-like member 8, means for supplying motive agent to and through the inner cap-like member 13 thereby discharging said film, and a rotatable cap 60 having perforations 67 to effect the impingement of a supplemental supply of the motive agent upon the discharged coating material to flatten it into sheet form.

15. A coating applying gun or tool having a discharge opening, means whereby coating material is supplied as a film like body across said opening, means for projecting motive fluid under pressure against said coating material across said opening, whereby the coating material is discharged in atomized condition from the coating gun with an initial velocity low enough to permit said discharged coating material to be further atomized by the impact of a supplemental supply of motive agent, and means to discharge a supplemental supply of motive agent thereonto, thereby further to atomize the discharged coating material.

16. That method of applying coating to surfaces comprising supplying a film-like body of coating material across a suitable motive agent discharge opening, projecting the motive agent under pressure against the film-like body of coating material across said opening, thereby effecting the discharge of the coating material in atomized condition, and further atomizing the discharged coating material by subjecting the same to the action of a supplemental discharge of motive agent.

17. That method of applying coating comprising providing a film-like body or supply of coating material across a discharge opening of motive agent, forcing said motive agent under pressure against said film-

like supply of the coating material, thereby discharging the material in an atomized condition but at a sufficiently low velocity to permit of further atomization, and discharging a motive agent under pressure supplementally upon such discharged, atomized coating material, thereby further atomizing the same.

18. A coating applying gun or tool comprising means to create a film, means to vary the thickness of the film at the point of formation, means to regulate a disrupting air supply under pressure at substantially the point of final discharge thereof upon said film, and means to subject the discharged film to the action of a supplemental discharge of air under pressure, whereby further atomization of the discharged film may be effected.

19. A coating applying gun or tool comprising means to create a film, means to discharge said film by the action of a jet of motive agent under pressure, means at substantially the point of discharge to destroy the film when desired, and means further to atomize the film.

20. A coating applying gun or tool comprising means to create a film, means to discharge said film by the action of a jet of motive agent under pressure, means at substantially the point of discharge thereof to destroy the film at times desired, and means further to atomize the film by a supplemental jet or jets of motive agent.

21. A coating applying gun or tool comprising in combination, means to supply a coating material as a film to a point of discharge, means to supply motive agent to said point to disrupt and discharge said film, means at substantially said point to regulate the supply of the motive agent, and means supplementally to subject the discharged, atomized material to a finer atomization.

22. That method of applying coating comprising providing a film of coating material, discharging the same in an atomized condition and further comminuting or atomizing the discharged material by subjecting the same to a supplemental atomizing action.

23. A coating applying gun or tool having means for discharging coating material in an atomized condition, and supplemental means for further atomizing the discharged material.

24. That method of applying coating comprising discharging coating material in atomized condition by air under pressure, varying the discharge of the air at the point of discharge, and further comminuting or atomizing the atomized discharged material.

25. A coating applying gun or tool having means to provide a body of coating material substantially at the point of discharge, means for subjecting said body of material

to the action of air under pressure, means substantially at the point of discharge to vary the air discharge, and means further to comminute the atomized, discharged material.

26. A tool for applying coating comprising a body having inner and outer cap-like members each perforated and having surfaces in juxtaposition, means to supply the coating material and the motive agent to and through said cap-like members, an outer member having provisions for discharging a supplemental supply of the motive agent upon the discharged coating material and means distinct from said outer member to vary the supplemental supply of the motive agent.

27. A tool for applying coating as a sheet comprising a body having inner and outer cap-like members each perforated and having surfaces in juxtaposition, means to supply the coating material and the motive agent to and through said cap-like members, an outer member having provisions for discharging a supplemental supply of the motive agent upon the discharged coating material, and valve means for the supple-

mental supply of the motive agent engaging said outer member whereby the supplemental supply of the motive agent may be varied while still maintaining the same.

28. A coating applying gun or tool comprising means to create a film, means to discharge said film by the action of a jet of motive agent under pressure, means at substantially the point of discharge thereof to destroy the film at the times desired, means at substantially the point of discharge to cut off the main supply of motive agent, and means further to atomize the discharged film by a supplemental jet or jets of motive agent.

29. Means for applying coating comprising means to supply liquid coating material, means to discharge a main supply of air onto said liquid coating material, means to discharge a supplemental supply of air onto the discharged coating material, and means to cut off the main supply without cutting off the supplemental supply, and conversely to cut off the supplemental supply without cutting off the main supply.

In testimony whereof, I have signed my name to this specification.

HERBERT W. DAY.