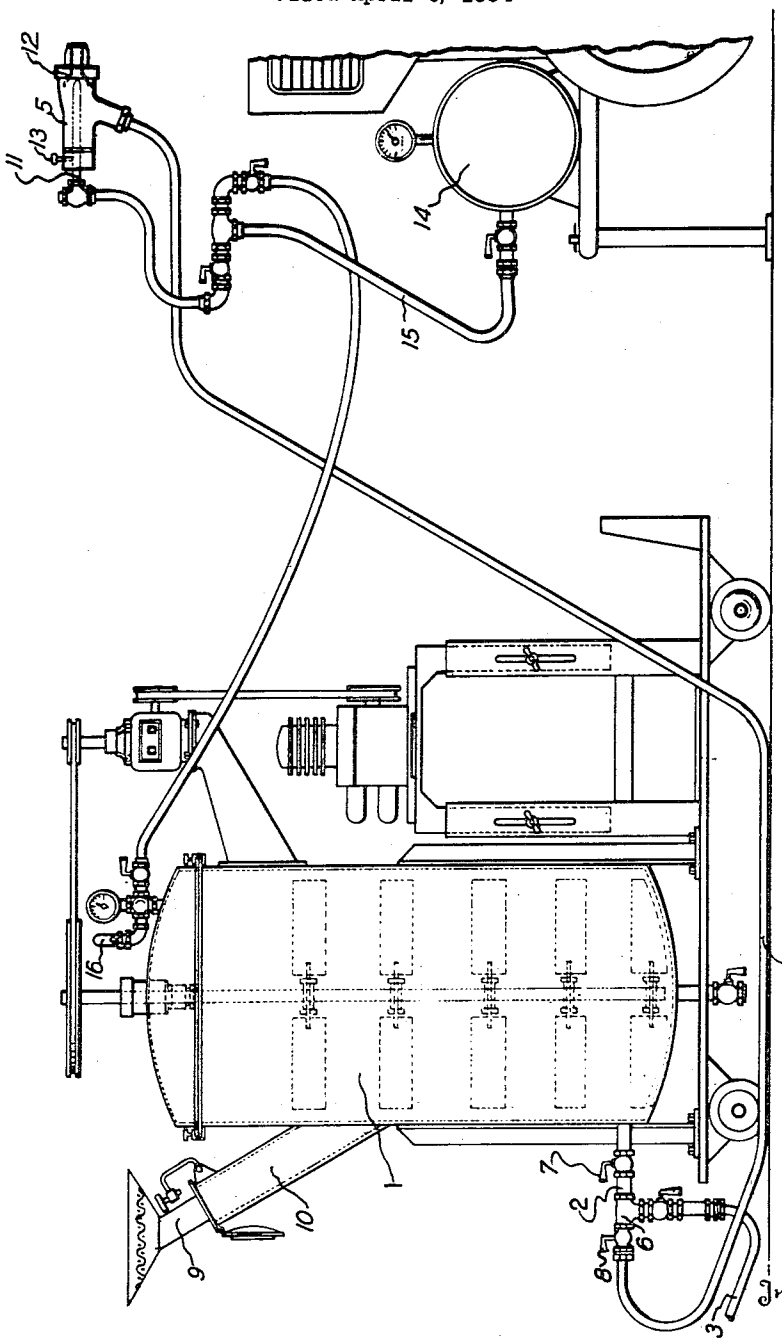
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METHOD FOR EJECTING STUCCO, PLASTER AND LIKE MATERIALS INTO ENGAGEMENT WITH A SURFACE TO BE COATED

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METHOD FOR EJECTING STUCCO, PLASTER AND LIKE MATERIALS INTO ENGAGEMENT WITH A SURFACE TO BE COATED

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This invention is an improved method for ejecting stucco, plaster and like materials into engagement with a surface to be coated.

For more than a decade in coating walls and other surfaces with stucco, plaster and like materials, I have had an opportunity to witness the performance of apparatus and methods available for this purpose and have actually used these apparatus and methods in the application of plaster and the like, of my own composition known as Spracrete, Trademark 406,574, registered April 11, 1944, and have experimented with other apparatus and methods in an effort to do an effective job in a minimum period of time and with a minimum loss of materials. It has for some time been recognized in these experiments that best results are obtained by use of hose of small diameter through which the materials would be fed, under pressure, to a spray gun. This I found to be feasible if the hose was lubricated, before each operation, such as by a column of water somewhat after the teaching of the patent to Ball et al., Patent No. 2,087,679. This method, while having many advantages, slowed operation and resulted in surface saturation and resultant loss of material and retardation of stucco adhesion. Further experiments have proven that lubrication of the hose running from the mixing tank to the spray gun is unnecessary if the dry stucco materials, sand and cement, are super saturated in the mixing tank and while in this condition fed into the hose and forced therethrough to the spray gun where the stucco mixture is partially dehydrated before being impinged against the surface to be coated. It is, therefore, an object of this invention to provide a method to force a super saturated stucco mixture through a hose, or other suitable conduit, into a spray gun where the surplus moisture is relieved and the residual mixture forced into contact with a surface, without interruption, to effect positive adherence.

A further object of this invention is to provide a method which may utilize apparatus as now used in the application of Spracrete, with variation in the consistency of the stucco or Spracrete mix and adjustment of the air pressure in the spray gun to delete a predetermined quantity of the liquid from the mix, just as the latter leaves the spray gun, so that a stucco of desired consistency is impinged on the surface being coated.

The invention, together with its objects and advantages, will be best understood by reading the following detailed description with reference to the accompanying drawing in which is illustrated a presently preferred embodiment of the invention, and wherein the figure is an elevational view of an apparatus for mixing and ejecting a coating composition as employed in accordance with the teaching of the present invention.

I have found that the method following the teaching of the present invention may be carried out by use of apparatus such as I have employed over a period of years in the application of the so-called Spracete composition. The apparatus includes a mixing tank 1 with suitable agitators rotatably mounted therein, and a drain

cock which pends from the bottom of the tank. Water is introduced into the bottom of the tank through a pipe 2, which is in communication with a valved water supply pipe 3. The pipe 2 is in communication with one end of a hose 4, the opposite end of the hose being in communication with a lateral outlet in the body of a spray gun 5. The hose 4 is of course flexible and substantially of the diameter of a standard garden hose. A T fitting 6 is mounted in the pipe 2 and has a valve 7 mounted on one side thereof and a valve 8 mounted on the opposite side. Water is first introduced into the tank 1 through the supply pipe 3 and pipe 2, at which time the valve 7 is open and the valve 8 closed. After a predetermined amount of water is accumulated in the tank 1, the materials used for making up the coating composition, commercially known as Spracrete, referred to supra, consisting especially of cement, sand and water, are introduced into the tank through a screened hopper 9 which leads into a tank inlet 10. After the desired amount of water and materials have been introduced into the tank and the valve 7 closed, a thorough admixture is effected by rotation of the tank agitators. When it is desired to transfer the contents of the tank 1 to the gun 5, valves 7 and 8 are opened and the valve of the water supply pipe 3 closed to permit free passage of the mix from the tank into the hose 4 under air pressure in the tank in a manner shown in the drawing and further hereinafter referred to. The spray gun 5 carries an axially movable air tube 11, the outer free end of which is tapered to conform to the shape of a seat 12 in the housing of the spray gun. The tube 11 may be held from casual displacement by a thumb screw 13 mounted near the aft end of the spray gun body.

I have found that best results are obtained by introducing into the tank 1 an excess amount of water so that the cement, sand and other ingredients which may be employed are super saturated and in this condition will flow freely through the small diameter hose 4 to the spray gun 5. When it is desired to eject the mix through the spray gun, the tube 11 is retracted to an extent determined by the operator and the mixture permitted to be passed through the outlet or dispensing end of the gun under pressure of air from a compressor 14 through an air conduit 15. The pressure of air emitted through the outlet end of the tube 11 is determined by the position of the tube 11 in the spray gun, the dispensing end of which latter is juxtaposed to the tapered seat 12. Proper positioning of said tube 11 permits surplus water to be dispersed from the mix as the latter leaves the spray gun and the partially dehydrated mix is then forced by the air pressure, without interruption and in a continuous stream, against the surface to be coated. The approximate distance of the outlet end of the gun to said surface is approximately three feet, thus allowing an adequate interval for getting rid of the water surplus. I have found that this result may be readily accomplished because the water being of a lower specific gravity than the solids of the mix may be separated from the mix without relative displacement of the water impregnated cement, sand and other solids which may be employed.

As shown in the drawing, the air conduit 15 is in communication with suitable tributaries which lead to the tube 11 and tank 1, each of the tributaries being provided with a valve so that the operator may control the path of movement of the air and also regulate, as desired, the volume of air moving from the compressor 14 to the spray gun 5 and tank 1.

Excess air pressure in the tank 1 is permitted to escape through the valve-controlled outlet 16.

It is, of course, to be understood that various changes

may be made in this invention within the scope of the claims hereto appended.

What I claim is:

1. A method of spraying stucco of predetermined consistency into engagement with a surface to be coated comprising mixing sand, cement and water in a receptacle, the water being present in an amount in excess of that necessary for producing the stucco mixture, after which the mixture is forced through a conduit into a spray gun through which latter air is passed with sufficient force to urge the mixture from the gun, dispersing the mixture after it leaves the gun to relieve the mixture of excess moisture, and then impinging the remainder of the mixture against the surface being coated.

2. The method of claim 1 wherein the air pressure is adjusted to control the rate of flow of the moisture, said dispersion being of such a degree that there is no separation of the water impregnated sand and cement.

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