

C. WEBER.

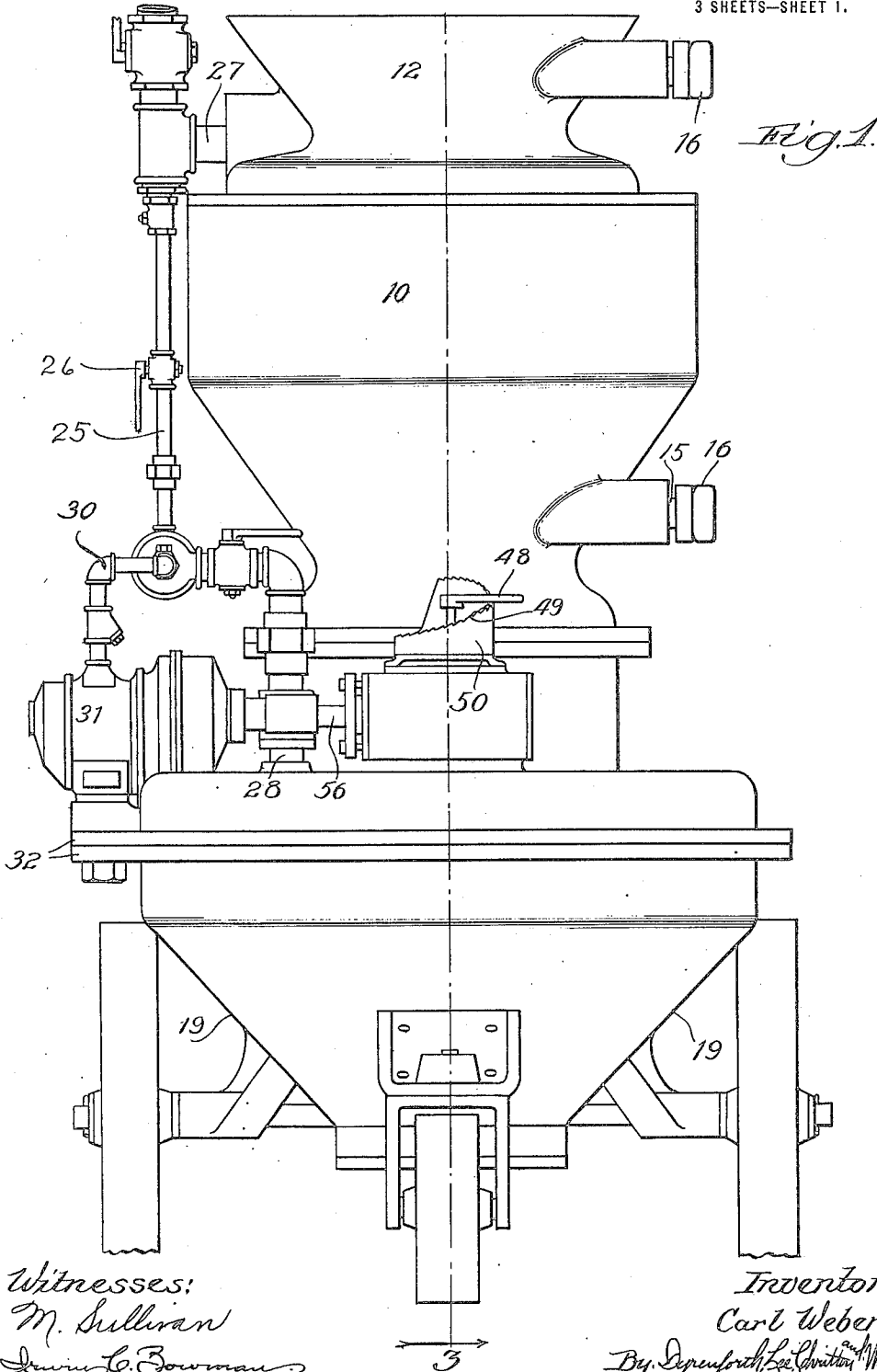
MACHINE FOR APPLYING PLASTER OR THE LIKE TO WALL SURFACES.

APPLICATION FILED OCT. 29, 1917.

1,323,663.

Patented Dec. 2, 1919.

3 SHEETS—SHEET 1.



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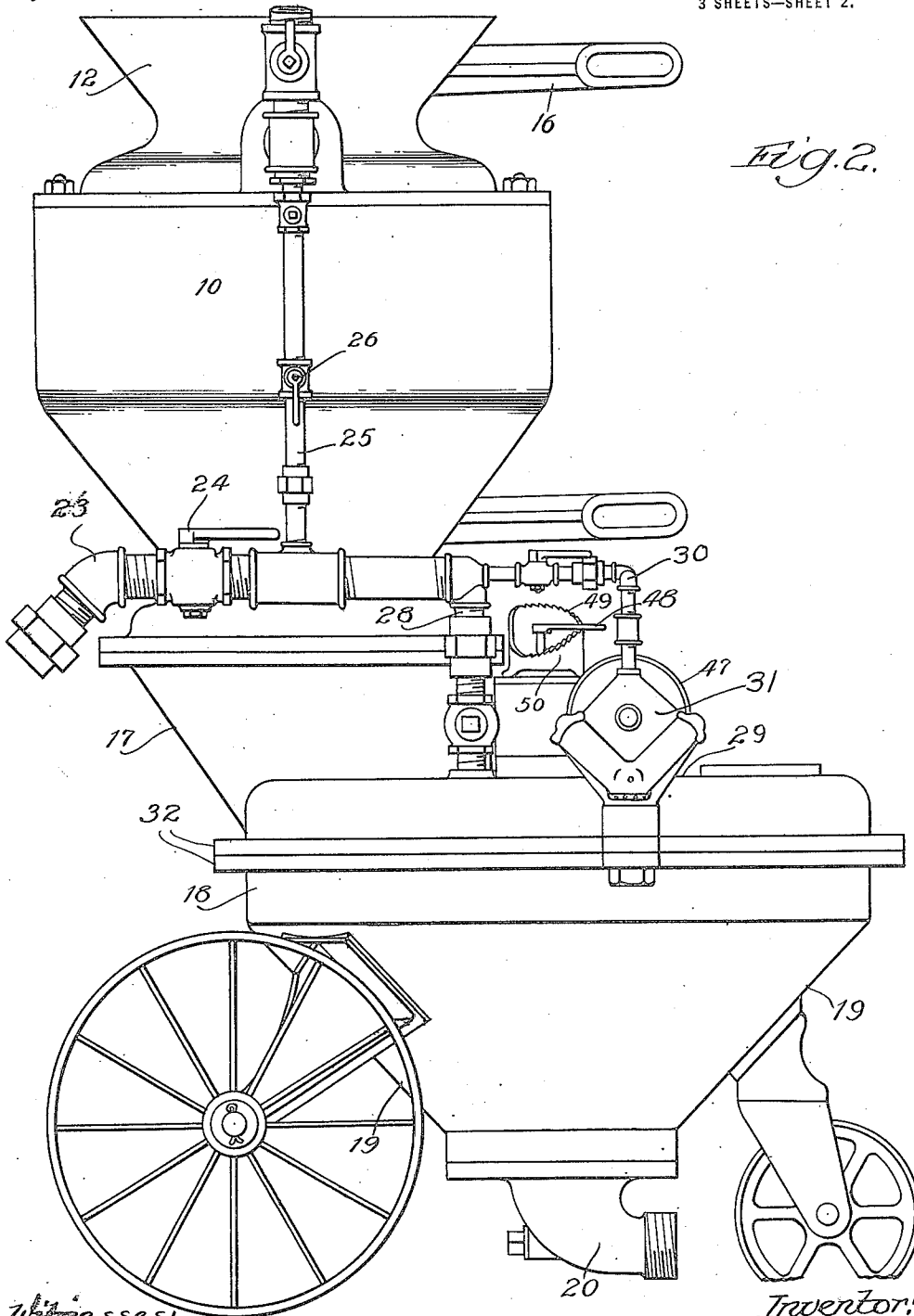
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Witnesses:
M. Sullivan
Irwin C. Bowman

Inventor:
Carl Weber
By *Depuefort, Jr., Christy, and*
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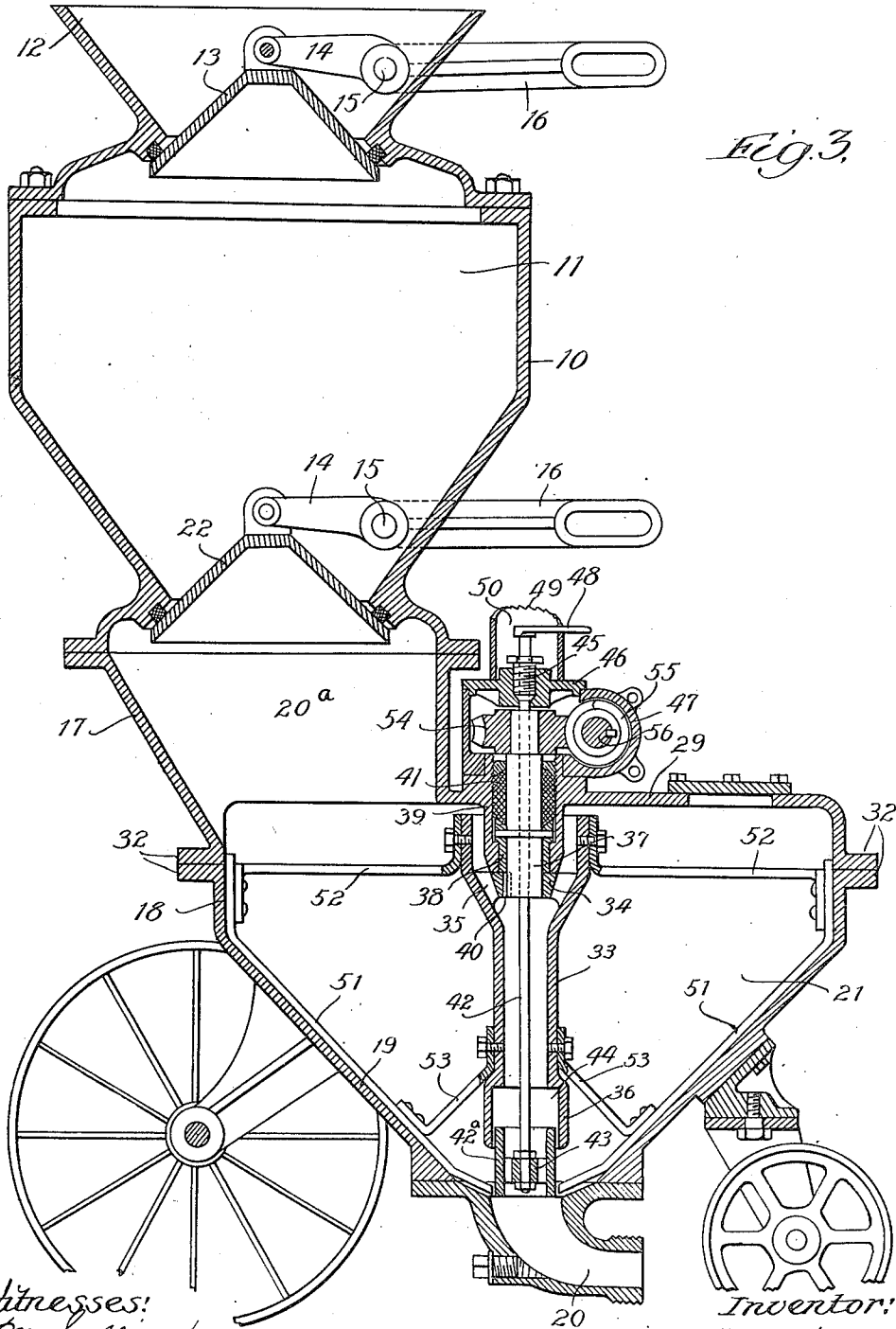


Fig. 3.

Witnesses:
M. Sullivan
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Inventor:
Carl Weber
By Ogdenford L. Schmitt, Atty.

UNITED STATES PATENT OFFICE.

CARL WEBER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CEMENT GUN COMPANY, INCORPORATED, OF ALLENTOWN, PENNSYLVANIA, A CORPORATION OF NEW YORK.

MACHINE FOR APPLYING PLASTER OR THE LIKE TO WALL-SURFACES.

1,323,663.

Specification of Letters Patent.

Patented Dec. 2, 1919.

Application filed October 29, 1917. Serial No. 199,084.

To all whom it may concern:

Be it known that I, CARL WEBER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Machines for Applying Plaster or the like to Wall-Surfaces, of which the following is a specification.

My invention relates to machines for applying plaster, or the like, to wall surfaces and involving, generally stated, means for feeding the plaster to a stream of fluid under pressure, preferably air, which serves to project the plaster through a hose-line from which it discharges upon the surface to be plastered.

My object is to provide improvements in machines of the character above stated, to the end of simplifying the machines, reducing the cost of manufacture thereof, rendering positive the continued operation of the machine; and generally to so improve upon machines of this character that they will be better adapted to perform the functions for which they are provided.

I have devised my improved machine for use, more particularly in practising the method of applying plaster cement, or the like, to wall surfaces disclosed, and forming the subject of, U. S. Letters Patent No. 1,139,091, granted to me on May 11, 1915, wherein, before the solid ingredients to form the plaster, or the like, are blown into the hose-line, water to an amount insufficient to effect complete hydration is mixed therewith, and after subjection to the pressure for blowing it through the hose-line more water, sufficient in amount to effect complete hydration of the solid materials, is added; and have chosen to illustrate my invention in a machine suitable for practising said method, though, it may be utilized in machines other than that suitable for practising the said patented method.

Referring to the accompanying drawings, Figure 1 is a view in end elevation of a machine constructed in accordance with my invention. Fig. 2 is a view in side elevation of the machine, the latter being viewed from the left-hand side of Fig. 1; and Fig. 3, a section taken at the line 3 on Fig. 1 and viewed in the direction of the arrow.

The particular construction of a machine

shown comprises a casing 10 presenting a chamber 11 which opens at its upper end into a hopper-shaped inlet 12 controlled by a downwardly opening bell-valve 13 pivotally connected with a yoke 14 pivoted at 15 and having an operating handle 16. The casing 10 surmounts the upwardly-extending restricted portion 17 of a casing 18, the lower portion of which is of inverted frusto-conical form, as represented at 19, with an opening at its lower end communicating with a coupling 20 to which the hose-line (not shown) for conveying the plaster to the wall surface to which it is to be applied, is attached. The chamber 11 opens at its lower end into the passage 20^a provided by the restriction 17, the latter opening into the chamber 21 formed in the lower portion of the casing 18, and a valve 22 like the valve 13, with operating means as described of this valve, is provided, for controlling communication between the chambers 11 and 21.

It may be here stated that in the operation of the machine, the materials to be discharged therefrom, which in the use of the machine for applying cement-plaster in accordance with the said patented method, would be sand and cement mixed in the proper proportions with sufficient water to moisten them and produce incomplete hydration only, would be dumped into the inlet 12 and would be charged into the chamber 11 upon opening the valve 13 and would also charge the chamber 21 upon opening the valve 22. Fluid under pressure, preferably air, is introduced, as hereinafter described, into the chamber 21 above the plaster material therein for effecting the discharge of the plaster from the machine, and in the operation of charging the chamber 11, the valve 22 would be closed, and in the operation of charging the chamber 21 from the chamber 11, the valve 22 would be opened and compressed fluid under the same pressure as the compressed fluid in the chamber 21, would be introduced into the chamber 11 to equalize the pressure in these two chambers.

In the particular arrangement shown, a pipe 23 is provided for connection with any suitable source of fluid under pressure, as for example compressed air. Coupled to this pipe, which contains a valve 24, is an

upwardly extending pipe 25 containing a valve 26, which opens at a branch 27 into the upper end of the chamber 11. Another branch 28 leads from the pipe 23 and opens into the chamber 21 through the top wall 29 thereof, and a third branch 30 leads from the pipe 23 to the inlet of a fluid-pressure-operated motor of any desirable construction and represented generally at 31, this motor being supported at the abutting annular flanged portions 32 of the upper and lower sections forming the casing 18. By providing the valves as stated, the supplying of the fluid-pressure to the machine and involving the alternate opening and closing of the chamber 11 to the fluid-pressure supply, is readily controlled.

Extending vertically in the chamber 21 and centrally thereof, is a hollow tubular member 33 having an internally located sleeve portion 34 connected with the body of the member 33 through the medium of webs 35 spaced apart about the sleeve 34. The member 33, which extends at its lower end slightly enlarged open end 36, short of the bottom of the chamber 21 and opens at its upper end into the top of this chamber, is supported on a vertically disposed hollow shaft 37 journaled at a shouldered collar 38 in a bearing 39 formed in the plate 29, the shaft 37 extending into the sleeve 34 and being secured thereto by means of the key 40. Packing 41 located in the bearing 39 and surrounding the shaft 37 is provided for preventing the escape of fluid-pressure through this bearing. Extending lengthwise through the shaft 37 and vertically adjustable therein, is a rod 42 carrying a sleeve-member 42^a at its lower end, secured thereto by the spider frame 43, the sleeve 42^a extending at its upper end into the lower enlarged portion 44 of the passage through the member 33 and at its lower end adjacent the outlet of the chamber 21, the external diameter of this sleeve being preferably slightly less than the diameter of said outlet. The upper end of the rod 42, which extends upwardly through a plug 45 screwed into an opening in the top 46 of a gear-box 47, carries a rigid handle 48 which rides upon a toothed cam surface 49 provided along the upper edge of a cylindrical member 50 mounted on the cover 46 centrally of the rod 41.

In the operation of the machine, fluid-pressure, such as air, supplied to the upper part of the chamber 21, exerts downward pressure against the plaster material therein and surrounding the member 33, operating to force the material to the outlet of this chamber and fluid-pressure discharges into the interior of the member 33 through its open upper end which extends short of the top wall of the chamber 21 and is spaced from the bearing 39 which it surrounds, the fluid-

pressure passing downwardly through the member 33 and discharging through the spider 43 into the outlet coupling 20 and thence into the hose-line. It will be understood from the foregoing that the discharge of the material from the chamber 21 depends upon the height at which the vertically adjustable sleeve-member 42^a extends, this being controlled through the handle device 48, as stated, and that as the material discharges into the coupling 20, it is impelled into the hose-line for discharge therefrom upon the surface to be plastered, by the fluid-pressure discharging into the coupling 20 through the tube 33. In using the machine as stated, for carrying out the above-referred-to patented method, the additional water for completing hydration may be added to the material discharged from the chamber 21, at the nozzle (not shown) with which the hose-line would be equipped at its outer end, a nozzle suitable for this purpose being shown in my above-referred-to patent.

To produce agitation of the material in the chamber 21 and insure even feeding of the same from this chamber and clean the webs thereof, the tube 33 is equipped with bar-sections 51, which are spaced apart and conformingly fit the side walls of the chamber 21, as represented, these bars being connected at their upper ends with the tube 33 as by radially disposed brace bars 52 and connected at their lower ends with the tube 33 by the radially disposed inclined bars 53. The bars 51 thus provided, are caused to travel about the axis of the sleeve 33 and against the inner frusto-conical surface of the chamber 21, by rotation of the tube 33 which is effected as through the medium of a worm-gear 54 rigidly connected with the upper end of the shaft 37, and meshing with a worm 55 journaled in the gear-box 47 and driven from the shaft 56 of the fluid-pressure operated motor 31. By the construction just described, the materials in the chamber 21 are not only agitated, but are also continuously mixed, and by reason of the movement of the bars 51 against the wall of the chamber 21, clogging of the outlet of the chamber 21 is prevented and even feed of the material assured.

By preference, the parts of the structure are so constructed and arranged that the sleeve 42^a may be adjusted to a position for shutting off the discharge of material from the chamber 21, permitting the machine to discharge the fluid-pressure alone, through the hose-line as for cleaning and washing the surface to be plastered.

While I have illustrated and described a particular construction in which my invention is embodied, I do not wish to be understood as intending to limit it thereto, as the same may be variously modified and altered without departing from the spirit of

my invention, it being my intention to claim my invention as fully and completely as the prior state of the art will permit.

What I claim as new and desire to secure by Letters Patent is—

1. In a machine of the character set forth, the combination of a chamber of circular cross-section and containing an outlet in its lower end, a conduit, for fluid-pressure, in said chamber and having an outlet adjacent the outlet of said chamber, an agitating device in said chamber arranged to move against the inner surface of said chamber, and means for supplying fluid pressure to said conduit.

2. In a machine of the character set forth, the combination of a chamber having downwardly tapering walls and of circular cross-section and containing an outlet in its lower end, a conduit, for fluid-pressure, in said chamber and having an outlet adjacent the outlet of said chamber, an agitating device in said chamber arranged to move against the inner surface of said chamber, and means for supplying fluid pressure to said conduit.

3. In a machine of the character set forth, the combination of a chamber for plastering material having an outlet at its lower end, a revoluble conduit, for fluid-pressure, in said chamber and having an outlet adjacent the outlet of said chamber, agitator-means carried by said conduit, and means for supplying fluid pressure to said conduit.

4. In a machine of the character set forth, the combination of a chamber having downwardly tapering walls and containing an outlet in its lower end, a revoluble conduit,

for fluid-pressure, in said chamber and having an outlet adjacent the outlet of said chamber, agitator means carried by said conduit, and means for supplying fluid pressure to said conduit.

5. In a machine of the character set forth, the combination of a chamber for plastering material having an outlet at its lower end, a rotatable conduit, for fluid pressure, in said chamber having an outlet adjacent the outlet of said chamber and spaced from the wall of the latter, with its inlet in communication with the interior of said chamber and so disposed that in the use of the apparatus it will extend above the material in the chamber, means for introducing fluid pressure into the upper portion of said chamber for passage through said conduit, and an agitating device in said chamber connected with said revoluble conduit to rotate therewith.

6. In a machine of the character set forth, the combination of a chamber for plastering material containing an inlet, a plurality of intercommunicating receptacles off-set laterally relative to said chamber and in communication with the inlet of the latter, a rotatably-mounted conduit in said chamber, for fluid pressure, having an outlet adjacent the outlet of said chamber and spaced from the wall of the latter, means for introducing fluid pressure into said conduit, an agitating device on said conduit to rotate therewith, and means exterior of said chamber for rotating said conduit.

CARL WEBER.