D. S. CHAPIN.

APPARATUS FOR APPLYING SEMIFLUID MATERIAL.

APPLICATION FILED JAN. 9, 1919.

1,399,849. Patented Dec. 13, 1921.

Fig. 1.

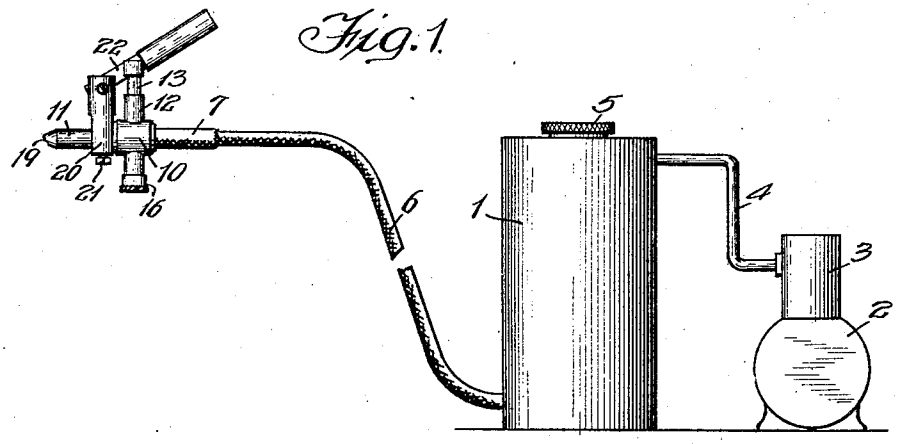


Fig. 2.

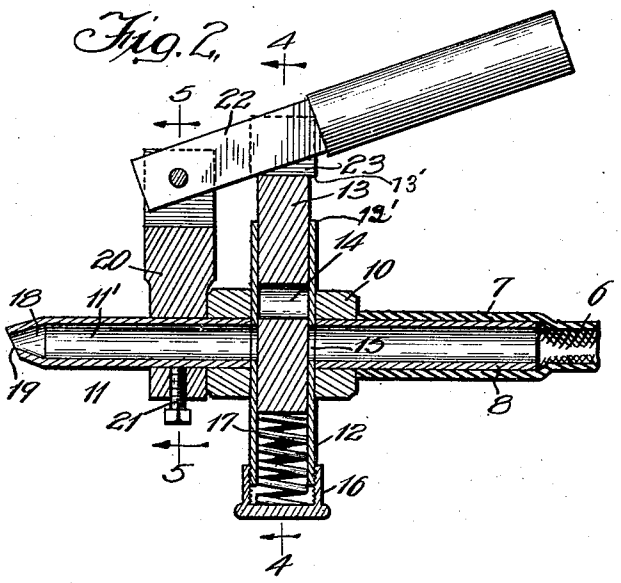


Fig. 4.

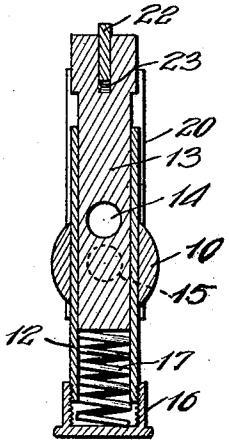


Fig. 3.

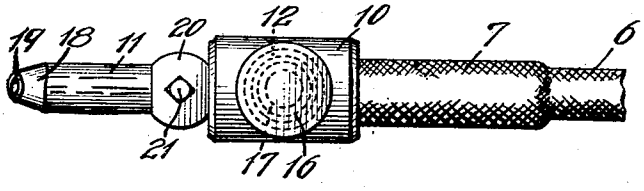
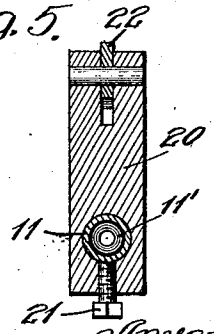


Fig. 5.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR APPLYING SEMIFLUID MATERIAL.

1,399,849. Specification of Letters Patent. Patented Dec. 13, 1921.

Application filed January 9, 1919. Serial No. 270,254.

To all whom it may concern:

Be it known that I, DAVID S. CHAPIN, a citizen of the United States, residing at the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Apparatus for Applying Semifluid Material, of which the following is a specification.

My invention relates to the art of glazing window sash. The usual means of securing the glass in place in the frames, and of making a tight joint has been by the use of putty in paste form. More recently this has been replaced to a certain extent by putty in a semi-liquid condition which may be flowed into the angle between the glass and the window frame by the use of a hand implement known as a bulber. But where large areas of sash are to be set under conditions which are unusually severe as, for instance, in greenhouses and skylights, it has been found desirable to use a semi-fluid material of greater adhesive power, elasticity and durability as, for instance, a mixture of tar and asbestos. The extraordinary "stickiness" of this material makes it almost impossible to apply it by hand or by the bulbers as heretofore used. My invention affords a means by which this material may be completely confined until it is delivered at the actual point of application, and by which the application can be made in its final form without further manipulation.

The principles of my invention are illustrated in the drawings, in which—

Figure 1 shows an elevation of the complete apparatus;

Fig. 2 is an enlarged view in longitudinal section of the applicator;

Fig. 3 is a bottom view thereof;

Fig. 4 is a section on the line 4—4 of Fig. 2; and

Fig. 5 is a section on the line 5—5 of Fig. 2.

Further describing my invention with reference to the drawings, in which like characters of reference denote like parts throughout: 1 is a tank for the purpose of receiving a considerable quantity of the adhesive glazing mixture. 2 represents a motor and 3 a pump operated thereby, and connected by means of the pipe 4 to the upper part of tank 1. Said tank should be provided with a screw cap 5 or other device by which the glazing mixture can be introduced, and by which it may be hermetically sealed. 6 is a flexible tube attached at one end to the lower part of the tank and having the other end 7 secured to an extension 8 of my improved applicator, which forms a nipple to receive it. The said applicator may be constructed by having an elongated central body portion 10 longitudinally apertured to receive the inlet tube 8 and the outlet tube or nozzle 11, which are axially alined with each other. The said body portion is provided with an aperture at right angles to the longitudinal opening and supported therein is the transverse tube 12, which forms a guideway for the closure 13. Said closure should have the transverse opening 14 of the same diameter as that of tube 8, and the guideway 12 is also perforated at 15 to correspond with the longitudinal tubular opening or bore. The lower portion of the guiding tube 12 is provided with a screw threaded cap 16 so that a spring 17 may be securely held in place within the lower part of said tube and bear upon the lower part of closure 13, and normally hold the transverse opening 14 thereof out of alinement with the bore of the receiving tube 8. A fulcrum member 20 may be removably secured to the nozzle 11, by means of the set screw 21. To the upper end of said member is pivoted a handle 22, which is seated midway of the ends in a groove 23 of closure 13, thereby preventing rotary displacement. The shoulder 13′ and the end 12′ of the guideway 12 should be so related that when the lever 22 is depressed to its lowest point the opening 14 will be in exact register with the bore 11′. The end of the applicator or nozzle 11 has a contracted opening 18 which should preferably be somewhat slanted or beveled as at 19 to facilitate the application of the glazing material.

In using the apparatus a supply of the glazing material is placed within the tank 1, which is closed air tight. By means of the pump 3 air is introduced into the upper portion of the tank until a sufficient pressure, from fifty to one hundred pounds, is obtained, by means of which the semi-fluid material is forced into the tube 6, and to the regulating device of the applicator. When the closure is in its normal position as shown under stress of spring 17, no flow will occur. By depressing the handle 22 the opening 14 in the closure is progres-

sively moved into such relation to the opening 15 as will allow the fluid to pass to the distributing nozzle in such quantity and with such force as may be required. As the outlet of the nozzle is placed in contact with the window frame and glass the material passes to the angle between them. The form and quantity is controlled by the closure 13 and by the relation of the nozzle to the point of application, the character of the flow being further modified by the contraction at the end of the nozzle, by means of which a steady and uniform flow may be obtained.

I claim:—

In an applicator of the type described wherein a nozzle is traversed by a tubular guideway and a tensioned valve plug slidable in the guideway with ports in the valve plug and guideway normally out of registration and the port in the guideway being in line with the nozzle, said valve plug being slotted at its outer end, a laterally directed shoulder carried by said valve plug outwardly of the tubular guideway, and a pivoted lever working in said slot adapted to move the valve plug to bring the ports in the guideway and valve plug into registry, with the shoulder of the plug engaging the upper end of the guideway to limit movement of the plug.

In witness whereof, I have hereunto subscribed my name, this 31st day of December, 1918, at Chicago, Cook county, Illinois.

DAVID S. CHAPIN.