Nov. 11, 1958 M. SHAFER 2,859,462

PASTE SPREADING MACHINE

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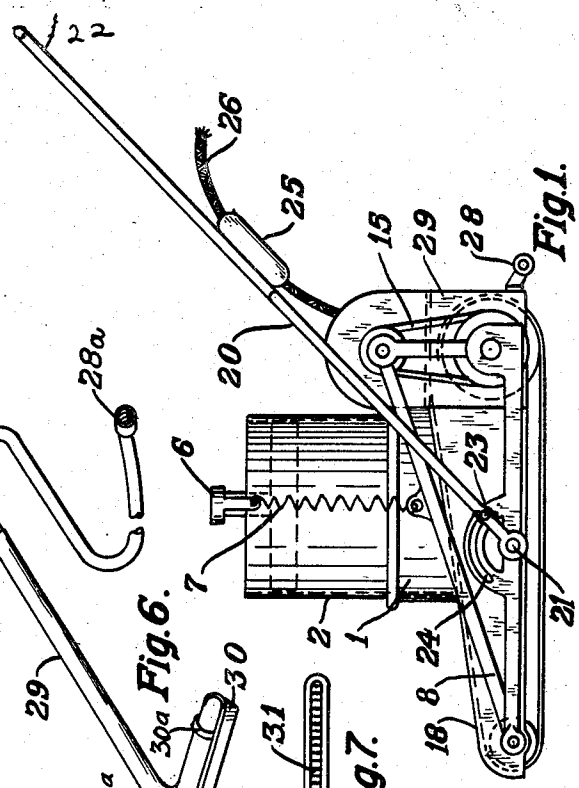


Fig.1.

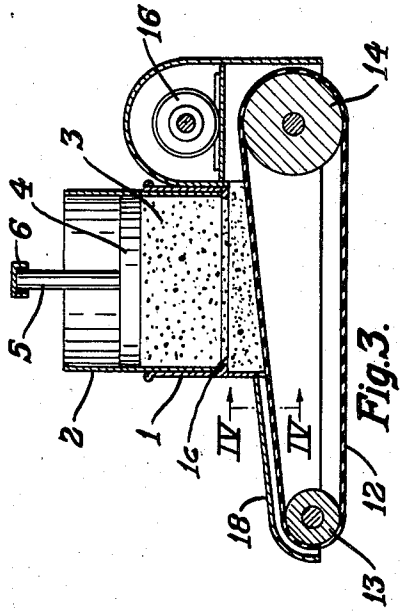


Fig.3.

Fig.6.

Fig.7.

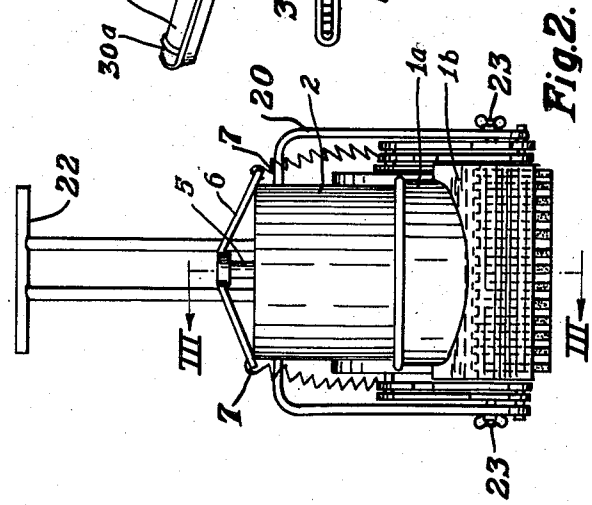


Fig.2.

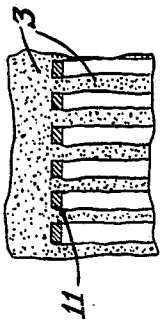


Fig.5.

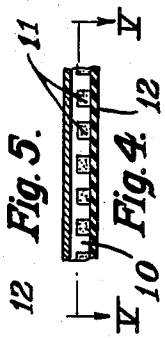


Fig.4.

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PASTE SPREADING MACHINE

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1 Claim. (Cl. 15—99)

This invention relates to a paste spreading machine for uniformly covering large floor areas with paste for adhering plastic or rubber floor tile and the like to the floor.

A common method of covering a floor surface with paste or adhesive for adhering rubber tile, linoleum and other floor coverings, is to manually spread the paste with hand tools, such as trowels and the like. But in covering large floor areas this method is extremely time consuming, therefore, involves considerable installation expense—also it does not insure uniformity of application of the paste onto the floor.

An object of my invention is to provide a novel machine for rapidly applying paste onto large floor surfaces for adhering plastic floor coverings and the like, so as to considerably reduce labor costs and insure uniform application of the paste.

A more specific object of my invention is to provide a novel tractor type machine including a belt drive serving as both the propelling means for the machine and the applicator for the paste in spreading paste over a large floor area for adhering floor coverings, such as rubber tile and the like.

Other objects and advantages of my invention will become apparent from a study of the following description taken with the accompanying drawing wherein:

Figure 1 is a side elevational view of a paste spreading machine embodying the principles of my invention;

Figure 2 is a front view of the machine shown in Figure 1;

Figure 3 is a vertical cross sectional view taken along line III—III of Figure 2;

Figure 4 is a fragmentary, transverse cross sectional view taken along line IV—IV of Figure 3;

Figure 5 is a fragmentary, horizontal cross sectional view taken along line V—V of Figure 4;

Figure 6 is a perspective view of an auxiliary applicator having a multiple-opening nozzle, and;

Figure 7 is a plan view of the outlet openings or nozzle of the applicator shown in Figure 6.

Referring more particularly to the drawing, numeral **1** denotes a housing having a base portion **1***b*, preferably of rectangular cross section and a top portion **1***a* of circular cross section for receiving a cylindrical paste containing can **2** such as used in selling the paste **3**. Removable lids may be provided on the top and bottom of the can. The paste may be placed under pressure by introducing a piston **4** into one end of the can. Piston **4** may be urged downwardly through a vertical bar **5** connected to a cross member **6** having ends connected to springs **7** whose lower ends are anchored to stationary cross braces **8**. Thus the paste is subjected to continuous pressure so that it may flow more easily and become discharged through an outlet opening of housing **1** as shown in Figures 4 and 5. A toothed portion **10** of the housing having notched out, spaced, rectangular openings **11** is provided in order to allow the paste to be ejected in the form of elongated strips,

as shown in Figure 5, rather than as a single sheet. This is in order to provide a ribbed top surface to the spread paste so as to permit easier adherence of rubber tile or other floor covering material by the paste.

The paste is discharged through openings **11** onto a wide belt **12** which is entrained about and driven by rollers **13** and **14**. Roller **14** is driven by a belt **15** which is driven by a motor **16**. Thus when the motor is driven through a gear reduction unit (not shown) it will drive the belt and propel the entire machine over a floor surface, very similar to a tractor. And as the paste is discharged onto the belt, toothed portion **10** in cooperation with a top shield or cover **18** prevents accumulation of an abnormal amount of paste by limiting the thickness of the discharged paste.

A substantially U-shaped pivotal element **20** is provided having extremities pivotally connected to pivots **21** and having a central portion rigidly connected to handle **22**. The handle may be swung about pivots **21** to the right hand position shown in Figure 1 or to a left hand position, so as to enable either pulling or pushing of the machine. The handle is selectively locked to either position by wing nuts **23** which are attachable to either end of the slots **24** formed in stationary sectors of the frame.

In order to allow turning movement of the machine there may be provided a roller element **28** attached to the frame. Thus by depressing handle **22** the machine may be pivoted and thus turned right or left on roller **28** as a pivot.

Motor **16** is energized through an electric cord **26** having a terminal plug (not shown) for plugging into a wall socket. Cord **26** may be kept somewhat tensioned by an automatic take-up or reeling unit **25** of any conventional construction to prevent sagging of wire **26** onto the floor surface. Motor **16** is a reversible electric motor and may be controlled by a reversing switch and an on-and-off switch (not shown) which may be located on handle **22**.

In operation, a can **2**, in which the paste is sold, may be opened at both ends by removing the lid and bottom, and piston **6** may be introduced into one end. The bottom edge of the can will rest on ledge **1***c* of the housing **1**. And as the result of pressure exerted by the tension of springs **7**, paste **3**, under pressure, is forced out through the outlet openings **11**, forwardly of housing **1**, onto the belt where it is spread in strip form as shown more clearly in Figure 5. The belt provides a friction drive with the floor surface—also it acts as an applicator to deposit the paste on the floor surface. The machine is driven to the left as viewed in Figures 1 and 3, hence the weight of the machine will spread a substantial portion of the paste after it is applied to the floor.

A separate air or hydraulic pump may be used in situations wherein a different paste supply unit is used, such as for the hand applicator **29—30**, which may be the same as that for dispensing grease in service stations, that is, having a compressor for maintaining grease under pressure. It is possible to use a separate applicator, such as shown in Figure 6, for applying the paste to inaccessible places, such as underneath tables and the like. A coupling **28***a* may be secured to a suitable pressurized supply source (not shown) whereby paste under pressure will then flow through a hose, through a rigid metallic handle **29** and through an outlet nozzle **29***a* whose outlet opening is partly covered with a perforated cover **30** which may be clamped to the outlet **29***a* by means of clamps **30***a*. The attachment **30** has a plurality of holes **31**, perhaps of the order of ⅛" wide and long, and separated by spacings of ⅛" throughout the entire outlet opening of the noz-

zle. Thus paste may be dispensed in the form of parallel strips substantially as shown in Figure 5. By making attachment **30** readily detachable through clamps **30***a*, it may be easily cleaned. Any well known type valve means for adjusting the rate of flow through the hose or handle **29** may be used if desired.

Thus it will be seen that I have provided an efficient paste spreading machine, which machine is tractor propelled on a floor surface for dispensing paste in the form of wide sheets by means of an applicator and driving belt, and which machine enables rapid covering of large floor areas in a fraction of the time necessary by ordinary methods; also I have provided a paste spreading machine which is relatively simple in construction and operation, and made up of parts which can be easily taken apart and cleaned; furthermore I have also provided an auxiliary applicator for permitting the application of paste to inaccessible places, such as underneath tables, near walls, etc.

While I have illustrated and described an embodiment of my invention, it will be understood that this is by way of illustration only, and that various changes and modifications may be made within the contemplation of my invention and within the scope of the following claim.

I claim:

A machine for spreading paste on floors for adhering rubber tile or similar floor covering material thereon, said machine comprising a pair of rollers extending across the entire width of the machine and a belt of corresponding width entrained about said rollers for providing tractor-like propulsion of the machine on the floor surface, an electric motor mounted on said machine and driving said rollers so that the belt will provide tractor-like propulsion of the machine, said machine having mounted thereon a housing which is provided with a circular opening at the top for receiving an open ended can of paste of slightly smaller diameter, means for supporting the lower open end of the can immediately over the upper flight of said belt, means for exerting continuous pressure on the top of the paste, said housing being open at the bottom and spaced above the lower flight of said belt so as to discharge paste along substantially the entire width of said housing and having at the forward portion thereof, with respect to the direction of movement of the machine, a downwardly projecting plate adjacent to said circular opening and the upper flight of said belt and having tooth-like notches in its lower edge for limiting the height and shaping the layer of paste discharged onto the belt.

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