March 25, 1930. C. G. TALBOTT 1,751,565

DEVICE FOR SPREADING BITUMEN

Filed Nov. 2, 1926

Fig. 1,

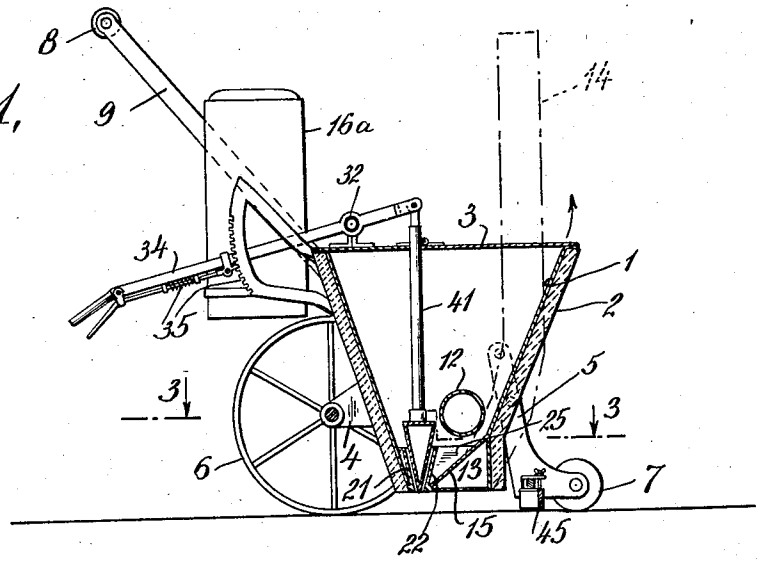


Fig. 2,

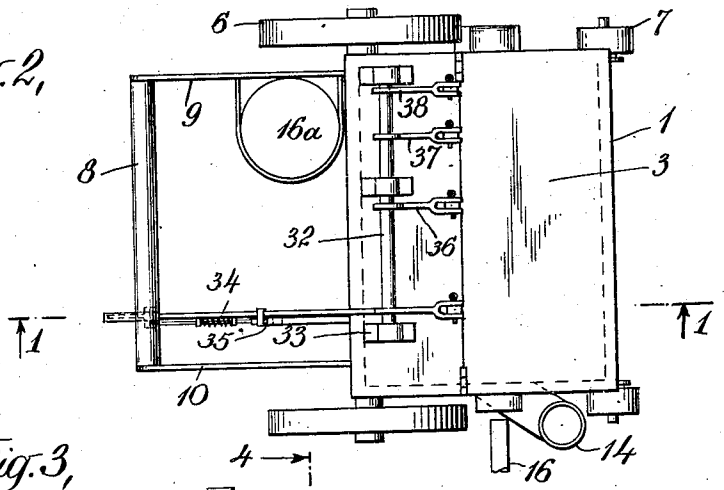


Fig. 3,

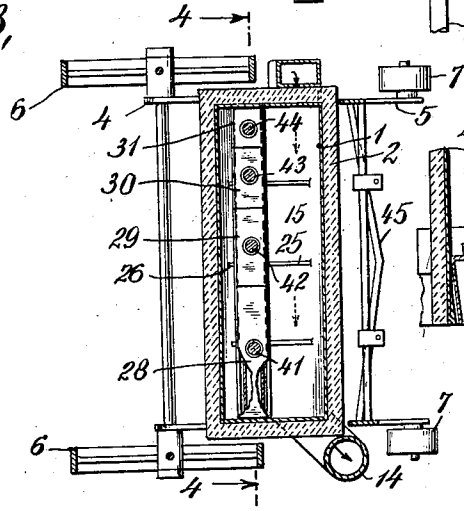
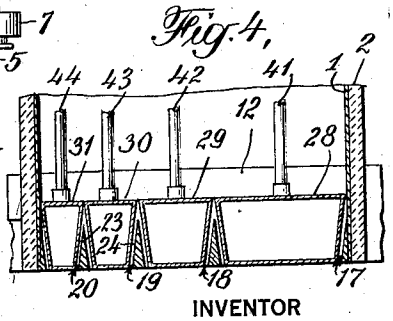


Fig. 4,



INVENTOR
CHARLES G. TALBOTT
BY
Daniel J. Mayre
ATTORNEY

Patented Mar. 25, 1930

1,751,565

UNITED STATES PATENT OFFICE

CHARLES G. TALBOTT, OF STAMFORD, CONNECTICUT, ASSIGNOR TO THE BARRETT COMPANY, A CORPORATION OF NEW JERSEY

DEVICE FOR SPREADING BITUMEN

Application filed November 2, 1926. Serial No. 145,747.

This invention relates to bitumen spreaders and relates more particularly to a portable device for spreading pitch or other bitumen in the laying of roofing felt.

When building large roofs such as those used upon apartment houses, factory buildings, etc., it has been the practice to place a plurality of layers of saturated felt upon the roof structure, coating each layer with pitch or asphalt before the succeeding layer of felt is applied and to then coat the top ply of felt with a thick layer of bitumen such as pitch or asphalt. Heretofore this has been done by hand, the bitumen being heated in tanks upon the ground and hauled to the roof in buckets where it is utilized, the bitumen being spread upon the roof by the use of squeegees and mops. Needless to say, this involves considerable labor and numerous difficulties are encountered, such as the bitumen "freezing" before it is completely spread.

My invention includes a portable tank mounted upon suitable wheels or trucks, the tank being adapted to be continuously heated and to contain a bitumen such as coal tar pitch, asphalt, or any other viscous material. located in the lower portion of the tank are a set of valve controlled openings constructed in a manner, and for a purpose, more fully hereinafter to be described.

It is among the objects of my invention to provide a readily portable device for spreading bitumen upon a surface, such as a roof, in any desired width or thickness of stream. It is, further, among the objects of my invention to provide for properly supplying heat to the bitumen in said device and especially to the bitumen as it flows through the valve controlled openings.

Further objects and the specific nature of my invention will be more fully understood from the following description and the appended drawing made a part hereof.

In the drawing, in which like reference characters refer to like parts,

Fig. 1 is a vertical section taken along the line 1—1 of Fig. 2.

Fig. 2 is a plan view thereof.

Fig. 3 is a section thereof taken along the line 3—3 of Fig. 1 and

Fig. 4 is a section of the valve controlled openings taken along the line 4—4 of Fig. 3.

The reference character 1 designates generally the tank which I propose to employ and which may be smaller at the bottom than at the top. Insulation 2 may be provided to increase the thermal efficiency of the tank and a hinged lid 3 in the top of the tank is employed for purposes of inspection, cleaning, filling, etc. The tank 1 may be mounted, by means of brackets 4 and 5 secured to the tank, upon wheels 6 and 7 respectively. The handle 8, having brackets 9 and 10 secured to the tank, may also be provided by which my device can be properly manipulated upon the roof.

In the lower portion of the tank 1 and extending through the sides thereof, is located a combustion chamber 12 below which is positioned a return horizontal flue 13 (with which the combustion chamber is connected) leading to the stack 14. The upper wall 15 of the flue 13 constitutes a continuation of one of the walls of the tank 1, as will be readily observed from Fig. 1. An oil burner 16 of any suitable type supplies the necessary combustible vapors to the combustion chamber 12 for heating the bitumen which may be placed in the tank. Oil for the oil burner 16 is supplied from a tank 16^a which is mounted upon the handle bracket 9.

In the lower portion of the tank 1 are longitudinal openings or slots 17, 18, 19 and 20 formed by sloping walls 21, 22, 23 and 24. The walls 21 and 22 may be reinforced by vanes 25 and 26 respectively. The assembly constituting the slots 17, 18, 19 and 20 and the vanes 25 and 26, is welded or otherwise secured in proper position in a longitudinal opening in the bottom of the tank as will be readily observed from Fig. 1. Any bitumen in the tank 1 (in its upright position) can, therefore, only flow therefrom thru the openings 17, 18, 19 and 20. The amount of bitumen that is allowed to flow thru openings 17, 18, 19 and 20 is controlled by tapered plug valves 28, 29, 30 and 31, respectively.

Above the upper left hand portion of the tank is positioned a horizontal shaft 32 mounted in bearings 33 which are secured to

the tank 1. Upon the shaft 32 is keyed an adjustable lever 34 adapted to be held in position by the adjustment assembly 35. To the shaft 32 are also keyed lever arms 36, 37 and 38. Thru the top of the tank 1 and secured to the valves 28, 29, 30 and 31, respectively, are rods 41, 42, 43 and 44. These rods are in turn secured by removable pins to the lever arms 34, 36, 37 and 38, respectively.

To the brackets 5 is secured scraping or squeegee member 45 which can be adjusted vertically and/or horizontally as desired for a purpose later to be described.

The operation of the device is as follows: The bitumen which it is desired to spread upon the intended surface, such for instance, as a roof, is placed in the tank 1 thru the opening at the top of the tank, the openings 17, 18, 19 and 20 being closed by the valves 28, 29, 30 and 31. The bitumen is heated by means of the oil burner until said bitumen has reached the proper fluidity, the amount of heat required being dependent upon the melting point of the bitumen being used. When the bitumen has reached the proper fluidity, the entire device is positioned over the place where it is desired to commence the spreading of the bitumen.

Assuming that it is desired to spread the bitumen upon a roof, the strip of felt which it is desired to coat having been previously laid, the spreader is positioned over the strip of felt. Roofing felt is ordinarily made up in standard widths, such for instance as widths of 32 and 36 inches. In laying these strips of felt a standard overlap of the strips is employed, such overlap being usually 11, 18, 23 and 26 inches. The opening 17 is of approximately the same length as the width of the narrowest standard overlap. By the addition to opening 17 of openings 18 or openings 18 and 19 or 18, 19 and 20, an opening can be obtained of approximately the same length as the width of the remaining standard overlaps usually employed. Assuming that it is desired to employ the entire spreading width of the device and that the device is in place, the valves 28, 29, 30 and 31 are lifted by means of the lever 34 and adjusted so that the proper thickness of stream of bitumen flows from the openings, and the device is moved lengthwise of the strip of felt at a speed proper to deposit the desired thickness of bitumen upon the strip.

In the event that it is desired to spread upon a strip of felt a narrower width of bitumen, one or more of the valves may be uncoupled from their respective lever arms, beginning with the narrowest valve. For instance, if it is desired that the width of spread shall be equivalent to the width of openings 17 and 18, the valves 30 and 31 are uncoupled from the lever arms 37 and 38 respectively, thus maintaining the openings 19 and 20 closed. The lever arm 34 would, therefore, only lift valves 28 and 29. Any other combination desired may likewise be resorted to. When the desired length of strip has been coated, the lever arm 34 is so manipulated as to close the valves which have been opened.

As before intimated, the amount of bitumen which is spread upon the roof may be regulated in two ways, either by the speed with which the device is moved along the strip or by the clearance between the valves and the walls of the openings.

The advantage of having the combustion chamber 12 and the flue 13 located as illustrated, is that the valve and valve openings are always maintained at the hottest temperature, the heat supplied to the device being communicated directly to the valve and valve openings so that the bitumen will at all times be maintained at its greatest fluidity at this point. Freezing or sticking of the valves and clogging of the openings will thus be substantially eliminated.

The spreader 45 may be adjusted vertically and/or horizontally so as to properly distribute the bitumen over any uneven portions of the roof and may also serve to "mop" the bitumen into the felt, thus procuring proper adhesion of the bitumen thereto.

The many advantages of my invention will be readily apparent from the above description. Those particularly worthy of note, are the elimination of hand pouring and mopping of the bitumen as well as the fact that by the use of my device, a uniform layer and width of pitch may be spread upon the felt strip. Furthermore, any one of a number of desired widths of "spread" of the bitumen may be employed.

I claim:

1. In a device for spreading bitumen, the combination of a tank having a longitudinal slot in the bottom thereof, sloping walls positioned in the bottom of said tank defining a plurality of smaller aligned slots and forming valve seats in conjunction with said smaller slots, and a plurality of selectively operable tapered valves adapted to seat in said valve seats for controlling the amount and extent of distribution of bitumen from said tank.

2. A device for spreading bitumen comprising, in combination, a portably mounted tank having walls converging toward the bottom, a heating flue in the bottom of the tank with its upper wall constituting a continuation of a wall of the tank, a combustion chamber located above and connected to the flue, parallel converging walls secured in the bottom of the tank adjacent the heating flue, sloping division walls connecting said parallel walls to form a plurality of tapered slots therewith, a tapered plug valve for each of said slots, a rod extending upward from each valve, a shaft mounted for oscillation upon said tank, a lever arm for each rod keyed

to said shaft, a removable pin connecting a lever arm and its associated rod, operating means for oscillating said shaft, a scraping member adjustably secured to said tank in operative relation to said slots, and means for moving said tank.

3. In a device for spreading bitumen, the combination of a mobile tank, members defining a series of aligned slots of varying length extending longitudinally of the bottom of said tank for the distribution of a sheet of bitumen therefrom transversely of the path of motion of said tank, and valve means cooperating with said slots for varying the extent of said distribution of said bitumen.

4. In a device for spreading bitumen, the combination of a tank, members defining a slot extending longitudinally of the bottom of said tank for distributing bitumen therefrom, and a combustion chamber arranged internally of said tank adjacent said slot defining members and substantially co-extensive with said slot for heating bitumen distributed through said slot.

5. In a device for spreading bitumen, the combination of a tank, members defining an elongated slot extending longitudinally of the bottom of said tank for distributing bitumen therefrom, a combustion chamber arranged internally of said tank adjacent said slot defining members and substantially co-extensive with said slot, and a flue connected with said combustion chamber and substantially co-extending with said slot internally of said tank adjacent said slot defining members.

In testimony whereof I affix my signature.

CHARLES G. TALBOTT.