July 24, 1962 E. TOLBERT ET AL 3,045,312

MACHINE FOR SPREADING MORTAR

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Fig. 1

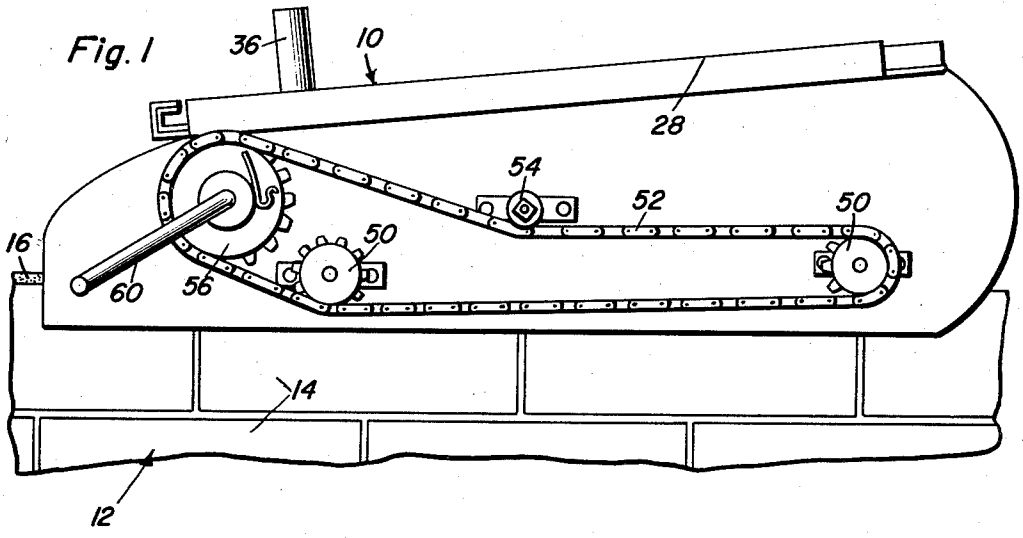


Fig. 2

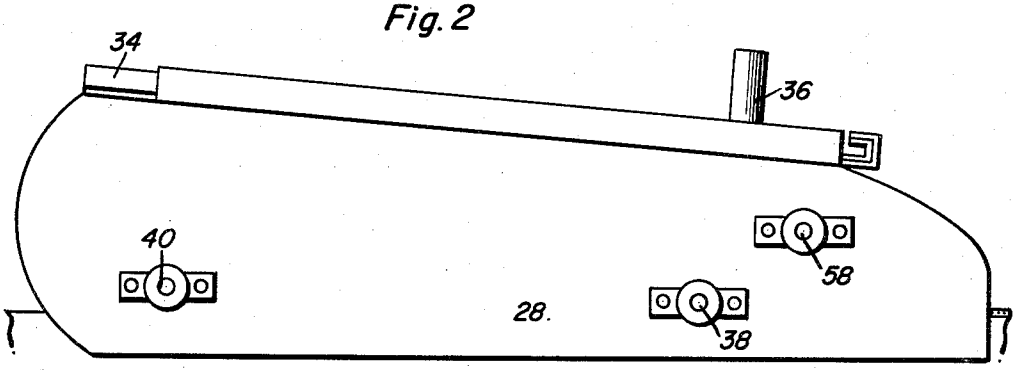
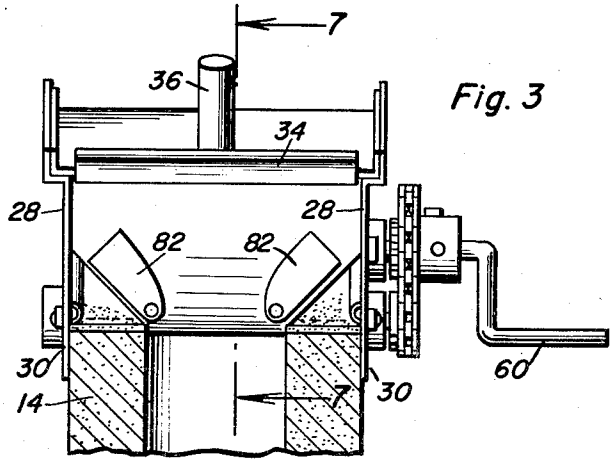


Fig. 3



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Fig. 4

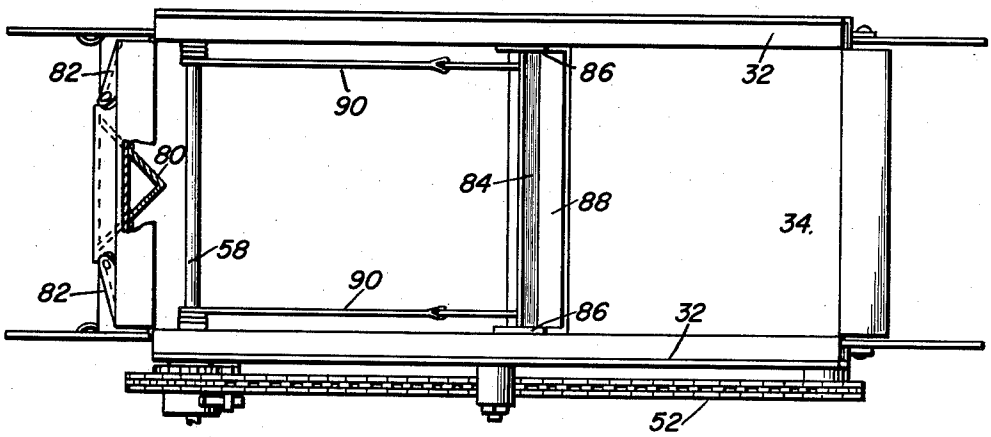


Fig. 5

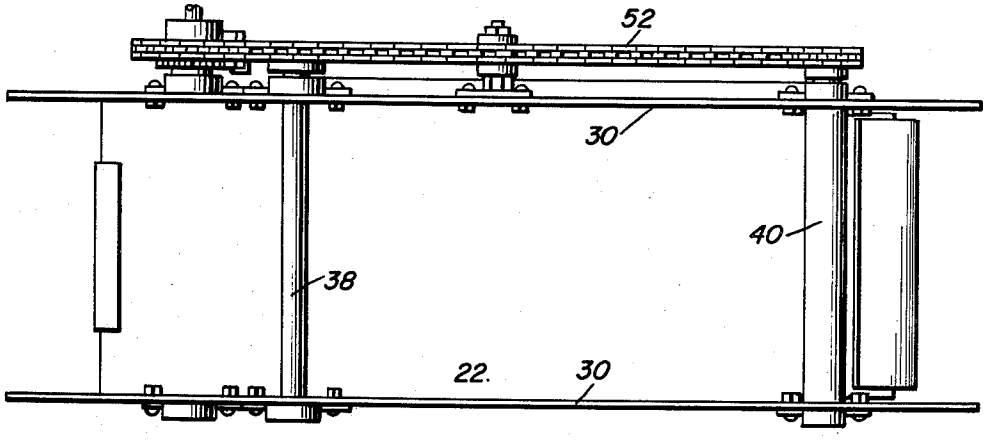
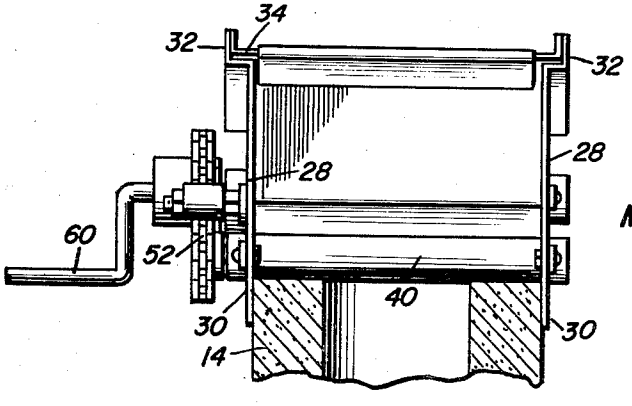


Fig. 6



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Fig. 7

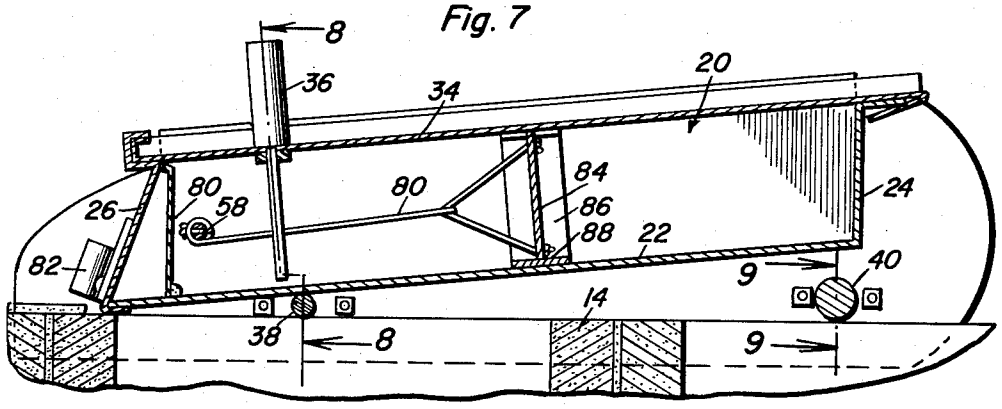


Fig. 8

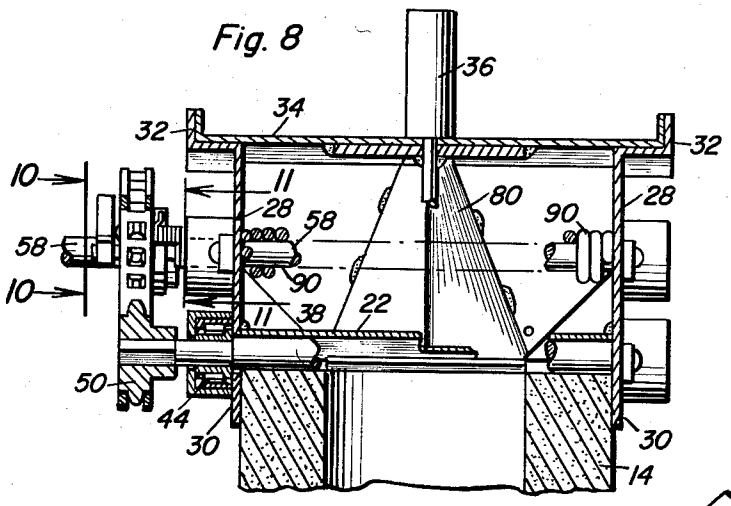


Fig. 9

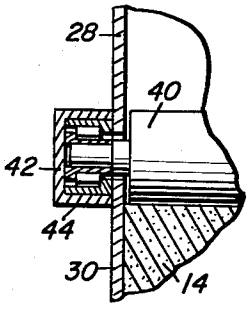


Fig. 10

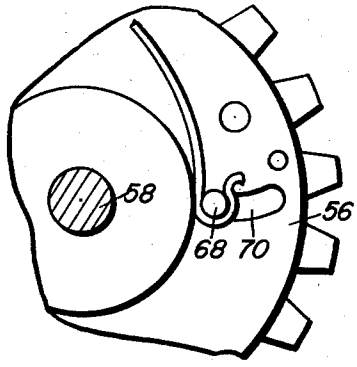
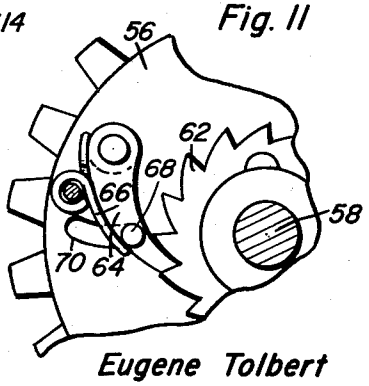


Fig. 11



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MACHINE FOR SPREADING MORTAR

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Filed Oct. 26, 1961, Ser. No. 147,835
8 Claims. (Cl. 25—118)

This invention comprises a novel and useful machine for spreading mortar and more particularly relates to an apparatus for use by bricklayers and masons to mechanically obtain the depositing of a controllably varied uniform thickness of mortar upon a course of bricks or blocks in a masonry construction.

It is the primary object of the invention to provide an apparatus which will greatly facilitate brick laying and masonry operations by automatically depositing a layer of mortar upon a course of masonry upon which the next course of bricks or blocks is to be laid.

A further object of this invention is to provide an apparatus in accordance with the preceding object which will obtain an automatic and uniform feed of the mortar from the apparatus during the operation of the latter.

Still another purpose of the invention is to provide an apparatus in conformity with the foregoing objects wherein the thickness of the layer of mortar to be deposited upon a course of masonry can be easily and readily varied while maintaining a uniform thickness throughout the layer thus deposited.

A still further object of the invention is to provide an apparatus in accordance with the preceding objects wherein a single manually operated means is utilized to both propel the apparatus along a masonry course during the mortar dispensing operation and further to effect a uniform and positive feeding of the mortar from the hopper within the device to the mortar dispensing orifice of the apparatus.

A further important object of the invention is to provide an apparatus in accordance with the foregoing objects which shall be particularly well adapted to cooperate with a course of masonry for travel therealong and for guiding engagement therewith and wherein improved means are provided to effect the controlled rate of travel of the device along a masonry course.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a view in side elevation of a portion of a masonry construction showing the apparatus in accordance with this invention operatively mounted upon the top course of masonry;

FIGURE 2 is a side elevational view from the other side of the apparatus of FIGURE 1;

FIGURE 3 is a view in end elevational from the front of the apparatus of FIGURE 1;

FIGURE 4 is a top plan view of the apparatus of FIGURE 1 parts being broken away and shown in section;

FIGURE 5 is a bottom plan view of the apparatus;

FIGURE 6 is an end elevational view from the rear of the apparatus of FIGURE 1;

FIGURE 7 is a central vertical longitudinal sectional view through the apparatus and showing its association with a masonry course, being taken substantially upon the plane indicated by the section line 7—7 of FIGURE 3;

FIGURE 8 is a detail view in vertical transverse section taken substantially upon the plane indicated by the section line 8—8 of FIGURE 7;

FIGURE 9 is a further detail view in vertical transverse section taken substantially upon the plane indicated by the section line 9—9 of FIGURE 7 and showing the mounting of the supporting and driving rollers of the device; and

FIGURES 10 and 11 are further detail views taken in vertical section substantially upon the planes indicated by the section lines 10—10 and 11—11 respectively of FIGURE 8.

In the accompanying drawings the numeral 10 designates generally the mortar applicator in accordance with this invention which is shown positioned upon a masonry construction 12 such as a wall or the like having courses of bricks or masonry blocks 14 therein. It is the purpose of this invention to apply upon the topmost course of masonry a layer of mortar 16 of a uniform thickness but which thickness can be readily adjusted or varied as desired.

The applicator 10 consists of a hollow body or receptacle 20 comprising a hopper and which includes an inclined or sloping bottom wall 22, a rear end wall 24, a front end wall 26, together with a pair of side walls. These side walls consist of a pair of parallel plates each indicated by the numeral 28 and which have depending portions 30 extending below the bottom wall 22 to provide guide plates which are adapted to slidingly embrace the sides of the topmost masonry course 14 in order to securely position and guide the hopper for travel therealong.

The upper end or top of the hopper is open being provided with longitudinally extending guide rails 32 along the opposite sides thereof in which is slidably received a top closure or cover 34 provided with a handle 36 by which sliding movement is imparted to the cover in order to open or close the top opening to thereby inspect or fill the interior of the hopper with mortar.

The apparatus is supported for movement along the topmost masonry course 14 by means of a pair of transversely extending support and driving rollers 38 and 40 which extend between the guide plates 30 and transversely beneath the bottom wall of the hopper to thereby support the latter in an inclined position upon the top surface of the topmost masonry course.

Referring especially to FIGURES 8 and 9 it will be observed that the rollers 38 and 40 have their extremities provided with diametrically reduced axial projections or pintles each indicated by the numeral 42 and which comprise axles by which the rollers are journaled as in bearing assemblies 44 secured to the guide plates 30. One of these axles of each roller project beyond its side plate and has connected thereto a manually operated driving means.

Conveniently, this driving means includes gearing such as the sprocket gears 50 which are secured to the axles of the rollers and over which sprocket gears is entrained a sprocket drive chain 52 provided with a suitable slack take up or idler 54 of conventional design, the sprocket chain in turn being entrained over a driving sprocket 56 secured to the crankshaft 58 provided with a manual operting handle 60. As will be noted, the handle and the gearing are provided upon the exterior of the hopper and the guide plates thereof. Upon rotation of the crankshaft, the connecting gearing assembly will in turn impart rotation to the support and drive rollers 38 and 40 and since the latter rest upon the topmost course of masonry the device will be caused to progress therealong, being confined to straight line travel by sliding engagement of the guide plates 30 with the sides of the masonry course.

Selectively connecting the driving sprocket 56 to its crankshaft 58 is a conventional type of reversible pawl and ratchet drive consisting of a ratchet wheel 62 opera-

tively engaged by the pawl 64 which is spring urged as at 66. An adjusting pin 68 operating in the slot 70 serves to selectively render the pawl engaged with or released from the ratchet wheel so as to thereby enable a step-by-step rotation to be imparted to the crankshaft 58 with unidirectional rotation or to disengage the gearing assembly from the crankshaft as desired.

At the forward end 26 of the hopper there is provided a mortar discharge means. For this purpose there is provided a deflector baffle as at 80 by which mortar moving from the hopper towards the opening in the end wall 26 is effected and uniformly delivered on both sides of this baffle means 80. Further baffle means 82 are positioned to deflect this mortar downwardly through the opening so as to ensure the applying of a layer or film of mortar of uniform thickness. Obviously by appropriately adjusting or positioning these baffles the thickness of the deposited mortar can be readily varied and controlled.

A feeding means is provided for automatically moving the mortar in the hopper towards the discharge means. This feeding means consists of a transversely extending partition 84 comprising a feeder plate which extends transversely from one side wall to the other of the hopper and having guide flanges 86 at the sides and 88 at the bottom of the partition plate serves to facilitate sliding movement of the feeder plate along the bottom and side walls of the hopper. In order to impart controlled movement to the feeder plate and thus effect a controlled forcing or feeding of the mortar forwardly thereof to the discharge means there is provided an actuating means. This actuating means consists of a pair of cables 90 each appropriately secured to the feeder plate at opposite sides thereof, and which cables have their ends fixedly secured to the previously mentioned crankshaft 58 which thus as to this portion thereof constitutes a winch drum. In this manner, step-by-step movement of the crankshaft will not only effect travel of the device along the top course of masonry, but also effect a corresponding synchronized travel of the feeder plate within the hopper. When it is desired to return the feeder plate to the remote end of the hopper as when it is necessary to replace the mortar supplied therein, it is merely necessary to open the top closure 34, release the ratchet mechanism shown in FIGURES 8, 10 and 11, so that the ratchet drive is disconnected from the gearing for driving the supporting driving rollers, whereupon the feeder plate may be manually moved to the other end of the hopper with the resultant unreeling or unrolling of the cable from its wedge drum.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A mortar applicator comprising a hopper having, vertical guide plates on the sides of said hopper and projecting downwardly therebeneath for slidably embracing a course of masonry during movement of said hopper therealong, support and drive rollers journaled in said guide plates and extending therebetween transversely beneath said hopper for movably supporting the latter upon the top of a masonry course, mortar discharge means for said hopper for delivering from said hopper a layer of mortar of uniform thickness, manually operated means connected to said rollers for actuating the latter to propel said hopper along said masonry course.

2. The combination of claim 1 including a transversely extending feeder plate mounted in said hopper for sliding movement longitudinally thereof for feeding mortar to said discharge means and actuating means for effecting feeding movement of said feeder plate.

3. The combination of claim 2 wherein said actuating means is interconnected to said manually operated means for synchronized operation therewith.

4. The combination of claim 1 wherein said manually operated means includes axles on said rollers projecting exteriorly of said guide plates, a handle mounted on said hopper, gearing exteriorly of said hopper connecting said handle to said axles.

5. The combination of claim 1 wherein said hopper has an open top with guide rails on the sides of the latter, a closure slidably mounted on said guide rails.

6. The combination of claim 1 including a transversely extending feeder plate mounted in said hopper for sliding movement longitudinally thereof for feeding mortar to said discharge means and actuating means for effecting feeding movement of said feeder plate, said actuating means including a winch drum and a cable secured to said drum and to said feeder plate.

7. The combination of claim 6 including a reversible ratchet connected to said winch drum whereby a unidirectional step-by-step movement may be imparted to said feeder plate.

8. The combination of claim 1 wherein said mortar discharge means comprises an opening at one end of said hopper extending transversely thereacross, baffle means associated with said opening for directing mortar uniformly through said opening and downwardly therefrom.

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