

[54] MACHINE FOR FORMING CURBING

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[51] Int. Cl. E01c 19/48

[58] Field of Search 94/44, 46; 249/2, 249/8

[56] References Cited

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2,932,875	4/1960	Butcher.....	94/44 X
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3,472,134	10/1969	Wilbur.....	94/46 R
3,585,911	6/1971	Vlasic.....	94/46 R

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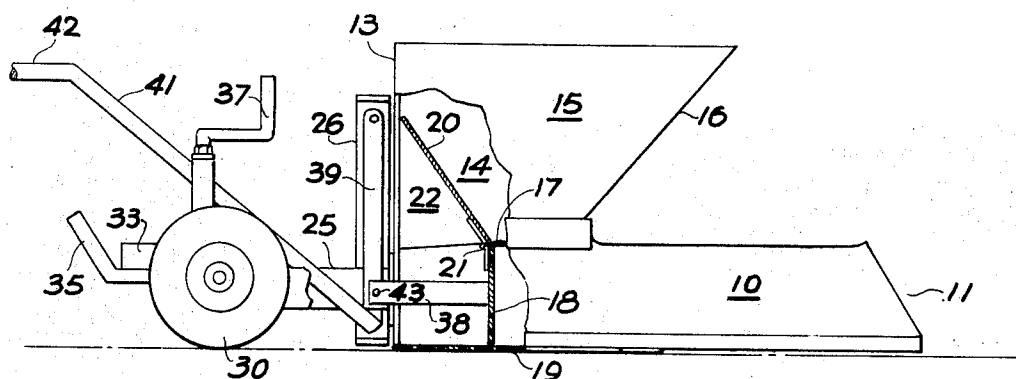
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[57] ABSTRACT

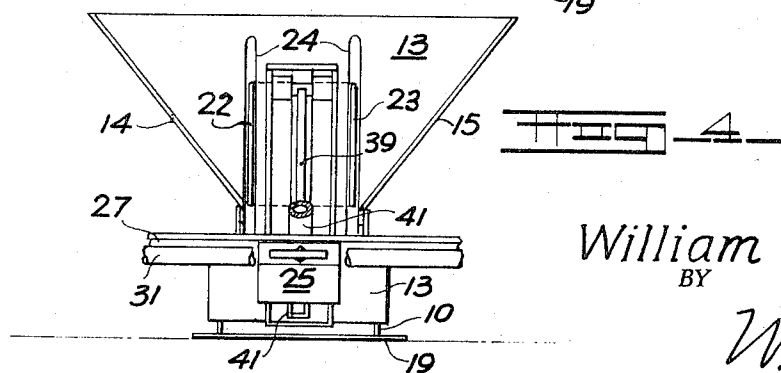
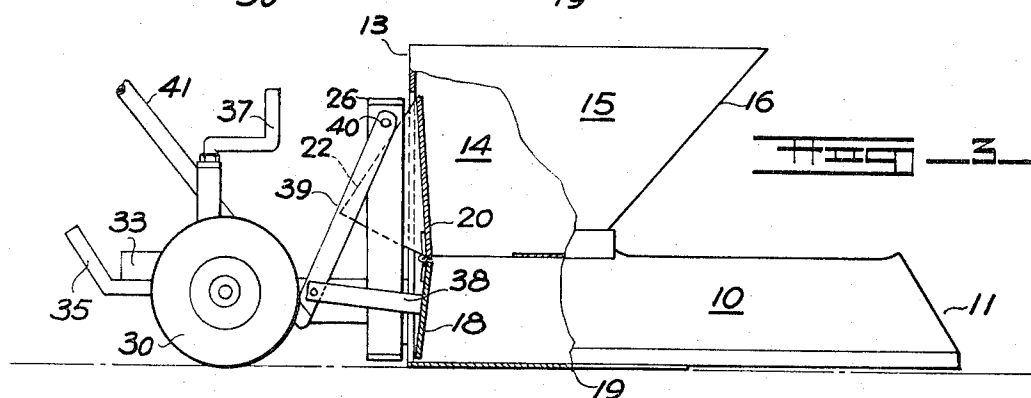
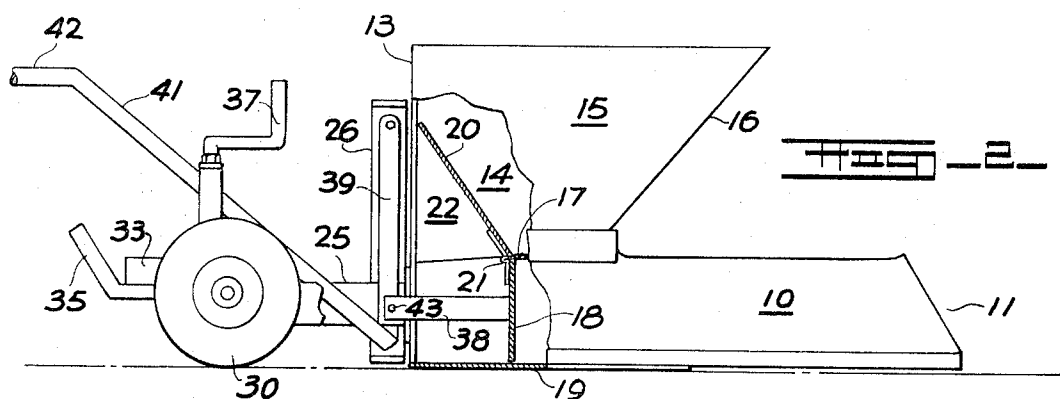
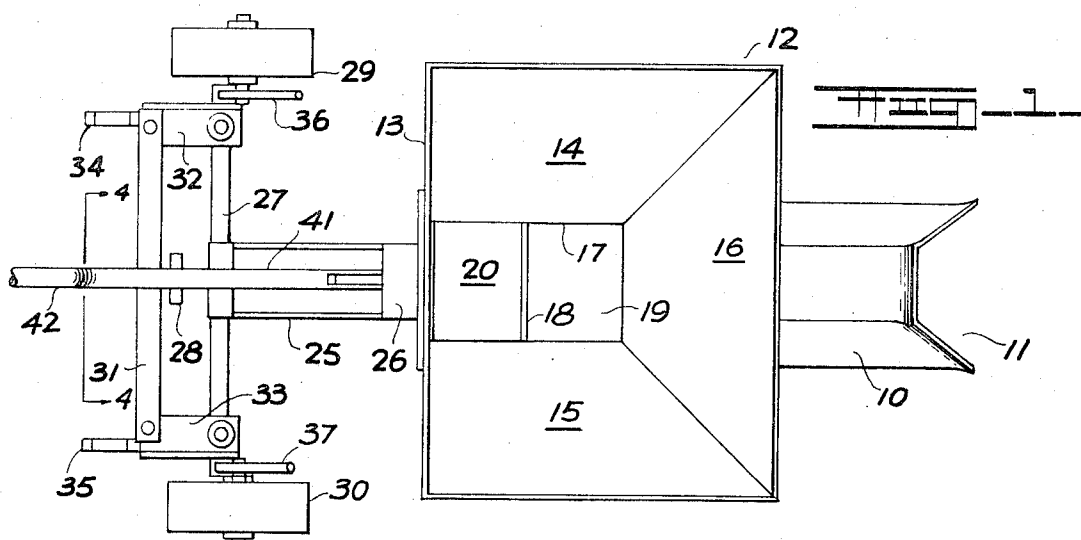
A machine for forming curbing consisting of a manually operable steerable device which compacts and shapes asphaltic concrete or portland cement mixes having no slump characteristics into uniform curbing. The machine has a curb forming shoe with a hopper thereabove and communicating therewith and a manually controlled ram to which a closure plate is hinged. Operation of the ram and the closure plate permits the asphaltic or portland cement mix to fall by gravity into the shoe where operation of the ram compacts the mix in the shoe to form the curbing. The reaction force moves the machine away from the newly extruded curbing.

5 Claims, 4 Drawing Figures



PATENTED MAY 15 1973

3,733,141



MACHINE FOR FORMING CURBING

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to machines for forming curbing of the type normally employed to shape asphaltic concrete and portland cement mixes of the no slump type into a desirably shaped curbing.

2. Description of the Prior Art

Prior structures of this type have included various forms of manually operated devices such as may be seen in U.S. Pat. Nos. 2,932,875, 2,541,547, 3,472,134 and 3,585,911. Only the latter of the aforesaid patents discloses the device comparable with the present invention on the basis of light-weight, portability, ease of operation and inexpensiveness. The present invention simplifies the concept and provides a simple, easily formed, manually operated machine for forming curbing.

SUMMARY OF THE INVENTION

A machine for forming curbing comprises apparatus slidable along a surface on which a curbing is to be formed and includes a shoe for shaping material such as asphaltic concrete and the like. A hopper on the shoe communicates therewith and a ram is reciprocally mounted in the shoe. A closure plate is hinged to the ram for closing the hopper with respect to the area on one side of the ram. Reciprocal action of the ram as occasioned by a link and lever handle arrangement compacts the asphaltic concrete or the like in the shoe and causes the machine to slide along the curbing thus formed by the reaction forces generated in the compaction of the asphaltic concrete or the like.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top plan view of the machine for forming curbing.

FIG. 2 is a side elevation thereof with parts broken away and parts in cross section.

FIG. 3 is a side elevation with parts broken away and parts in cross section and illustrating the ram and closure plate in a second position.

FIG. 4 is an end view of the machine for forming curbing.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In its simplest form the machine for forming curbing may be seen in top plan view in FIG. 1 wherein a shoe 10 having an angularly formed delivery end 11 will be seen to be positioned beneath a hopper generally indicated as 12 and consisting of a front wall 13 parallel side walls 14 and 15 and a back wall 16. The side walls 14 and 15 and the back wall 16 are disposed at an angle from horizontal while the front wall 13 is preferably vertically positioned. The hopper 12 has an opening 17 communicating with the interior of the shoe 10 and a vertical compaction plate or ram 18 is disposed in the shoe 10 for reciprocal movement therein. The shoe 10 has a closed bottom portion 19 over the forward part thereof and a closure plate 20 is hinged as at 21 to the upper edge of the ram 18. A pair of generally triangular shaped members 22 and 23 are attached at their forward edges to the sides of the closure plate 20 and move therewith into and out of a pair of vertical slots 24 formed in the front wall 13. A frame including a horizontal section 25 and a vertical section 26 extends forwardly of the forward end of the shoe 10 and the horizontal section 25 includes a transverse frame member 27 which is slidably mounted with respect to the forward end of the horizontal section 25 so that it can be adjusted transversally with respect thereto and secured in adjusted position by a fastener at 28.

The ends of the transverse frame member 27 support wheel and axle assemblies 29 and 30 and the same are steerable by reason of an inner connecting drag link 31 which is pivoted to steering arms 32 and 33 which are part of the wheel and axle assemblies 29 and 30 respectively.

Handle receiving stub shafts 34 and 35 enable handles not shown to be engaged thereon so that the steering arrangement can be manually controlled and each of the wheel and axle assemblies 29 and 30 incorporate vertical adjustment means actuated by cranks 36 and 37 respectively as will be understood by those skilled in the art.

By referring now to FIGS. 2 and 3 of the drawings it will be seen that the compaction plate or ram 18 has a member 38 extending forwardly therefrom and into the area of the horizontal section of the frame 25. A lever 39 is pivoted as at 40 to the vertical section 26 of the frame of the machine and an actuating arm 41 is secured to the lower end of the lever 39 and extends outwardly out forwardly of the machine and terminates in a horizontal portion 42. The forward end of the member 38 which is attached to the ram 18 is pivoted by pivot 43 to the lever 39 immediately above the innermost end of the actuating arm 41.

Those skilled in the art will observe that when suitable material such as an asphaltic concrete mix is positioned in the hopper 12 and the actuating arm 41 moved upwardly the ram 18 will move forwardly, to the left as seen in the drawings, to the position illustrated in FIG. 3 of the drawings whereupon the asphaltic material in the hopper will fall by gravity into the forward end of the shoe 10. The actuating arm 41 is then depressed manually whereupon the ram 18 will move to the right as seen in the drawings and FIG. 2 thereof compacting the asphaltic material into the shoe 10 and causing it to extrude therefrom and by the same motion creating a reaction force which will move the machine for forming curbing to the left relative to the extruded curbing being formed. When the ram 18 moves to the position shown in FIG. 2 of the drawings, on the compaction stroke, the closure plate 20 and its side members 22 and 23 move therewith so that material in the hopper cannot enter the area forwardly, to the left, of the ram 18 which would otherwise interfere with the operation of the device. The free edge of the closure plate 20 slides up and down the inner surface of the front wall 13 of the hopper 12 where it serves the dual purpose of agitating the material in the hopper 12 to insure that it will fall downwardly into the shoe 10 on the next stroke.

It will thus be seen that the machine for forming curbing as disclosed herein is steerable by means of the ground engaging wheels 29 and 30 that they may be adjusted sidewardly so that the machine can extrude curbing offcenter with respect to the wheels 29 and 30 and that the machine is simply and easily actuated by the vertical movement manually imparted the actuating arm 41.

Although but one embodiment of the present invention has been illustrated and described it will be appar-

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ent to those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention.

I claim:

1. A machine for forming curbing consisting of an elongated curb forming shoe having an opening in the upper portion thereof, a hopper for receiving curbing material mounted on said curb forming shoe and in communication with said opening, a ram disposed within said curb forming shoe and having a cross sectional configuration corresponding substantially thereto, a lever pivoted to said machine and extending outwardly therefrom for manual actuation and a link connecting said ram and said lever whereby said ram may be reciprocally moved in said shoe, a closure member positioned in said hopper and hinged to said ram and extending upwardly on an angle thereabove and adapted when moved by said ram to cover said

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opening and agitate material in said hopper.

2. The curb forming machine set forth in claim 1 and wherein side plates are secured to said closure member and moved therewith into and out of vertical slots in said hopper adjacent said closure member.

3. The curb forming machine set forth in claim 1 and wherein said hopper includes one substantially vertical wall with the free edge of said closure member slidably engaging the same.

4. The curb forming machine set forth in claim 1 and wherein one end of said curb forming shoe is curved outwardly so as to form an area of gradual separation with respect to curbing shaped therein and moving relative thereto.

5. The curb forming machine set forth in claim 1 and wherein a bottom member is affixed to said curb forming shoe in the area thereof in which said ram moves.

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