

[54] CURB FORMING MACHINE

[75] Inventor: **William T. James, III**, Canfield,
Ohio

[73] Assignee: **The Renner Company, Youngstown, Ohio**

[22] Filed: Dec. 20, 1971

[21] Appl. No.: 209,638

[52] U.S. Cl.....404/98

[51] Int. Cl. E01c 19/48

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

[56] **References Cited**

UNITED STATES PATENTS

2,541,547	2/1951	Robinson.....	94/46 R
2,932,875	4/1960	Butcher.....	94/44 X
3,053,156	9/1962	Jennings.....	94/46 R
3,261,272	7/1966	Jennings.....	94/46 R
3,280,711	10/1966	Jennings.....	94/46 R
3,363,524	1/1968	Catenacci.....	94/46 R
3,427,938	2/1969	Handy et al.....	94/46 R
3,472,134	10/1969	Wilbur.....	94/46 R
3,585,911	6/1971	Vlasic.....	94/46 R

FOREIGN PATENTS OR APPLICATIONS

1,203,436	8/1970	Great Britain.....	249/2
204,789	5/1939	Germany.....	94/46 R

Primary Examiner—Roy D. Frazier

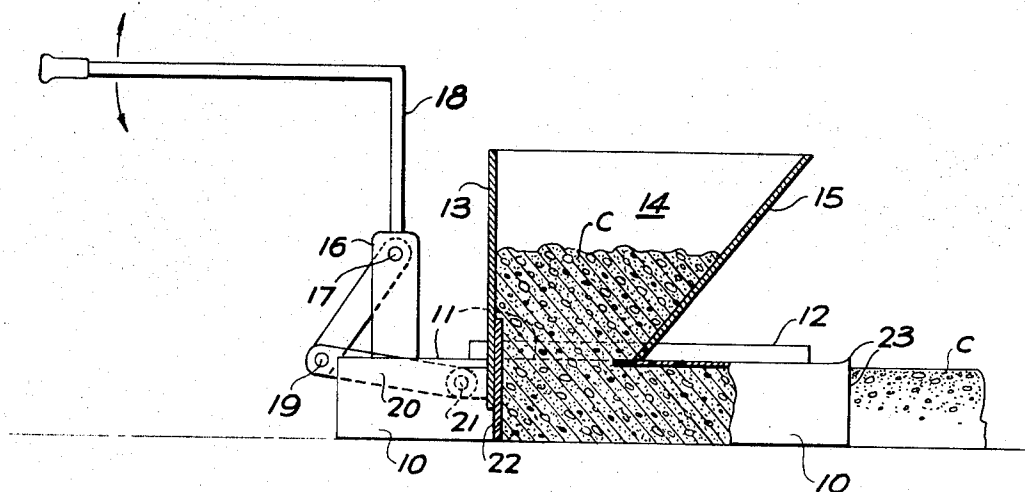
Assistant Examiner—Thomas J. Holko

Attorney—Webster B. Harpman

[57] **ABSTRACT**

A curb forming machine comprises a manually operable steerable device for forming asphaltic concrete or portland cement mixes having no slump characteristics into a uniform curb. The device carries a curb forming shoe with a hopper thereabove slidable in relation to the shoe and communicating therewith in one position and closed with respect thereto in another. A ram is attached to a wall of the hopper and is movable toward and away from the shoe. Movement of the ram and the hopper permits asphaltic or portland cement mix to fall by gravity into the shoe and the compaction of the same in the shoe when the ram moves toward the same. The reaction force moves the curb forming machine away from the newly extruded curbing.

4 Claims, 3 Drawing Figures



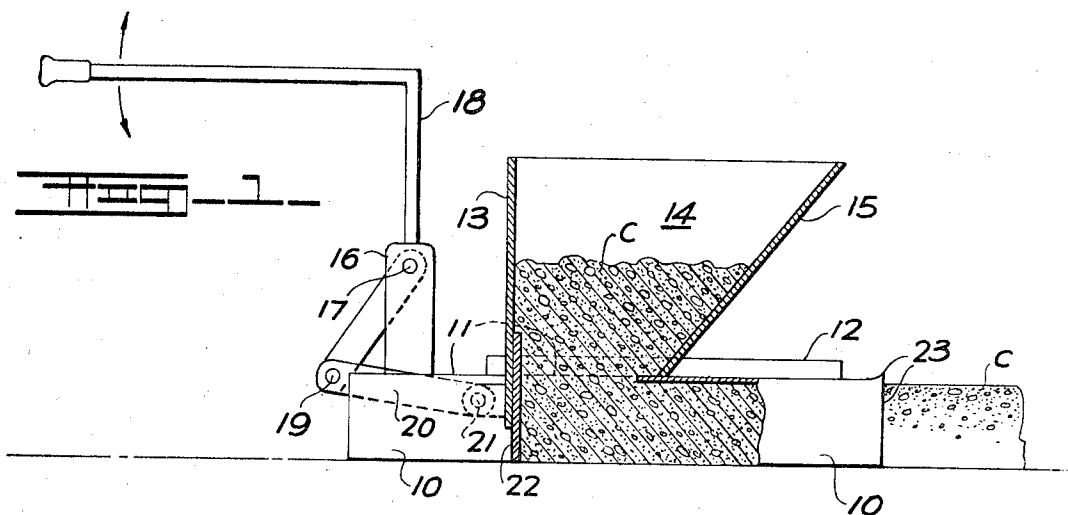


Fig. 1

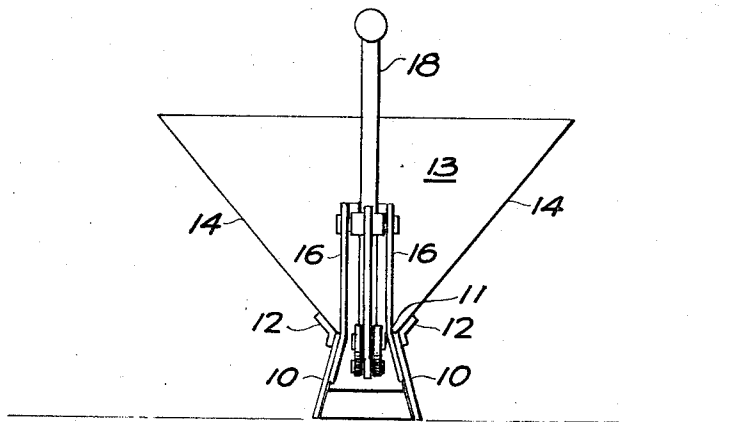
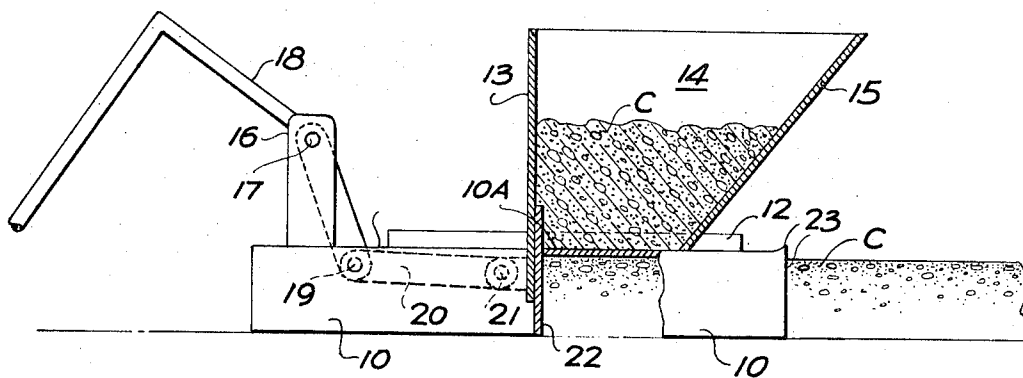


Fig. 3

INVENTOR.
William T. James, III.

BY

W.B. Hansen
ATTORNEY.

CURB FORMING MACHINE

BACKGROUND OF THE INVENTION

1. Field of the Invention

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

2. Description of the Prior Art

Prior structures of this type have generally comprised power driven extruding machines such as disclosed in U.S. Pat. Nos. 3,261,272, 3,280,711, 3,053,156, 3,427,938 and 3,363,524.

The prior art includes simpler 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 last of the aforesaid patents discloses a device comparable with the present invention on the basis of light-weight, portability, ease of operation and inexpensiveness. The present invention simplifies the curb forming machine concept and provides a simple easily formed combination hopper and ram movable relative to a shoe by manual means whereby a desirable curbing can be formed.

SUMMARY OF THE INVENTION

A curb forming machine comprises a device 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 and a ram formed integrally or joined to one another moves relative to an opening in the shoe through which the asphaltic concrete is delivered. A compaction stroke of the ram forces the asphaltic concrete into the shoe and compacts the same and at the same time moves the hopper so as close the opening communicating with the shoe and prevents asphaltic concrete or the like from entering the area behind the ram. Subsequent back and forth strokes of the ram compact the asphaltic concrete or the like and cause the curb forming device to slide along the curbing thus formed by the reaction forces generated in the compaction of the asphaltic concrete.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevation with parts broken away and parts in cross section illustrating the curb forming machine with the hopper in communication with the shoe.

FIG. 2 is a side elevation of parts in cross section and parts broken away with the hopper and the ram in position at the completion of a compaction stroke.

FIG. 3 is an end elevation of the curb forming machine seen in FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In its simplest form the curb forming machine of this invention consists of a shoe 10 of generally inverted U-shape with the forward end thereof, the left end as seen in FIGS. 1 and 2 of the drawings having a cutaway area 11 in the upper central section thereof and a pair of spaced rails 12 positioned longitudinally of the shoe 10 and one on either side of the cutaway area 11. A hopper consisting of a front wall portion 13 side wall portions 14 and 15 and an angularly inclined back wall 15 is slidably positioned on the shoe 10 between the rails 12 and so that the open bottom of the hopper will register with the cutaway area 11 in the upper portion of the

shoe 10 when the hopper is in position thereover as seen in FIG. 1 of the drawings.

By referring thereto it will be observed that a frame 16 is positioned vertically on the forward end of the shoe 10 with portions thereof extending downwardly thereinto through the cutaway area 11 and secured thereto as by welding as best seen in FIG. 3 of the drawings. The upper end of the frame 16 has a transverse pivot 17 to which a handle 18 is pivoted so as to form a lever with respect to the pivot 17 and the frame 16. The lower end of the lever 18 is pivoted as at 19 to a link 20 which in turn is pivoted as at 21 to the front wall 13 of the hopper and a ram 22 is attached to the inner or opposite side of the front wall 13 of the hopper and is of a configuration registering with the interior of the shoe 10 so as to movable longitudinally therewithin.

In FIG. 1 of the drawings the hopper and more particularly the open bottom thereof is shown in communication with the cutaway area 11 of the shoe 10 so that asphaltic concrete or the like positioned in the hopper and indicated by the letter C will flow downwardly into the shoe 10 and it will be observed that a finished section of curbing is shown extending out of the right end of the shoe 10 and it will be further observed that the right end of the shoe 10 is curved outwardly as at 23 so that the extruded curbing will not be marked by a sharp end line of the shoe as the same moves progressively to the left as a result of the reaction forces imparted thereto by movement of the ram 22 and the hopper by the lever 18 heretofore referred to.

By referring now to FIG. 2 of the drawings the lever 18 will be seen to have been moved into a lower position with the hopper and the ram 22 thereon sliding along the upper surface of the shoe 10 between the rails 12 so as to compact the asphaltic concrete C within the interior of the shoe 10 and whereby the reaction force of such compaction will move the shoe 10 to the left. By referring to FIG. 2 of the drawings it will be observed that as the hopper and the ram 22 thereon moves to the right as by manual motion imparted the lever 18 the reaction motion of the shoe 10 will be to the left so that the unbroken upper portion thereof indicated in FIG. 2 by the numeral 10a will confine the asphaltic material or the like to the area within the shoe so that appropriate compaction may take place. It will also be observed that because the hopper moves to the right, as seen in FIG. 2 of the drawings, relative to the shoe 10 no asphaltic concrete or the like can move into position in front of the ram 22 as the ram 22 is in effect part of the front wall 13 of the hopper.

It will be obvious to those skilled in the art that if desired means for steering the curb forming machine disclosed herein may be added thereto as for example some steering mechanism as taught in the aforesaid U.S. Pat. Nos. 3,261,272, 3,280,711 and 3,053,156 and which patents are owned by the assignee of this application.

The above described curb forming machine provides relatively easy and fast formation of a suitable extruded curbing from asphaltic concrete or portland cement mixtures having no slump characteristics and is versatile in that it can be used for forming curbing in various location wherein the larger, more complicated and have air curbing machines are not practical. Such locations may obviously include parking lot areas in which extruded curbing is used for defining driving lanes or

3

individual parking areas and the like as will occur to those skilled in the art.

Although but one embodiment of the present invention has been illustrated and described it will be apparent to those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention and having thus described my invention what I claim is:

1. A curb forming machine consisting of an elongated curb forming shoe having an opening in the upper portion thereof, a hopper for receiving curbing material slidably mounted on said curb forming shoe and movable from a first position in communication with said opening in the said shoe to a second position away from said opening a ram disposed within said curb forming shoe and having a cross sectional configuration corresponding substantially thereto said ram attached to said hopper and movable therewith and means to operate

4

said ram longitudinally within said shoe and said hopper longitudinally on said shoe.

2. The curb forming machine set forth in claim 1 and wherein said means for operating said ram and said hopper consists of a lever, means on said shoe pivotally engaging said lever and a link connecting said lever and said ram and hopper.

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

4. A curb forming machine set forth in claim 1 and wherein a pair of longitudinally extending spaced rails are positioned on said shoe one on either side of said opening therein and said hopper is slidably positioned therebetween.

* * * * *

20

25

30

35

40

45

50

55

60

65