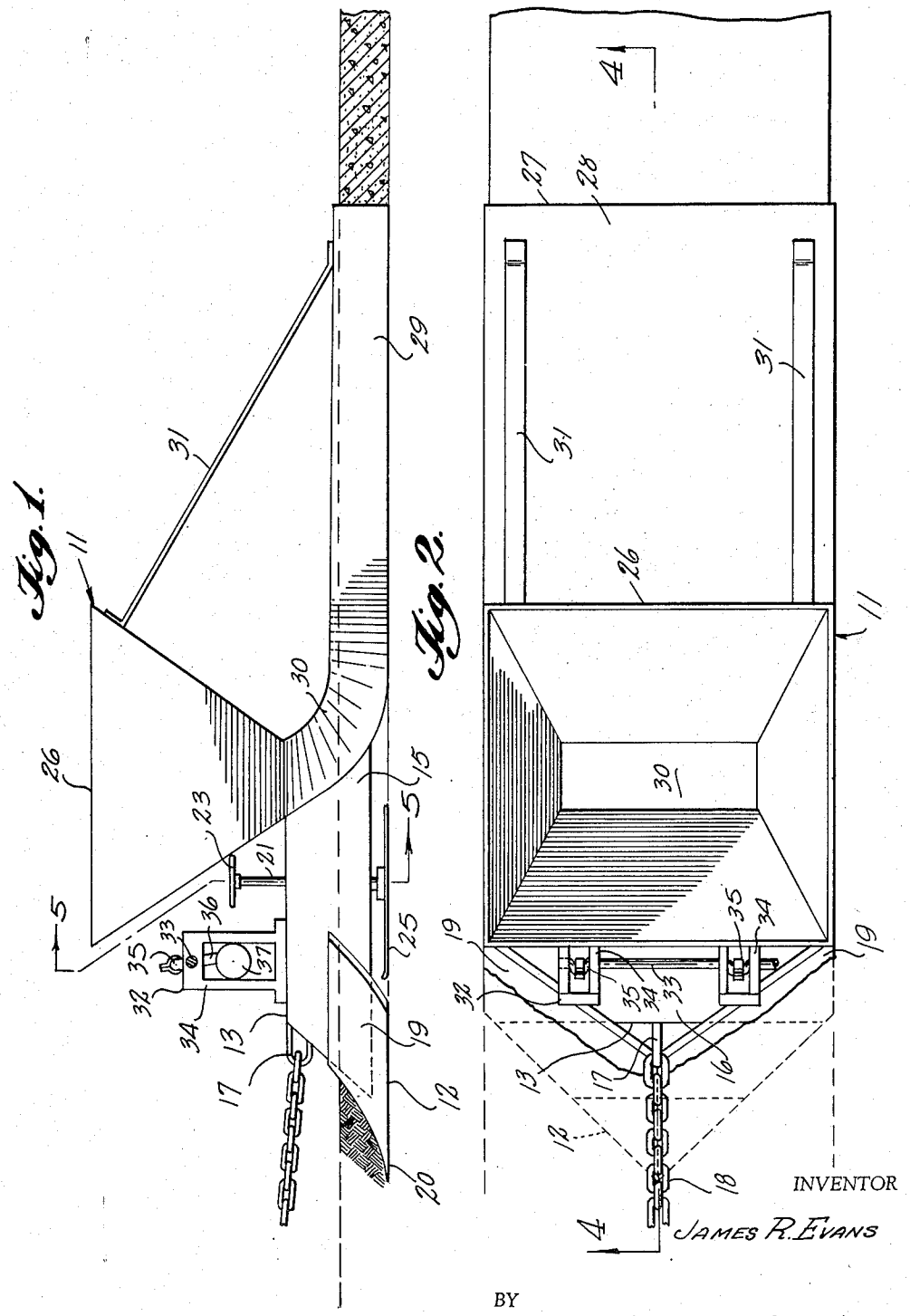
Jan. 5, 1954 J. R. EVANS 2,664,794

SIDEWALK GRADER AND PAVER

Filed March 7, 1952 2 Sheets-Sheet 1



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2 Sheets-Sheet 2

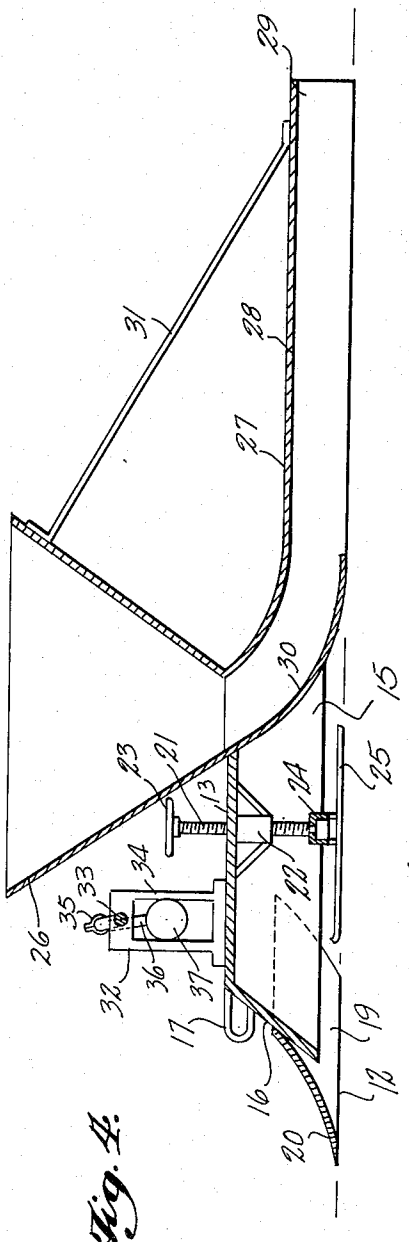


Fig. 4.

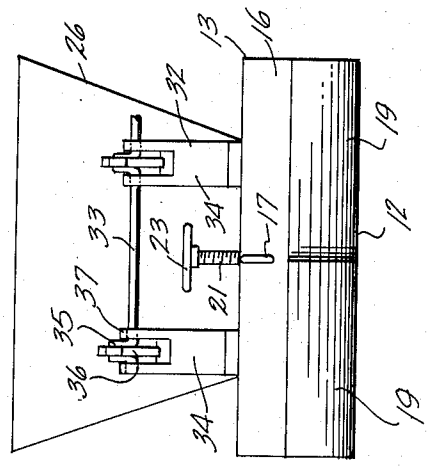


Fig. 3.

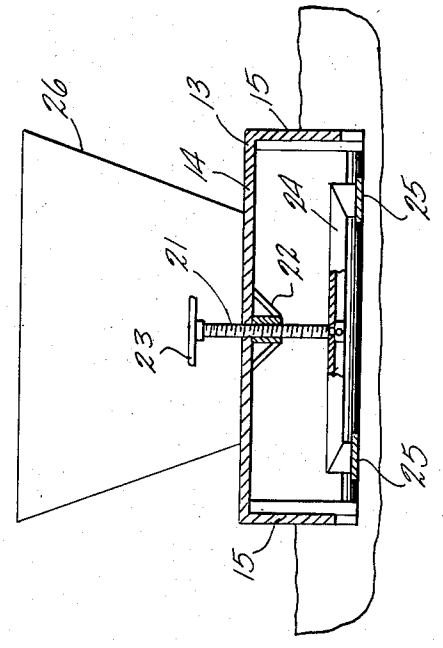


Fig. 5.

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Patented Jan. 5, 1954 2,664,794

UNITED STATES PATENT OFFICE

2,664,794

SIDEWALK GRADER AND PAVER

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Application March 7, 1952, Serial No. 275,260

2 Claims. (Cl. 94—46)

1

This invention relates to sidewalk laying apparatus, and more particularly to an improved device for simultaneously laying and forming a sidewalk slab.

A main object of the invention is to provide a novel and improved sidewalk slab laying apparatus which is simple in construction, which is easy to operate, and which is arranged to pour sidewalks of desired width without the use of extra forms or expensive hand operations.

A further object of the invention is to provide an improved sidewalk slab laying and forming machine which is inexpensive to manufacture, which is rugged in construction, which is adjustable to provide a desired depth of the sidewalk slab being laid, which provides even distribution of the cementitious material employed in forming the slab, and which levels, smooths, edges and forms the slab in a single operation.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

Figure 1 is a side elevational view of an improved sidewalk slab laying apparatus constructed in accordance with the present invention.

Figure 2 is a top plan view of the apparatus of Figure 1.

Figure 3 is a front end elevational view of the apparatus of Figures 1 and 2.

Figure 4 is a longitudinal vertical cross sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a transverse vertical cross sectional view taken on the line 5—5 of Figure 1.

Referring to the drawings, the improved sidewalk slab laying apparatus is designated generally at 11. The apparatus comprises a plow portion 12 secured to the forward end of a downwardly facing, hollow base member 13, said base member being generally channel-shaped, as shown in Figure 5, and including the top wall 14 and the respective depending vertical side walls 15, 15. The base member 13 is also provided with the downwardly and forwardly inclined front wall 16, and secured to the center of the top marginal portion of front wall 16 is rigid loop member 17 to which is attached the chain 18. Chain 18 is adapted to be secured to the reel of a winch or other suitable pulling means for moving the apparatus in a forward direction.

The plow member 12 comprises the forwardly converging, downwardly and forwardly inclined moldboard elements 19, 19 rigidly secured to the lower portions of the side margins of front wall 16, the moldboard elements 19, 19 merging to

2

define a sharp point 20 at the forward ends of the moldboard elements.

Designated at 21 is a vertical shaft threaded through the intermediate portion of the top wall 14 and supported in an internally threaded collar 22 secured to said wall 14, as shown in Figure 5. Shaft 21 is provided at its top end with the hand wheel 23 rigidly secured to said shaft. Rotatably connected to the bottom end of shaft 21 is a transverse, channel-shaped bar member 24 to the opposite ends of which are secured the longitudinally extending, ground-engaging shoes 25, 25. It will be apparent that by adjusting the threaded shaft 21 by means of hand wheel 23, the shoes 25, 25 may be raised or lowered to vary the height of the base 13 relative to the ground surface engaged by the shoes 25, 25.

Designated at 26 is a hopper supported by the rear portion of base member 13. Designated at 27 is a downwardly facing, relatively wide, longitudinally extending channel and having the top wall 28 and the side walls 29, 29. The bottom end of hopper 26 is connected to the channel 27 by a downwardly and rearwardly extending curved conduit 30, arranged as shown in Figure 4, said conduit 30 being arranged to discharge cementitious material from the hopper 26 into the space beneath the longitudinally extending, downwardly facing channel 27. The hopper 26 is rigidly braced to the rear portion of channel 27 by a pair of inclined strut rods 31, 31 rigidly connecting the upper rear marginal portion of hopper 26 to the rear portion of the top wall 28, said strut rods 31, 31 extending in vertical longitudinal planes inwardly adjacent the vertical longitudinal planes of the side walls 29, 29.

Mounted on the forward portion of the top wall 14 of base member 13 is a vibrator, designated generally at 32 and including a transverse shaft 33 rotatably mounted in a pair of upstanding frames 34, 34 disposed symmetrically on opposite sides of the vertical longitudinal center plane of base 13, said shaft 33 being formed with eccentric portions 35, 35 located in the frames 34, 34 and having pivotally connected to said eccentric portions the arms 36 carrying weights 37 slidably engaged in the respective frames 34 for vertical reciprocation therein. The transversely extending shaft 33 is driven by a suitable external driving means, not shown, and the rotation of shaft 33 communicates vertical reciprocatory movement to the weights 37, causing the device 32 to vibrate and causing vibrations to be transmitted through the base 13 to the hopper 26 and to the channel 27.

In operation, cementitious material, such as concrete, cement, or the like, is poured into the hopper **26**, said cementitious material descending through said hopper to the space beneath the longitudinal, downwardly facing channel **27**. The apparatus is pulled forwardly by any suitable means, such as the winch device above mentioned, causing the plow **12** to dig a rectangular furrow. The cementitious material is poured into said furrow through the conduit **30** and is leveled, smoothed, edged and formed by the channel **27** responsive to the forward movement of the device, the cementitious material being meanwhile distributed evenly by the vibration produced by the vibrator device **32**. As the rear end of the channel **27** leaves the formed slab, as the device is moved forwardly, the slab is substantially completed and ordinarily requires no further manual operations thereon except for minor touch-up operations.

Obviously, the device can be made in any desired size and width so that a sidewalk slab of any desired width may be poured by the use of an apparatus as above described.

While a specific embodiment of an improved sidewalk slab laying apparatus has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. A sidewalk slab laying apparatus comprising a base, a transverse bar member beneath said base, a plurality of longitudinally extending ground-engaging shoes secured to said bar member, a vertical shaft threaded through said base and rotatably secured to said transverse bar member, a plow secured to the forward end of said base

and comprising a pair of downwardly and forwardly inclined moldboard elements rigidly secured together and to said base, said moldboard elements merging in a sharp point at their forward ends, a hopper supported by said base, a downwardly facing, relatively wide, longitudinally extending channel, and a downwardly and rearwardly curved conduit connecting said hopper to said channel, said channel being arranged to receive cementitious material from said hopper and to form the material into a slab responsive to forward movement of the base, and a brace between the end of said channel and the rear wall of said hopper.

2. A sidewalk slab laying apparatus comprising a support, a downwardly facing, hollow plow having a downwardly and forwardly inclined tapered front wall, a vibrator mounted on said support, a plurality of ground-engaging longitudinal shoes disposed beneath said support rearwardly of said plow, means adjustably securing said shoes to said support, a hopper supported by said support rearwardly of said plow, a downwardly slab-forming longitudinal channel rearwardly of said hopper, and means for connecting said channel with said hopper, said channel being arranged to receive cementitious material from said hopper and to form the material into a longitudinal slab responsive to forward movement of the apparatus, and a brace between the end of said channel and the rear wall of said hopper.

JAMES R. EVANS.

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