June 14, 1960 D. JOSEPH 2,940,298

CEMENT DISPENSING DEVICE

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Fig. 2

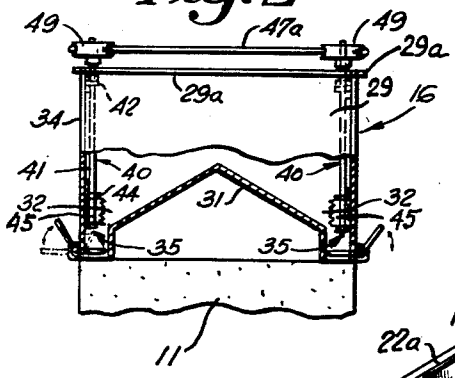


Fig. 1

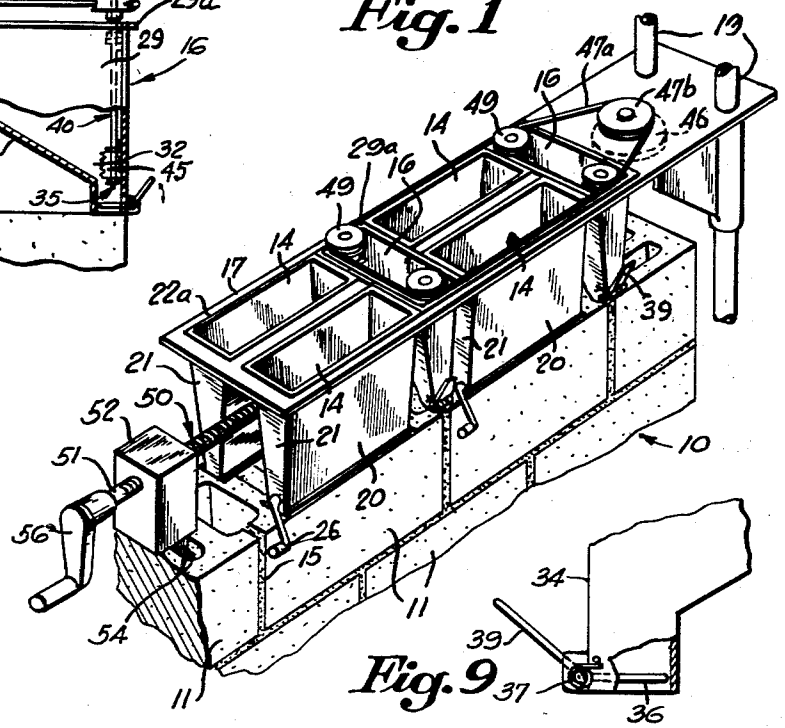
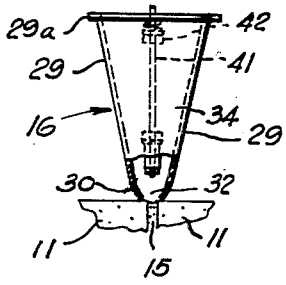


Fig. 3



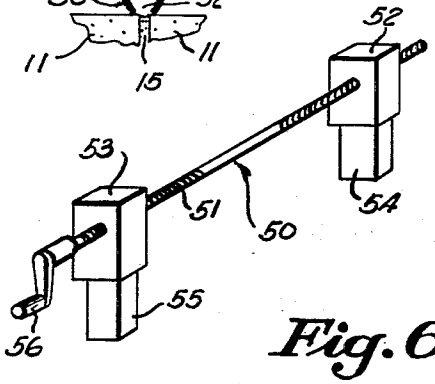
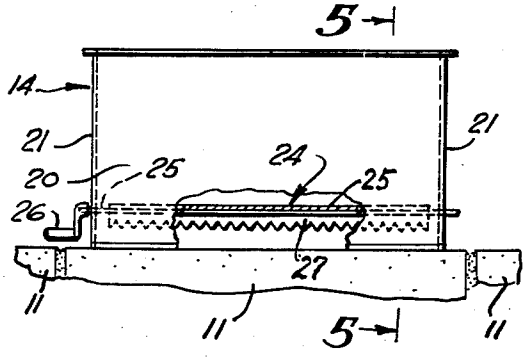


Fig. 6

Fig. 9

Fig. 4



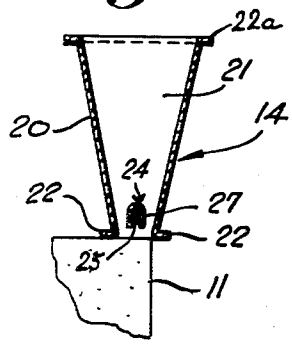
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Fig. 5



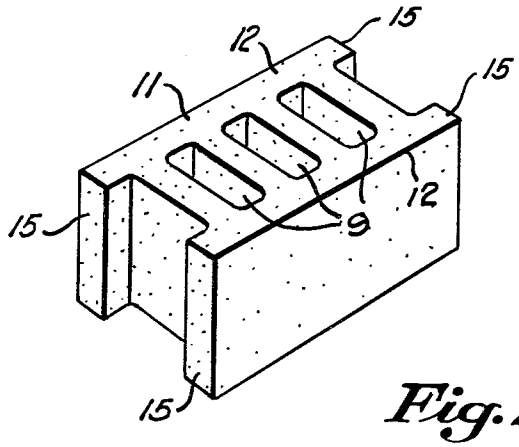


Fig. 7

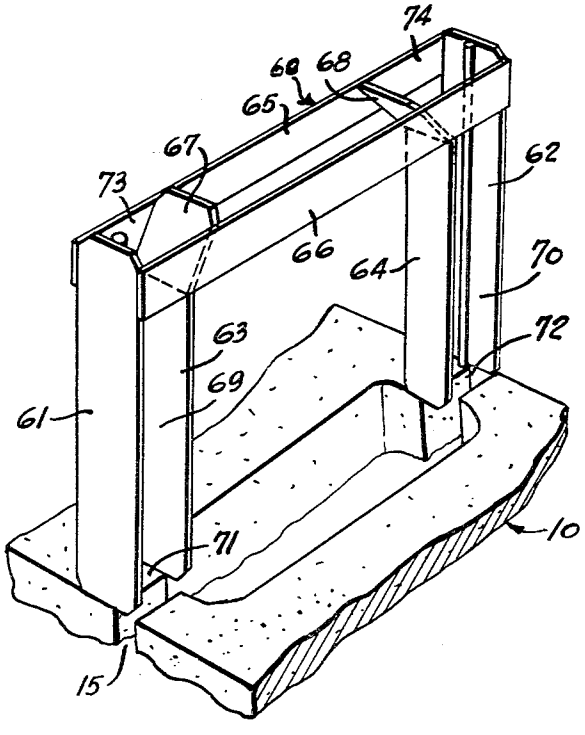


Fig. 8

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CEMENT DISPENSING DEVICE

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4 Claims. (Cl. 72—128)

This invention relates to improvements in devices for laying building members such as blocks, bricks, slabs, and the like, and more particularly relates to devices for dispensing cement for placement between adjacent building members.

It is an object of the present invention to disclose devices which will facilitate the construction of walls with building members such as blocks or the like.

A further object of the invention is to provide devices for the more perfect construction of walls with building blocks, bricks and slabs than heretofore possible.

Yet another object of the invention is to provide improved devices for the dispensing of cement for placement between adjacent building members.

Other objects of the present invention will be more apparent in the course of the following description of a preferred embodiment thereof.

This invention is an improvement upon that portion of applicant's copending application Ser. No. 387,579, filed October 22, 1953, now Patent No. 2,818,725, which relates to the dispensing of cement into the hollows in the laid-up building members and between adjacent ones of such members. The device of the invention is characterized by the greater ease of its manipulation, the positiveness of feeding of cement to the desired locations, and the completeness with which the hollows and joints in the laid-up structure may be filled with cement.

Briefly, the device of the invention in its preferred embodiment and when used with a laid-up structure of hollow blocks comprises at least two cement dispensing devices of different character, one of which extends generally longitudinally of the laid-up structure and dispenses cement on the top thereof at the location of the edges of the blocks. The other dispensing device extends generally transversely of the laid-up structure, and dispenses cement on top of the structure at the location of the forward and rear corners of a vertical joint between adjacent building members. A clamp extending between two blocks may be used to facilitate the operation.

The dispensing devices are mounted on a common supporting framework disposed beside the structure. The devices may be easily and quickly disposed over successive zones of the structure as it is progressively laid.

The invention will appear more clearly from the following detailed description when taken in conjunction with the accompanying drawing showing by way of example a preferred embodiment of the inventive concept.

In the drawing:

Figure 1 is a fragmentary view in perspective of an embodiment of the cement dispensing device of the invention.

Figure 2 is a view partially in vertical section and partially in side elevation of the device for dispensing cement upon the corners of the joints between building members.

Figure 3 is a view in end elevation of the mechanism of Figure 2.

Figure 4 is a view partially in vertical section and partially in side elevation of the mechanism of the device for dispensing cement upon the edges of the building members.

Figure 5 is a view in vertical section through the mechanism of Figure 4, the section being taken along line 5—5 of Figure 4.

Figure 6 is a perspective view of a clamp used for holding two blocks.

Figure 7 is a perspective view of a hollow block.

Figure 8 is a perspective view of a stopper which may be used for guiding the flow of cement.

Figure 9 is a side view, partly in section, of a portion of the dispenser shown in Figures 2 and 3.

The cement dispensing device of the invention is used to apply cement upon a portion of a wall, generally designated **10**, made up of hollow building blocks **11** (Fig. 7). Such blocks have outer edges **12** which are provided with cement dispensed by mechanism generally designated **14** in Figs. 1, 4 and 5. Adjacent blocks **11**, which are preferably laid up by apparatus such as that shown in application Ser. No. 387,579, when laid are spaced a short distance to form narrow crevices **15**. Cement to fill crevices **15**, thus to provide joints between the confronting vertical surfaces of adjacent blocks **11**, is dispensed by mechanism generally designated **16**.

Dispensing mechanisms **14** and **16** are carried by a laterally extending plate or framework **17** so as to lie in alignment above the top course of wall **10**. Framework **17** may be mounted on a support **19**, indicated diagrammatically in Figure 1, which may travel longitudinally of the wall, while the framework **17** may travel vertically with respect thereto, to allow the cement dispensing device to be positioned at the desired location above the top course of blocks. Support **19**, the specific details of which do not form parts of the present invention, may be, for example, similar to that shown in Figure 11 of application Ser. No. 387,579 for supporting cement receptacle of the prior application.

In the construction shown in Figure 1, the support **17** carries four dispensers **14** extending in pairs parallel to the direction of the blocks **11**, and two dispensers **16** extending transversely thereto. Obviously, this arrangement may be varied, if desired.

Proceeding now to a description of cement dispensing mechanisms **14** and **16**, each of the dispensers **14** comprises a container of symmetrical, trough-shape, having downwardly converging side walls **20** and spaced vertical end walls **21**. Each dispenser **14** in the embodiment shown is of a length slightly less than the length of a block **11**, and in operative position lies above an edge **12** of the block **11** as shown in Figure 1. The lower ends of sidewalls **20**, which are spaced a distance at least generally equal to the width of hollows in blocks **11**, are provided with oppositely laterally directed flanges **22**.

The upper ends of the walls **20** and **21** have flanges **22***a* which are attached to the plate **17** and by means of which the dispensers **14** are suspended from the plate **17**. To aid in the distribution of the cement each dispenser **14** is provided with a horizontal, longitudinally extending agitator means **24** positioned centrally of the mechanism **14** adjacent its mouth at the lower end thereof. Means **24** comprises a rod **25** journalled in opposite end walls **21**, and turned manually by a crank **26** on one end thereof. A U-shaped stirring member **27** having serrated longitudinal edges is secured to rod **25** so that the rod lies within the bight thereof.

Dispensers **16** lie transverse to dispensers **14**, and are spaced from the latter a distance such that while dispensers **14** are being used to apply cement to the edges

12 of a block 11, dispensers 16 are in position to dispense cement for filling crevices 15.

Each dispenser 16 comprises an upwardly open container of symmetrical trough-like shape. Such container has downwardly converging side wall 29, the lower ends of which converge still more steeply at 30. The bottom 31 of the container, inwardly from each nozzle device 32, to be described, at the front and rear of the container, is in the form of an inverted broad V, so as to lead the cement contents of the container downwardly to both nozzles 32. As shown, the container of mechanism 16 is disposed with its longitudinal axis above the space between blocks 11, and the container is of such length that the end walls 34 thereof lie generally in alignment with the vertical front and rear walls, respectively, of the adjacent blocks 11 forming the crevices 15 being treated. The dispensers 16 are suspended from the plate 17 by their upper flanges 29*a*.

Each nozzle 32 is formed between its respective end wall 34 and the confronting outer edge of bottom 31 of the container, such outer edges each being flanged to provide a vertical passage 35 between it and the end wall. Such passage may be of any desired horizontal section, that shown being round.

Each nozzle is provided with a disc-like closure member 36 pivoted to the respective end wall 34 by a horizontal pivot pin. Each closure member 36 is normally held in horizontal, nozzle closing, position by a coil spring 37 of such strength that it sustains the pressure of a full load of cement in container 16. Closure member 36 may be opened when desired by swinging in the appropriate direction a handle 39 connected thereto.

To insure delivery of cement to nozzles 32, an agitator means 40 is mounted above each nozzle. Such agitator comprises a vertical rod 41 rotatably mounted in top and bottom angle brackets 42 and 44, affixed to end wall 34. At the lower end of rod 41, immediately above closure disc 36, there is affixed a U-shaped stirring member 45 having serrated free edges, as shown. Rods 41 may be continuously rotated, when the device 16 is in use, by an electric motor 46 mounted on member 17 as shown in Figure 1, the motor 46 driving the agitators through the medium of a belt 47*a* entrained over a pulley 47*b* on the motor shaft and over pulleys 49 affixed to the upper ends of rods 41.

In operation, dispensers 14 and 16 are first filled with cement of suitable consistency. Mechanisms 16 dispense a desired amount of cement, when closure discs 36 are opened, over the front and rear corner zones of crevices 15 above which they are disposed. When sufficient cement has been thus dispensed, handles 39 of the closures are released, and flow of cement through nozzles 32 ceases. Simultaneously, the dispensers 14 which are actuated manually by means of the handles 26, dispense cement over the edges 12 of the blocks 11. The support 19 is then moved to position mechanisms 14 and 16 over a new, untreated section of the wall 10. The support may be thus successively moved in either direction, that is, either to the right or left.

After mechanisms 14 and 16 have thus performed their functions and have been moved to a new wall section, an operator trowels the cement dispensed by both the mechanisms.

Preferably the trowel work is done when the dispensing device has gone through several cycles, thereby leaving an appreciable length of wall section with dispensed cement therein and thereon, ready for finishing by the mason.

I have found that the dispensing device of the invention is of particular advantage in that it provides two separate dispensing mechanisms for performing what are essentially two different operations. Thus mechanism 14 is designed to dispense a large amount of cement quickly over an appreciable length, whereas mechanism 16 dispenses a relatively small amount of cement at the exact zone transversely of the wall where it is required to fill the crevices. The placing of nozzles 32 over the corners of the crevice insures full penetration by the cement into the crevices at such locations.

A clamp 50 shown in Figure 6 is used to hold together two blocks 11 during the work. The clamp 50 includes a threaded shaft 51 which carries two clamping members 52 and 53 provided with projecting plates 54 and 55, respectively. One end of the shaft 51 carries a handle 56. The plates 54 and 55 fit into inner openings 9 provided in the blocks 11. It is apparent that when the handle 56 is rotated, the members 52 and 53 will move either toward each other or away from each other to increase or diminish their grip upon the blocks 11.

Figure 8 shows a stopper or flow-controlling device 60 which may be used, if desired, in conjunction with a dispenser 16. The device 60 includes two outer bars 61 and 62 and two spaced inner bars 63 and 64 which are held together by transverse bars 65 and 66. The inner bars 63 and 64 have inclined surfaces 67 and 68, respectively, so that cement is guided into channels 69 and 70 formed between the outer and inner bars. In operation the stopper 60 is placed over the crevices 15 between two adjacent blocks, so that the lower ends 71 and 72 of the channels 69 and 70 are located directly above the crevices 15. The dispenser 16 is then moved into a position in which its dispensing openings are located directly above the upper ends 73 and 74 of the channels 69 and 70. Then the flow of cement may be effectively guided by the channels.

While there are above disclosed but a limited number of embodiments of the structure of the present invention, it is possible to produce other embodiments without departing from the inventive concept herein disclosed, and it is desired, therefore, that only such limitations be imposed on the appended claims as are stated therein.

What is claimed is:

1. A dispenser for simultaneously depositing cement upon the longitudinal edges of building blocks and into the crevices between successive building blocks which are in spaced longitudinal arrangement in the top course of a structure, the dispenser comprising at least one first elongated dispensing mechanism adapted to be located above a longitudinal edge of a building block for depositing cement thereon, at least one second elongated dispensing mechanism disposed at right angles to the first mechanism adjacent one end thereof for depositing cement into said crevice, a single frame connecting and supporting such mechanisms, the length of the first dispensing mechanism being equal to that of a building block, whereby when the first dispensing mechanism is located over a building block, the second dispensing mechanism will be located over the crevice adjacent said building block, the second mechanism having two spaced vertical dispensing nozzles, a driven agitator above each nozzle, and power means connected with said frame to drive both agitators, each of said agitators comprising a vertical shaft located within and above the nozzle, and a stirring member on the shaft adjacent the nozzle.

2. A dispenser in accordance with claim 1, comprising two first dispensing mechanisms located side by side for simultaneously dispensing cement upon opposite longitudinal edges of the same building block, said second dispensing mechanism extending transversely to the two first dispensing mechanisms next to adjacent ends thereof, all of said mechanisms having flanges carried by said frame, said frame enclosing the upper ends of said mechanisms, and a plate carried by said frame, said power means comprising a drive carried by said plate and connected with the shafts of said agitators.

3. A dispenser in accordance with claim 1, wherein said second dispensing mechanism comprises downwardly

converging side walls, end walls between said side walls and a bottom having the shape of an inverted V, said nozzles being located adjacent said end walls on opposite sides of said V-shaped bottom, and spring-loaded closure members connected with said end walls for closing said nozzles.

4. A dispenser in accordance with claim 1, wherein said first dispensing mechanism comprises downwardly converging side walls, the lower ends of said side walls forming an elongated slot, end walls between said side walls, a rod journalled in said end walls and extending above said slot, and an elongated stirring member having serrated edges and connected to said rod, said stirring member being U-shaped in cross-section and rotatable along with said rod.

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