Nov. 3, 1964 E. JUCHNIEWICZ 3,154,830

EMBOSSED ROLLER DEVICE FOR SIMULATING NATURAL STONES

Filed Feb. 18, 1963 2 Sheets-Sheet 1

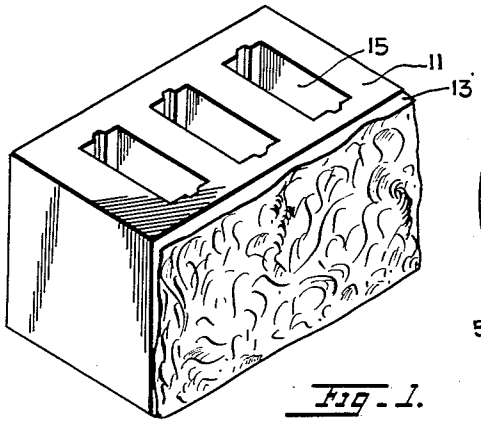


Fig. 1.

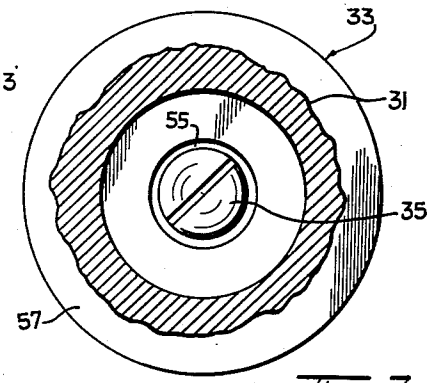


Fig. 3.

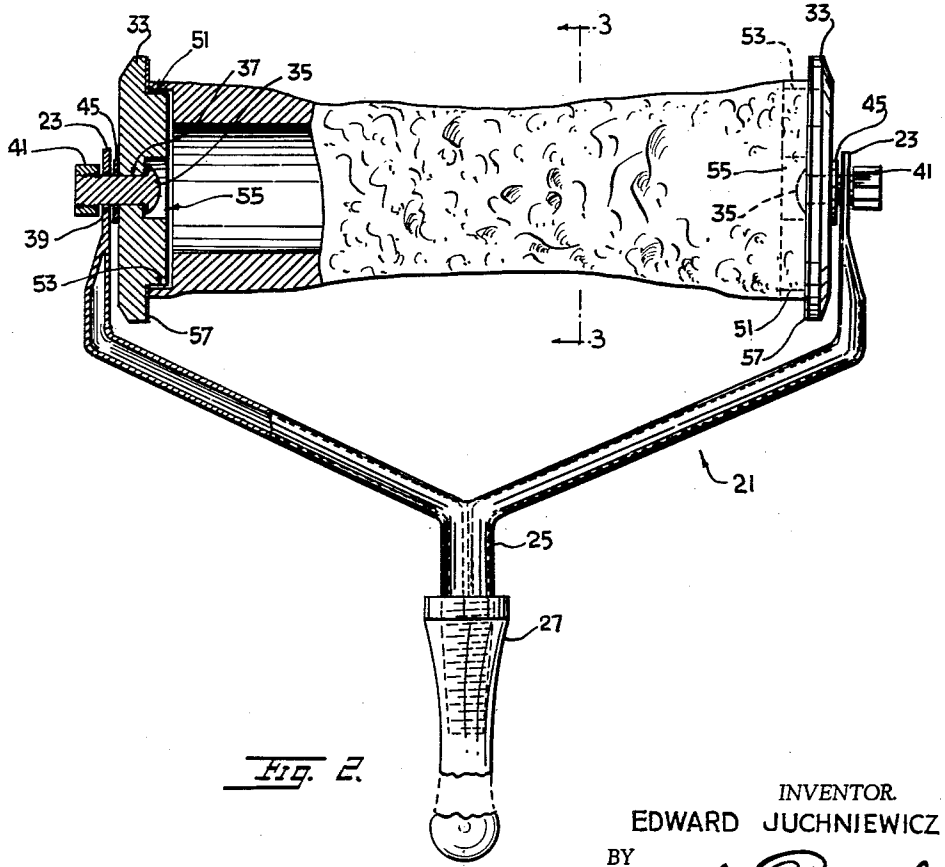


Fig. 2.

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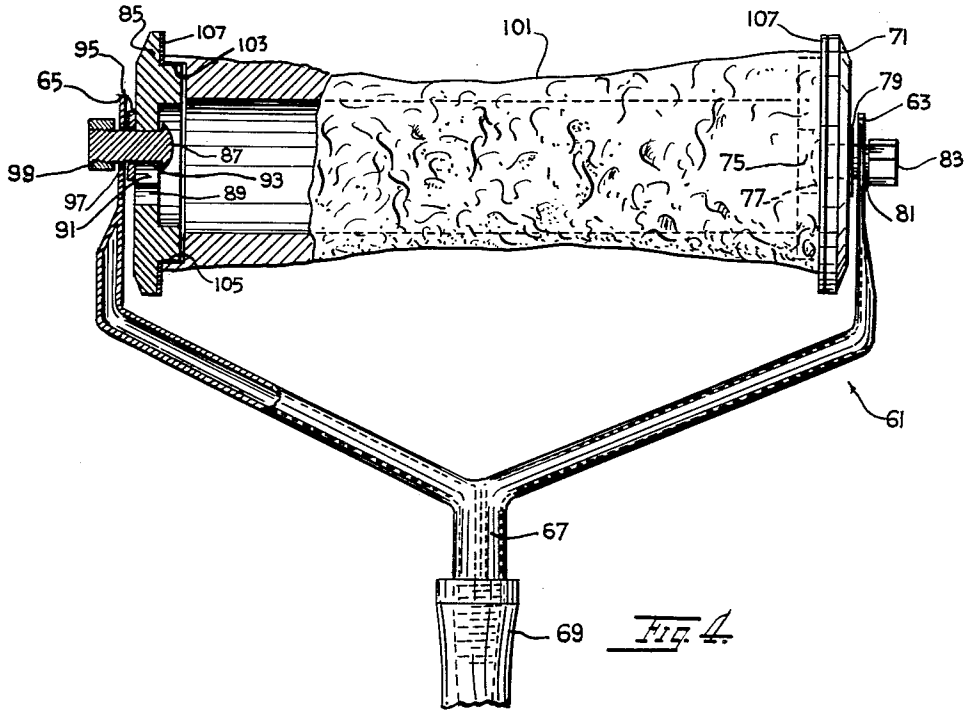


Fig. 4.

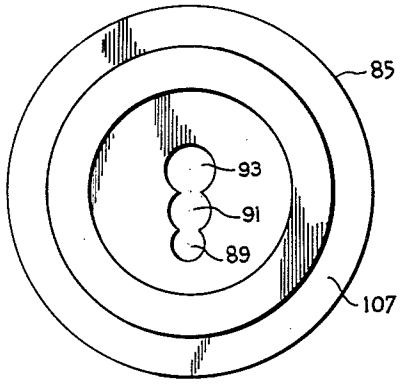


Fig. 5.

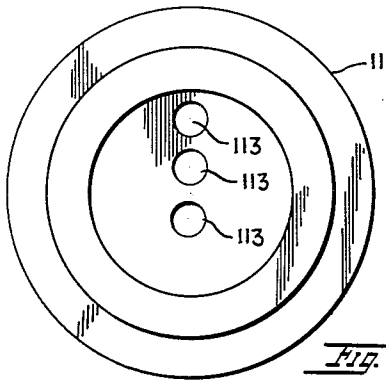


Fig. 6.

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EMBOSSED ROLLER DEVICE FOR SIMULATING NATURAL STONES

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5 Claims. (Cl. 25—1)

This invention relates to structural surfacing and more particularly to such surfacing having the appearance of stone.

The present invention finds ready application to structural units such as cinder blocks or bricks, the formation of simulated stone surfacing thereon and a tool for forming such simulated stone surface.

In the construction of residences and commercial establishments, it is often desired to avoid using common place wood and brick for exterior surfaces and in place thereof use stone. However, stone is very expensive material which is heavy and which must be cut, crated and shipped to the construction site. In an effort to avoid the expense of natural stone many substitutes have been offered to the construction trades. Many of these substitutes only appear to simulate natural stone from a distance, but when observed from close range the surface lacks depth. Improved simulated stone surfaces having a dimension in depth have been introduced but they must be formed on the supporting walls requiring the contractor to do tedious work on vertical walls sometimes at heights at which such work becomes very difficult and dangerous. Other such simulated stone surfaces may be formed from structural units having a surface applied thereto at the manufacturing plant by expensive machinery and requiring careful handling and packaging for delivery from the manufacturing plant to the construction site.

It is an object of this invention is to provide a novel tool for forming simulated stone surfaces on structural units.

Still another object is to provide a novel portable surface forming tool simple in construction and easy to assemble.

Yet another object is to provide a novel portable surface forming tool which is adjustable to provide a plurality of surfaces from a single set of components.

The present invention contemplates a roller having an irregular surface formed thereon and adapted to be mounted between spaced areas of a yoke-shaped support. The roller is passed over an aggregate applied to the surface of a structural unit to apply formations thereon simulating that of stone. Adjustment means may be provided to vary the appearance of the formations produced by a single roller thereby increasing the utility thereof.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

FIG. 1 is a perspective view of a structural unit having a simulated stone surface applied thereto in accordance with the present invention.

FIG. 2 is a view in partial section of a tool for forming the simulated stone surface on the structural unit of FIG. 1.

FIG. 3 is a structural view taken along lines 3—3 of FIG. 2.

FIG. 4 is a view in partial section of a modified form of the tool shown in FIG. 2.

FIG. 5 is a plan view of an end bell used in the modified tool of FIG. 4.

FIG. 6 is a plan view of yet another form of end bell

adapted for use on the forming tools of either FIG. 2 or FIG. 4.

A structural unit, such as a cinder block or brick, generally indicated by the numeral 11 (FIG. 1) has applied to a surface thereof an aggregate 13 such as concrete, mortar, plastic material or the like. When said aggregate has partially hardened it assumes a state wherein it is easily formable and any indentations, grooves, depressions or other changes in the surface thereof will remain as formed until aggregate 13 solidifies. When properly formed the surface of aggregate 13 and thereby structural unit 11 will simulate that of stone. Cores 15 are formed in structural unit 11 to lighten the weight thereof.

To facilitate the application of the simulated stone facing to structural unit 11 a forming tool 21 (FIG. 2) is utilized. A pair of spaced arms 23, formed from tubular steel or the like, are arranged in a substantially Y-shaped configuration terminating in an externally threaded shank 25. An internally threaded handle 27 is threaded onto shank 25 thus allowing for a firm grip on forming tool 21.

An irregularly surfaced roller 31 (FIGS. 2 and 3) is mounted between a pair of end bells 33 (FIGS. 2 and 3) each rotatively carried by an arm 23. An externally threaded securing member 35 such as a bolt or the like is passed through an aperture 37 formed in end bell 33 and an aperture 39 formed in arm 23 and then an internally threaded member 41 is threaded onto externally threaded member 35 to rotatively secure same in place as shown in FIG. 2. An annular-shaped washer 45 is mounted on each member 35 between end bell 33 and arm 23 to provide proper spacing of the elements.

Roller 31 is manufactured of steel or other formable rigid material having good wear properties. The irregular outer cylindrical surface thereof is provided with smooth flowing depressions and rises in such manner as to allow roller 31 to be easily and speedily moved over the aggregate to form the simulated stone surface thereon.

End bell 33 is manufactured from hard rubber or the like with a ridge 51 (FIG. 2) formed thereon to accommodate a lip 53 formed on roller 31. A recess 55 (FIGS. 2 and 3) is formed in the inner surface of end bell 33. A relatively thin flat annular ring 57 (FIGS. 2 and 3) is fitted around ridge 51 of end bell 33 to prevent wear on the inner surface of end bells 33.

To assemble forming tool 31 externally threaded members 35 are passed through aperture 37 of end bell 33, washers 45, apertures 39 of arms 23 and then internally threaded members 41 are threaded onto externally threaded members 35 to secure end bells 33 to arm 23. With rings 57 in place roller 31 is first set onto one end bell by seating lip 53 of roller 31 on ridge 51 of end bell 31. The inherent resilience of arms 23 allows for a slight spacing thereof sufficient to position the other end of roller 31 such that its lip 53 will seat on the other end bell 33. When roller 31 is properly disposed between end bells 33 the resilience of arms 23 will bias end bells 33 toward each other to prevent inadvertent extraction of roller 31 therefrom.

When it is desired to form a simulated stone surface on a structural unit 11 an aggregate of proper composition is applied to a surface thereof. When the aggregate has partially hardened forming tool 21 is disposed with the surface of roller 31 in contact with the aggregate and if desired with rings 57 in contact with the edges of the structural unit. Forming tool 21 is then drawn across structural unit 11. The irregular surface of roller 31 will form contours in the surface of the aggregate which, when the aggregate completely hardens, will give structural unit 11 the appearance of stone.

FIGS. 4 and 5 show a modified forming tool 61 having spaced arms 63, 65 terminating in a shank 67 upon which is mounted a handle 69. A first end bell 71 is mounted to arm 63 by first passing an externally threaded member 75 through an aperture 77 formed in end bell 71, a washer 79, an aperture 81 formed in arms 63, and securing an internally threaded member 83 on the end of member 75. Another end bell 85 is mounted to arm 65 by passing an externally threaded member 87 of proper diameter through either of apertures 89, 91, or 93 (FIGS. 4 and 5) formed in end bell 85, a washer 95, an aperture 97 formed in arm 65 and securing an internally threaded member 99 on the end of externally threaded member 87.

A roller 101 is inserted between end bells 71 and 85 by seating lips 103 formed on roller 101 on ridges 105 formed on end bells 71 and 85. Rings 10 (FIGS. 4 and 5) are placed on each end bell 71, 85 in a manner and for a purpose similar to that described above for rings 57 and end bells 33. When so mounted the end of roller 101 seated on end bell 85 will travel in an eccentric path about the axis of rotation through threaded members 75 and 87. Such eccentric motion will produce from a roller of a given external surface configuration a different surface on aggregate 13 than that which would be produced by the same roller traveling a non-eccentric path.

Should it be desired to produce yet another configuration, an externally threaded member of a proper diameter may be inserted in another one of apertures 89, 91, or 93 to effect movement of roller 101 through a different eccentric path. Additional effects would be produced by still the same roller if an end bell similar to end bell 85 were to be secured to arm 63 in place of end bell 71 and an appropriate externally threaded member similar to member 87 were used.

In the embodiment shown in FIGS. 4 and 5, apertures 89, 91 and 93 overlap and the reason that the threaded member does not move from aperture to aperture is because the threaded members are provided in different diameters.

An end bell 111 (FIG. 6) having a plurality of equal diameter apertures 113 may be used in place of end bell 85 to accomplish the same results. Apertures 113 being all of the same diameter require only one externally threaded member, however a space is required between each aperture thus limiting the number of apertures possible.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A tool for use on a structural unit having a formable aggregate applied to the surface thereof; comprising, a pair of spaced arms, connecting means interconnecting said arms a predetermined distance apart, said connecting means permitting limited resilient movement of said spaced arms either towards or away from each other; mounting means secured to each of said spaced arms for rotative movement with respect thereto, roller means disposed between said mounting means, said roller means having a longitudinal dimension greater in size than said predetermined spacing of said spaced arms whereby said spaced arms must be separated to allow disposition of said roller therebetween, said connecting means permitting said separation of said arms to allow disposition of said roller therebetween, said connecting means further resiliently maintaining said roller in rotative position between said spaced arms, at least one of said mounting means providing an adjustable positioner for the corresponding end of said roller when mounted thereon, said adjustable positioner including means for eccentrically mounting said mounting means to its respective arm, said eccentric mounting means consisting of spaced apertures formed in said mounting means along a radial line and a member adapted for positioning in one of said apertures and an aperture formed in one of said arms to rotatively interconnect said end bell to said arm.

2. A tool for use on a structural unit having a formable aggregate applied to the surface thereof; comprising, a pair of spaced arms, connecting means interconnecting said arms a predetermined distance apart, said connecting means permitting limited resilient movement of said spaced arms either towards or away from each other; mounting means secured to each of said spaced arms for rotative movement with respect thereto, roller means disposed between said mounting means, said roller means having a longitudinal dimension greater in size than said predetermined spacing of said spaced arms whereby said spaced arms must be separated to allow disposition of said roller therebetween, said connecting means permitting said separation of said arms to allow disposition of said roller therebetween, said connecting means further resiliently maintaining said roller in rotative position between said spaced arms, said mounting means including an end bell, securing means for rotatively mounting said end bell to one of said spaced arms, said end bell having formed thereon a raised portion coacting with a mating depressed portion formed in said roller, said end bell further extending radially a greater distance than said roller to provide guide surfaces for directing the movement of said roller across the formable aggregate, said end bells having formed therein apertures at the center thereof, said spaced arms also having formed therein apertures adapted to be aligned with the aperture in said end bells, an externally threaded member adapted for insertion in said aperture and having a head at one end larger in size than the diameter of either of said apertures, and an internally threaded member coacting with said externally threaded member to secure said externally threaded member in position to rotatively connect said end bell and said arm, a plurality of additional apertures formed in said end bell and disposed along a radial line, each said additional aperture being adapted for cooperation with said externally threaded member.

3. A tool for use on a structural unit having a formable aggregate applied to the surface thereof; comprising, a pair of spaced arms, connecting means interconnecting said arms a predetermined distance apart, said connecting means permitting limited resilient movement of said spaced arms either towards or away from each other; mounting means secured to each of said spaced arms for rotative movement with respect thereto, roller means disposed between said mounting means, said roller means having a longitudinal dimension greater in size than said predetermined spacing of said spaced arms whereby said spaced arms must be separated to allow disposition of said roller therebetween, said connecting means permitting said separation of said arms to allow disposition of said roller therebetween, said connecting means further resiliently maintaining said roller in rotative position between said spaced arms, said mounting means including an end bell, securing means for rotatively mounting said end bell to one of said spaced arms, said end bell having formed thereon a raised portion coacting with a mating depressed portion formed in said roller, said end bell further extending radially a greater distance than said roller to provide guide surfaces for directing the movement of said roller across the formable aggregate, said end bells having formed therein apertures at the center thereof, said spaced arms also having formed therein apertures adapted to be aligned with the aperture in said end bells, an externally threaded member adapted for insertion in said aperture and having a head at one end larger in size than the diameter of either of said apertures, and an internally

threaded member coacting with said externally threaded member to secure said externally threaded member in position to rotatively connect said end bell and said arm, a plurality of additional apertures formed in said end bell and disposed along a radial line, each said additional aperture being adapted for cooperation with said externally threaded member, said additional apertures all having the same diametrical size.

4. A tool for use on a structural unit having a formable aggregate applied to the surface thereof; comprising, a pair of spaced arms, connecting means interconnecting said arms a predetermined distance apart, said connecting means permitting limited resilient movement of said spaced arms either towards or away from each other; mounting means secured to each of said spaced arms for rotative movement with respect thereto, roller means disposed between said mounting means, said roller means having a longitudinal dimension greater in size than said predetermined spacing of said spaced arms whereby said spaced arms must be separated to allow disposition of said roller therebetween, said connecting means permitting said separation of said arms to allow disposition of said roller therebetween, said connecting means further resiliently maintaining said roller in rotative position between said spaced arms, said mounting means including an end bell, securing means for rotatively mounting said end bell to one of said spaced arms, said end bell having formed thereon a raised portion coacting with a mating depressed portion formed in said roller, said end bell further extending radially a greater distance than said roller to provide guide surfaces for directing the movement of said roller across the formable aggregate, said end bells having formed therein apertures at the center thereof, said spaced arms also having formed therein apertures adapted to be aligned with the aperture in said end bells, an externally threaded member adapted for insertion in said aperture and having a head at one end larger in size than the diameter of either of said apertures, and an internally threaded member coacting with said externally threaded member to secure said externally threaded member in position to rotatively connect said end bell and said arm, a plurality of additional apertures formed in said end bell and disposed along a radial line, each said additional aperture being adapted for cooperation with said externally threaded member, said additional apertures each having a diameter different than any other of said additional apertures, and a plurality of externally threaded members each having a diameter corresponding to a diameter of one of said additional apertures.

5. A tool for use on a structural unit having a formable aggregate applied to the surface thereof; comprising, a pair of spaced arms, connecting means interconnecting said arms a predetermined distance apart, said connecting means permitting limited resilient movement of said spaced arms either towards or away from each other; mounting means secured to each of said spaced arms for rotative movement with respect thereto, roller means disposed between said mounting means, said roller means having a longitudinal dimension greater in size than said predetermined spacing of said spaced arms whereby said spaced arms must be separated to allow disposition of said roller therebetween, said connecting means permitting said separation of said arms to allow disposition of said roller therebetween, said connecting means further resiliently maintaining said roller in rotative position between said spaced arms, said mounting means including an end bell, securing means for rotatively mounting said end bell to one of said spaced arms, said end bell having formed thereon a raised portion coacting with a mating depressed portion formed in said roller, said end bell further extending radially a greater distance than said roller to provide guide surfaces for directing the movement of said roller across the formable aggregate, said end bells having formed therein apertures at the center thereof, said spaced arms also having formed therein apertures adapted to be aligned with the aperture in said end bells, an externally threaded member adapted for insertion in said aperture and having a head at one end larger in size than the diameter of either of said apertures, and an internally threaded member coacting with said externally threaded member to secure said externally threaded member in position to rotatively connect said end bell and said arm, a plurality of additional apertures formed in said end bell and disposed along a radial line, each said additional aperture being adapted for cooperation with said externally threaded member, said additional apertures each having a different diametrical size and being disposed in overlapping relationship one with respect to the other with the aperture diameter increasing in dimension as the aperture center is positioned further from the radial center of said end bell.

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