

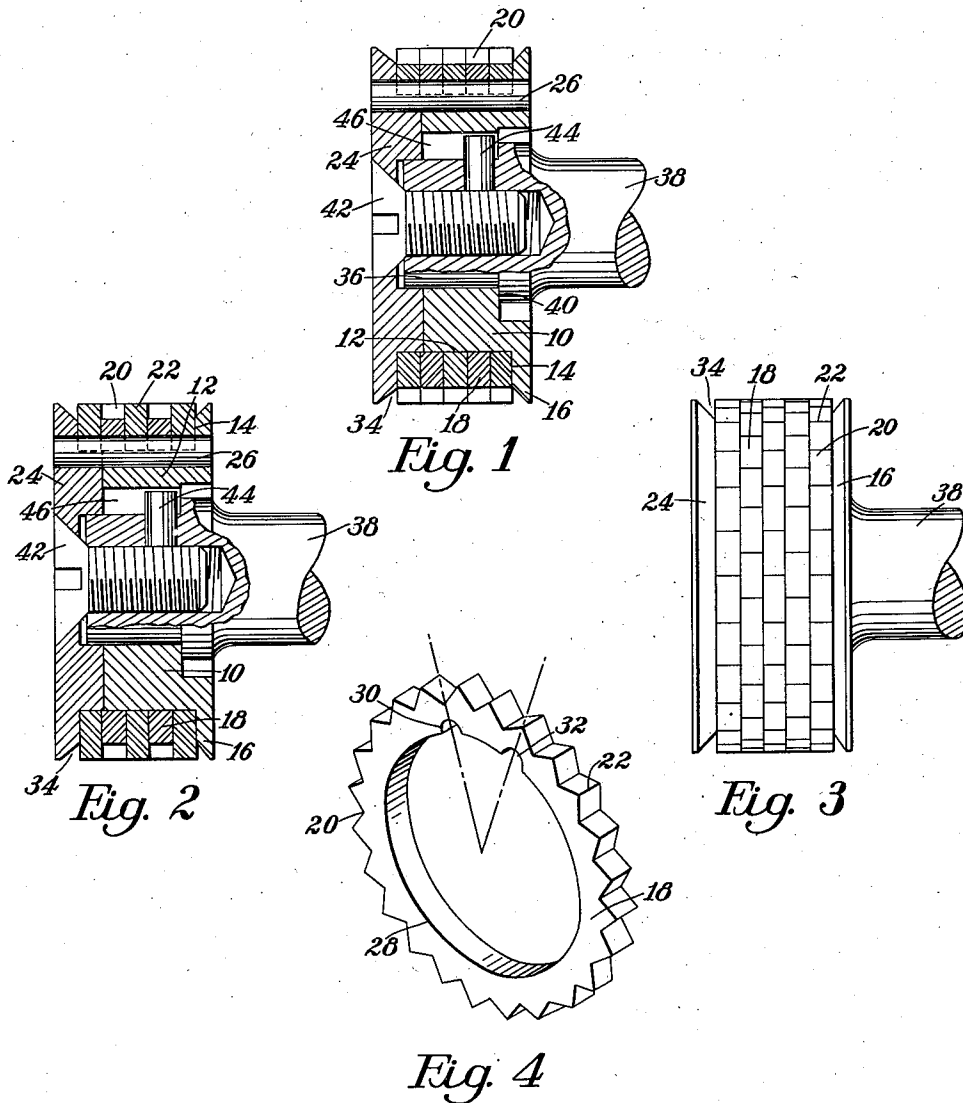
March 29, 1949.

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2,465,376

CEMENT-APPLYING ROLL

Filed April 27, 1945



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UNITED STATES PATENT OFFICE

2,465,376

CEMENT-APPLYING ROLL

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Application April 27, 1945, Serial No. 590,687

6 Claims. (Cl. 91—67.8)

1

This invention relates to cement-applying rolls and is herein illustrated as embodied in a roll which comprises a plurality of members disposed end to end and bound together to make a substantially cylindrical structure.

It is well understood that, in the application of coatings, such as adhesives, hereinafter termed "cements," greater or lesser quantities are required for different kinds of work in order to get a good bond and, since the manufacturers of cement-applying machines must devise an arrangement which will be suitable for all kinds of work, it is desirable to have the applying roll of such machines constructed from a plurality of parts which may be assembled in different relations in accordance with the coating which is to be applied.

Accordingly, an object of the invention is to provide an improved built up, or assembled, applying roll which may readily be put together in different ways enabling the quantity of cement applied by the roll to be varied.

In accordance with features of the invention and as herein illustrated, the cement-applying roll comprises terminal portions at least one of which has a hub and intermediate annular body portions supported on the hub. These annular portions have notched peripheries, and interengaging means, such as a key and a plurality of keyways, are provided to effect either an alined relation or a staggered relation of the notches on the adjacent members when assembled. In the illustrated construction, dual keyways are provided on the inner peripheries of these intermediate members, and one keyway is radially alined with a notch while the other is radially alined with a tooth or land.

These and other features of the invention will best be understood from a consideration of the following specification taken in connection with the accompanying drawings, in which

Fig. 1 is a diametrical section along the axis of the roll and showing the notches of adjacent sections alined;

Fig. 2 is a similar view showing the notches of adjacent sections staggered;

Fig. 3 is an elevation of the roll arranged as in Fig. 2; and

Fig. 4 is an angular view of one of the intermediate, annular cement-applying members.

The cement-applying structure comprises a terminal member 10 having a hub 12 (Fig. 1) adjacent to one end of which there is a shoulder 14 forming one face of a flange 16 tapered at its periphery. Disposed on this hub 12 are annular

2

applying members or body portions 18 having a series of notches 20 extending transversely of their peripheries and, as herein illustrated, the lands between the adjacent notches are in the form of sharp-edged teeth 22. The exact design of the corrugated peripheries of these members may be varied in accordance with the character of the work to be treated. These intermediate annular members 18 are held against endwise movement on the hub 12 by another terminal flanged member 24 held against rotation with respect to the first terminal member 10 by means of a key 26 extending in a direction parallel to the axis of the roll and, as illustrated, taking the form of a pin.

Spaced selective positioning means are provided on the successive annular members to enable them to be alined so that the notches 20 in adjacent members are either in register or are staggered. These positioning means are formed on the inner periphery 28 of each annular member as keyways 30 and 32, one or the other of which cooperates with the key 26. It will be noted that each keyway 30 is adjacent to a notch 20 on the periphery of the applying members, whereas each keyway 32 is adjacent to an intermediate land or tooth 22. The radial positions of these two keyways with respect to the periphery of a member are shown (Fig. 4) by the dot-dash radial lines drawn in the plane of one side face of one annular member 18 and, from an inspection of this, it will be seen that the keyways are spaced by a distance proportional to the pitch distance between a land and an adjacent notch or an integral multiple thereof; in other words, the angle between the keyways may be the same as the pitch angle between a notch and an adjacent tooth or it may be a multiple of that angle. Viewed in another aspect, the distance between the keyways along the inner circumference has the same proportion to the distance between a notch and a land or a multiple thereof as the radius of the inner circumference bears to the radius of the outer circumference. When these intermediate members are assembled on the hub 12 with the keyways 30 all in engagement with the key 26, then, the resulting structure will be arranged, as shown in Fig. 1, so that, on the periphery of the assembled roll, there will be rows of transverse notches extending across the periphery of the roll. It will be noted also that peripheral cement-carrying grooves 34 are formed between the tapered flanges of the terminal members 10, 24 and the adjacent intermediate members 18. Consequently, the terminal members are

part of the cement-applying structure and may also be called terminal applying members.

This assembled structure is positioned on the reduced end portion 36 of a rod 38 and brought against a shoulder 40 thereon. It is clamped in this position by means of a headed screw 42 bearing against the outer terminal member 24 and having a threaded engagement with a socket in the end of the rod 38. To prevent rotation of the assembled structure upon the rod, a key in the form of a radially extending pin 44 is brought into engagement with a keyway 46 formed inside the hub of the terminal member 10. When this roll is mounted in a cement-applying machine (not shown), the rod 38 will be rotatably mounted and may be either connected to or integral with a driven shaft in the machine.

If, on the other hand, the annular body portions 18 are assembled as shown in Figs. 2 and 3, then, the notches 20 of one annular member 18 will be positioned beside the teeth 22 of the adjacent member and will form on the periphery of the roll a series of pockets of limited axial extent which will receive cement from a suitable source and apply it to the work in a plurality of globules. There is, with this arrangement, no lateral displacement of the cement on the roll by the pressure of the work and, consequently, a greater quantity is transferred to the work than is the case with the arrangement shown in Fig. 1.

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

1. In an applying roll, a series of applying members the peripheries of which have a series of transverse notches with intermediate lands, each of said members having a plurality of alining positioning means spaced by an angle which is proportional to the pitch angle between a notch and an adjacent land, and means for holding said members in a unitary structure.

2. An applying roll comprising a shouldered member having a hub portion, a plurality of body portions supported on said hub, the peripheries of said body portions being provided with a series of transverse teeth separated by interposed notches, and means for interconnecting the hub and the body portions constructed and arranged to permit the positioning of adjacent body por-

tions on the hub with the teeth in or out of alinement.

3. An applying roll comprising a hub, a key on said hub, body portions fitting the hub and provided with corrugated peripheries comprising a series of teeth and interposed notches, said body portions also having on their inner periphery a plurality of key-receiving ways, one of which is alined with a tooth and the other of which is alined with a notch on the periphery, and means for holding said body portions on the hub.

4. In an applying roll, a rod having a shouldered portion, applying members on said rod one of which abuts the shoulder, said members being held together on the rod by fastening means on the rod engaging an applying member which is away from the shoulder to draw it against the other members and the latter against the shoulder, the peripheries of some of said members having notches and intermediate lands, and means for alining the notch of one member with the intermediate land of an adjacent member.

5. In an applying roll, end flanges at least one of which is provided with a hub portion, a key in the hub portion extending parallel to the axis of the roll, and a series of annular body portions between said end flanges and mounted on the hub portion, the peripheries of said annular body portions having a series of notches with intermediate lands, and also having on their inner peripheries a plurality of key-receiving ways one of which is alined with a notch on the outer periphery and another of which is alined with a land thereon.

6. In an applying roll, a rod having a reduced end portion and a shoulder adjacent thereto, terminal and intermediate applying members carried by said reduced portion, means for drawing said members against the shoulder of the rod, some of said intermediate members having toothed peripheries with intermediate notches, interengaging means between a terminal member and said intermediate members including selective coacting means on one of said intermediate members radially alined with a tooth and a notch on the peripheries thereof respectively.

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No references cited.