May 1, 1928. 1,668,142

J. D. CONGER

HEATED ROLLER

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Fig. 1.

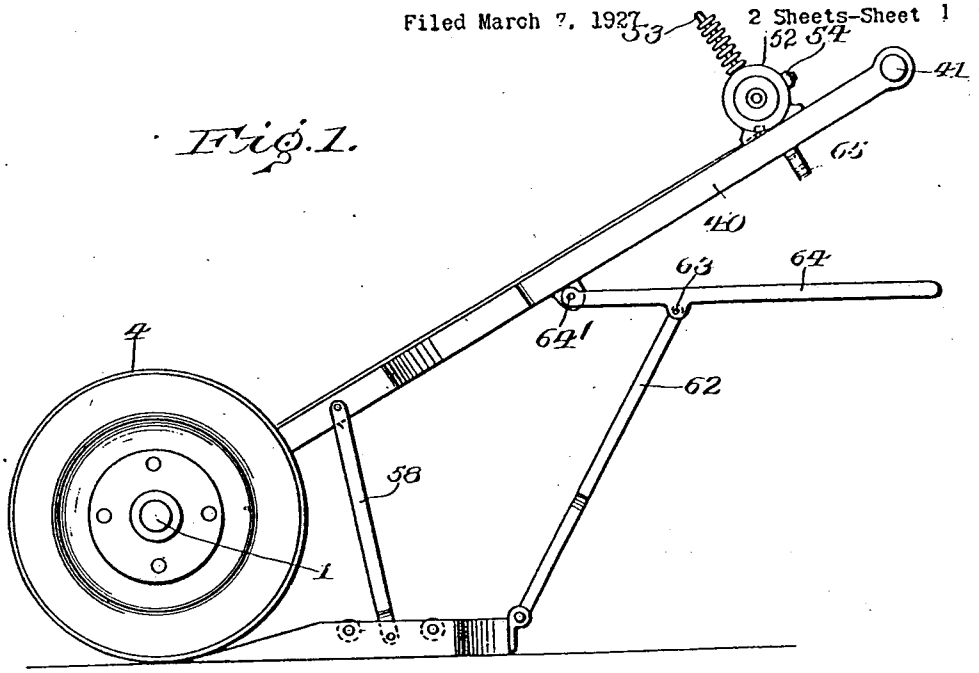
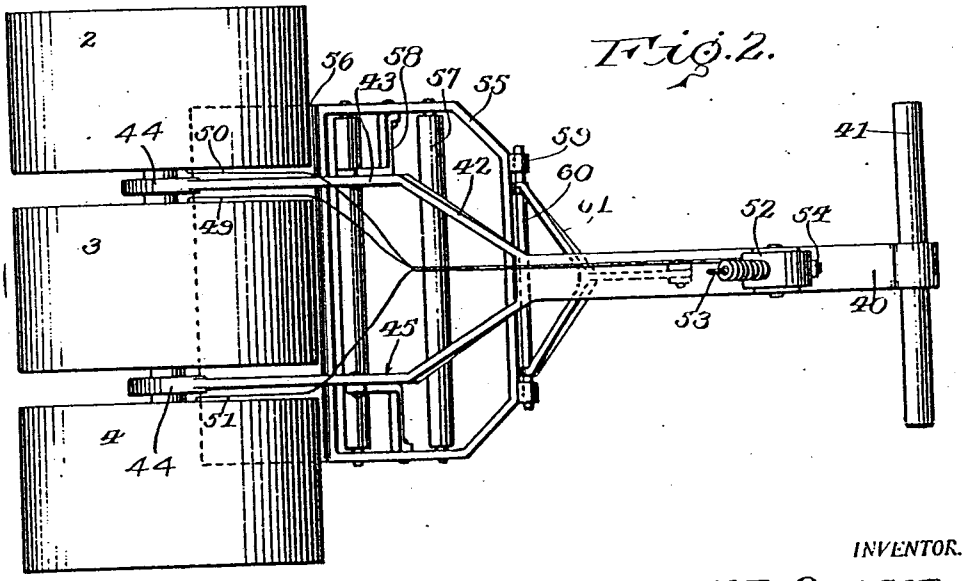


Fig. 2.



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Fig. 3.

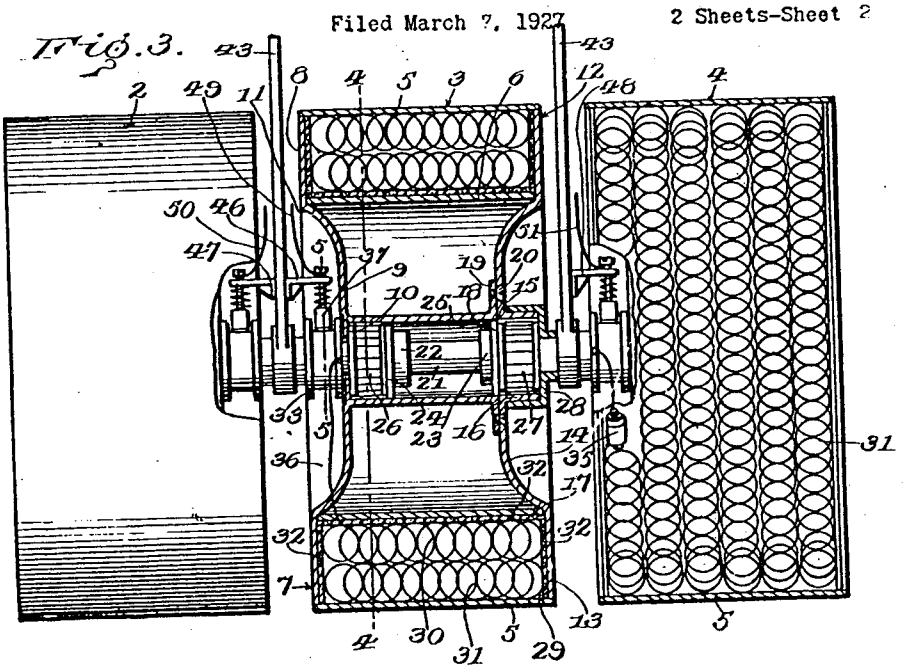


Fig. 4.

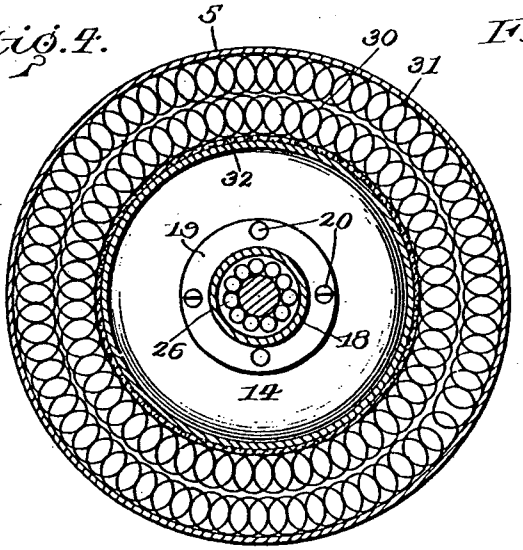
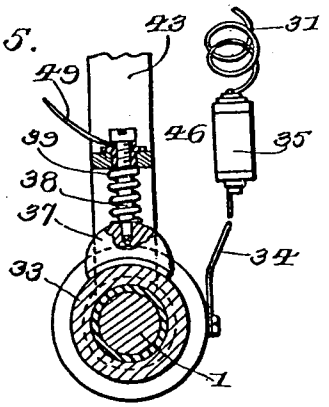


Fig. 5.



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UNITED STATES PATENT OFFICE.

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HEATED ROLLER.

Application filed March 7, 1927. Serial No. 173,482.

This invention relates to an electrical combined smoothing, heating and securing device for floor coverings, designed primarily for use in connection with linoleum, but it is to be understood a device in accordance with this invention, can be employed for any purpose or in any connection for which it is found applicable, and the invention has for its object to provide, in a manner as hereinafter set forth, a device of such class for smoothing and making pliable the floor covering, such as linoleum when it is crimpy and cold as well as simultaneously with the aforesaid functions drying the cement which is employed for connecting the covering to the floor.

A further object of the invention is to provide, in a manner as hereinafter set forth, a device of the class referred to not only embodying the objects aforesaid, but further providing that when a deadening felt is interposed between the linoleum and floor to expeditiously dry the cement between the felt and linoleum to secure them together and further for expeditiously drying the cement between the felt and the floor for securing the former to the latter, as well as for absorbing the moisture in the felt to prevent such moisture from expanding the floor when the latter is dry, whereby when the moistened floor becomes dry it contracts and breaks the linoleum, but as the device will absorb the moisture in the felt, the objection of expansion and contraction with respect to the floor is overcome.

A further object of the invention is to provide, in a manner as hereinafter set forth an electrical combined smoothing, heating and securing device for expeditiously securing to a floor, linoleum laid thereon when the latter is to be cemented to the floor and further whereby the device overcomes the necessity of employing a heavy cement to connect the linoleum in position.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a device for the purpose referred to, which is simple in its construction and arrangement, strong, durable, compact, thoroughly efficient in its use, expeditious in its action, readily assembled and comparatively inexpensive to set up.

With the foregoing and other objects in view the invention consists of the novel construction, combination and arrangement of parts, as hereinafter more specifically described and illustrated in the accompanying drawings wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which fall within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:

Figure 1 is a side elevation of an electrical combined smoothing, heating and securing device for floor coverings in accordance with this invention.

Figure 2 is a top plan view thereof.

Figure 3 is a fragmentary view of the device in sectional plan.

Figure 4 is a section on line 4—4 Figure 3.

Figure 5 is a section on line 5—5 Figure 3.

A device in accordance with this invention comprises a shaft 1 upon which are revolubly mounted a set of combined smoothing and heat applying elements, preferably three in number, arranged in spaced relation and referred to generally by the reference characters 2, 3 and 4. As each of said elements is of the same construction, but one will be described, as the description of one will apply to the other. Each of said elements is in the form of a roller preferably of eight inches in diameter and having a bearing surface of fifteen inches in width, but it is to be understood that the size of the roller can be as desired. Each of said elements consists of an annular body portion 5 having arranged therein and spaced therefrom a shell 6, with the body thereof in transverse section of less length than the length of the body portion 5 in transverse section. Arranged within the body portion 5, as well as being secured thereto in any suitable manner, is a side member 7 formed of a flat annular outer portion 8 and an inner concaved portion 9 formed with an axial opening 10. At the point of joinder of the portion 8 with the portion 9 a seat 11 is provided for the shell 6. The outer face of the portion 8 of the member 7 is flush with one edge of the body portion 5. Arranged within the body portion 5 and flush with the other edge thereof is a side member 12 formed of a flat outer portion 13 and a cup-shaped or concaved inner portion 14 provided with a centrally arranged opening 15 of greater diameter than the opening 10. Projecting outwardly from the cup-shaped portion 14 and forming a continuation of the wall of the opening 15

is an annular collar 16. At the point of joinder of the outer portion 13 with the inner portion 14 of the member 12 a seat 17 is provided for the shell 6. Formed integral with the inner face of the cup-shaped portion 9 of the side member 7 is a sleeve 18 of a diameter greater than the diameter of the opening 10 and of an inner diameter corresponding to the diameter of the opening 15. The sleeve 18 is formed at its free end with a laterally extending annular flange 19 which abuts against the inner face of the cup-shaped portion 14 of the member 13 and is fixedly secured therewith by the holdfast devices 20.

The shaft 10 extends through each of the elements of the set axially thereof and that part of the shaft 1, which is arranged within a sleeve 18 and indicated at 21 is provided with a pair of spaced collars 22, 23. Against the collar 22 and opposing the member 7, as well as being spaced therefrom, is a plate 24 and against the collar 23, that is the outer face thereof, is arranged a plate 25. Arranged within the sleeve 18 and interposed between the plate 24 and the side member 7 is a bearing device 26 and positioned against the plate 25 and arranged within the collar 16 is a bearing device 27. Secured to the flange 16 and surrounding the shaft 1 is a cap member 28 which maintains the bearing device 27 within the collar 16.

The body portion 5, in connection with the shell 6, the outer portion 8 of the side member 7 and outer portion 13 of the side member 12 provides an annular chamber 29 for inner and outer electrical heating units 30, 31 respectively and each of said units is formed of a series of opposed circular coils. The inner and side walls of the chamber 29 are provided with a lining of any suitable non-heat conducting material, preferably asbestos, and which is indicated at 32.

Mounted in the cup-shaped portion 9 of the side member 7 and upon the shaft 1 is a distributor 33 of the peripherally grooved type and which is insulated from the shaft 1 and also insulated from the side member 7. The distributor 33 is suitably connected with a side member 7 so as to bodily revolve with that element with which it is associated. Leading from the distributor to the heating unit 31 is a circuit conductor 34 having interposed therein a thermostat 35 for controlling the temperature of such unit. Leading from the distributor 33 to the heating unit 30 is a circuit connection 36.

The lining 32 is employed with respect to the heating unit 30, 31, to direct the heat outwardly at the tread portion of the smoothing and heating element and to arrest the heat in a lateral direction sidewise and an inward direction towards the shaft 1. The temperature of the outer heating unit 31 is not to exceed from 180 to 200 degrees and is controlled by the thermostat 35, as when the heating unit 31 has its temperature past 200 degrees the thermostat 35 will act to automatically cut off the supply of current to such unit. The inner heating unit 30 will stand three hundred and seventy-five degrees and when above two hundred degrees is used to obtain a quick heat. Associated with the distributor 33 is a spring controlled brush 37 against which rides the distributor when the smoothing and heating element revolves. The brush 37 is of arcuate contour and carries a stem 38, provided with a controlling spring 39. The stem 38 is threaded. The supporting means for the brush 37 will be hereinafter referred to.

The device is manually propelled and for such purpose a handle 40 is employed and which carries at its upper end a bar 41 providing hand grips. The lower part of the handle 40 is in the form of a yoke having each of its arms formed with an inwardly inclined upper part 42 and a lower part 43 which is disposed longitudinally. The part 42 extends inwardly at an angle with respect to the upper end of the part 43. The lower end of the part 43 is provided with means, as at 44 for detachably connecting the handle 40 to the shaft 1. The yoke shaped lower part of the handle 40 is referred to generally by the reference character 45 and is of a width to straddle the inner element 3. One of the arms of the yoke-shaped lower portion 45 of the handle 40 is formed with a pair of oppositely extending lateral brackets 46, 47, the former extending into the cup-shaped portion 9 of the side member 7 of the element 3 and the latter extending into the cup-shaped portion 9 of the side member 7 of the element 2. The other arm of the yoke shaped lower portion 45 of the handle 40 carries a laterally extending bracket 48 which extends into the side member 7 of the element 4. When the elements 2, 3 and 4 are set up the side member 7 of the element 3 opposes the side member 7 of the element 2 and the side member 12 of the element 3 opposes the side member 7 of the element 4. The brackets 46, 47 and 48 have connected therewith and insulated therefrom the shanks 38 of the brackets 37. Connected to the shank 37 which is supported by the bracket 46 is a circuit conductor 49. Connected to that shank 38 supported by the bracket 47 is a circuit conductor 50 and connected to that shank 38 supported by the bracket 48 is a circuit conductor 51.

Mounted on the handle 40 in proximity to the top thereof, is an automatic winding reel 52, for a circuit conductor 53, which is adapted to be connected with a course of

electrical energy. The reel 52 is provided with a two-way switch 54 and extending from the reel 52 are the circuit conductors 49, 50 and 51 and which are controlled by the switch 54 as the latter is electrically connected with the conductor 53 and is adapted to be electrically connected with the conductors 49, 50 and 51 when the switch is actuated.

Carried by the handle 40 is a lifting device for the set of combined smoothing and heating elements and which is employed for lifting such elements, while hot, from out of contact with the linoleum and for supporting such elements in such position. The lifting device comprises a frame 55, provided at its forward end with a tapered shoe 56 of a length to engage under the elements of the set, see dotted line showing in Figure 2. The frame 55 has mounted therein a plurality of spaced rollers 57 disposed lengthwise with respect to the shoe 56. Pivotally connected to the arms of the yoke-shaped portion 45 of the handle, as well as depending therefrom, and further pivotally connected to the frame 55 is a pair of links 58. The frame 55 at its rear end is formed with a pair of spaced tubular bosses 59, supporting a pivot rod 60 to which is connected a V-shaped member 61 provided with an upstanding bar 62, which is pivotally connected as at 63, to a rearwardly directed handle member 64 having its forward end pivotally connected as at 64', with the handle 40. Now with reference to Figure 1 if the handle member 64 is swung downwardly the shoe 56 will be forced under the set of elements and elevate the same, then on a rearward movement of said elements they will slide up on the frame 55 and upon the rollers 57. The handle 40 is provided with a latch 65 for connecting the handle members 64 therewith whereby the frame 55 will be elevated and positioned rearwardly with respect to the set of smoothing and heating elements.

When the device is used, with the heating units in action, it will be moved over the linoleum, make the latter pliable, as well as smooth it, and at the same time dry the cement which is employed for connecting the linoleum to the floor or to the felt and also the felt to the floor. The operation as aforesaid will be expeditiously carried out. The device when active, will also provide for the absorbing of the moisture from the felt when the latter is interposed between the linoleum and the floor, under such conditions overcoming the expansion and contraction of the floor. The device will further provide for quickly drying the cement causing the adhering of the linoleum in the position to which it has been laid and take up all moisture to overcome expansion relative to the floor. When the device is used, it is not necessary to employ a heavy cement which at present is used, as heavy cement is open to the objection that it will not dry readily and cause the surface of the floor to look rough and wavy.

It is thought the many advantages of an electrical combined smoothing, heating and securing device for floor covering, in accordance with this invention, can be readily understood, and although the preferred embodiment is as illustrated and described yet it is to be understood that changes in the details of construction can be had which will fall within the scope of the invention as claimed.

What I claim is:—

1. A device for the purpose set forth comprising a set of endwise opposed revoluble floor covering smoothing and electrical heating elements having the heating units thereof in a normally open circuit, a supporting shaft common to said elements of said set, a handle connected with and extended rearwardly from the the shaft, circuit forming means for said units including a windable conductor, an automatic windable reel on the handle for the conductor, and a switch on the reel.

2. A device for the purpose set forth comprising a set of endwise opposed revoluble floor covering smoothing and electrical heating elements having the heating units thereof in a normally open circuit, a supporting shaft common to the elements of said set, a handle connected with and extended rearwardly from the shaft, circuit forming means for said unit including a windable conductor, an automatic windable reel on the handle for the conductor, a switch controlling said circuit forming means, and manually operable means suspended from said handle for synchronously elevating the elements of said set.

3. A device for the purpose set forth comprising a set of endwise opposed revoluble floor covering smoothing and electrical heating elements, each having a pair of heating units in a normally open circuit, a supporting shaft common to said elements, a handle connected with said shaft, circuit forming means common to one of the units of each of said elements, circuit forming means common to the other unit of each of said elements and including a thermostatic controlling means therefor, an automatic windable reel carried by the handle and provided with a switch for the said circuit forming means, and conducting means leading from an electrical source, windable on said reel and electrically connected with said switch.

4. A device for the purpose set forth comprising a set of endwise opposed revoluble floor covering smoothing and electrical heating elements, each having a pair of heating units in a normally open circuit, a support-

ing shaft common to said elements, a handle connected with said shaft, circuit forming means common to one of the units of each of said elements, circuit forming means common to the other unit of each of said elements and including a thermostatic controlling means therefor, an automatic windable reel provided with a switch for the said circuit forming means, conducting means leading from an electrical source, windable on said reel and electrically connected with said switch, and a manually operated elevating means for said elements arranged rearwardly of these latter and suspended from said handle.

5. A device for the purpose set forth comprising a set of endwise opposed revoluble floor covering smoothing and electrical heating elements having the heating units thereof in a normally open circuit, a supporting shaft common to the elements of said set, a handle extended rearwardly from the shaft, circuit forming means for said unit including a windable conductor, an automatic windable reel for the conductor and carried by the handle, a switch controlling said circuit forming means when carried by the reel, manually operable means suspended from said handle rearwardly of and for synchronously elevating the elements of said set, and means coacting with the handle for latching said elevating means in inactive position.

6. A device for the purpose set forth comprising a set of endwise opposed revoluble floor covering smoothing and electrical heating elements, each having a pair of heating units in a normally open circuit, a supporting shaft common to said elements, a handle connected to said shaft, circuit forming means common to one of the units of each of said elements, circuit forming means common to the other unit of each of said elements and including a thermostatic controlling means therefor, an automatic windable reel carried by the handle and provided with a switch for the said circuit forming means, conducting means leading from an electrical source, windable on said reel and electrically connected with said switch, a manually operated elevating means for said elements suspended from said handle rearwardly of said elements, and means for latching said elevating means in inactive position.

In testimony whereof, I affix my signature hereto.

JONATHAN D. CONGER.