Aug. 23, 1932. W. F. GRUPE 1,873,578

CORK PADDING FOR IRONING MACHINES

Filed Oct. 13, 1930

Fig 1

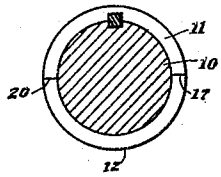


Fig 2

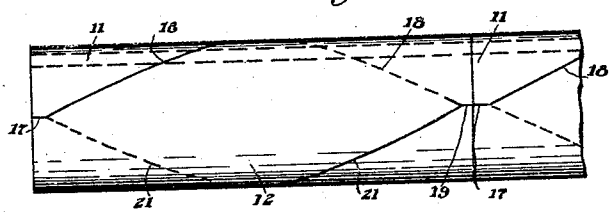


Fig 3

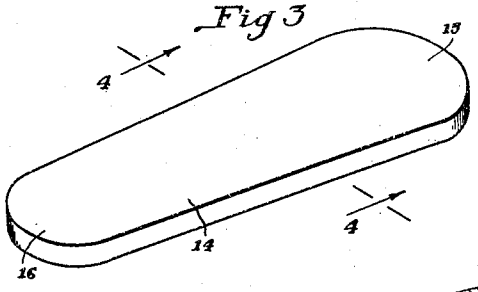


Fig 4

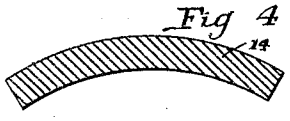
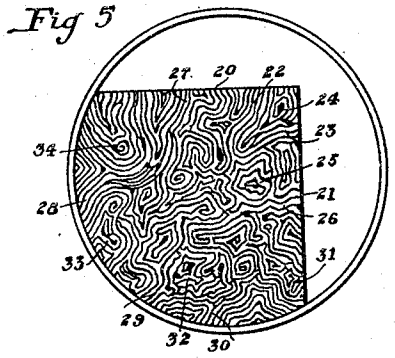


Fig 5



INVENTOR

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by his atty

Walter F Kaufman

Patented Aug. 23, 1932 1,873,578

UNITED STATES PATENT OFFICE

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CORK PADDING FOR IRONING MACHINES

Application filed October 13, 1930. Serial No. 488,501.

This invention relates to paddings for rolls and the like of ironing and other laundering machines.

According to the present invention, the pad is formed from a mass of substantially flat cork particles or like material molded and bonded to one another whereby the product is of high utility for use as padding for rolls of ironing and other laundering machines, and also as padding for flat and slightly curved types of machines such as garment pressing machines.

In my copending application, entitled Cork envelopes for laundry rolls, filed June 9, 1924, and bearing Serial No. 719,009, Patent No. 1,833,461, I have set forth a cork envelope formed of substantially flat particles of cork molded and bonded to form an interbonded mass of cork particles, in which the cork particles in the resulting facing for the roll are disposed substantially parallel to the direction of pressure to which the roll facing or flat bed pad is subjected during the stage of ironing or the like operation.

The present invention distinguishes from my co-pending application Serial No. 5,089 filed January 27, 1925, for a cork padding for laundry rolls in which application I have described and claimed a resilient facing for ironing and like rolls formed of a mass of inherently flat cork particles interbonded to one another in more or less overlapping relation to dispose the flat faces of the particles substantially at right angles to the direction of pressure exerted during the stage of ironing or the like.

In the present invention, the mass is formed of cork waste known commercially as cork wool. Such cork wool usually comprises substantially flat particles of varying thicknesses and superficial areas similar to wood shavings and of varying lengths, widths and thicknesses, more or less twisted or intermatted with one another; preferably, the commercial cork wool is broken up by means of a grinding or similar machine.

The cork wool is charged into a mold of any suitable type and compressed and baked. The baked mass after cooling consists of cork particles which are more or less flattened out in varying directions and which form felted masses. The cork particles of the respective masses are interbonded to one another and to contacting particles of adjacent masses, the interbonding being effected at spaced locations by the resins natural in cork with varying magnitudes of non-bonded relation and intervening air spaces of varying extents.

Further features and objects of the invention will be more fully understood from the following detail description and the accompanying drawing, in which

Fig. 1 is an end elevation of a laundry roll provided with a cork facing embodying my invention;

Fig. 2 is a side elevation of Fig. 1, but showing the roll and its facing broken away at one side;

Fig. 3 is a top perspective view of a substantially flat pad embodying my invention;

Fig. 4 is a section on 4—4 of Fig. 3; and

Fig. 5 is a magnified view showing generally the character of intermatting and interbonding of the cork particles at one corner of the pad.

Referring to Figs. 1 and 2, the roll 10 is of any approved or regulation type employed in laundrying and similar machines.

In Figs. 1 and 2, the facing for the roll 10 is indicated as formed of two lengths 11, 12 extending serially along the length of the roll 10 but it will be understood that the number of sections may be varied as desired.

Each length of roll facing is preferably formed of sections extending peripherally to serve as a complete envelope about the effective surface of the roll 10. The engaging lateral edges of such sections are preferably of a contour whereby the engagement of the sections with the roll proper and with the key is most effectively attained.

It will be understood that in the use of a cork facing embodying my invention, the cork facing may be secured by shellac or other adhesive to the roll and that the cork facing may be surrounded by sheathings of linen, cotton or the like, sewed by stitchings or equivalent means so as to be held tautly about the effective faces of the cork sections.

In Figs. 3 and 4, I have shown a form of

pad 14 suitable for use on the so-called flat types, as in garment ironing or pressing machines and similar types, wherein the pad is positioned on the lower steam chest member or equivalent, the upper face of which is usually slightly convex. However, such upper surface may be flat and my pad of corresponding shape.

Such substantially flat pad 14 is usually of enlarged diameter at one edge 15 and of a reduced diameter at its opposite edge 16, and may be of any desired thickness.

A circular shaped facing such as the facing formed by sections 11, 12, may be produced pursuant to the general procedure of charging the mold and baking as is described in my aforesaid patent; in the present application the cork wool is charged into a mold formed of two concentric mold members, the space between the two mold members conforming to the thickness of the resulting annular mold product, i. e., the unitary section. The cork wool is charged into the mold in successive charges, and an annular plunger passed through the mold to compress the charge to the desired degree of compression. Successive charges of cork wool are continued and compressed in a like manner and to like extent until the mold has been filled. A closure plate is then clamped at the charging end of the mold to hold the total charge at the desired compression.

The range of compression may vary from that represented by a reduction of volume from two volumes to one to that represented by the reduction of volume from six volumes to one. The temperature of baking may vary from 300° F. to 575° F. while the period of baking depends upon the charge and the desired degree of baking.

It will be understood that other binders may be added to the charge in addition to the resins natural in cork.

The molded product is then removed from the mold. The product is substantially a complete annulus extending unitarily about its circular periphery and for a length corresponding to the length of the mold. Such mold length may be the complete length of the laundry roll, or of one-half or other fractional part thereof as measured in the direction of the axis of the roll.

However, the annular moulded product is preferably severed in the general direction of its length to afford more ready application to the surface of the roll. The line of severing is preferably of a contour to provide increased anchorage of the sections by mutual engagement. As one form of mutually engaging lateral faces, I sever at one side of the annulus along a substantially rectilinearly and axially extending length indicated at 17, see Figs. 1 and 2, then along a line indicated at 18 extending spirally about the annulus and finally terminating at the substantially rectilinear and axially extending line indicated at 19. At the opposite side, the annulus is severed axially, as is indicated at 20, see Fig. 1, then spirally downwardly along the line indicated at 21 and thence upwardly and terminating in an axially extending line, corresponding to and substantially diametrically opposite to the aforesaid line of severing 19.

In a similar manner, the remaining lengths of roll facing may be formed of sections having mutually engaging faces of non-rectilinear configuration.

It will be observed that such forms of mutually engaging faces of the sections afford mutual anchoring between the sections during the stages when the roll facing encounters buttons and other raised or thickened portions of the articles being laundered or pressed.

Upon any lower section encountering such elevated or raised portions, there is a tendency of the section to "creep" peripherally about the roll opposite to the direction of actuation of the roll, and I have discovered that the above and like non-rectilinear forms of contacting edges between the sections attain a highly improved anchorage of the section as a whole.

In a similar manner, the peripherally extending engaging faces of the roll facings may be formed of non-rectilinear faces to thereby secure anchorage mutually between the respective lengths longitudinally of the roll.

In the form of pads shown in Fig. 3, the same may be produced by charging cork wool or the like into a mold having the general configuration of that of the final product; preferably, such mold is of a capacity for molding a desired number such as six or more pads at a time.

Preferably, the charge is fed in successive increments and a plunger having the configuration of the interior of the mold is employed to compress the charge as the increments are added and to attain a uniform predetermined compression of the charge. The range of compression may vary from that represented by the reduction of volume from three volumes to one volume and from six volumes to one volume.

The mold is then closed with the charge under the desired compression and the mold and its charge are subjected to baking. The period of baking depends upon the temperature of baking; the temperature may vary from 300° Fahrenheit to 575° Fahrenheit.

Upon completion of the baking operation, the product is allowed to cool while under compression within the mold.

The product is then severed along lines corresponding to the flat faces of the flat pad shown in Fig. 3 to form the flat pads of the desired thickness.

If it is desired to impart a slight curvature to the pad of the form shown in Fig. 3, such result is attained by placing the flat pad between heated shaping irons or clamps respectively having convex and concave faces corresponding to the desired curvature. Upon raising the temperature of the cork pad to the temperature of approximately 300° F., the mass becomes of a yielding nature and the pad is allowed to cool under compression of the shaping irons.

It will be understood that the flat pads may be of any desired shapes, including other forms of curved contour or with square corners or other general rectilinear outline.

Facings for rolls may also be produced by forming flat sections of rectangular form, and bending the sections by the clamping procedure set forth hereinabove, and applying the bent sections peripherally about the roll to form a complete envelope or facing for the roll.

In Fig. 5, I have illustrated diagrammatically in magnified view the constitution of the mass of the complete product formed according to my present invention. This view presents the cork mass as seen through a magnifying glass. The illustration is taken at one corner of the intersecting faces 20, 21 of the product. It will be noted that the individual cork particles as indicated at 22, 23 are flattened out for considerable lengths and that the planes of flattening are transverse to one another. There are also formed portions as indicated at 24, 25 where the cork particles are intermatted. The portions indicated at 26, 27, 28, 29, 30 are of general flattened nature, whereas the portions indicated at 31, 32, 33 and 34 are of the matted nature. It will be observed that the particles are bonded to one another in more or less overlapping relation.

Pursuant to my method of baking, the particles of cork or like material are interbonded to one another by the resins inherent in the cork or added thereto and at spaced locations, thereby permitting relative movement of the cork particles when under pressure and affording interflexing of the cork particles without danger of rupture. The air spaces intervening between the regions of bonding add to the resiliency of the mass.

It will be understood that the distribution of the resins in the baking stage takes place at a temperature in excess of that of ironing stage or similar subsequent procedure in the use of the facing, whereby the function of interbonding by the resins continues indefinitely.

In the use of pads embodying my present invention, upon elevation of the laundering or pressing machine to the usual temperatures of operation of the same, the cork particles attain a resiliency combined with permanency of a nature which is highly adaptable for ironing and other pressing operations. Improved ironing effects are attained with embroidered or other raised types of articles ironed, and similarly in pressing the relief portions of garments as about the pocket patches and about the buttons. When buttons are encountered by my roll facing, the portion of the facing in immediate contact with the button yields sufficiently to permit the button to pass without breakage or obstructing the transit of the garment through the ironing machine.

My cork product may be formed of flat cork particles similarly as above set forth in combination with resilient material such as the so-called commercial rubber or other rubber compositions, including latex and synthetic rubber and the various commercial rubber substitutes, including sulphurated castor oil. In such combination, the cork product after the baking operation, and while at an elevated temperature, is submerged within a bath containing a resilient material of the above character, together with suitable vulcanizing ingredients, in which bath the cork product is kept until cooled, the cooling of the air between the cork particles creating a vacuum and thus drawing in by absorption or like process the resilient rubber material. After the desired amount of rubber material has been thus absorbed, the resulting product is subject to a temperature sufficient to vulcanize the resilient material disposed in the locations between the cork particles.

By the term "flat" in designation of the particles of cork employed as the raw material as hereinabove described and as set forth in the claims, I define the same as particles having flat faces disposed on substantially opposite sides, the dimensions of the flat faces of any particle being many times greater than the thickness or average thickness of such particle.

Whereas, I have described my invention by reference to specific forms thereof, it will be understood that many changes and modifications may be made without departing from the spirit of the invention.

I claim:

1. A resilient facing for ironing apparatus and the like comprising a mass formed of cork material embodying substantially flat particles of varying dimensions and disposed in overlapping relation to one another within the mass under compression and bonded to one another at spaced locations by a medium maintaining its bonding action under ironing conditions, the planes of some of said flat particles being angularly disposed relative to the planes of other of said particles within the mass.

2. A resilient facing for ironing apparatus and the like comprising a baked mass formed of cork material embodying substan-

tially flat particles of varying dimensions and disposed in overlapping relation to one another within the mass under compression and bonded to one another at spaced locations by a resin containing medium maintaining its bonding action under ironing conditions, the planes of some of said flat particles being angularly disposed relative to the planes of other of said particles within the mass and a resilient medium interposed between said particles, said resilient medium being disposed throughout the interior of said mass.

3. A resilient facing for ironing apparatus and the like comprising a mass formed of cork wool embodying substantially flat particles of varying dimensions and disposed in overlapping relation to one another within the mass under compression and bonded to one another at spaced locations by a medium maintaining its bonding action under ironing conditions, the planes of some of said flat particles being angularly disposed relative to the planes of other of said particles within the mass, and a resilient medium disposed between said spaced locations, said resilient medium being disposed throughout the interior of said mass.

4. A resilient facing for ironing apparatus and the like comprising a baked mass formed of cork wool embodying substantially flat particles of varying dimensions and disposed in overlapping relation to one another within the mass under compression and bonded to one another at spaced locations by a medium maintaining its bonding action under ironing conditions, the planes of some of said flat particles being angularly disposed relative to the planes of other of said particles within the mass, air spaces disposed between said bonded locations, and a resilient medium disposed between said spaced locations, said air spaces and said resilient medium being disposed throughout the interior of said mass.

5. A resilient facing for ironing apparatus and the like comprising a mass formed of cork wool embodying substantially flat particles of varying dimensions and disposed in overlapping relation to one another within the mass under compression and bonded to one another at spaced locations by a resin containing medium maintaining its bonding action under ironing conditions, the planes of some of said flat particles being angularly disposed relative to the planes of other of said particles within the mass, and a resilient medium disposed between said spaced locations, said resilient medium being disposed throughout the interior of said mass.

In testimony whereof I have hereunto set my hand.

WILLIAM F. GRUPE.