Dec. 2, 1941. F. J. WAKEM 2,264,731

IRONER PADDING

Filed Nov. 10, 1938

Fig. 1.

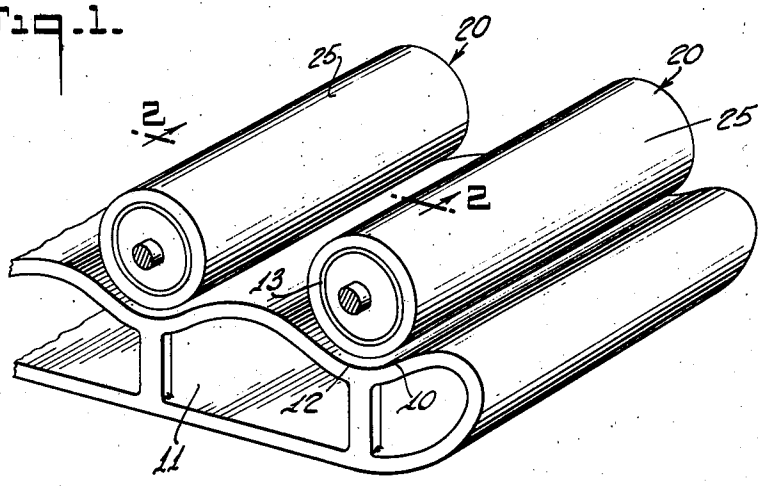


Fig. 2.

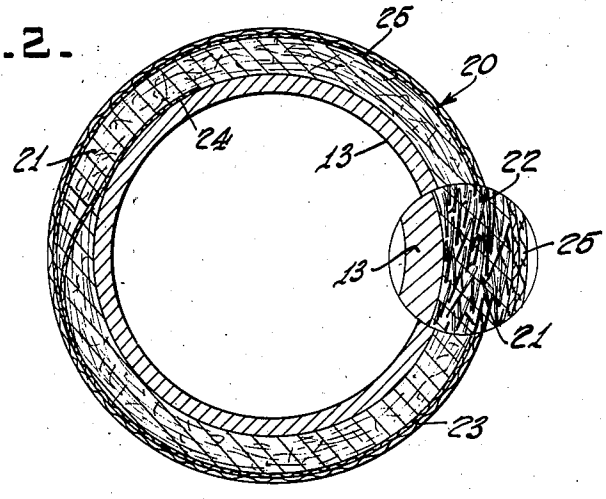
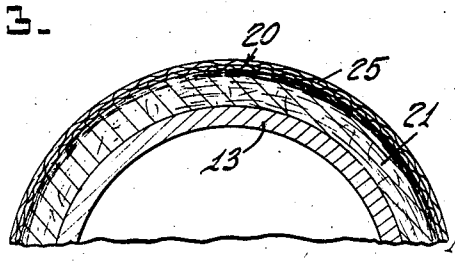


Fig. 3.



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IRONER PADDING

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4 Claims. (Cl. 38—65)

The present invention relates to improvements in covering assemblies for the rolls or other pressing members of ironing or pressing machines, particularly those employed for flat-work.

Conventionally, flat-work ironers comprise one or more hollow, padded rolls which are rotated in heated and highly polished concave beds. The materials to be ironed, such as cloth articles, are fed while in a moistened state between the roll and bed and are subjected to simultaneous heat and pressure. Press type ironers, also conventionally employed, comprise a flat padded bed or buck and a swinging, usually steam heated, cover member. In machines of this type the moist articles to be ironed are placed over the flat bed or buck and pressed between it and the heated cover member.

To provide the desired smooth finish and dry condition of the articles ironed, it has been determined that the padding which covers the roll of the roll type ironer or the bed or buck of the flat type ironer must have a smooth surface, be uniform in thickness, lasting in resiliency, and capable of readily dissipating moisture vapor. A padding heretofore proposed for this purpose which has satisfactorily fulfilled the majority of the above requirements consists of a felted mat of preferably asbestos fibres faced with a covering cloth of cotton, asbestos, or the like. However, where paddings of this type have been employed over extended periods, they have packed down and become hard and unfit for further use. It has been determined that this deterioration of the padding is caused by the action of moisture, vaporized during the ironing operation, escaping into the pad and finally becoming absorbed by the fibres of the pad. The absorption of moisture by the fibres tends to destroy their resiliency until, upon sufficient absorption, the fibres lose substantially all their resiliency and the packing and hardening of the padding occurs.

It is a principal object of the present invention to provide an asbestos padding or padded covering assembly for flat-work ironers and the like which will meet all of the above-stated desiderata, namely, which will be heat-resistant, smooth, and permissive of moisture dissipation and which will, at the same time, be of lasting resiliency and resistant to packing down over long periods of time.

A further object of the invention is the provision of a padding of the above-stated type which includes a waterproofing treatment so disposed as to prevent substantial absorption of moisture by the fibres, while permitting adequate and continuous discharge of moisture vapor.

A still further object of the invention is the provision of a padding for flat-work ironers and the like capable of retaining its resiliency over long periods of use without substantially increasing the cost of the padding.

It has heretofore been proposed to overcome the absorption of moisture by ironer paddings through the provision of a moisture-proof membrane or cloth as the outer covering of the padding. This proposal has not, however, proven satisfactory, principally due to the fact that the escape of moisture through the padding and its covering is substantially inhibited and thorough drying of the article undergoing the ironing operation is prevented. Thus, though the proposed expedient does serve to prevent the absorption of moisture by the padding, it does not provide a pad which meets one of the primary requirements of a satisfactory padding, namely, the ability to readily and continuously dissipate moisture vapor.

For the attainment of the above-noted objects, and in contrast to the prior proposal as above referred to, there is formed, according to the present invention, a padding of resilient asbestos fibres, the fibres in at least that portion of the padding adjacent its outer surface, that is, the surface which is to be adjacent the article ironed, being protected by a moisture-resistant material. Suitably, the moisture-resistant material may coat the individual fibres of the padding substantially throughout the same without filling the interstices between the fibres, or alternatively may be in a substantially continuous layer adjacent the outer surface of the padding coating the fibres and closing, or substantially closing, the openings therebetween. The padding assembly is completed by an outer covering of porous binder cloth and a porous surfacing sheet. In both forms of the invention, substantial absorption of moisture by the fibres is prevented, and at the same time escape of the moisture vapor is permitted through the interstices of the pad covering. In the construction in which the moisture-proofing is applied only to the individual fibres, the moisture vapor may also escape through the unfilled interstices of the padding itself.

My invention will be more fully understood and further objects and advantages thereof will become apparent when reference is made to the more detailed description thereof which is to follow and to the accompanying drawing in which

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Fig. 1 is a diagrammatic elevational view of a roll type flat-work ironer employing paddings of the present invention;

Fig. 2 is a sectional view taken through one of the padded rolls of the machine, for example, on the line 2—2 of Fig. 1; and

Fig. 3 is a view similar to Fig. 2 but depicting a somewhat modified form of the padding.

Referring now to the drawing, the invention is disclosed as embodied in paddings for roll type flat-work ironers. It will be understood, however, that this type of ironer has been selected for convenience in illustration only and that the invention is in no way limited thereto but is equally applicable, for example, to paddings for flat press type ironers. As disclosed in Fig. 1, the ironer may suitably comprise a bed plate 10 forming the upper wall of a steam chest 11. The bed plate 10 includes concave portions 12 cooperating with one or more driven ironer rolls 13. Any suitable number of the rolls may be employed as determined by the size and character of the articles to be ironed. Each of the rolls 13 has a resilient covering 20.

In accordance with the preferred form of the present invention, the roll covering 20, as illustrated more in detail in Fig. 2, comprises a pad of resilient asbestos fibres 21. The pad may preferably be formed of the fibres in interfelted relationship, but other ways of combining the fibres may be employed if desired. For example, rovings composed of asbestos fibres may be assembled as by wires, threads, or the like, woven, knitted, or otherwise incorporated with the rovings in the pad structure. Also, loose strands of asbestos fibres may be woven into pad form. The individual fibres carry a preferably substantially continuous coating of a moisture-resistant material 22. For ease of illustration, the coating has been indicated only on the fibres of a magnified section of the padding, but it will be understood that substantially all of the fibres are similarly coated. Suitably, the moisture-resistant material may comprise zinc stearate, aluminum stearate, ammonium stearate, and like known waterproofing materials. However, these materials are merely exemplary of a large class of materials which may be employed, it being apparent to those skilled in the art that others of the numerous waterproofing media having similar properties may be substituted therefor.

The water-resistant medium may be applied to the individual fibres of the padding in any suitable manner. For example, during the conventional carding operation in the preparation of the fibres for felting or other pad forming operations, the binder may be sprayed on or otherwise applied to the fibres, whereby substantially each fibre will be covered with a coating of the moisture-resistant medium. Alternatively, the moisture-resistant medium may be applied during other stages of the preparation of the fibres, it being preferred, however, that such application be made prior to the felting or other pad forming operations to readily obtain the substantial covering of the individual fibres desired without filling the interstices of the pad itself.

The padding of asbestos fibres carrying individual coatings of the waterproofing material is suitably confined against the surface of the roll 13 by a binder sheet or cloth 23. The binder cloth preferably comprises a closely woven but air-permeable asbestos fabric and includes an end portion 24 secured to the roll 13 by an adhesive or the like. The cloth 24 extends between adjacent ends of the padding 21 and completely around the padding to provide a protective and securing cover therefor. Suitably, the roll covering assembly also includes an outer cover or facing sheet 25 overlying the binder cloth. The facing sheet 25 may comprise a woven asbestos fabric, but suitably is of cotton or similar material and is pervious to water vapor or steam similarly as cloth 24.

The roll covering assembly described above exhibits all of the advantages of the previously proposed asbestos paddings or covering assemblies and additionally overcomes the faults thereof. Thus, the moisture-proofing of the individual fibres prevents the same from absorbing any substantial amount of the moisture vapor or steam given off by the article being ironed as it passes through the bite between the roll and the hot bed plate. As a result, the fibres retain their resiliency over long periods of use of the padding, preventing hardening and packing down of the same and greatly prolonging its life. At the same time, due to the lack of impedance to moisture penetration within the interstices of the pad and the permeable nature of the binder cloth and covering sheet, ready and continuous dissipation of the moisture vapor is permitted.

Referring now particularly to Fig. 3, a somewhat modified form of the invention is depicted. According to this form, a moisture-proofing medium, which may suitably be any of those previously referred to, is applied to a layer of the fibres adjacent the outer surface of the padding. The moisture-resistant material in this instance not only covers the individual fibres in the outer layer of the padding, but also at least partially fills the interstices between the fibres of said outer layer, whereby substantial penetration of the moisture vapor to the unprotected inner layers of fibres is prevented. The application of the moisture-proofing medium may in this case suitably be obtained by applying the medium to the surface of the padding after the forming of the same, for example, in a cold state and thereafter warming the padding to such an extent as to soften the moisture-proofing medium and to permit the same to penetrate to some extent into the padding. Alernatively, a solution of the moisture-proofing medium may be applied to the outer surface of the pad as by spraying or the like and permitted to partially penetrate therein.

The last described form of the invention, while inhibiting any substantial escape of the moisture vapor into the pad itself, allows for successful operation of the ironer due to the fact that the moisture-proofing is located entirely in the padding, which is, in turn, covered by the overlying convolutions of the pervious binder cloth and cover sheet. The latter, as previously described, are suitably formed of asbestos cloth and cotton cloth, respectively, and provide numerous interstices through which the moisture vapor passes to escape from the surface of the roll at either side of the bite between the roll and bed plate.

Having thus described my invention in rather full detail, it will be understod these details need not be strictly adhered to, but that various changes and modifications will suggest themselves to one skilled in the art. all falling within the scope of the invention as defined by the subjoined claims.

What I claim is:

1. A covering assembly for flat-work ironer rolls and the like comprising a pad of asbestos

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fibres, a moisture-vapor-pervious binder cloth overlying a face of said pad, a moisture-vapor-pervious cover sheet overlying the binder cloth and providing a facing for the assembly, and a waterproofing medium carried by the fibres in at least that portion of the pad adjacent the overlying binder cloth.

2. A covering assembly for flat-work ironer rolls and the like comprising a pad of asbestos fibres, a moisture-vapor-pervious binder cloth overlying a face of said pad, a moisture-vapor-pervious cover sheet overlying the binder cloth and providing a facing for the assembly, and a waterproofing medium individually coating the fibres of said pad.

3. A covering assembly for flat-work ironer rolls and the like comprising a pad of asbestos fibres, a moisture-vapor-pervious binder cloth overlying a face of said pad, a moisture-vapor-pervious cover sheet overlying the binder cloth and providing a facing for the assembly, and a moisture-proofing medium impregnating a layer of said pad adjacent the overlying binder cloth.

4. A covering assembly for flat-work ironers and the like, comprising a pad of asbestos fibres, a moisture-vapor-pervious sheet overlying said pad, and a water-proofing medium carried by the fibres in at least that portion of the pad adjacent the overlying sheet.

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