

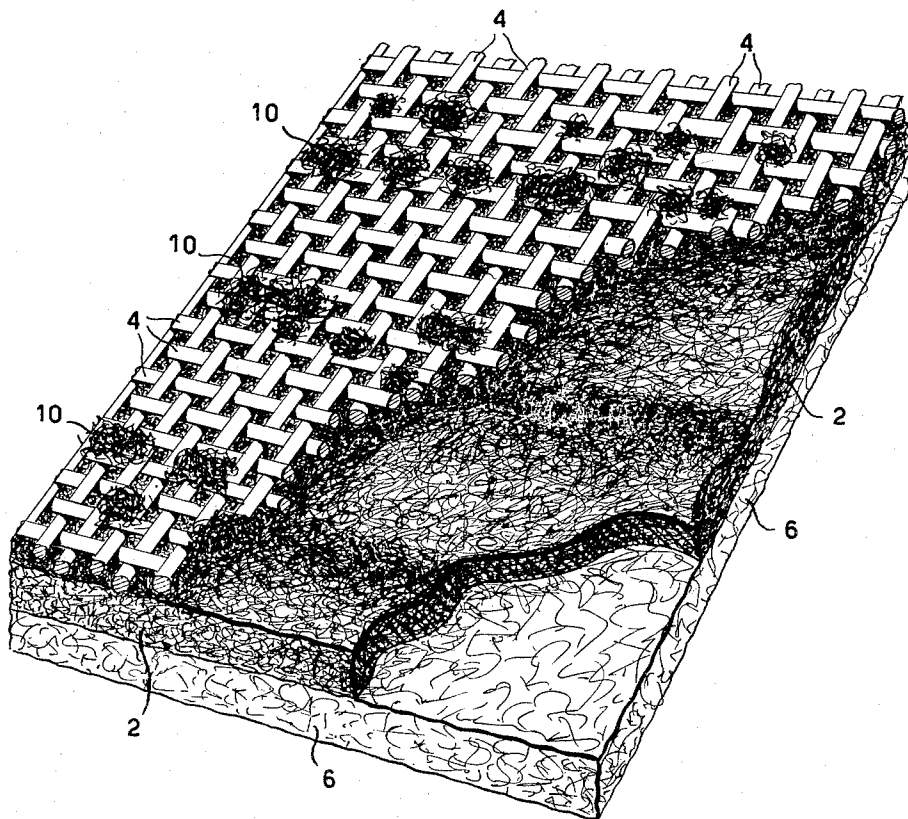
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RESILIENT AND HEAT RESISTANT BLANKET

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RESILIENT AND HEAT-RESISTANT BLANKET

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4 Claims. (Cl. 28—79)

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This invention relates to a resilient and heat resistant asbestos faced stainless steel blanket and the method of making the same.

This blanket may be used wherever a flexible, resilient, heat or moisture resistant or insulating blanket is required, the blanket also being possessed of considerable tensile strength thus being resistant to physical damage and permanent deformation.

In the art of ironing or pressing such as in laundries and garment pressing shops there is commonly used both the generally flat press type and the roller or mangle type ironing or pressing equipment. To these presses or ironers is applied either wet steam or dry hot air. The dry hot air is usually applied when the fabric being pressed contains the moisture generally required to exist in the pressing operation. The covering of these presses or mangles must be porous to permit the passage of the hot air or steam and also resilient to accommodate for variations in thickness of the garment or material being pressed.

Heretofore, various covers have been employed to provide this necessary porosity and resiliency. Generally a cotton felt pad or a pad of cotton or asbestos fibers has been used. This pad is covered with one or more layers of terry cloth or flannel and then over the surface is placed a cotton, nylon or asbestos cover cloth.

Upon being subjected to steam temperature, moisture and pressure these cotton slivers of a pad of this type pack down and dry out or scorch and have a life of approximately one week at a moderately high rate of usage. Slivers of cotton and asbestos also pack down and become hard and lose their resiliency and porosity. Thus they block the steam flow and press unevenly.

Another type of covering that has been employed consists of a very expensive blanket of a sort of basket weave woven from ribbons or strands of stainless steel wool. The woven stainless steel blanket is then covered with one or more layers of terry cloth or flannel and then over the surface is placed a cotton, nylon or asbestos cover cloth.

This covering is objectionable not only because of the cost of this woven stainless steel blanket but also because of the short life of terry cloth or cotton felt covering resulting from the drying and scorching action of the steam.

Another type covering which has been employed is a thick layer of asbestos fiber covered with a suitable cover cloth. While the life of the asbestos fiber is indefinite, the asbestos soon

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packs to a hard thin pad with little resiliency or porosity and is as unsatisfactory as any of the prior listed covers.

It is an object of this invention to provide an improved press or mangle cover consisting of a blanket of moderately compacted stainless steel wool which is covered with a suitable thickness of soft, fluffy, self-adherent fibrous insulating layer of finely carded asbestos. The proportionate thickness of the stainless steel blanket and asbestos surfacing involved may be varied and the total thickness of the blanket may be any thickness as required by a specific application. Thus a relatively thin pad can be supplied for covering a press or mangle already covered with a woven stainless steel blanket, thereby taking the place of flannel or terry cloth and a thick pad can be supplied suitably completely replacing all former pads employed. The stainless steel and asbestos pad is then covered by a cover cloth of nylon, asbestos or other suitable fiber.

Another object of the invention is to provide a blanket of insulating material which may be used as an insulating lining in the manufacture of stoves, ovens, cold chests, and other applications where temperature insulation, heat, cold, or moisture resistance are required, and where the material so used must possess resiliency to resist gradual settling as would, over a period of time, affect the uniform distribution of the insulating material.

These and other objects of the invention will become apparent from the following description when read in conjunction with the accompanying drawing in which is shown a successively cut-away section of a typical blanket embodying this invention, the blanket being viewed from what, in most applications, would be the underside.

Referring to the drawing, there is shown a blanket consisting of a layer of an open weave backing material 4 to which the stainless steel wool 2 has been needled as will hereinafter be described. To the needled steel wool there is applied a layer of fibrous asbestos 6.

In the preparation of such a blanket a loose mass of stainless steel wool is compressed to a substantial extent and caused to pass beneath vertically moving needles provided with barbs which in their movements catch the stainless steel wool fibers pushing them downwardly through the mass and thus provide sufficient interlocking to impart to the blanket a substantial tensile strength. This is similar to the "needling," or "felting" process well known in the

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art, as applied to various other fibrous materials to provide felting. One such method is shown in the U. S. patent to J. A. Gould 2,372,484, dated March 27, 1945. The mass of stainless steel wool is fed through the rows of needles and may be, though not necessarily, supported on a loosely woven backing material 4 such as a rough burlap, asbestos or other suitable material of open weave.

The process of "needling" produces what is generally known in the art as a "needled" pad or blanket. The needled blanket is characterized by having fibers or more generally groups of fibers in bunches extending from one surface or from the proximity of one surface toward, to or through, the opposite surface depending upon the length of the fiber or fibers seized by the barbs of the various needles.

The result of having many such bunches of fibers so disposed in the blanket is to produce a flat blanket of generally uniform thickness when compared with the irregular unflat pad of fibers which have not been subjected to needling. The needled blanket is somewhat compacted and of well defined form. It also has greatly increased tensile strength due to the generally regularly repeated groups of needled or bunched fibers acting to interlock the miscellaneous arranged fibers of which the pad is formed. The needled pad can then be cut or sheared to desired shapes and, particularly in the case of metal wool, unlike the unruly or disorderly mass of fibers existing before needling, the sheared pads will retain their shapes indefinitely.

In the process of needling if a backing material is used the needles will push the stainless steel wool fibers through the backing material and clusters of steel wool ends may be seen on the under side of the blanket as indicated at 10. If backing is not provided the groups of ends displaced by needling will be barely visible on the under side of the blanket. Whether or not backing is employed is determined by the nature of the intended application of the blanket.

After the felting of the stainless steel wool blanket is completed, the finely carded asbestos layer 6 is applied uniformly over the face of the blanket to any desired thickness. The fibers of the asbestos layer intermingle with each other and with the metal strands on the surface of the steel wool blanket and form a layer which will cling together and to the steel wool unless forcibly pulled apart. This layer of asbestos is provided to form an insulating layer which is built up of a mass of finely carded fibers from which improperly milled particles of asbestos, generally known as "pencils" of asbestos, have been excluded. This mass of intermingled fibers forms a practically continuous felt-like covering over the felted steel wool and is of sufficient thickness to cover and so prevent ends of stainless steel wool fiber from extending through the asbestos layer. This protection is particularly desirable in applications such as ironing press and mangle pads and other applications where a soft surface must be presented or where materials in contact with the blanket may be injured or damaged by protruding stiff, sharp stainless steel fibers.

It is also of importance to note that the asbestos layer provides a soft surface which is very desirable. Unlike applications employing asbestos alone or asbestos and cotton mixed, the asbestos layer on top of the stainless steel blanket is prevented from becoming packed by the working or

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flexing of the underlying stainless steel wool blanket; therefore, the resiliency and porosity of the asbestos layer is retained long after the resiliency and porosity of an asbestos layer alone would have ceased to exist.

As is well known to those familiar with the art, generally the word "asbestos" implies a mixture of asbestos and approximately 10 to 25% cotton or other organic fiber which serves to hold the asbestos fiber together and makes it possible to handle. The word "asbestos" as employed in this specification applies to this conventional asbestos and cotton mixture. When a material is referred to in the specification as being a mixture of asbestos and cotton it should be understood that reference is made to a mixture having a cotton content considerably greater than 25%.

When this blanket is used as a pad for covering an ironing mangle or press, the pad is generally covered with a cotton, asbestos, or nylon cloth covering material thereby bringing in contact with the garment being pressed a perfectly smooth, lint-free surface which may be replaced when required by virtue of its having become soiled or worn. In these applications the life of a stainless steel and asbestos pad, which does not become compressed and embrittled due to repeated applications of heat, moisture, and pressure, is many times that of cotton felt pads.

The asbestos coated stainless steel wool blanket hereinbefore described may also be utilized as an insulating material between the sheet metal sides of an oven or stove or within the walls of a cold chest, or in other applications where temperature insulation and heat, cold, or moisture resistance are required. The blanket readily lends itself to forming or cutting to a desired shape such as may be prepared in numbers prior to a production assembly of an article requiring such insulation. The permanence and resiliency possessed by this blanket, when applied in conditions where it is subjected to heat or cold in the presence of moisture makes it a highly desirable material for applications of this type. When the blanket is employed as a heat insulating material, in applications such as these, the asbestos fibers do not require the careful carding that is required in the application of a press pad.

It will be apparent that other types of metal wool such as ordinary carbon steel wool or brass wool and the like may be substituted for the stainless steel wool and also that other types of fibrous material may be substituted for the asbestos fiber as herein disclosed. It is also apparent that while the present blanket is shown in flat form, the invention may be employed in many various forms or shapes. It should therefore be understood that while the form of the invention as herein disclosed is illustrative of and represents some of the most desirable embodiments of the invention, the invention may take other forms.

What I claim and desire to protect by Letters Patent is:

1. A needled pad formed substantially exclusively of metal fibers and including groups of metal fibers extending in a direction from one surface toward the other to provide interlocking of the metal fibers, said pad having disposed on one entire surface thereof a layer of self-adhering mass of intermingled asbestos fibers.

2. A needled pad formed substantially exclusively of stainless steel fibers and including groups

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of stainless steel fibers extending in a direction from one surface toward the other to provide interlocking of the stainless steel fibers, said pad having disposed on one entire surface thereof a layer of self-adhering mass of intermingled asbestos fibers.

3. A pad needled to a layer of backing material, said pad being formed substantially exclusively of metal fibers and including groups of metal fibers extending in a direction from one surface toward and through the other surface to provide interlocking of the metal fibers of the pad and to provide attachment of the pad to the backing material, said pad having disposed on the entire exposed surface thereof a layer of self-adhering mass of intermingled asbestos fibers.

4. A pad needled to a layer of backing material, said pad being formed substantially exclusively of stainless steel fibers and including groups of stainless steel fibers extending in a direction from one surface toward and through the other surface to provide interlocking of the stainless steel fibers of the pad and to provide attachment of the pad

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to the backing material, and said pad having disposed on the entire surface thereof a layer of a self-adhering mass of intermingled asbestos fibers.

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