

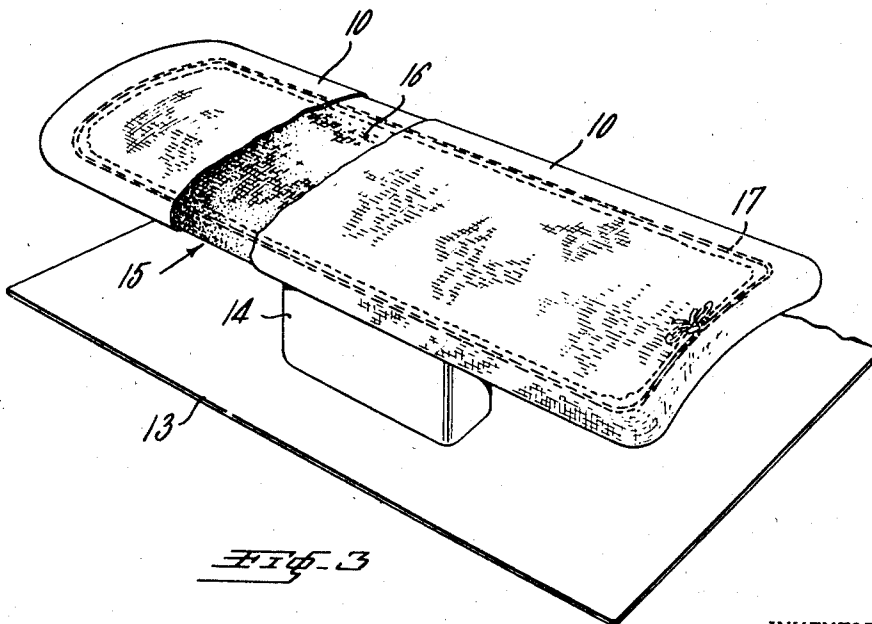
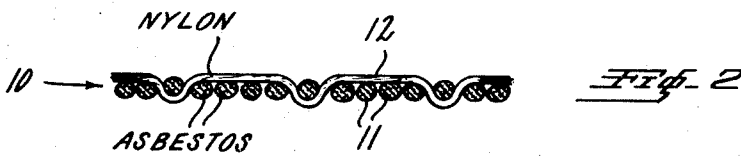
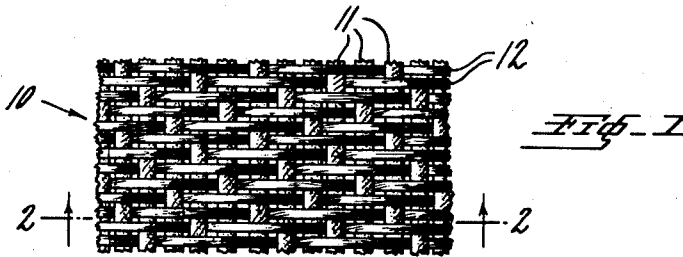
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H. E. SUNBURY ET AL  
ASBESTOS-NYLON COVER CLOTH

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# UNITED STATES PATENT OFFICE

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## ASBESTOS-NYLON COVER CLOTH

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6 Claims. (Cl. 139-420)

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This invention relates to a cover cloth for use upon dry cleaning presses, laundry presses and other laundry or pressing equipment, and more particularly to a strong durable heat resisting cover cloth formed by interweaving asbestos yarns and nylon or other heat resistant synthetic yarns.

Dry cleaning presses are used for pressing suits, dresses and other articles of clothing, and laundry presses are used to press wash goods such as shirts, dresses and other articles of wear. The cover cloth contemplated by the present invention was developed primarily for use upon these two types of presses but may be used upon other types of pressing and laundering apparatus.

Dry cleaning presses and laundry presses are provided with a work supporting fixed member called a "buck" and a movable pressing member called a "head." The buck in dry cleaning presses and in laundry presses comprises a table like member having a convexed yielding upper face which is usually covered with some form of textile or other padding, and over this padding is secured a cover cloth. The head has a concaved work-engaging surface formed of metal, and this surface may or may not be covered with a cover cloth.

Dry cleaning presses are operated at a temperature of about 240° to 275° F. Laundry presses are operated at a temperature of from about 300° to 340° F. These temperatures cause a cover cloth made of cotton to deteriorate rapidly particularly on laundry presses where the cotton cloth will char within a period of about one week.

It has therefore been proposed heretofore to use asbestos cover cloths formed of interwoven asbestos yarns, and a resin treated asbestos fabric has been developed which has proven very successful for use upon steam heated dry cleaning presses to press the heavy type garments such as woolen goods. Its service life is several times that of cotton cover cloth, and the quality of the work produced meets dry cleaning standards. When the same asbestos fabric is used as a cover on a hot head silk pressing machine the coarseness of its weave imparts an objectionable impression upon the fine gabardine or silk article being pressed, and if it is attempted to reduce the coarseness of this fabric by applying thereto a large amount of resin the fabric will become objectionably stiff. When such asbestos fabric is used upon laundry presses it is found that it becomes loaded with starch deposited thereupon from the goods being pressed, which is of course

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objectionable. Furthermore an all asbestos fabric has relatively poor resistance to abrasion and flexing.

Recently in addition to the cotton cover cloth and the asbestos cover cloth above referred to, there has appeared on the market several types of nylon cover cloth, but such nylon covers have met with only limited success on dry cleaning presses, one objection thereto being that its surface is so smooth that the garment being pressed may tend to slip off of the buck before the head can be lowered, and also after the head is raised just prior to the application of the vacuum. It is also found that the slippery surface of the nylon fabric has a tendency to leave excessive shine on certain types of garments.

Recognizing the shortcomings above mentioned of asbestos cover cloth and nylon cover cloth, we have found that an excellent cover cloth can be produced by interweaving asbestos yarns and nylon yarns in a manner hereinafter described whereby each yarn complements the other and properties are imparted to the fabric which are not possessed by an all asbestos fabric or an all nylon fabric.

In producing the asbestos-nylon cover cloth contemplated by the present invention it is preferable to form the warp of the fabric entirely of nylon yarns or other synthetic yarns having high heat resisting properties, and to form the weft of the fabric entirely of asbestos yarns. It is also preferable to employ a sateen weave or other floating weave with several up and one down, four up one down being considered a good construction. It is highly desirable that the fabric be so woven that the work engaging face of the fabric be formed very largely but not entirely of nylon and that the back of the fabric be formed very largely but not entirely of asbestos. The purpose of such a weave is to produce a relatively smooth nylon face that is interrupted at short intervals by an asbestos yarn. Asbestos, being a mineral, has a mild abrasive action and this gives the work-engaging face of the fabric a desired amount of friction, that reduces the smoothness of the fabric sufficiently to prevent a garment from slipping off of the buck, and also breaks up the weaving design slightly so as not to impart an excessively smooth surface to the clothing being pressed. The nylon yarns also serve to increase the strength of the fabric and its resistance to abrasion and improve its flexing properties.

The interweaving of the asbestos and nylon yarns as herein contemplated produces another extremely important result which helps to keep

down the temperature of the nylon yarn and increase the working life of the fabric. This is due to the fact that steam is used to moisten the dry cleaned garments being pressed; and laundered garments are pressed while in a moist condition, so that in either case some moisture is supplied to the cover cloth. The asbestos yarns absorb moisture readily and tend to retain this moisture adjacent the nylon yarns. As long as moisture is retained in the cover cloth by the asbestos yarns, much of the heat applied to the cloth will be utilized in changing the moisture to vapor or steam, and the latent heat used up in converting water into steam does not produce a further temperature rise. If all moisture is vaporized the temperature of the cloth will rise rapidly, but as long as some moisture is present in the cloth it will help to keep down the temperature of the nylon yarns and this is an important factor in prolonging the life of the nylon yarns and that of the asbestos-nylon fabric.

It will be seen from the foregoing that the interwoven asbestos and nylon yarns cooperate in a highly desirable manner to produce a cover cloth having many desirable features such as good heat resisting properties, long life, high resistance to abrasion and tear, good flexing properties, is free of lint, does not become loaded with starch, and has a work surface that is smooth enough to meet the requirements of various dry cleaning and laundry presses without producing a surface that is so smooth that the goods will slip off of the buck or give the pressed goods an objectionable shiny appearance.

The cover cloth of the present invention also protects the underlying flannel material, when such is used between the padding and cover cloth, so that such material has longer life by not burning out as fast.

It has been observed that laundered articles dry faster when pressed on this asbestos-nylon cover thereby speeding up the cycle of operations due to this faster drying and increasing the productivity of the press.

The above and other features of the cover cloth contemplated by the present invention will be further understood from the following description when read in connection with the accompanying drawing, wherein

Fig. 1 is a plan view of the work face of a piece of fabric constructed in accordance with the present invention;

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1; and

Fig. 3 is a perspective view of the lower portion or buck of a typical laundry press covered with the fabric shown in Figs. 1 and 2.

The fabric 10 contemplated by the present invention is formed of the weft yarns 11 and warp yarns 12. The weft yarns 11 are asbestos yarns, and the warp yarns 12 are formed of nylon or other heat resistant synthetic fibers. The nylon yarns 12 are shown as having very little twist and this permits them to flatten out in the fabric more than the asbestos yarns which have a substantial amount of twist, however if desired the nylon yarns may have considerable twist. The weave shown is a sateen weave with four up and one down, and while it is not essential that this particular type of weave be employed it is important that a floating weave be used with several up and one down so that the working face of the fabric will be formed very largely but not entirely of nylon. It is not essential that the warp be formed entirely of nylon and the weft entirely

of asbestos so long as the work face of the fabric 10 is formed very largely but not entirely of nylon.

The wearing properties of the asbestos and nylon yarns can be further improved and the life of the fabric increased by treating the fabric with a small amount of a suitable resin.

The synthetic heat-resistant yarns 12 are preferably formed of fibers of a drawn linear condensation polymer selected from the group consisting of synthetic polymeric amides i. e. the materials known as nylon and saturated linear polyesters made by esterifying a glycol with a dibasic acid and devoid of ethylenic and acetylenic unsaturation, such as a polyester derived essentially from terephthalic acid and ethylene glycol and known as "Terylene." Fibers formed of such "Terylene" have a melting point of about 480° F., are tough and durable and have excellent heat resisting properties. The nylon and "Terylene" yarns here employed are capable of withstanding the high temperature and wear resulting from weeks of ironing or pressing, such as six to eight weeks in respect to laundry press covers, and several months on dry cleaning press covers.

The fabric contemplated by the present invention has, as above stated, been designed primarily as a cover cloth for use upon dry cleaning presses and laundry presses, and in Fig. 3 of the drawing there is shown the lower portion or buck of a dry cleaning press and comprising table or supporting surface 13 having extended upwardly therefrom a post 14 that supports a buck 15 of usual construction. The upper curved face of this buck is covered with the textile or other padding material 16. Over this padding 16 is secured the cover cloth 10. Different means may be employed to secure the cover cloth in place upon the buck, and in the construction shown the cover is secured in place by a draw string 17 disposed at the under face of the buck and threaded through hems provided at the marginal edges of the cover cloth. The fabric is preferably so applied that the nylon yarns 12 extend lengthwise of the buck, but it may be applied with the nylon yarns extending transversely of the buck or diagonally thereof.

One good practical construction for the asbestos-nylon cover cloth contemplated by the present invention and designated by 10 in the drawing is the following:

Nylon warp yarn.....	260 d/17
Asbestos weft yarn.....	51/2 (23 cut)
Warps per inch.....	84
Wefts per inch.....	31
Sateen weave.....	4 up 1 down
Weight (grey fabric off loom)...	11.37 ozs./sq. yd.
Gauge (grey fabric off loom)...	.0254"
Percentage weight nylon.....	28.8%
Percentage weight asbestos.....	71.2%
Tensile strength—warp.....	383 lbs. per in.
Tensile strength—weft.....	85 lbs. per in.
Weight of finished resin treated fabric <sup>1</sup> .....	11.55 ozs./sq. yd.

<sup>1</sup> Scoured and treated with 1% Rhoplex Resin.

It will be apparent from the foregoing that an asbestos-nylon cover cloth constructed in accordance with the present invention is capable of giving long service and possesses many advantages over an all asbestos or an all nylon cover cloth. The more important of such advantages are; controlled smoothness of the working face of

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the cover cloth; high flexibility; and good resistance to heat, abrasion and tearing.

Having thus described our invention, what we claim and desire to protect by Letters Patent is:

1. An asbestos-nylon cover cloth for use upon dry cleaning presses and laundry presses, comprising a fabric formed of asbestos and nylon yarns interwoven with a floating weave so that the work engaging face of the fabric is formed very largely but not entirely of nylon and the back is formed very largely but not entirely of asbestos, whereby a strong heat-resistant fabric is produced having a smooth nylon face interrupted at short intervals by the rougher asbestos yarns, and the moisture absorbing property of the asbestos helps to keep down the temperature of the nylon.

2. A cover cloth for use upon dry cleaning presses and laundry presses, comprising a fabric formed of asbestos yarns and synthetic yarns made of fibers of a linear condensation polymer having good heat resisting properties, said yarns being interwoven with a floating weave so that the work engaging face of the fabric is formed very largely but not entirely of the synthetic yarns and the back is formed very largely but not entirely of the asbestos yarns, whereby a strong heat-resistant fabric is formed having a smooth work face that is interrupted at short intervals by the rougher asbestos yarns and the moisture absorbing property of the asbestos helps to keep down the temperature of the synthetic yarns.

3. A cover cloth for use upon dry cleaning presses and laundry presses, comprising a fabric woven of asbestos yarns and synthetic yarns made of fibers formed of polymers selected from the group consisting of synthetic polymeric amides and saturated linear polyesters, said yarns being interwoven with a floating weave so that the work engaging face of the fabric is formed very largely but not entirely of the synthetic yarns and the back is formed very largely but not entirely of the asbestos yarns, whereby a strong heat-resistant fabric is formed having a smooth work face that is interrupted at short intervals by the rougher asbestos yarns and the moisture absorbing property of the asbestos helps to keep down the temperature of the synthetic yarns.

4. A cover cloth for use upon pressing and laundering apparatus, comprising a durable heat-resistant fabric formed of asbestos yarns and

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nylon yarns interwoven with the asbestos yarns with a floating weave with one down and several up, so that the work engaging face is formed very largely but not entirely of the nylon yarns and the back is formed very largely but not entirely of the asbestos yarns, whereby the fabric is given a relatively smooth work face and the moisture absorbing property of the asbestos helps to keep down the temperature of the nylon yarns.

5. A cover cloth for use upon pressing and laundering apparatus, comprising a durable heat-resistant fabric formed of asbestos yarns and synthetic yarns made of fibers of a linear condensation polymer having good heat resisting properties, said yarns being interwoven with the asbestos yarns with a floating weave with one down and several up, so that the work engaging face is formed very largely but not entirely of the synthetic yarns and the back is formed very largely but not entirely of the asbestos yarns, whereby the fabric is given a relatively smooth work face and the moisture absorbing property of the asbestos helps to keep down the temperature of the synthetic yarns.

6. A cover cloth for use upon pressing and laundering apparatus, comprising a durable heat-resistant fabric formed of asbestos yarns and synthetic yarns made of fibers of a linear condensation polymer having good heat resisting properties, said yarns being interwoven with the asbestos yarns so that the working face is formed primarily of said synthetic yarns and the back is formed primarily of said asbestos yarns to thereby impart a controlled smoothness to the working face that will not objectionably impress its weave upon the garment being pressed and will not impart an objectionable shine to such garment.

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