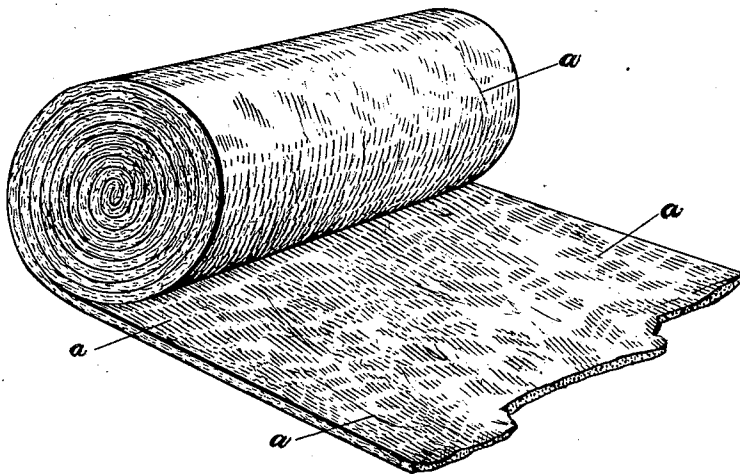


(No Model.)

L. T. BURNHAM.
ABSORBENT COTTON.

No. 459,608.

Patented Sept. 15, 1891.



Witnesses.

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UNITED STATES PATENT OFFICE.

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ABSORBENT COTTON.

SPECIFICATION forming part of Letters Patent No. 459,608, dated September 15, 1891.

Application filed June 4, 1891. Serial No. 395,128. (No specimens.)

To all whom it may concern:

Be it known that I, LEWIS TAFEL BURNHAM, a citizen of the United States, residing at Waltham, in the county of Middlesex, Commonwealth of Massachusetts, have invented a new and useful Improvement in Absorbent Cotton, of which the following is a specification.

Heretofore absorbent cotton for surgical purposes has been made from long staple cotton of fine fiber and of the best quality, carefully carded and prepared, so that the article when finished presents to the wound an absorbent of very fine fiber, in which the fibers of cotton are laid parallel, or very nearly so, and which as a dressing or pad is strong only in one direction—that is, in the direction of the staple or fiber. In the other directions, or at right angles to the staple or fiber, it is extremely weak and easily detached. The absorbent cotton made as described allows a glazing of the surface first exposed to the wound or discharges, thus rendering the bulk of the dressing useless and making it very deleterious to the healing of the wound.

In the present invention I have sought to produce an absorbent cotton which will be cheaper and which is more absorbent of blood, pus, sero-purulent, and muco-purulent fluids than ordinary absorbent cotton. My improved absorbent cotton can be made from raw cotton of cheap quality and short staple, or I can make the absorbent cotton from cotton not serviceable for cloth-making, and more particularly from “cop waste,” so called, or from card flyings or card waste intermingled with thread waste, or from combings or nappings intermingled with thread waste; and I do not desire to be limited to cotton, as it can be made from jute, flax, or, in fact, from any vegetable fiber.

To produce my improved absorbent cotton, material of this kind—as cop waste, for example—is taken and put through a machine once, twice, or as often as may be necessary to tear up or separate the threads and to beat it up into its required softness, and it is then put into a lapper and wound into laps of convenient size. When taken from the lapper, it is exposed to a dry heat and it is then ready for shipment. The lap is of a uniform thickness, and varying in thickness and width

as is convenient and necessary for the treatment of different-sized wounds. The absorbent cotton, if put into the form of a lap, is in conveniently-shaped packages for the market; a given number of pounds to a package can be put into it; it can be easily sheared into any desired shape to cover the wound, and being in a lap or roll it can be easily handled by the physician, and being of uniform thickness it does not make a lumpy or severe application to the wound. If it is used in bulk form, it cannot be uniformly or evenly applied to the wound, and when so applied and bandages put on the outside it produces an uneven pressure upon the wound with hurtful results. The cheapness of the article so produced is apparent, it being made from waste cotton and without being subjected to the expense of any carding process.

My improved absorbent cotton is illustrated in the figure of the accompanying drawing.

It will be noticed that in among the fibers, which are shown by the many small lines or marks, there are numerous threads interspersed, which I have indicated by the letters *a a*, these threads, however, being much more numerous than would appear from the illustration. Absorbent cotton made from this material and in the manner aforesaid is unlike the ordinary absorbent cotton in that the fibers are not parallel, but are crossed or mixed, and many small threads (it being made from thread waste) are intermingled and interspersed among them. These bits of thread, as shown at *a a*, some of them being partially beaten out by the action of the machine, extend in all directions in among the fibers, and they perform two functions: First, they serve to hold the fibers together and make the lap or pad strong in all directions, and, second, the intermingled bits of threads serve to accelerate the absorption, because, being mixed in with the fibers and extending in all directions throughout the whole pad, they furnish channels into the substance of the dressing, and when these bits of thread come in contact with the fluid they immediately become saturated, and by capillary attraction the fluid is immediately and quickly carried not only into the ends of the threads, but into all the fibers that lie in contact with

them. The absorbent cotton made from the mixture of these threads and fibers is more absorbent than the ordinary absorbent cotton. Therefore it takes less absorbent dressing for the same flow of fluid than would be required in the use of the ordinary absorbent cotton, the celerity of the absorption being greatly increased by reason of these strings or threads. Consequently, it keeps the wound cleaner, and, taking less material to treat the same wound, makes a less bulky bandage. If the stock used for this absorbent cotton is raw cotton or card waste, or short staple stock or waste cotton, or material of any kind which has no threads in it, then, in that case, thread waste or cop waste should be mixed with it

before it goes through the machine to an amount sufficient to enable the material when it emerges from the machine to have the desired number of threads in it to give it consistency and strength and to insure a quick absorption of the fluid, as above described.

I claim—

An absorbent cotton in the form of a lap or sheet made from the intermingling of cotton threads with the fibers of cotton, substantially as herein set forth and described.

LEWIS TAFEL BURNHAM.

Witnesses:

CHARLES G. SMITH,
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