

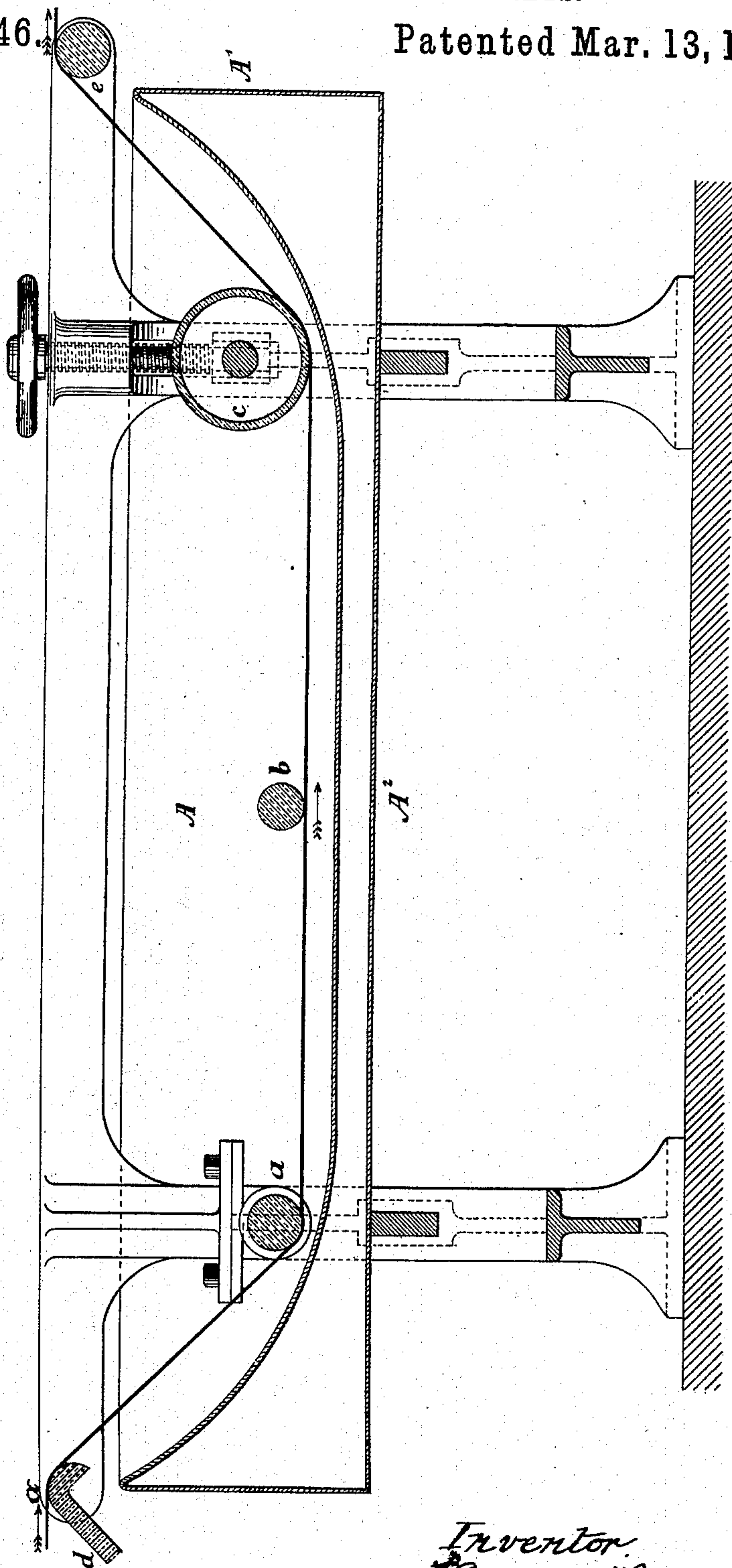
(No Model.)

H. BUCZKOWSKI.

PROCESS OF MAKING SOAP SHEETS.

No. 273,946.

Patented Mar. 13, 1883.



Witnesses.
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UNITED STATES PATENT OFFICE.

HEINRICH BUCZKOWSKI, OF VIENNA, AUSTRIA-HUNGARY.

PROCESS OF MAKING SOAP SHEETS.

SPECIFICATION forming part of Letters Patent No. 273,946, dated March 13, 1883.

Application filed July 11, 1882. (No model.)

To all whom it may concern:

Be it known that I, HEINRICH BUCZKOWSKI, a subject of the Emperor of Austria, residing at the city of Vienna, in the Austro-Hungarian Empire, have invented a certain new and useful Process of Making Soap Sheets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to letters or figures of reference marked thereon, which form a part of this specification.

This process for making soap sheets is more expeditious and economical than any other known to me, and it yields a finer product, and is carried out in the following manner: I take glycerine soap and a neutral cocoa, palm, or tallow soap manufactured in the ordinary way and well seasoned. These two sorts of soap are first dried, in order to free them as far as possible from the water contained therein. For this latter purpose the soap is reduced into small pieces or shavings, by planing or otherwise, to facilitate the drying and dissolving of the same. I next prepare in a boiler a mixture of about ten parts, by weight, of glycerine and thirty-five parts of spirit, in which are put about sixty parts of the dried glycerine soap and fifty parts of the other or dried neutral soap, (the cocoa soap being preferred on account of its making much foam.) The whole mixture is heated to from 72° to 82° Celsius, and continuously stirred until it is reduced to a perfectly homogeneous and rather liquid mass, without solid parts or clods. To hasten the congelation of the soap, and to give a finer gloss to the paper or other substance which is to be coated with it, one-half to one per centum of turpentine-oil may be added to the liquid. Of course disinfecting and perfuming materials may be added thereto. This liquid mass is poured into a trough provided with a jacket into which hot water or steam is led, in order to keep the soap solution constantly at a temperature of from 72° to 82° Celsius.

The annexed drawing represents in a longitudinal section an apparatus which may be advantageously employed in carrying out my invention.

A is the said trough. A' A² is the steam-jacket. As may be seen in the drawing, three rollers or cylinders, *a b c*, are suspended in the trough A, and one of them, *a*, may be made to turn upon its axis; but this is not absolutely necessary. On the outside of the trough there is fixed a striker or smoothing-bar, *d*, and a hollow metallic cylinder, *e*. The cylinder *e* may be heated by hot water or steam in any appropriate manner; but in most cases, especially when the temperature of the surrounding air is pretty high, this heating may be dispensed with. The other rollers or cylinders and the bar *d* may be made of glass, porcelain, metal, or other hard and smooth materials. The material that serves for the preparation of soap sheets, by being coated or saturated with liquid soap, must consist of a substance of great capillarity or absorbent power, and its most advantageous form for receiving such coating is that of a continuous sheet, or so-called "endless roll." Such materials are paper, linen, silk, jute, cotton, or woolen stuffs. The continuous sheet or endless roll is passed, in the direction indicated by the arrow, over the smoothing-guide or striker *d* into the trough A, containing the soap solution. It then passes under the two guide rollers or cylinders *a* and *b*, which guide and hold down the stuff in the liquid mass. Next it passes under the cylinder *c*, which may be heated, and finally over the cylinder *e* to a rolling apparatus. The duty of the bar *d* (which may be replaced by a roller) is to cause the stuff which is to imbibe or take up the soap solution to enter the trough in a well-stretched condition, and with its whole breadth free from any fold or crease. The cylinder *e* strips off the surplus soap from the upper side of the fibrous sheet, while the roller or cylinder *c* removes it from the under side. The two cylinders *c* and *e* thus permit the soap-filled sheet to be freed from its surplus soap by stripping it off and leaving the sheet charged with just the desired quantity. The soap solution must be continuously maintained at a temperature of from 72° to 82° Celsius, whereby the formation of clods is substantially prevented, while otherwise at a lower temperature spirit must be added, and by repeated additions the whole mass would become too diluted.

The cylinders *c* and *e* may be transposed, if desired. It is preferable to make the cylinder *e* vertically adjustable, so that it can be placed higher or lower, according to the varying level of the soap solution. As there are known different arrangements for lifting and lowering rollers, I have only indicated one of them in the annexed drawing. If clods or solid parts should form themselves in the solution during the operation, the mass must be immediately diluted by the addition of a sufficient quantity of spirit and glycerine and then properly stirring it.

The sheet or stuff charged or impregnated with the soap solution begins to dry immediately after it leaves the trough, and it is completely dried when it arrives at the rolling apparatus. This rolling apparatus for rolling up and unrolling the web or sheet is not shown in the drawing, as for this purpose any one of the existing apparatus of this kind may be employed.

In order to insure the easy and regular working of the apparatus, and thereby to prevent the breaking off of the web or sheet charged with soap solution, it is preferable to make the roller *a* movable around its axis, as heretofore stated.

As to the paper I make use of, it must be of great absorbing power and have a proper degree of toughness for allowing it to resist, even when impregnated, the traction exerted upon it during the operation. Paper resembling cigarette-paper and containing a certain quantity—say over forty (40) per cent.—of cotton fiber is most suitable for this purpose.

By the above-described process it is possible to impregnate and to coat uniformly with soap entire rolls of fibrous material, especially of paper, in a manner that insures expeditious and economical operating and the manufacture of a uniform, fine, and smooth product.

The advantage of operating upon continuous webs or so-called "endless rolls" of paper or other material consists in a considerable simplification of the process of drawing the web to be impregnated through the soap solution in the trough, for as soon as the top or outer end of the roll of material has passed under the cylinders no further particular attention need be paid to the feeding and passing of the remainder of the roll or sheet; and, moreover, the soap-covered material can be drawn through and dried in this stretched or distended condition. By thus drying the impregnated stuff while stretched it becomes

possible to obtain a completely-smooth soap sheet, for if not in a stretched condition the impregnated web, in drying, would be drawn together or puckered and form wrinkled waves. After passing through the rolling-up apparatus the now completed soap sheet enters a cutting apparatus, where, in a manner similar to cigarette-paper, it is beaten or pressed and cut in the desired shape and size. The rolling up may be dispensed with, and the sheet may pass direct to the cutting apparatus. The single leaves are then formed into a book of block form, and may be packed and disposed or adjusted in any manner desired. The leaves can in a useful manner be fastened together with wire or thread. The pasting of the soap leaves, however, with the usual pasting material—such as gum, mucilage, glue, paste, &c.—is not practicable; but for this purpose zinc-white should be used.

The *modus operandi* is as follows: To a hot thin-running (easily-flowing) glue add to one hundred parts ten parts of zinc-white and stir this mixture into a thoroughly-mixed mass; paste the backs (edges) in the usual manner and press them together at once, because the mass possesses the power of holding or adhering while hot.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The described mixture, consisting of about ten parts, by weight, of glycerine, thirty-five parts, by weight, of spirit, sixty parts, by weight, of dried glycerine soap, and about fifty parts, by weight, of dried neutral soap for the manufacturing of soap sheets—viz., for impregnating and coating paper or other suitable stuffs with soap.

2. The combination of turpentine-oil, in about the proportion named, with the described soap solution to hasten the drying of the same, and to give a finer gloss to the sheets or leaflets.

3. The treatment of a fibrous web with a soap solution maintained at a heat of about from 72° to 82° Celsius, for the described purpose.

4. In the manufacture of soap sheets, and as a material for absorbing and holding the soap solution, as set forth, the thin paper described, containing over forty per cent. of cotton fibers.

In testimony whereof I affix my signature in presence of two witnesses.

HEINRICH BUCZKOWSKI.

Witnesses:

WILLIAM HÜNING,

JAMES RILEY WEAVER.