(No Model.)

H. D. HOLBROOK.

SHEET MATERIAL OF CORK AND MECHANISM FOR PRODUCING SAME.

No. 595,776. Patented Dec. 21, 1897.

Fig. 2.

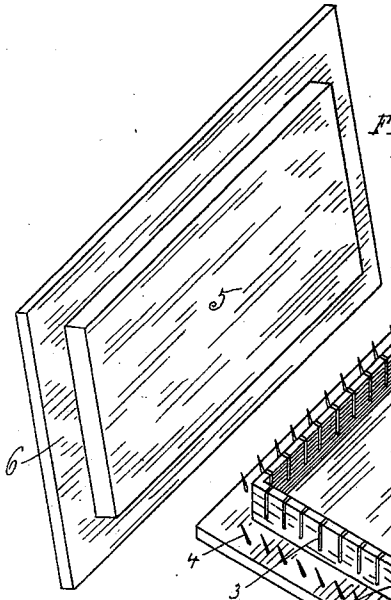
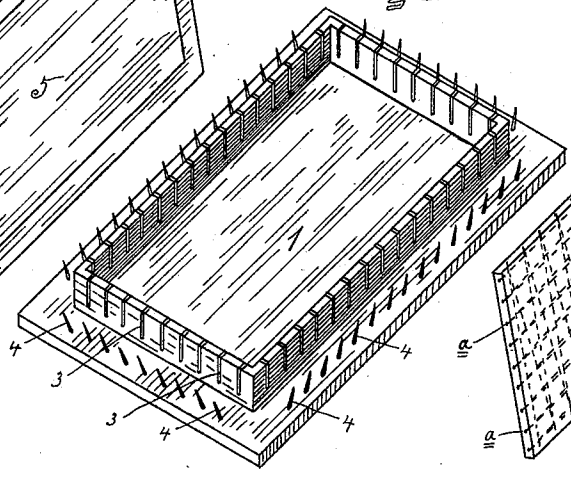


Fig. 1.



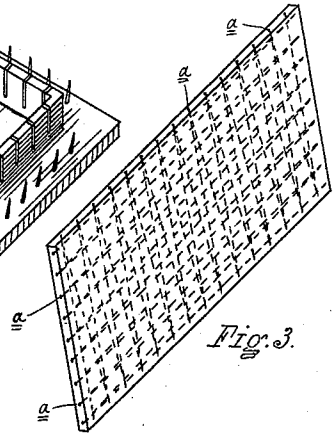


Fig. 3.

Fig. 5.

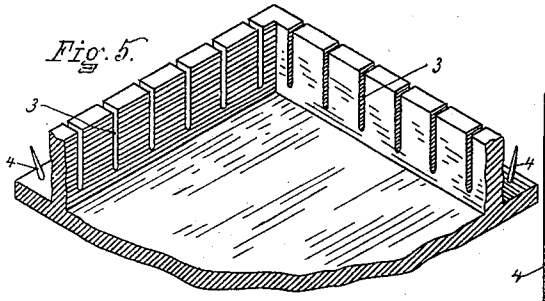


Fig. 4.

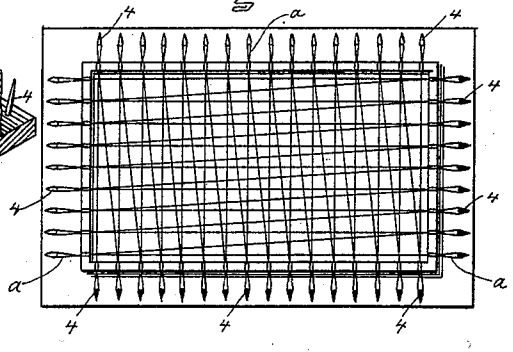


Fig. 6.

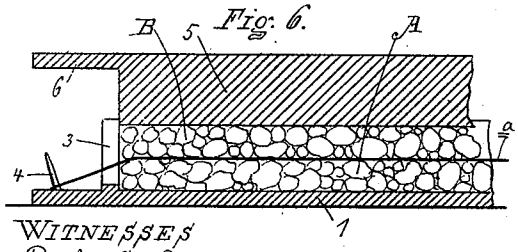
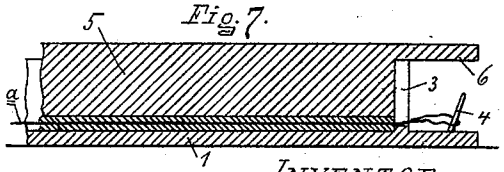


Fig. 7.



WITNESSES
Rich. A. George
E. Millard Jones

INVENTOR
HARRY D. HOLBROOK
BY Risley, Robinson & Love
ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HARRY D. HOLBROOK, OF UTICA, NEW YORK.

SHEET MATERIAL OF CORK AND MECHANISM FOR PRODUCING SAME.

SPECIFICATION forming part of Letters Patent No. 595,776, dated December 21, 1897.

Application filed December 17, 1894. Serial No. 532,015. (No model.)

To all whom it may concern:

Be it known that I, HARRY D. HOLBROOK, of Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Sheet Material of Cork and Mechanism for Producing the Same; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form part of this specification.

My invention relates to an improvement in sheet material composed of granulated or powdered cork held together by cement and provided with fibers running through the sheet to give strength to the material, and also means for producing such material.

In the drawings which accompany and form a part of this specification, and in which similar letters and figures of reference refer to corresponding parts in the several views, Figure 1 shows the base portion of the mold for producing the material. Fig. 2 shows the die or cover portion of the mold or press for producing the material. Fig. 3 shows a sheet of the material as it comes from the mold. Fig. 4 shows a plan view of the base portion of the mold with the fibers, threads, or strings arranged therein to become embodied in the sheet of material, as hereinafter explained. Fig. 5 shows in perspective a portion of the base-mold. Fig. 6 shows details, mostly in section, of the mold in the first portion of the operation. Fig. 7 shows the same as Fig. 6 when the molding operation is completed with a sheet of the material in the mold.

Referring to the letters and figures in a more particular description, 1 indicates a plate-like base provided with a vertical wall 2, formed, preferably, integral therewith and located a little in from the edge of the plate-like base, as clearly shown in Figs. 1 and 5. The wall 2 is provided with a series of vertical slits, as shown at 3 3, &c., extending from the upper edge of the wall nearly to the bottom. Opposite these slits are provided the projecting pins or pegs 4 4, arranged on that portion of the base which projects outside of the wall. Within the wall 2 is adapted to operate the die-plate 5 of a form to closely fit within the walls 2 of the mold. The die portion 5 of the die is mounted on and preferably formed integral with the die base or body 6 and projects from the under face of the die-body a sufficient distance so that when the die-body rests upon the top of the walls 2 there will be a sufficient interval left between the under face of the die 5 and the inner face of the mold 1 to contain the sheet of material being formed.

In forming the sheet of material shown in Fig. 3 the mold is placed on the bed or base of a powerful press. The mold is then partially filled with ground, powdered, or granulated cork saturated with an elastic cement, preferably composed of caoutchouc cut with benzin. Any other elastic cementing material not soluble in water may be used. When the mold is partially filled with the material thus prepared, as shown at A in Fig. 6, the operator then places the threads, strings, or fibrous material (indicated by *a*) in the mold, passing them across from one side to the other and from one end to the other, preferably substantially in the manner shown in Fig. 4, forming a network of threads or strings. In this operation the threads are passed out through the slits 3 in the walls and around the pins 4 and back through the slits and across the body of the mold, as clearly appears from Fig. 4. When the threads have been thus placed in position, the remainder of the mold is filled with the same material as shown at B in Fig. 6. The die or presser plate 5 is then placed in position on the mold, as clearly appears from Fig. 6, and by means of the press is forced into the mold, compressing the materials into the position shown in Fig. 7. After being held in this position for a short period of time the pressure is relieved and the operator removes the cover or plate 5 and passes a sharp knife around the inner face of the walls 2, severing the cords or threads passing through the slits in the wall and removing the sheet of material. These sheets may then be placed between iron plates and a number of them compiled and placed together under a press, where they may be kept under pressure for some time. Whether this latter operation is

performed or not depends on the rapidity with which the material is to be manufactured and the time that it can be allowed to remain under pressure in the original mold.

The last operation consists in passing the sheet of material through a sandpapering process, by means of which an even surface is produced, the surface previous to the sandpapering being uneven by reason of the unequal expansion of the particles of cork when the pressure is relieved. This process of smoothing may also be done with very rapidly moving knives; but I have found the most practical way of producing a smooth surface is by placing the sheet of material on a board or rigid backing and passing it in contact with a sandpaper roller or belt. Both sides, or only one, may be smoothed, depending upon the use to which the material is to be put.

This material is particularly adapted for use as insoles in shoes, and is equally applicable to any use where sheet-cork is used. It is more elastic and free from all holes or perforations which would allow the passage of water or moisture.

It is obvious that instead of the arrangement of strings or threads a very openly woven canvas or netting might be used; but I have found the threads preferable, as the sheet of material is not so liable to split or separate on the lines of the fibers.

The material is very satisfactory for many purposes without the use of any threads or material for giving it strength; but with the threads extending through the body of the sheet the same is capable of standing a considerable amount of strain and is adapted to any use to which sheet-cork can be put and numerous other uses which sheet-cork will not stand. The material is of such a nature and consistency that it can be readily sewed through in the process of manufacture.

It is evident that numerous other ways of producing the material than that herein described may be pursued without departing from the equivalents of my invention.

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

1. As a new article of manufacture the flexible, elastic sheet material herein described consisting of a homogeneous body of granulated cork and elastic cement molded under pressure, and threads running through the body of the material and having the protuberances of the granulations of the cork removed to the general surface of the sheet, substantially as set forth.

2. A mold for forming sheet material consisting of a plain base having vertically-slitted walls and a cover having a die portion adapted to operate within the walls, substantially as set forth.

3. A mold for forming sheet material consisting of a plain base having vertically-slitted walls and projecting pins at the outer side of the walls and a cover having a plain die portion adapted to fit within the walls, substantially as set forth.

In witness whereof I have affixed my signature in presence of two witnesses.

HARRY D. HOLBROOK.

Witnesses:
WILLIAM DONNELLEY,
A. J. DUTCHER.