

H. Hayward.
Hat Fabric.

Nº 93,616.

Patented Aug. 10, 1869.

Fig: 1.

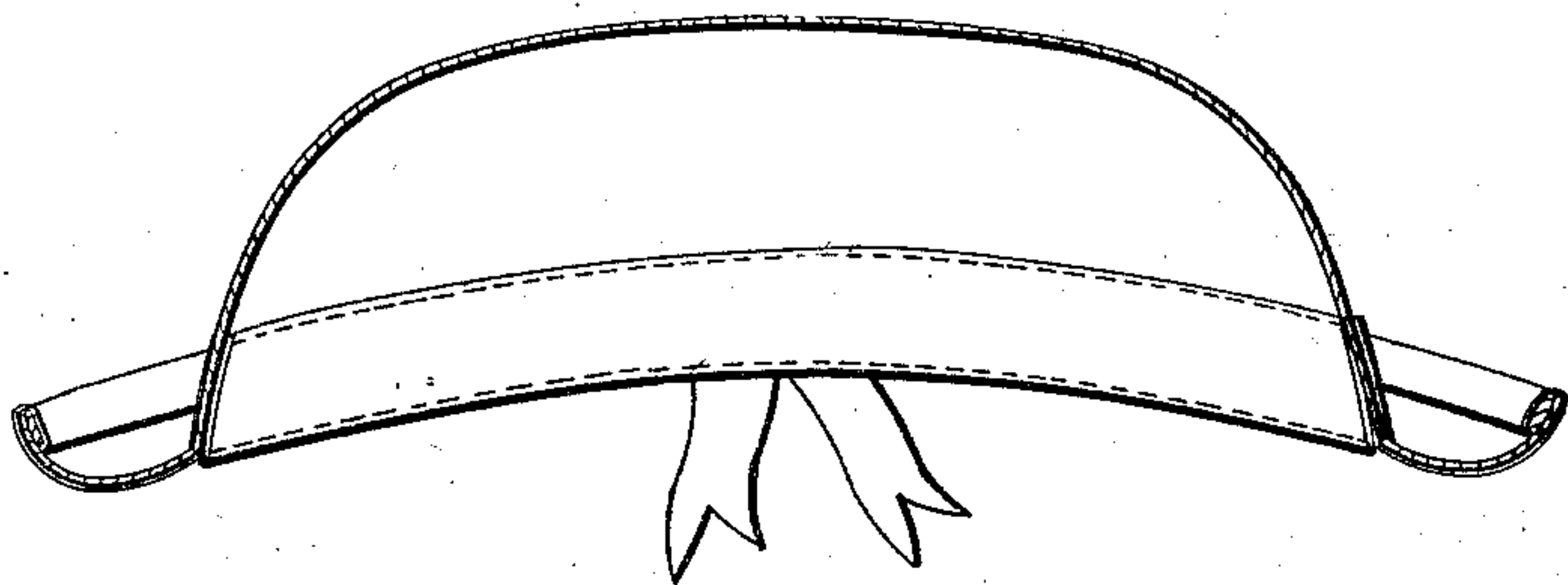
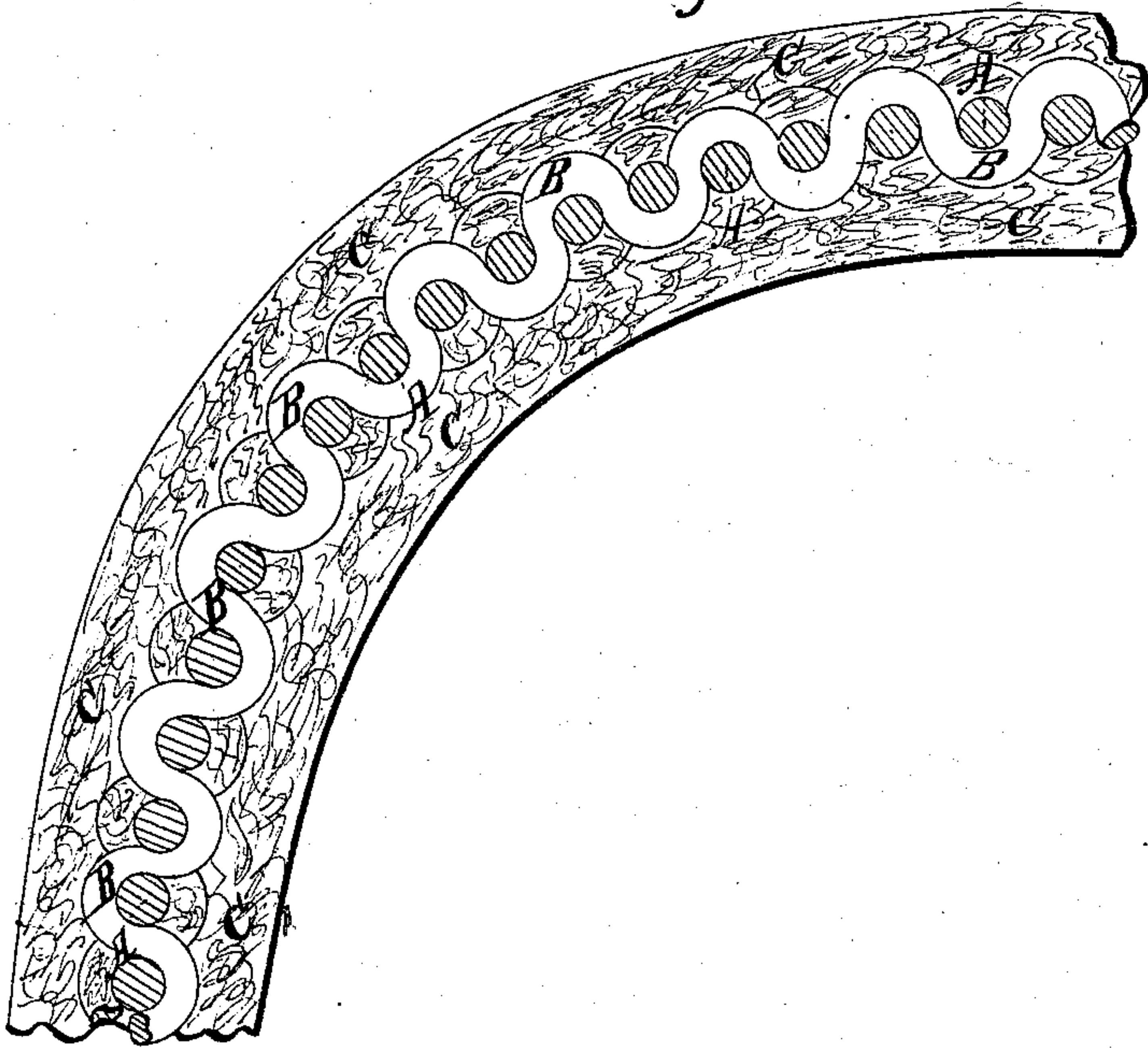


Fig: 2.



Witnesses.

Wm C Day
C. C. Livings

Inventor.

H. Hayward
by his attorney
J. D. Johnson

United States Patent Office.

HENRY HAYWARD, OF NEW YORK, N. Y.

Letters Patent No. 93,616, dated August 10, 1869.

IMPROVEMENT IN HATS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HENRY HAYWARD, of the city and county of New York, in the State of New York, have invented certain new and useful Improvements in Hats and analogous articles; and I do hereby declare that the following is a full and exact description thereof.

Hats have been before made by pressing up common felt or woollen cloth into the required shape by dies, but hats of such material are deficient in stiffness unless strongly sized, and sized material is, for several reasons, less valuable than material possessing the stiffness in itself.

Hats have also been made composed wholly or in part of hair cloth, but such are objectionable in consequence of the labor involved in their manufacture, and are obviously different in appearance and in qualities from felt hats.

In a patent granted to me, dated July the 21st, 1868, I have described a process of manufacturing what I call hair felt, in which horse-hair is wrought with cotton or the like yarns in a loosely-woven fabric, and then incorporated in a thickness of felt by applying wool or other felting-material on both faces and subjecting it to a felting-operation.

Such hair felt has come to be an important article of manufacture, and is known in the trade under the name of "Hayward's patent hair felt."

I have now discovered that by modifying the manufacture, and afterward subjecting such modified hair-felt to the same treatment as has been before applied to common felt, that is to say, pressing it into the required convex forms, and holding it there for a little period with heat, I am able to produce hats, caps, or the swelled parts of hats and caps, or the convex and stiff parts of such articles, greatly superior in appearance, in softness of surface, persistence of contour, and general texture, strength, and probable durability, to anything before known to me; and to effect this great improvement with very little labor and cost, I employ silk in the raw or gummy condition as the warp of my hair felt, and I treat the felt with hot dies of the proper form, in the press described in the patent of M. Morse, dated March 6, 1866, but I believe the machines known as Simonet's, and various others, may be used with success. I consider it necessary simply to strain the raw-silk-warped hair felt into the

required dishing form, and to hold it there firmly under heat, wetting and otherwise treating it in the same manner as in producing hats from ordinary felt by such dies.

The accompanying drawings form a part of this specification.

Figure 1 represents a central section through a hat entire, upon a small scale, and

Figure 2, a section of a portion upon a magnified scale.

In fig. 2, A A, &c., are the horse-hairs, represented in cross-section;

B B, &c., are yarns of raw silk or silk-waste in the gum, which I use instead of cotton or other ordinary yarns to form the warp of the woven fabric; and

C C is the wool, which is firmly felted into and through the woven fabric, so that the whole forms a dense and elastic material, the same as is described in my patent above referred to, except in the fact that the warp is of raw and gummy silk, and that the extra stiff material thus produced stands in and persistently maintains the proper dishing form. The raw-silk yarns are harder and stiffer than ordinary yarns; the gummy matter therein softens by moisture and heat in the act of shaping, and afterward resets, and assumes and maintains the form in which the material is moulded by the dies.

The value of the raw silk in this manufacture lies in its great strength, stiffness, and elasticity, and in the property it possesses of softening and resetting around, so as to match to the several horse-hairs in the exact shape required, so as to aid in holding the finished hat very strongly in form.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

As a new article of manufacture, a head-covering, composed of a layer of open-worked hair-cloth, secured by felting to one, or between two layers of felting-material, substantially as described.

In testimony whereof, I have hereunto set my name, in presence of two subscribing witnesses.

HY. HAYWARD.

Witnesses:

CHAS. E. FORMAN,
THOS. B. CLIFFORD.