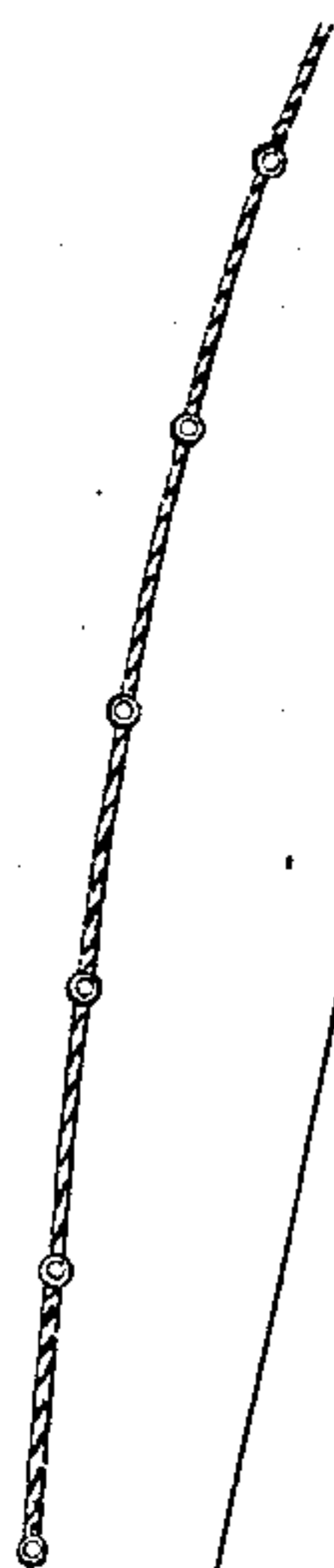


*H. Hayward,  
Hoop Skirt.*

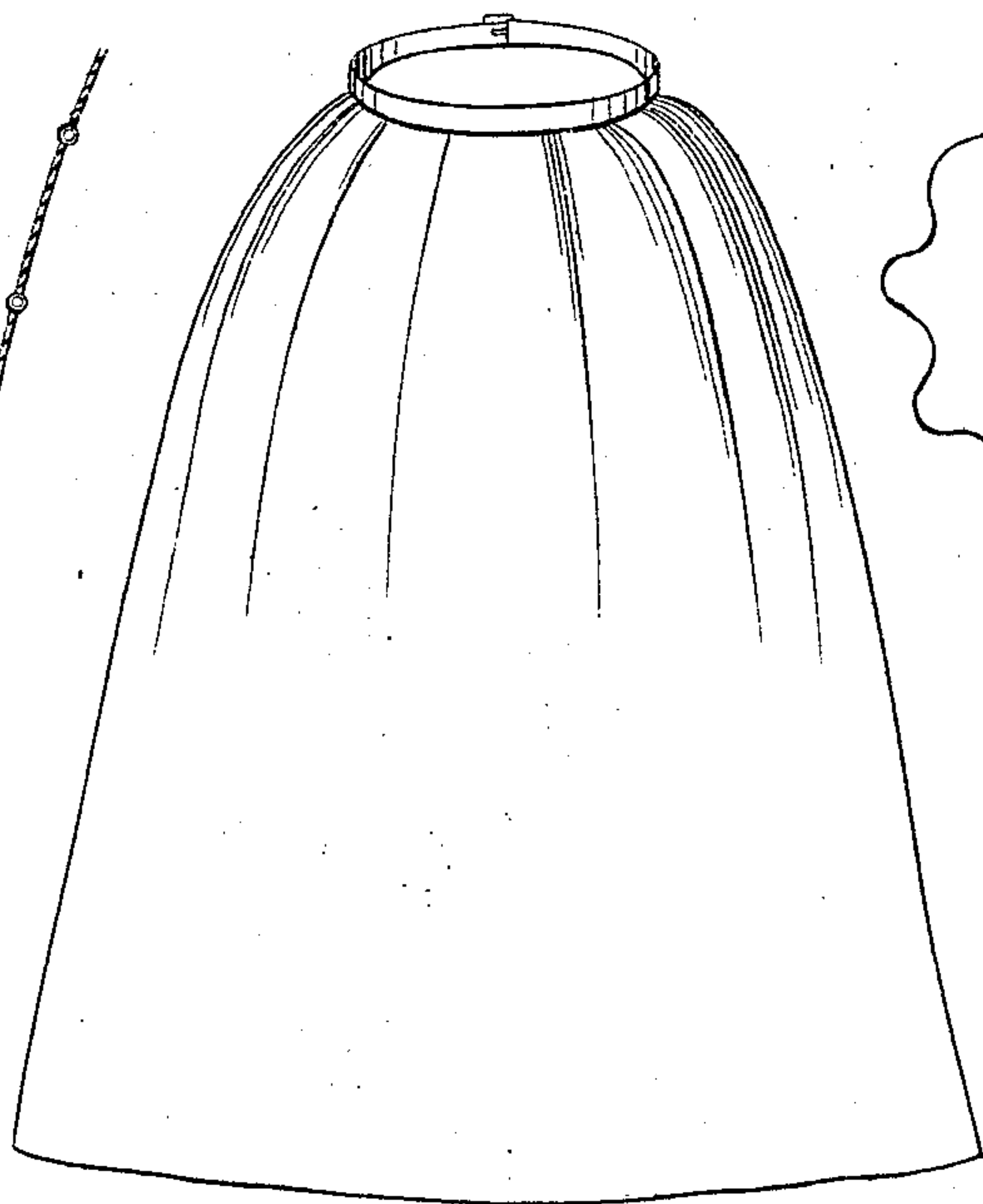
*No. 95684.*

*Patented. Oct. 12. 1869*

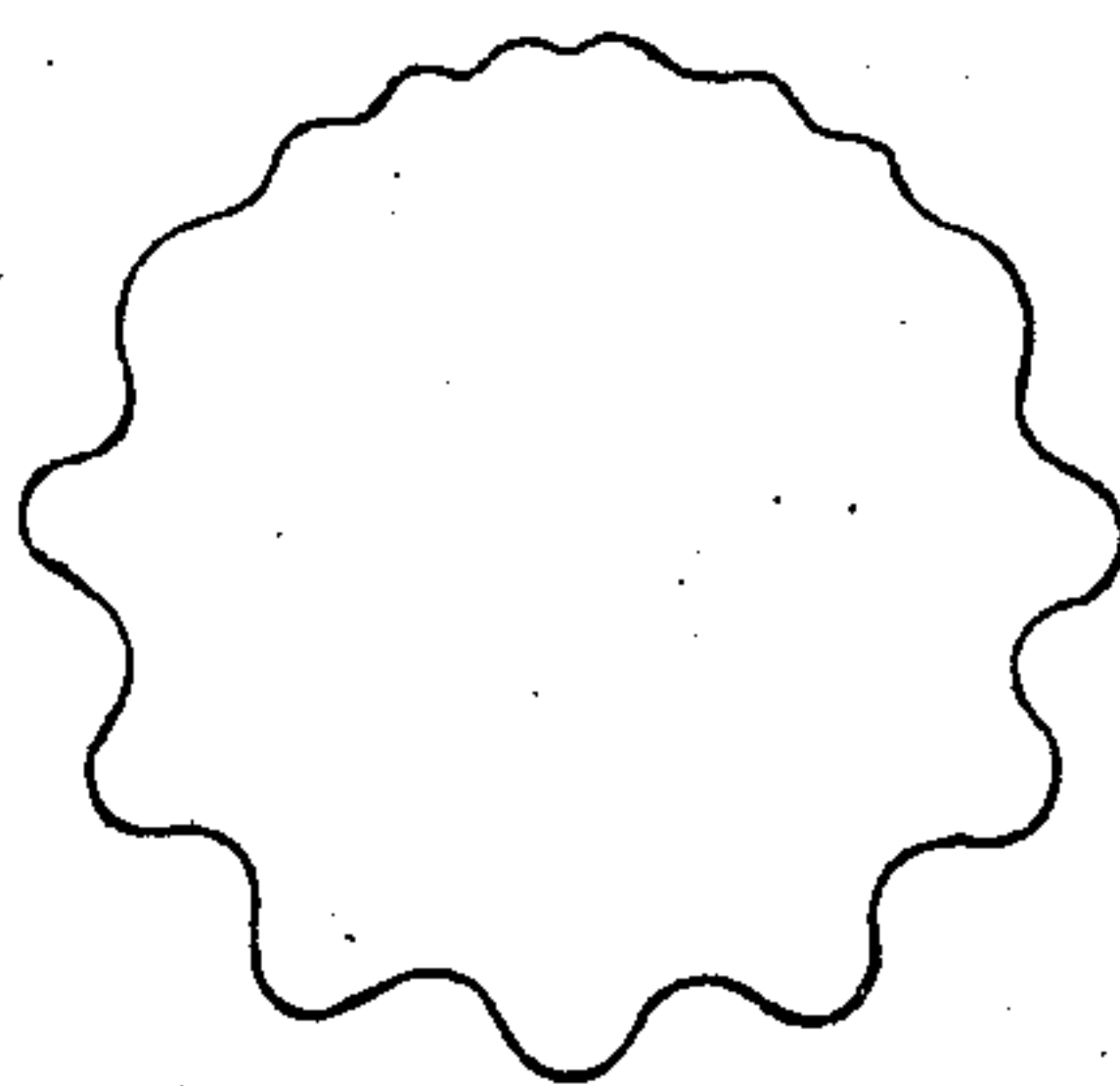
*Fig. 4.*



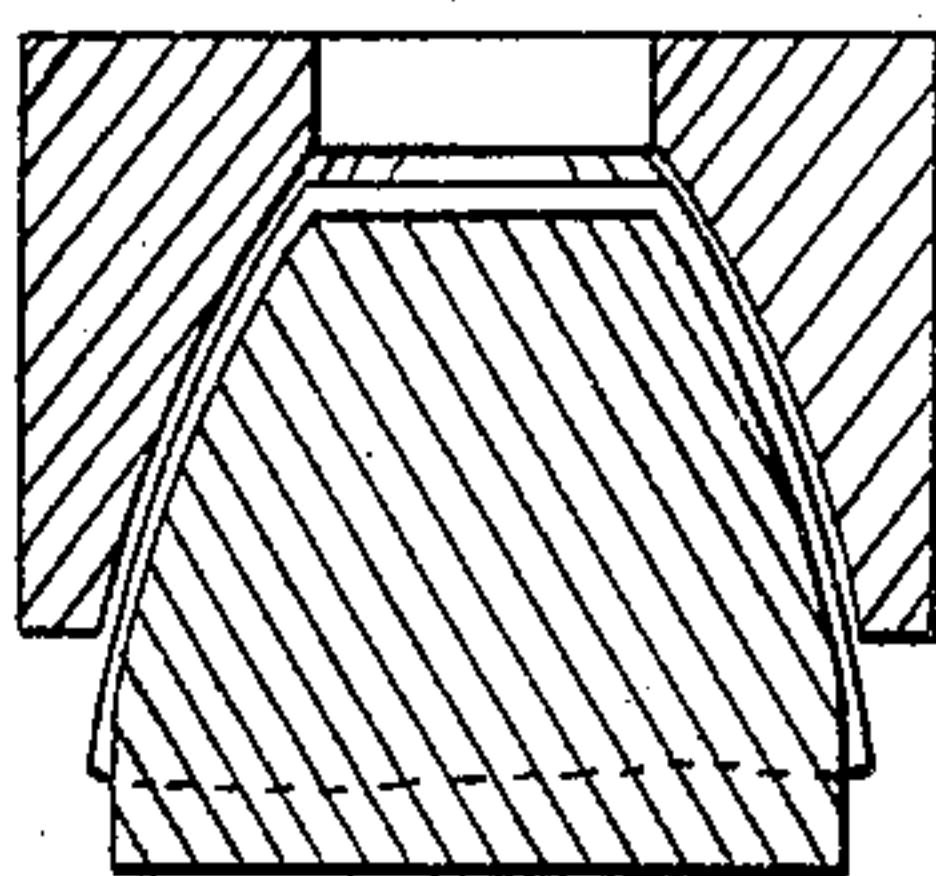
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 5.*



*Fig. 6.*



*Fig. 7.*



*Witnesses.*

*W. C. Livingston  
W. C. Livingston*

*Inventor.*

*H. Hayward  
By his attorney  
J. S. Hayward*

# United States Patent Office.

HENRY HAYWARD, OF NEW YORK, N. Y.

Letters Patent No. 95,684, dated October 12, 1869.

## IMPROVEMENT IN SKIRTS.

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 made an Improvement in Skirts for ladies' wear; and I do hereby declare that the following is a full and exact description thereof.

The employment of tempered-steel hoops in skirts is open to various objections, not the least of which is the liability of the steel either to break or to become permanently set when doubled or bent in very short curves. Felt has lately been much approved as a material for skirts, its peculiar stiffness and immunity from this evil rendering it highly desirable for this purpose. The peculiar properties of horse-hair make it very desirable for this use, and has given the general name of "crinoline" to all stiffened skirts.

I employ horse-hair in my skirts, in a new form.

The skirt approximates in its appearance and qualities very closely to a skirt having hoops of steel, but it avoids the liability of steel hoops to break, rust, or become permanently and obstinately set. A lady may sit upon, or otherwise double and bend my material, without danger of injuring either herself or the clothing.

I employ horse-hair in the form of cords. The horse-hair is held in the centre or body of the cord in a straight or nearly straight condition, is held together by a covering, tightly wrapped around it, by the aid of the ordinary covering-machinery. The cords may be wound upon bobbins, or otherwise suitably held, to be introduced into the material of the skirt in the act of weaving.

I can weave the skirt in any approved manner to receive my stiffeners.

I can produce a good skirt by simply introducing the horse-hair cords at short intervals as yarns in the filling; that is to say, I can operate the harness, and weave with an ordinary filling of cotton, wool, or the like, until a space of, say, one inch, is woven, and then introduce one of the horse-hair yarns, then proceed weaving in the ordinary manner, with ordinary filling, for another inch, and then introduce another yarn. To effect this, the shuttle carrying the horse-hair

yarn may be carried in a separate box, and thrown across at intervals of thirty or any other number of picks, as will be well understood by those accustomed to fancy weaving.

As skirts are ordinarily made, more stiffness is required around the bottom than near the top. I propose to vary my skirts, by putting the horse-hair cords closer together near the bottom, and gradually increasing the distance as the work proceeds. I propose to weave the skirts in the proper form, narrower at the top, by using looms adapted to such gored work.

The accompanying drawings form a part of this specification.

Figure 1 represents a complete skirt;

Figure 2, a horizontal section near the top, on the same scale;

Figure 3, a vertical section of the same part, with heated dies for corrugating, on a smaller scale; and

Figure 4, a vertical section of the side of the skirt near the bottom, on a larger scale.

The additional figures indicate the construction of the stiffening-cords—

Figure 5 being a side view, showing a piece of cord partially made, the end at the right being finished, and the part at the left being unfinished.

Figure 6 is a section of the unfinished, and

Figure 7, a section of the finished part of the cord.

It is believed that this description, and these figures, will make the whole matter clear to mechanics skilled in the arts to which it relates, without letters of reference, and a minute description of each detail by itself.

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 skirt composed of a fabric whose warp and weft, one or both, are partially composed of spun horse-hair yarn, substantially as described.

HY. HAYWARD.

Witnesses:

C. C. LIVINGS,

W. C. DEY.