S. H. DOUGHTY.

BUSTLES.

No. 184,765. Patented Nov. 28, 1876.

Fig: 1.

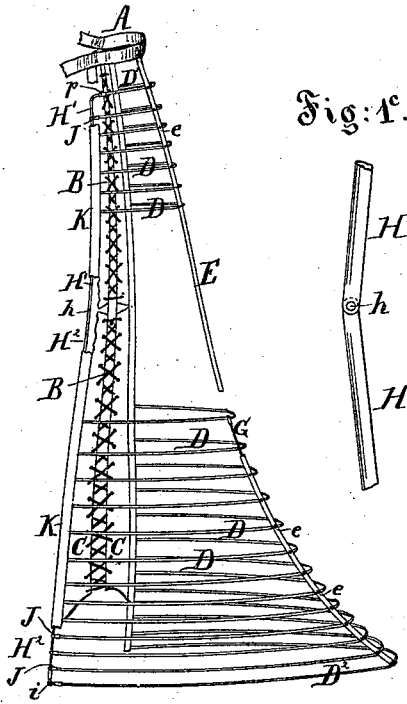


Fig: 1ᵇ.

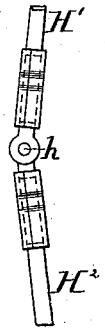


Fig: 1ᶜ.

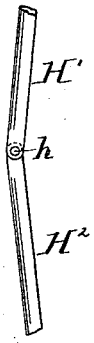


Fig: 1ᵃ.

Fig: 3.

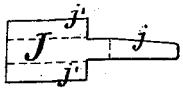


Fig: 4.

Fig: 2.

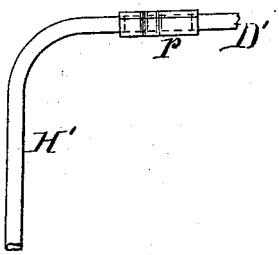


Fig: 5.

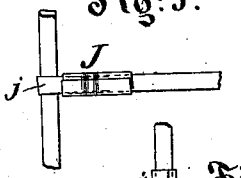


Fig: 7.

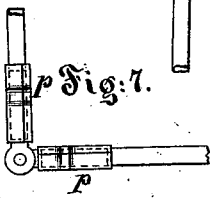
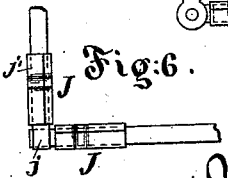


Fig: 6.



Witnesses:

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H. Henry Gentner 2d

Inventor:

S. H. Doughty.

by his attorney

Thomas D. Stetson.

UNITED STATES PATENT OFFICE.

SAMUEL H. DOUGHTY, OF NEW YORK, N. Y.

IMPROVEMENT IN BUSTLES.

Specification forming part of Letters Patent No. **184,765**, dated November 28, 1876; application filed September 23, 1876.

To all whom it may concern:

Be it known that I, SAMUEL H. DOUGHTY, of New York city, in the State of New York, have invented certain new and useful Improvements relating to Bustles, and analogous articles of ladies' wearing apparel, of which the following is a specification:

I have succeeded in introducing important improvements in the details,, whereby the action of the springs is improved, and the convenience and durability of the article promoted.

When my improvements are fully carried out, a stiff spring of channel-shaped steel, analogous to that employed for umbrella-ribs, known as "paragon" ribs, extends up and down the bustle on each side, and is provided with a hinge at or near the mid-height, which allows the bustle to fold at that point, and accommodate the action in sitting down. Most of my ordinary horizontal springs take hold of the upright springs, before referred to, by means of a connecting-piece, firmly secured to the horizontal spring and embracing the upright, as will appear further on. The lowermost horizontal spring is hinged to the upright by a pivot; the uppermost is united stiffly.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying out the invention.

Figure 1 is a general perspective view of a pannier. The additional figures represent details on a larger scale.

Fig. 1^a is a section of one of the upright front springs. This is on a larger scale than any of the other figures. Fig. 1^b represents one form of the hinge used at the mid-height of the front spring. Fig. 1^c shows another form thereof.

Fig. 2 represents the stiff junction of the front spring with the upper horizontal spring.

Fig. 3 shows the metal of the interlocking-piece in a plane condition.

Fig. 4 shows the same after it has been bent, by suitable dies or otherwise, into the form ready for application.

Fig. 5 shows the same after it has been applied to interlock a horizontal spring with an upright spring. It shows the completed joint or interlocking connection.

Fig. 6 shows two of these interlocking-pieces engaged together to form a suitable connection for the top or bottom of the front. It is represented as at the bottom. I prefer it at the top, using the form shown in Fig. 7 at the bottom.

Fig. 7 is a modification, a hinge similar to that shown in Fig. 1^b used as a junction for the bottom of the upright spring with the lower horizontal spring.

Similar letters of reference indicate like parts in all the figures.

A is the ordinary waistband; B, the ordinary adjustable lacing, rove through eyes in the inner edge of ordinary fabric C. The fabric C and lacing B stretch across and constitute the chord of the arc formed by the horizontal springs. The ordinary horizontal springs are marked D. The uppermost is marked D^1, and the lowermost is marked D^2. One tape, E, extends up and down the back of the bustle, secured to each horizontal hoop by clasps *e*. A spring, G, may also extend up and down a portion of the distance at the back, as usual, attached by any ordinary or suitable means. Up and down the front of the bustle, on each side, extends a narrow strip of steel, in two lengths, H^1 H^2, connected together by a hinge, *h*. Each length H^1 H^2 is folded nearly together longitudinally.

I have used successfully the ordinary steel spring sold in the market to form the ribs of paragon umbrellas; but I esteem it preferable to use lighter and more flexible steel, which may be specially made for the purpose.

The upper end of each upright steel H^1 is bent nearly at right angles, and stiffly connected to the uppermost horizontal steel D^1 by a clasp, *p*, which may be similar to those used for joining the ends of the springs of hoop-skirts. The lower horizontal spring D^2 is connected to the lower end of each spring H^2 by a flexible hinge, *i*. The several intermediate horizontal springs D are united with their respective uprights H^1 H^2 by a metallic connection, J, which loosely embraces the upright spring, and is firmly attached to the horizontal spring.

What I esteem the preferable construction of this interlocking connection J is shown in Figs. 3 and 4; but the form may be varied

within wide limits. It is only essential that it be adapted to encircle the upright spring, and be firmly united to the horizontal spring.

The several parts of the piece J are marked *j j'*, &c. To apply the connection, the springs are held in the proper relation; the long tongue *j* is folded around the upright spring, and bent down into the trough formed by the folding pieces *j j'*, which already contain the horizontal spring; and then the parts *j'* are folded firmly down by hand or by machinery to inclose the whole, and the union is guarded against pulling out of the horizontal spring by what is known in the skirt-manufacture as "corrugating"—that is, bending both the inclosed spring and the clasping parts by a press or by a blow in a suitable machine. The junction thus formed between the horizontal and the upright springs is very strong and durable, and allows a considerable working or looseness. The junctions are finally covered by a tab or binding, K, of muslin or other suitable fabric.

Many modifications may be made in the details without defeating the objects of the invention. Some parts of my improvements may be used without the others; but I prefer the whole together, as shown.

It will be understood that many or all the improvements used in other skirts, panniers, and bustles may be used with mine, such as adjustments in the shape or proportions, the attachment of removable protectors on the lower edge, or the like. Instead of one tape at the back, I can use three or any other number.

I find that the same means of fastening which I have applied in attaching the ends of the horizontal springs D to the springs H^1 H^2 may apply, also, in securing the ends of the upright or bracing spring G at the back.

I propose, in some cases, to dispense with the stiff connection at the junction of the upright spring H^1 and the highest and lowest of the horizontal springs, and to make a connection there, by interlocking, by the same device as connects the springs D.

The hinge shown in Figs. 1^b and 7 has been long known in the skirt trade, to form hinges in the horizontal hoops of skirts. I use it for the hinge *h*, and it makes that portion of the upright spring as stiff in one direction as any other part thereof, while it bends with perfect freedom kneewise. The same form of hinge may be used at the bottom, and, if preferred, also at the top, of the upright front spring; but I prefer, in general, to make the top by a simple duplication of the interlocking-clasps J—that is to say, attaching one clasp, J, to the upper end of the upright spring, and interlocking it with a similar clasp attached to the end of the horizontal spring D', as will be understood. I can use my interlocking-clasp J to embrace the upright spring and connect each of the horizontal springs thereto, even if the upright spring is of still more flexible material, as manila cord or catgut.

I claim as my improvements in bustles, panniers, the open-front parts of skirts, and analogous articles of ladies' wear in which springs extend only part way round—

1. The concave or paragon spring as a front connection for the several horizontal springs, as and for the purposes specified.

2. The hinge *h* in the upright front springs, connecting the two parts, as herein specified.

3. The interlocking connection-piece J, formed with a tongue, *j*, and folded lips *j'*, adapted to connect the horizontal springs D and the upright front springs, as herein specified.

4. In combination, the upright springs H^1 H^2, joining the horizontal springs D with a hinge, *h*, at each side, and the flexible connections formed by the interlocking unions J, as herein specified.

In testimony whereof I have hereunto set my hand this 20th day of September, 1876, in the presence of two subscribing witnesses.

SAMUEL H. DOUGHTY.

Witnesses:

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PHILLIPS ABBOTT.