J. FETTIS.

RIBBON WIRE.

No. 185,093. Patented Dec. 5, 1876.

Fig: 1.

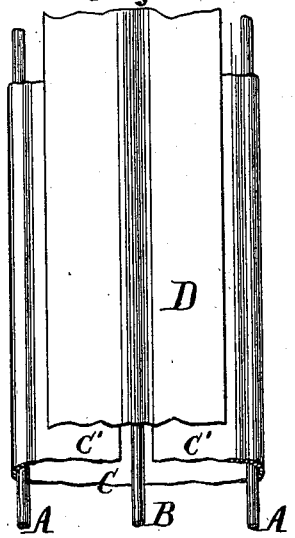
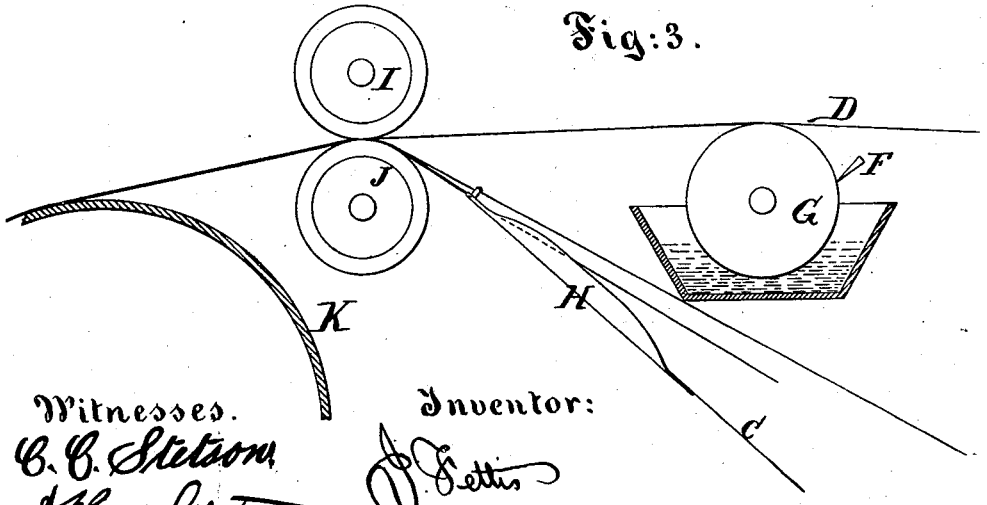


Fig: 2.

Fig: 3.



Witnesses.

C. C. Stetson

A. Bruce Gontner

Inventor:

J. Fettis

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UNITED STATES PATENT OFFICE.

JESSE FETTIS, OF NEW YORK, N. Y.

IMPROVEMENT IN RIBBON-WIRE.

Specification forming part of Letters Patent No. **185,093**, dated December 5, 1876; application filed September 30, 1876.

To all whom it may concern:

Be it known that I, JESSE FETTIS, of New York city, in the State of New York, have invented certain new and useful Improvements relating to Ribbon-Wire, of which the following is a specification:

Ribbon-wire, sometimes denominated "wire-taste," "cap-wire," or "three-wire ribbon," has long been known in the market, and is of great utility in many articles of clothing, particularly the head-dresses for ladies and children. As heretofore constructed it was a narrow ribbon or tape of cotton, with three of the cotton warps omitted, and three slender iron wires substituted in the place thereof.

I have discovered that an article rivaling this old manufacture in all its useful qualities, and exceeding it in some of the most important, may be manufactured rapidly with little cost, by inclosing the wires held at a suitable distance apart within a folded fabric previously prepared by the ordinary cheap processes in great widths, and cut up into strips. I have devised a construction which conceals and defends the edge, and the cementing material is doubly useful by contributing stiffness to the manufacture.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form part of this specification.

Figure 1 is a face view of a short length of my completed ribbon-wire. Fig. 2 is a cross-section thereof. Fig. 3 is a side elevation, giving an outline of the essential parts of the apparatus I employ in the manufacture.

I cut by hand or by machinery two sets of strips of muslin. One set has a width nearly twice as great as the proposed article; the other is less wide. I wind these sets on separate reels, ready to be delivered, as required. I lead through suitable guides under proper tension two wires, at a proper distance apart to form the edges of my narrow goods, and I lead midway between them a third wire, or, if preferred, a yarn of cotton. All of these are moistened with a cementing material, preferably a strong solution of size or glue, with water and dextrine. I lead through a suitable folding-guide one of the wide strips of muslin, and fold the edges inward over the wires. So soon as the edges are fairly folded over, the narrow strip, previously made adhesive with the cementing material on its under surface, is pressed down, and covers the folded edge, and nearly the entire upper surface. The wire or yarn presented in the middle of the width is held between the abutting edges of the wide strip. The material, having been properly compressed together in this condition, is dried and wound on thin board for sale and use.

Referring to the figures, A A are the edge-wires; B, the central wire or yarn; C C′, the broad strip of muslin; D, the narrow strip, and *e* the dextrine or other cement.

I prefer that the drying shall only be carried to a moderate extent by rapid artificial heat, and that it shall be completed by the slower process of exposure to the air in the shade. I thus increase the toughness of the product.

Referring to Fig. 3, G is a roller partially immersed in a dish, showing the liquid cementing material, and slowly revolving as the narrow strip of material D is drawn in contact therewith. F is a scraper, that removes most of the cement, and allows only just enough to go over on the roller and be transferred to the lower face of the strip D. The edge-wires A and intermediate yarn are similarly moistened with cement by passing in contact with a similar wheel. (Not represented.) H is a folding-guide, through which the wide fabric C C′ is drawn, and folded over upon the wires and yarn. I J are rollers, preferably of india-rubber, which press the compound and dampened material gently but firmly together. K is a steam-heated cylinder, around which the finished but very damp fabric is carried one or more times, and partially dried.

I can use more than three of the wires or other longitudinal parts, if preferred. I can use paper instead of muslin for one or both of the parts C D. Preferably, however, the whole is made exactly as I have described. It can be produced rapidly by machinery. The machines are found to require but little skill or care.

By the employment of the yarn B instead of an additional wire along the center of the

ribbon, I secure a proper abutment for the folded edges C′ of the strip C without the increased cost and weight which would be caused by the addition of another wire. The wires are best coated with cement by being each led once around their respective gumming-cylinders.

I claim as my invention—

1. The compound ribbon-wire described, having the folded fabric C C′, wires A A, and covering-strip D joined by a cementing material, *e*, as herein specified.

2. The central wire or yarn B and edge-wires A, in combination with the flexible folded strip C C′ and covering-strip D, as and for the purpose herein specified.

In testimony whereof I have hereunto set my hand this 29th day of September, 1876, in the presence of two subscribing witnesses.

JESSE FETTIS.

Witnesses:

CHARLES C. STETSON,

A. HENRY GENTNER.