

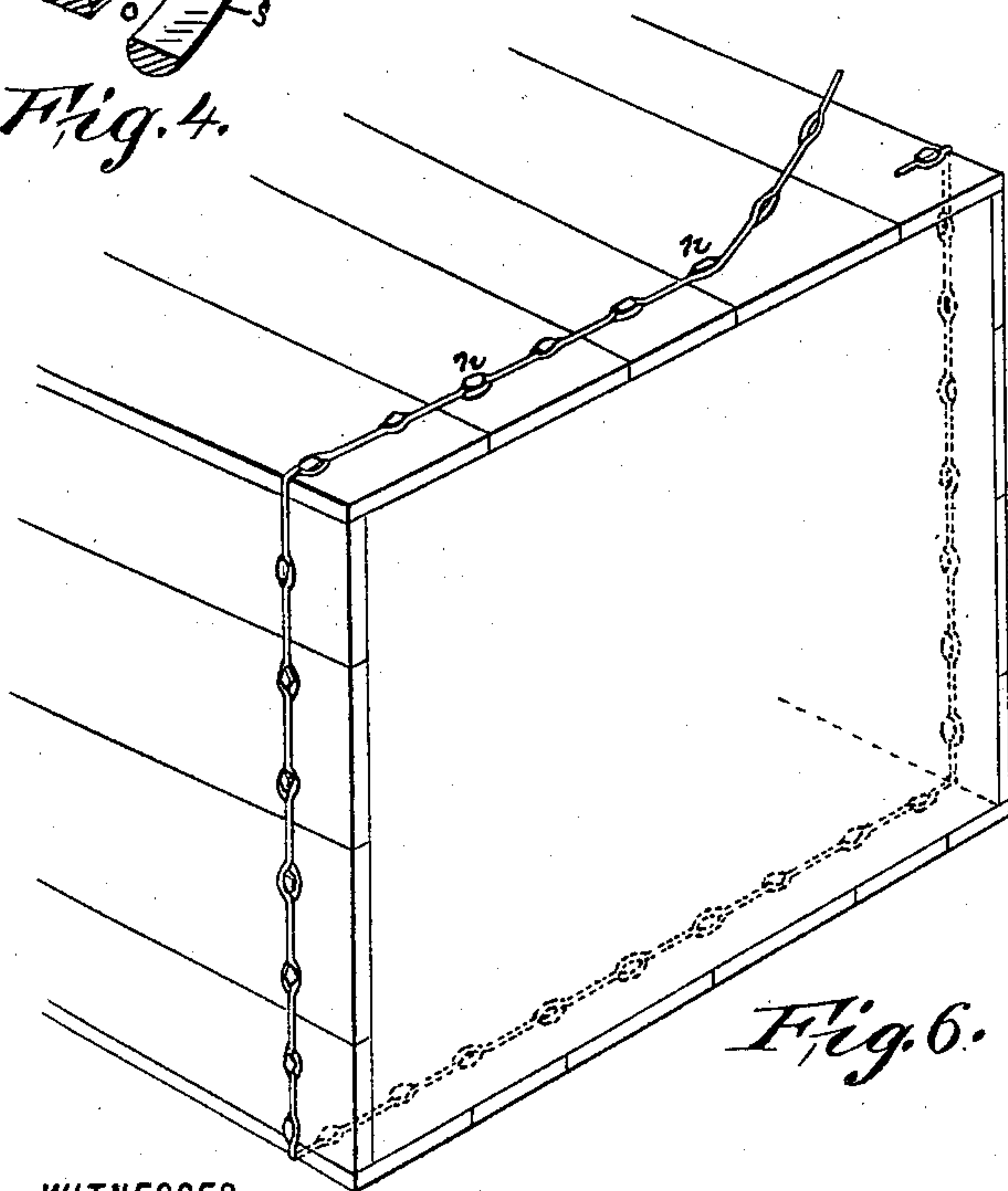
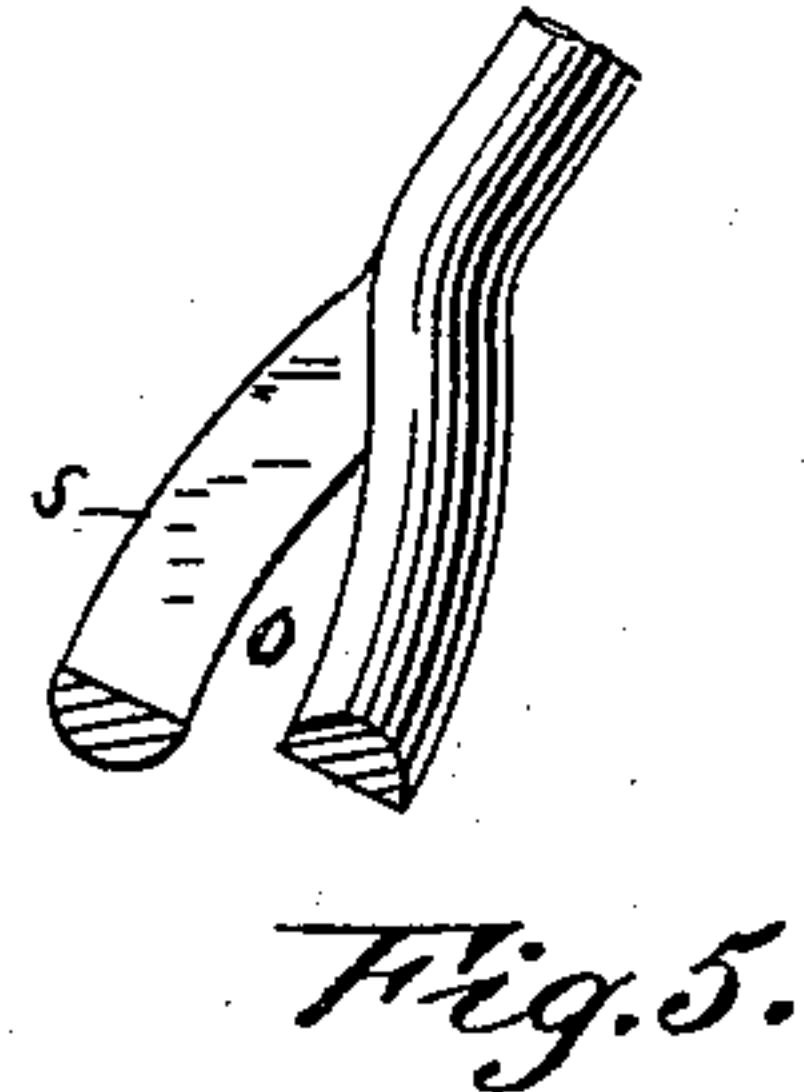
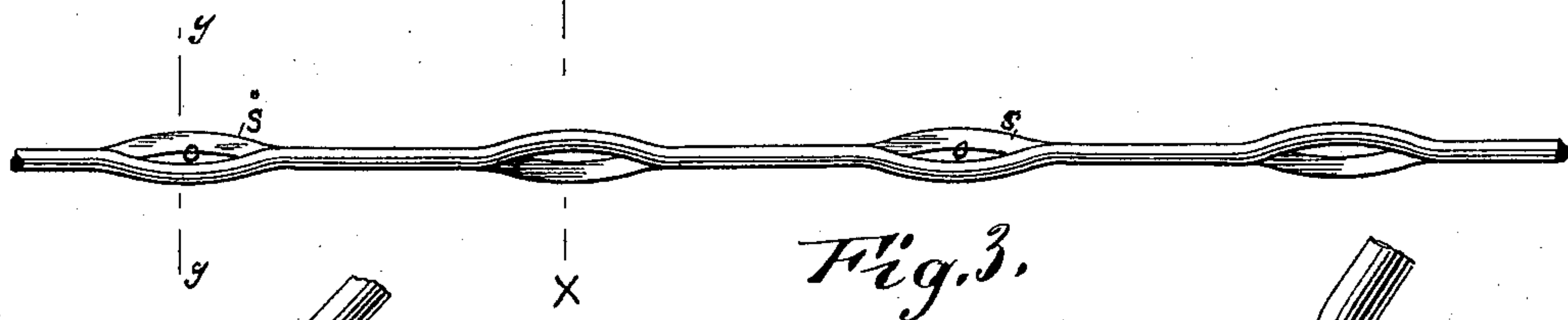
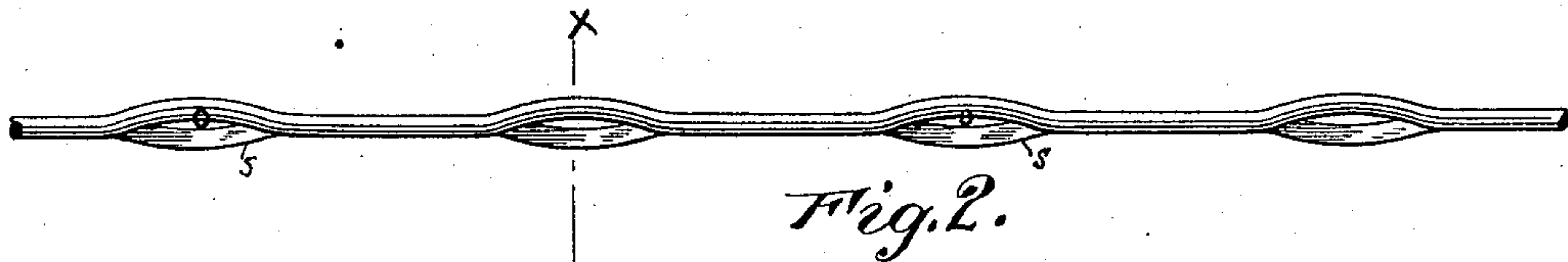
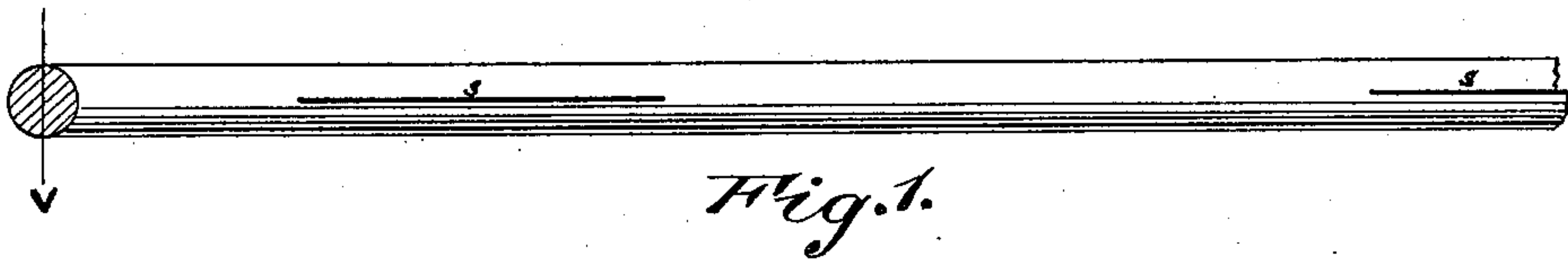
(No Model.)

2 Sheets—Sheet 1.

S. C. CARY.
BOX STRAP.

No. 585,020.

Patented June 22, 1897.



WITNESSES

C. W. Benjamin
E. B. Chace

INVENTOR

Spencer C. Cary
BY *A. M. Vermilyea*
his ATTORNEY

(No Model.)

2 Sheets—Sheet 2.

S. C. CARY.
BOX STRAP.

No. 585,020.

Patented June 22, 1897.

Fig. 7.

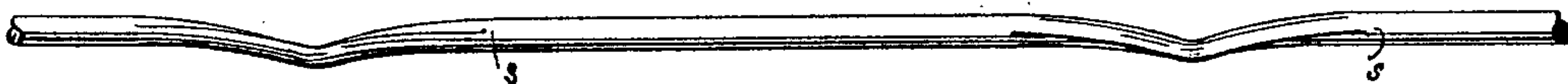


Fig. 8.

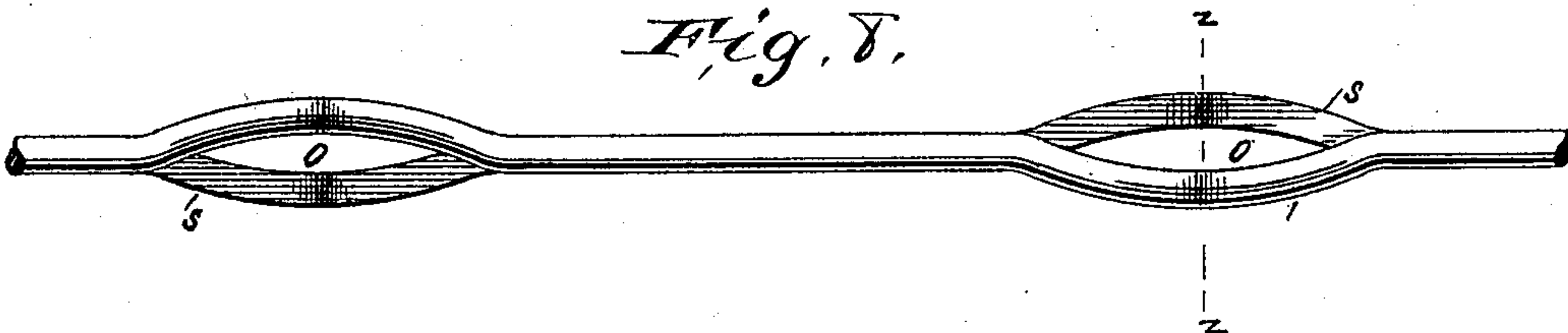


Fig. 9.



Witnesses:
C. W. Benjamin
Arthur H. Vermeulen

Inventor:
Spencer C. Cary
by A. H. Vermeulen
his Attorney.

UNITED STATES PATENT OFFICE.

SPENCER C. CARY, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE CARY MANUFACTURING COMPANY, OF NEW YORK, N. Y.

BOX-STRAP.

SPECIFICATION forming part of Letters Patent No. 585,020, dated June 22, 1897.

Application filed December 21, 1896. Serial No. 616,449. (No model.)

To all whom it may concern:

Be it known that I, SPENCER C. CARY, a citizen of the United States of America, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Box-Straps, of which the following is a specification, reference being had to the accompanying drawings, forming part of the same, in which—
10 Figure 1 is a perspective view of a piece of wire from which the strap may be made, with marks indicating the intended locations and direction of the openings which are to be made therein to receive the nails by which it
15 is to be held to the box. Fig. 2 is a plan view of one form of the completed strap. Fig. 3 is a plan view of another (the preferred) form of the completed article. Fig. 4 is a vertical sectional view on line *xx*, Figs. 2 and 3. Fig.
20 5 is a similar view on line *yy*, Fig. 3. Fig. 6 represents a portion of a box to which a strap like that of Fig. 3 has been partially applied. Fig. 7 is a side elevation of a short piece of strap which has been applied to a box. Fig.
25 8 is a plan view of the piece shown in Fig. 7, and Fig. 9 is a vertical cross-sectional view on line *zz* of Fig. 8.

A box-strap must have strength without being brittle. It has to be applied to articles of
30 various shapes and sizes and must be capable of bending readily at any point in order that in turning corners it may be brought closely to the form of the article without breaking or cracking at such points. It must
35 be capable of ready securing by nails or analogous fastenings and capable of rapid manufacture, and also economical as regards the material and labor expended in manufacture. When finished, it should be slightly, and above
40 all should be so formed that as one portion is secured the continuation will lie flat to a box or package ready for being rapidly and easily fastened. I have experimented in endeavoring to produce such a strap to a con-
45 siderable degree. I find that if a piece of material is cut vertically and spread laterally to form an opening for a securing-nail the metal at the ends of the cut is so hardened that the strap is brittle at those points, and a
50 liability to break there is fatal to the acceptableness of a strap. Not only so, but the

width of the metal on either side of the cut is only one-half of the whole of the strap, and it is therefore weaker than is desirable, the result being that heavier material must be used. 55 For heavy straps the strength may be attained by leaving the strap entire and driving a nail directly through it, but for very light straps this cannot be done. The opening for the nail must be made by the manufacturer. The
60 consumer has not the requisite appliances. Moreover, to slit vertically and spread horizontally requires a form of punch and can only be done with a step-by-step movement, which is slow as well as expensive. 65

I have tried slitting a flat strip vertically and spreading vertically; but that leaves a strap with substantially lateral openings, as the main body of the strap between the slits lies at right angles to the plane of the edges 70 of the slit portions. It will not lie flat on a box and the nail must be inserted sidewise and then turned one-quarter around (the strap being twisted at the same time) before it can be driven into the box. When it is so
75 driven, it will spread the opening somewhat and be very likely to crack the strap at the juncture of the two parts of metal forming the sides of the opening. It will, moreover, give the free part of the strap a further twist, 80 and that will, to a considerable degree, stand edgewise instead of flatwise to the box, so that packers will not use it because of the inconvenience attending that use, and it does not, therefore, constitute a practical device 85 for general use.

The strap I have devised and here represent is free from all these objections. In making it I take wire, usually round, as that has great strength united with great pliability, 90 and its cost is low. I then slit it horizontally—considering horizontally to mean a line parallel with the face to be applied to the box or the face of the box itself to which the strap is to be applied. At the same time with suit- 95 able dies I force the upper part of the slit wire away from its normal position in one direction and the lower part away from its normal position in the other direction. That is, assuming that the line *v* of Fig. 1 is a verti- 100 cal line, the cuts or slits *s* will be made horizontally at right angles to line *v* and one part

forced to one side of the plane of line *v* and the other to the other side of that plane. The result is a substantially double-convex opening *o* for the insertion of the nail *n*, a line through which opening is vertical just as line *v* is vertical, and the material where the slit ends (both the top part and the bottom part) has the full width of the unslit goods. The metal is not rendered so brittle as by vertical slitting and lateral spreading, and the resulting article will be a strap the eyes of which are flat with the great diameter of the goods. This point I further insure by alternating the direction of bending, as shown in Fig. 3. First I bend the top part one way and the bottom part the other way, and at a succeeding eye the top part is bent as a preceding bottom one was and the bottom part as a preceding top one was, which will provide a series of points of support in both directions at even levels and substantially even distances from the axial line of the metal, which, it is manifest, will compel the eyes to all lie flat, with the openings through them ready for the vertical insertion of nails without twisting the strap for the purpose. It is smooth and therefore acceptable to the packer, light for its strength, and therefore economical as well as more easily handled, no extra weight needing to be moved or paid for, always lies so that it may be easily bent to the form of the package to be strapped and that nails may be inserted vertically and driven home without twisting the strap to bring the opening to the desired plane or the nail to the vertical position, and it is more pliable than one in which the stock is slit vertically and spread away from the cut at right angles to the direction of making the cut, the bends not being hardened as in such other form.

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

1. A box-strap composed of a strip of metal slitted horizontally at intervals and having the parts of the material on opposite sides of said slits, spread outwardly in the direction

of the plane of the slit, both parts substantially parallel, but one part in one direction and the other part in the other direction from the axial line of the strip, all substantially as set forth.

2. A box-strap composed of a strip of metal slitted horizontally at intervals in a direction parallel with the greatest diameter of the strip, and having the parts of the material on opposite sides of said slits spread outwardly in the direction of the plane of the slit, both parts substantially parallel, but one part in one direction and the other part in the other direction from the axial line of the strip, all substantially as set forth.

3. A box-strap composed of a strip of metal slitted horizontally at intervals and having the parts of the material on opposite sides of said slits spread outwardly in the direction of the plane of the slit, both parts substantially parallel, but one part in one direction and the other part in the other direction from the axial line of the strip, the direction of spreading the respective parts being reversed at some slits from what they are at other slits, all substantially as set forth.

4. A box-strap composed of a single metal wire slitted at intervals through and parallel with its substantially greatest diameter and having the material on opposite sides of said slits spread outwardly in the direction of the plane of the slit, both parts substantially parallel but one part in one direction and the other part in the other direction, the direction of spreading the respective parts alternating at successive slits all substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 19th day of December, 1896.

SPENCER C. CARY.

Witnesses:

PETER B. VERMILYA,
B. M. GLASGOW.