

(No Model.)

E. P. FREDERICK.
ART OF SPLICING WIRE.

No. 390,220.

Patented Oct. 2, 1888.

Fig. 1,

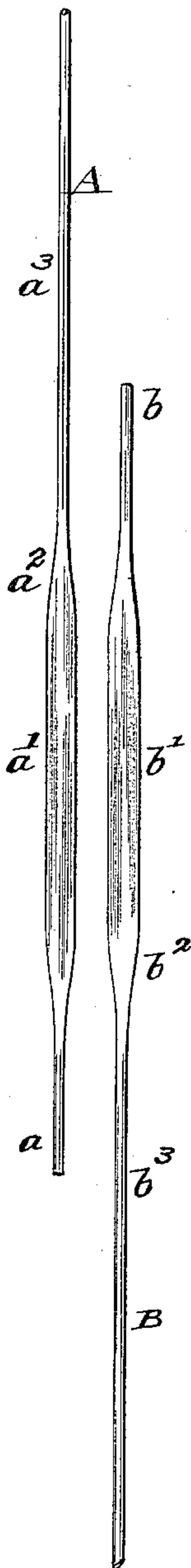


Fig. 2,

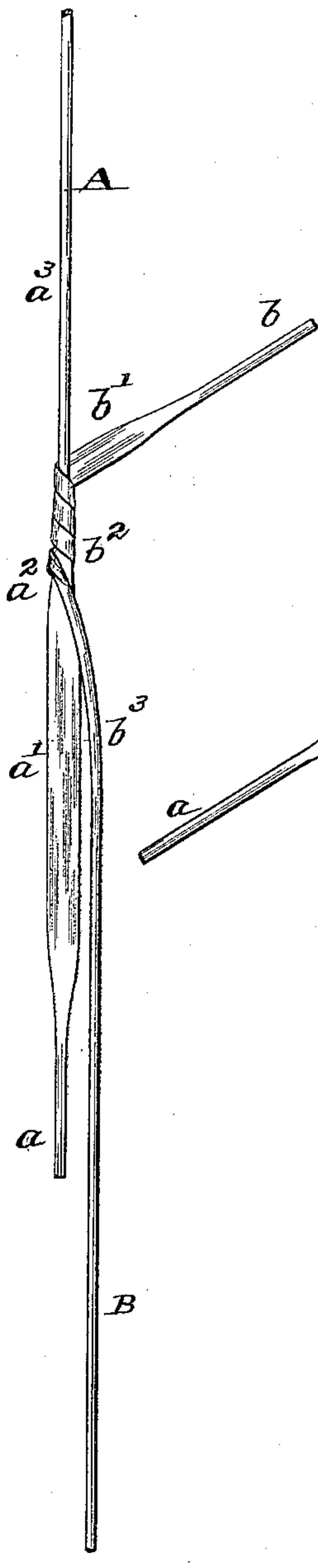


Fig. 3,

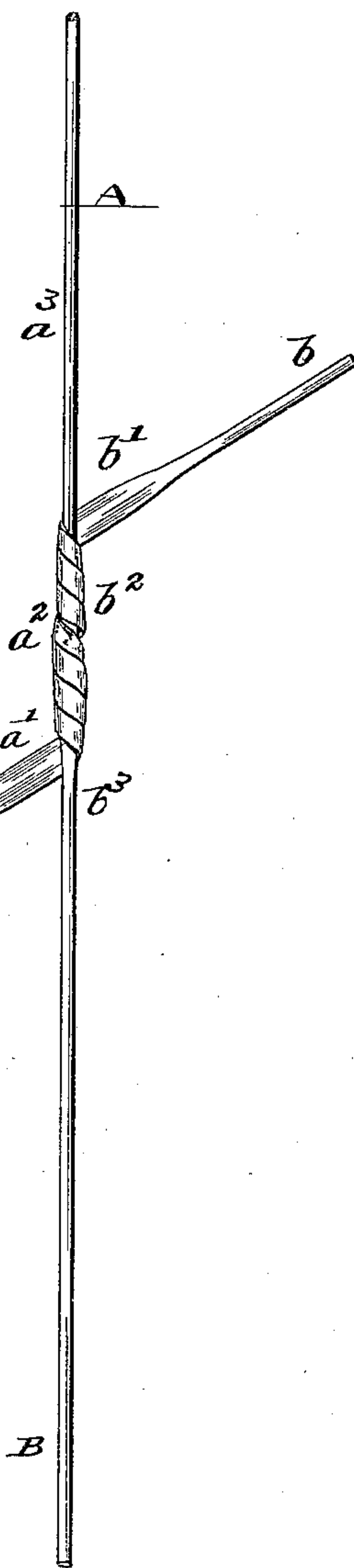
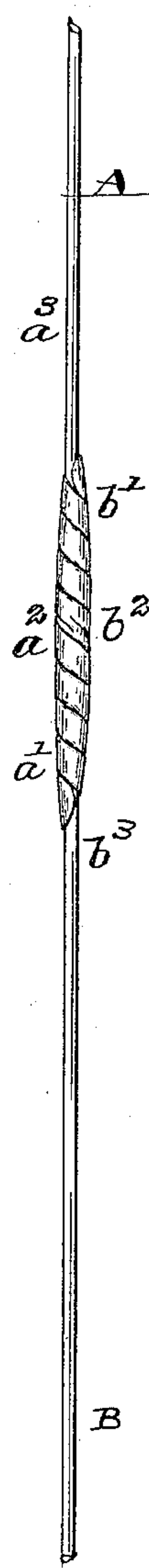


Fig. 4,



Attest;

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UNITED STATES PATENT OFFICE.

EDWARD P. FREDERICK, OF ST. LOUIS, MISSOURI.

ART OF SPLICING WIRE.

SPECIFICATION forming part of Letters Patent No. 390,220, dated October 2, 1888.

Application filed May 3, 1888. Serial No. 272,683. (No model.)

To all whom it may concern:

Be it known that I, EDWARD P. FREDERICK, of St. Louis, Missouri, have made a new and useful Improvement in the Art of Splicing Wire, of which the following is a full, clear, and exact description.

Said improvement is applicable to many kinds of wire, and is especially useful in the manufacture of wire ropes or cables.

The usual manner hitherto of joining or splicing wire other than welded or brazed wire has been to place an end of one of the two wires which it is intended to join or splice alongside of an end of the other wire, with the two ends pointing in opposite directions and lapping as far as deemed necessary—say two inches, more or less—and then by means of tools adapted to the purpose intertwisting said lapping portions of said wires tightly together and compressing the joint or splice formed, as above described, thereby indenting to some extent each wire into the other and diminishing their respective size and strength.

By the above-described method strength and stiffness are obtained directly in the joint throughout the lap; but the above-mentioned indentation in each wire suddenly terminates at the ends of the lap, thereby forming a sudden change of form and strength of the wires at said points, which are consequently weak points in the aforesaid construction. In corroboration of the above practice has developed the fact that when joints or splices of the above-described construction are subjected to turns around pulleys or otherwise the stiffness of the said joints proper prevents them from yielding or bending sufficiently, and a sudden or sharp bend in the wire is forced at the above-described weak points at the ends of the joints or splice, the frequent repetition of which sharp bends eventually causes a break in the wire at said points.

To provide means whereby the defects above referred to can be substantially overcome is the object of the herein-described improvement, which consists, substantially, of joining or splicing together two pieces of wire by flattening said pieces of wire near the ends which are intended to be joined, making the change of shape from round to flat gradual, then by lapping said wires, with their ends pointing in opposite directions, respectively, so that the

portion in which the shape changes from round to flat of one piece of wire shall lay against the similar portion of the other piece, and then spirally winding the flattened end of each piece of wire around the round part of the other piece, gradually tapering off the wires and compressing the joint formed, as described, into the desired shape, substantially as hereinafter more fully set forth and claimed, and as illustrated in the annexed drawings, making part of this specification, in which—

Figure 1 is an elevation of two pieces of wire properly shaped preparatory to carrying into effect the herein-described improvement. Figs. 2, 3, 4 are elevations of wire, illustrating various stages in the construction of the herein-described improvement.

Similar letters refer to the same parts.

A B are two pieces of wire illustrating the various steps or stages in the application of the herein-described improvement. The mode of procedure to carry the said improvement into effect is as follows: About one inch of the wires next to their ends, as *a b*, are left in their original round shape to promote convenience in handling and to be subsequently cut off. The next portions, about two inches, (more or less,) *a' b'*, are flattened, as shown, so as to make them flexible, care being taken to make the change of form from round to flat gradual, and thereby avoid having weak points. The intermediate parts, *a''* and *b''*, Fig. 1, are placed against each other, and the flat part *b'* is wound spirally around the round part *a''*, as shown in Fig. 2. Then the flat part *a'* is wound in a similar manner around the round part *b''*, producing the effect shown in Fig. 3. The process is continued until all the flat portions of both wires are wound, the round ends *a b* are cut off, the resulting ends tapered, and the joint, by means of proper tools, is made to assume the finished shape shown in Fig. 4.

The following are the principal advantages secured by the improvement under consideration: By flattening the portions of wire which are wound around the round wire in accordance with this improved method the indentation of one round wire by the other, and consequent weakening of both wires, incident to the usual methods of joining or splicing, is avoided.

Practice has demonstrated that in making

short turns, as in passing over pulleys, this joint proper yields and bends to the demand, and, there being no change of form in the wire at the end of the lap, the wire does not make
5 a short or sharp bend at those points, and hence is free from the objection of ordinary constructions hereinbefore referred to.

I claim—

1. The herein-described method of splicing
10 wire, the same consisting in flattening the wires to be spliced, then lapping said wires, so that the flattened portion of each wire shall lap the round part of the other wire, then wind-
15 ing spirally the flattened portion of each wire around the round part of the other wire, and then compressing and finishing the splice, substantially as described.

2. The herein-described method of joining
20 or splicing wire, which consists, substantially, of flattening a portion of the ends of the wires

which are intended to be joined, making the change of form from round to flat gradual, placing the portions of the two wires in which the form changes against each other with the said ends of the two wires pointing in respect- 25
ively opposite directions, with the flat portion of each wire lapping over the round portion of the other, and then, when in the above-described position, spirally winding the flat por- 30
tion of each wire around the respectively adjacent round part of the other wire, tapering off the end of each wire, and compressing the joint, formed as above described, into the desired form, all substantially as and for the purpose herein described.

Witness my hand this 24th April, 1888.

EDWARD P. FREDERICK.

Witnesses:

C. D. MOODY,

J. D. BASCOM.