

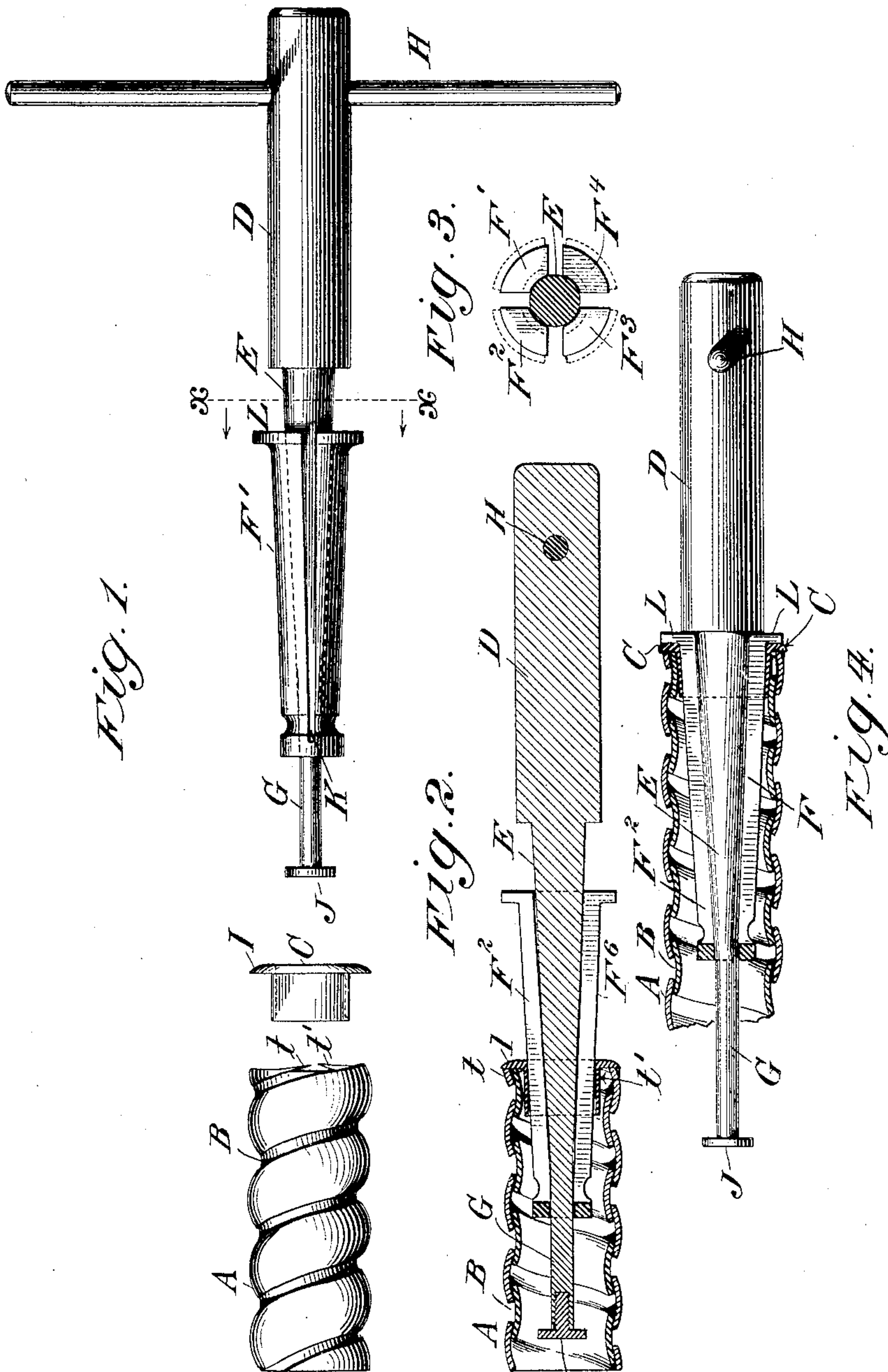
No. 640,758.

Patented Jan. 9, 1900.

E. T. GREENFIELD.
FLEXIBLE METALLIC CONDUIT.

(Application filed July 17, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

EDWIN T. GREENFIELD, OF NEW YORK, N. Y.

FLEXIBLE METALLIC CONDUIT.

SPECIFICATION forming part of Letters Patent No. 640,758, dated January 9, 1900.

Application filed July 17, 1899. Serial No. 724,060. (No model.)

To all whom it may concern:

Be it known that I, EDWIN T. GREENFIELD, a citizen of the United States, residing at New York, in the borough of Manhattan, county of New York, and State of New York, have made a new and useful Improvement in Flexible Metallic Conduits, of which the following is a specification.

My improvement has for its object to provide means for giving to the ends of flexible and other metallic conduits, like those disclosed in a prior patent granted to me on the 8th day of August, 1899, and numbered 630,501, smoothed or finished ends.

In the before-mentioned patent I have described and shown a flexible metallic tube composed of two interlocking strips of metal spirally wound the one about the other. In using such conduits it is found that where the ends are sawed off there is always left a jagged surface, which endangers the insulation of wires being drawn into the inner surface thereof, and it was with a view of overcoming this objectionable feature that the present improvement was devised.

My improvement will be understood by referring to the accompanying drawings, in which—

Figure 1 illustrates in side elevational view a short section of flexible metallic conduit like that disclosed in the before-mentioned patent and also like that disclosed in prior patents granted to me, the same being composed of interlocking strips of metal. Said figure also illustrates the improved bushing-ring for overcoming the evil effects of the jagged ends of said conduit and the tool for putting the same in place. Fig. 2 is a longitudinal sectional view taken through the body of Fig. 1, illustrating the manner of using the tool, the bushing-ring being in place within the end of the conduit. Fig. 3 is a transverse sectional view taken through Fig. 1 on the line xx and as seen looking thereat in the direction of the arrows from the right toward the left hand end of the drawings. Fig. 4 is a longitudinal sectional view illustrating the completion of the use of the tool in inserting the bushing-ring within the end of the conduit, the tool being shown partly in sectional and partly in side elevational view.

Referring now to the drawings and first to Fig. 1, A and B represent the interlocking metallic strips which constitute or compose when wound together my novel form of conduit. It is found in actual use of the before-mentioned conduit that when the same is sawed off there always result ragged edges or jagged ends $t\ t'$, which by reason of their sharp edges necessarily endanger the insulation of wires being drawn into the inner surface of the conduit. My present improvement is designed to overcome this objectionable feature, and to this end I form an expansible metallic bushing-ring C, preferably of lead and having a flange I, adapted to overlap or conceal the ends $t\ t'$ and the ragged sawed edges when put into position in the inner end of the conduit. For the purpose of putting this ring in position I have devised a tool consisting of a body part D, having a handle H, said body part being cone-shaped at E for a definite part of its length and adapted to be inserted through an expander, consisting of four expansible parts $F\ F'\ F^2\ F^3\ F^4$, constructed by slitting a tube with parallel slits K to a point near one end thereof, the other end thereof having shoulders L, adapted to come into mechanical bearing with the corresponding body part D when thrust firmly home.

J is a detachable head for holding the parts together.

The result sought by my novel means and with the novel tool hereinbefore described I effect as follows: The expansible bushing-ring C is put into position in the end of the conduit and the tool is inserted with the expander at its extreme left-hand position. It is then forced inward by hitting the outer end of the body part D successive blows with a hammer. Thus the cone-shaped part E causes the expander $F\ F'\ F^2\ F^3\ F^4$ to expand the cylindrical body part of the bushing-ring outward against the inner surface of the flexible metallic conduit, thereby causing the same to be firmly secured. Finally when the shoulder L comes into mechanical contact with the flange I of the bushing-ring and the shoulder of the body part D into like mechanical contact with the shoulder L the operator takes hold of the handle H and rotates the entire tool until the bushing-ring is firmly and se-

curely locked in position in and against the end of the conduit, thus making a completed smooth end which will not offer any obstruction to insulated wires when being put in place.

I do not limit my improvement to the especial means herein shown and described for effecting the result sought, as I believe I am broadly entitled to claim means in the nature of an expansible bushing-ring for protecting or covering the jagged edges at the end of a flexible metallic conduit and when combined therewith; nor do I limit myself to the use of the improved means for protecting or covering the jagged ends of a metallic conduit in connection with a flexible conduit, as it is obvious that the same means might be used in connection with ordinary iron or steel tubular conduits, and my claims are designed to be of such scope as to include all such uses.

I make no claim in the present application to the tool herein shown and described for placing a protecting-bushing in the end of a metallic conduit, as the same constitutes the subject-matter of a separate or divisional application bearing Serial No. 728,956, filed by me in the United States Patent Office on the 30th day of August, 1899.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent of the United States, is—

1. A metallic conduit having jagged ends, in combination with a bushing-ring secured to the inner surface and end thereof, substantially as described.

2. A metallic conduit having jagged ends, in combination with a bushing-ring secured to the inner surface thereof, said ring being provided with a flange which covers the end of the conduit, substantially as described.

3. A metallic conduit provided with a bushing-ring, said ring being secured against the inner surface of the conduit and provided with a flange which rests against the end thereof, substantially as described.

4. A flexible conduit composed of interlocking metallic strips provided with bushing-rings at its opposite ends, said rings being secured against the inner surface of the conduit and having flanges which rest against the ends thereof, substantially as described.

In testimony whereof I have hereunto subscribed my name this 5th day of July, 1899.

EDWIN T. GREENFIELD.

Witnesses:

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