

(No Model.)

J. SPRUCE.

APPARATUS FOR MANUFACTURING IMITATION TWISTED WIRE.

No. 300,741.

Patented June 17, 1884.

Fig. 1

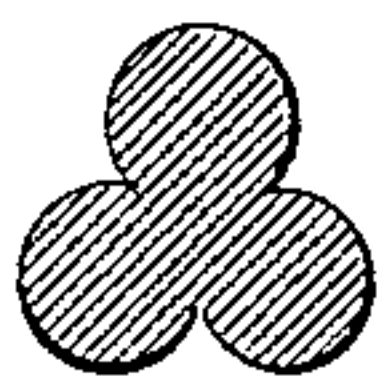


Fig. 2

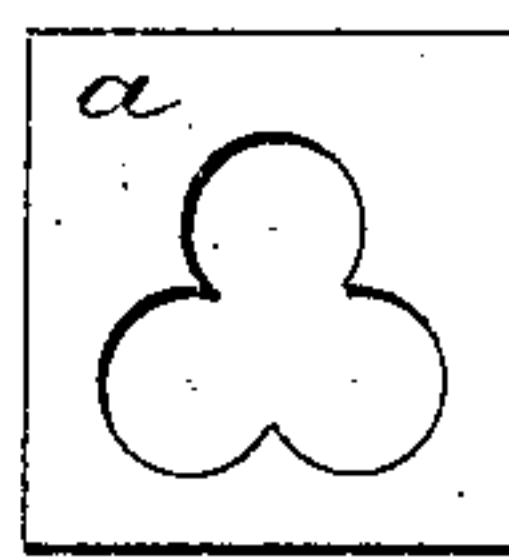


Fig. 3

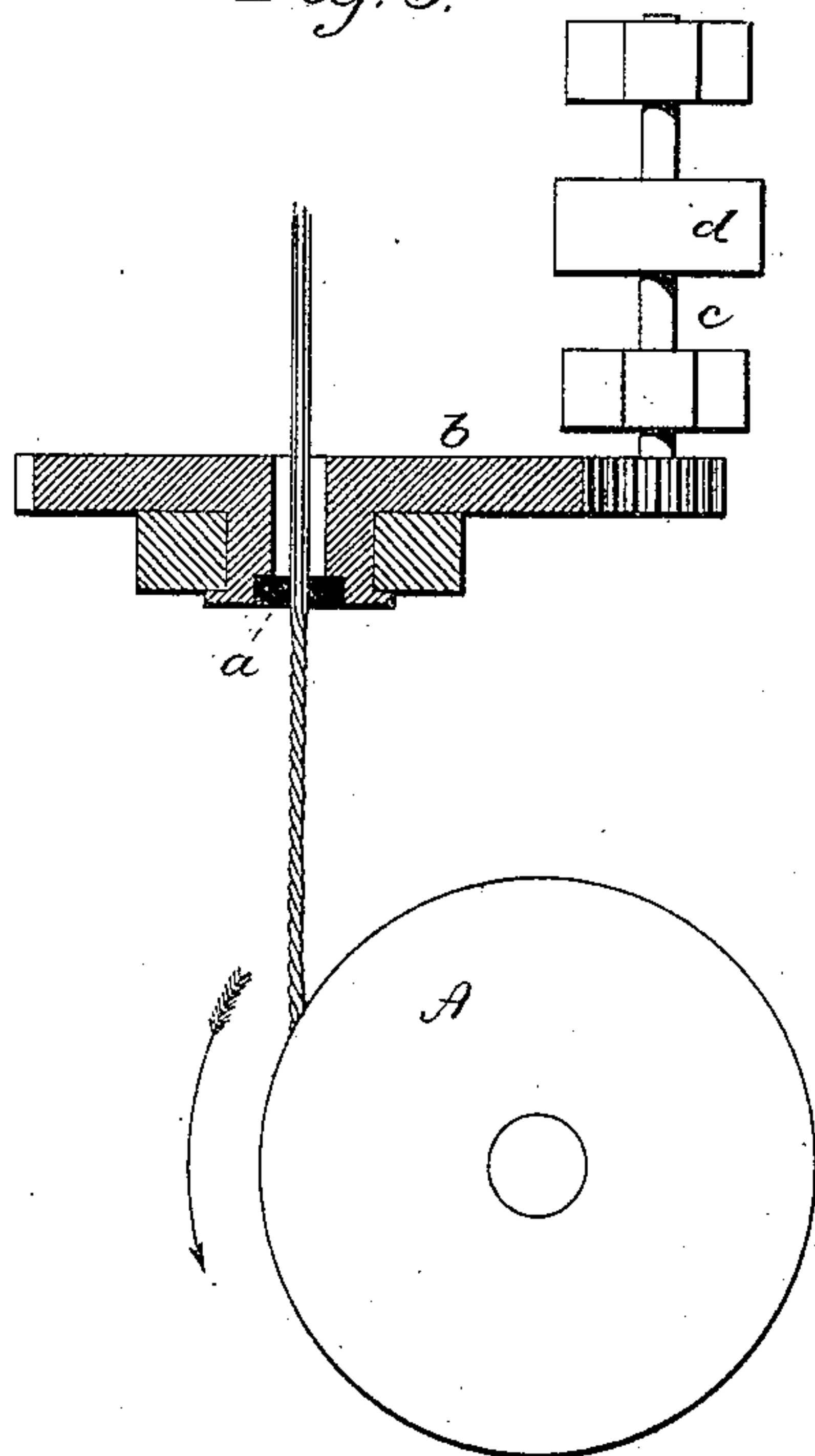
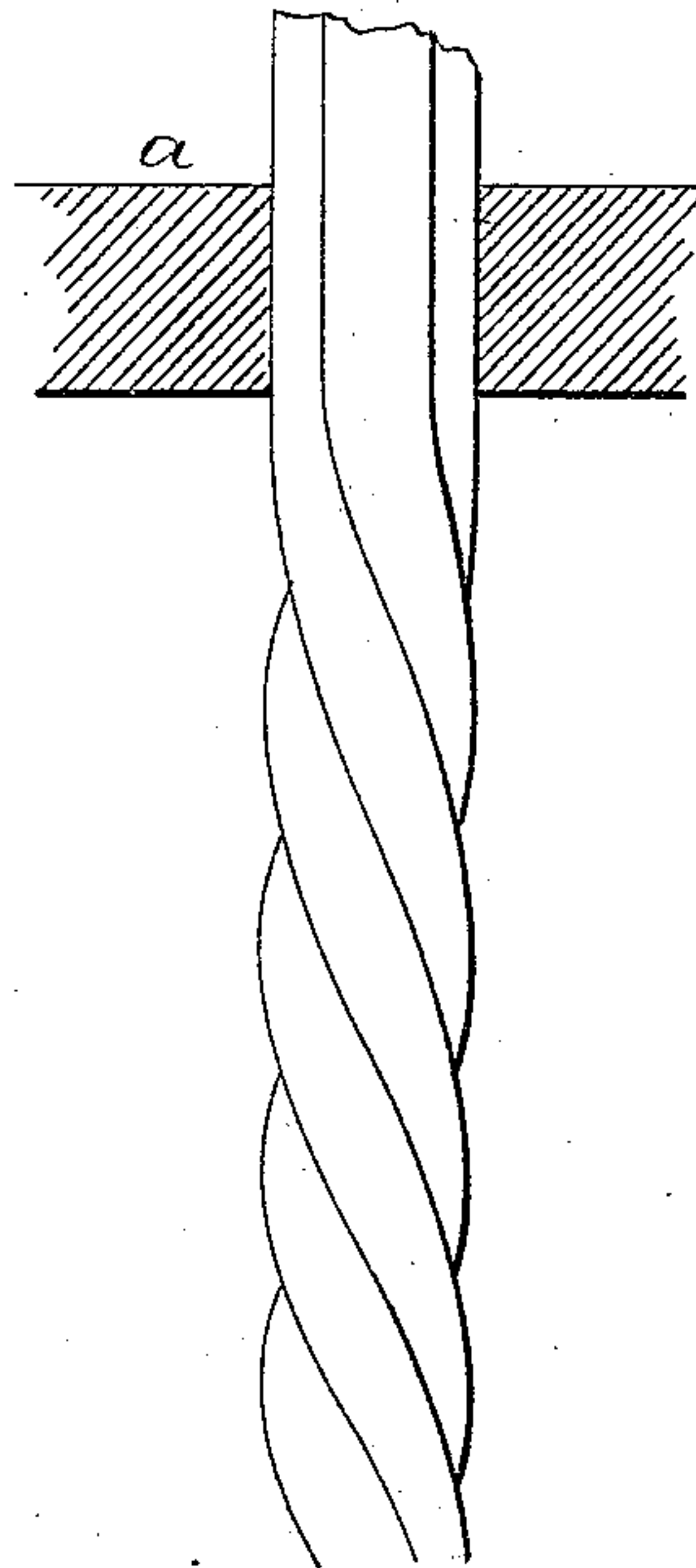


Fig. 4



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# UNITED STATES PATENT OFFICE.

JAMES SPRUCE, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE  
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## APPARATUS FOR MANUFACTURING IMITATION TWISTED WIRE.

SPECIFICATION forming part of Letters Patent No. 300,741, dated June 17, 1884.

Application filed December 17, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES SPRUCE, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new Improvement in Apparatus for the Manufacture of Imitation Twisted Wire; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a transverse section of a triple wire; Fig. 2, a face view of the die for drawing such wire; Fig. 3, a horizontal sectional view of the apparatus for drawing and twisting; Fig. 4, a side view of the wire, showing a portion of it as it passes through the die untwisted, and the other portion as twisted between the die and the wire-block—Figs. 1, 2, and 4 enlarged for convenience of illustration.

This invention relates to an improvement in the manufacture of wire which has the appearance of several round wires twisted together.

The class of wire to which this invention particularly relates is largely employed in the manufacture of various articles both useful and ornamental—such as table-service, picture-frames, card-holders, &c. In the usual construction of the wire several strands of round wire of uniform diameter are twisted together, which gives a twisted cord-like appearance. In the use of such twisted wire in the production of articles such as before mentioned, great care must be exercised in bending into the various shapes required, in order to avoid the separation of the convolutions, and to retain the even twist throughout, and unless the twist be a very close one such opening of the convolutions cannot be avoided.

The object of my invention is to produce a solid wire having the appearance of several round wires twisted together; and the invention consists in drawing a single wire through a die, the outline of the opening corresponding to two or more small round wires united, and so that the wire drawn therethrough will partake of the shape of the die, and present the appearance of several small round wires

united, and imparting to this wire a twist by the rotation of the die, whereby the wire after such twist has the appearance of several smaller round wires twisted together, as more fully hereinafter described.

I have illustrated my invention as a wire drawn in trefoil shape—that is, represent three round wires united, and which produces a trefoil shape in transverse section, as seen in Fig. 1. I construct a die, *a*, Fig. 2, having an aperture through it in shape corresponding to a transverse section through the combined several round wires to be represented. Instead of arranging the die in a stationary position on the draw-bench, I arrange it in the hub of a gear-wheel, *b*, as seen in Fig. 3. To this gear-wheel rotary motion is imparted from a driving-shaft, *c*, by power applied thereto through a pulley, *d*, or otherwise. This may be arranged in the usual position for dies on a draw-bench.

*A* represents the usual wire-block, by the revolution of which the wire is drawn through the die. The rod is introduced through the die *a*, and then connected to the wire-block *A* in the usual manner. The wire-block is then caused to revolve, and at the same time the die *a* revolves; but the plane of revolution of the die is parallel with the plane of the axis of the wire-block—that is, the plane of the die is at right angles to the plane of the wire-block. This revolution of the die will twist the wire as it is drawn through the die, the twist being produced between the bearing of the wire on the wire-block and the delivery-face of the die, and that twist will be closer or looser accordingly as the die revolves with a greater or less velocity—that is, the greater the velocity the closer will be the twist. If the wire be drawn from a reel through the die, then that reel must have a revolution to substantially correspond with the revolution of the die *a*, to prevent twisting the wire in rear of the die; but if it be drawn from rods the die itself will revolve the rod in rear of it, to prevent such twisting. Wire thus drawn will have the appearance, as seen in Fig. 4, of three round wires or strands twisted together, but will be practically one single wire.

This illustration of my invention as applied



to drawing and twisting wire of trefoil shape in transverse section—that is, so as to represent three round wires united—will be sufficient to enable those skilled in the art to adapt  
5 the invention to making wire having the representation of any desirable number of such round wires.

I make no claim herein to the wire produced by this method and apparatus, as such  
10 article constitutes the subject of an independent application filed in even date herewith.

I claim—

In an apparatus for the manufacture of wire in imitation of several round wires twisted to-

gether, the combination of a die constructed 15 with an opening through it corresponding in shape to the transverse section of several round wires laid together, said die arranged to revolve upon an axis parallel with the axis of the wire, the mechanism, substantially such 20 as described, to impart rotation to said die, and a wire-block onto which the wire is drawn through the die, substantially as described.

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Witnesses:

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