

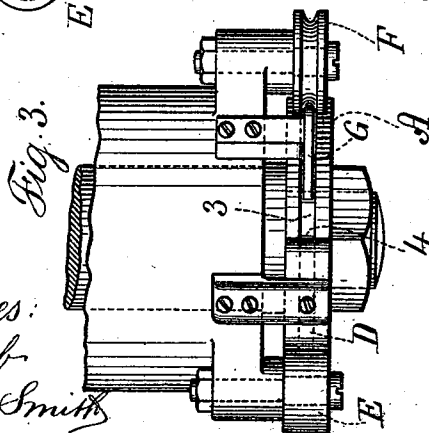
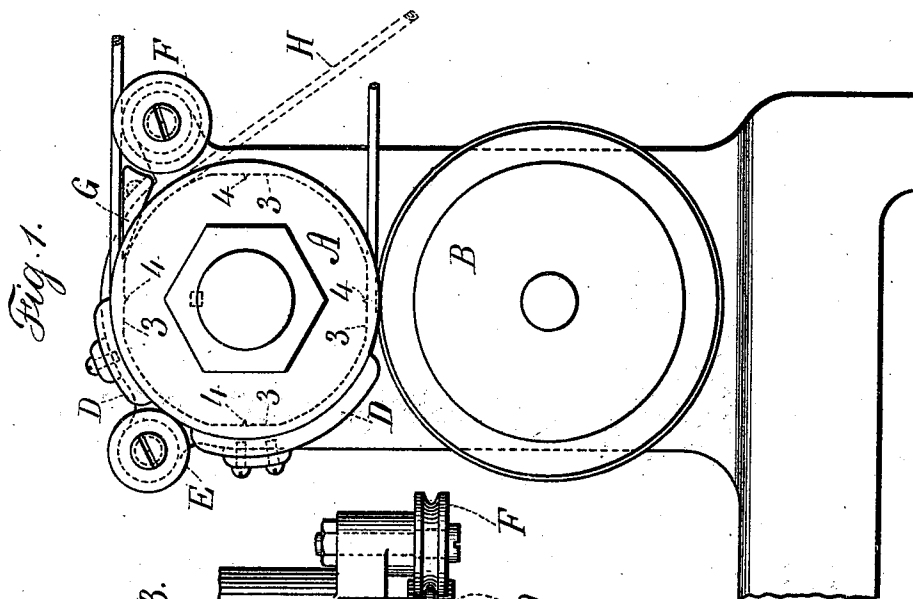
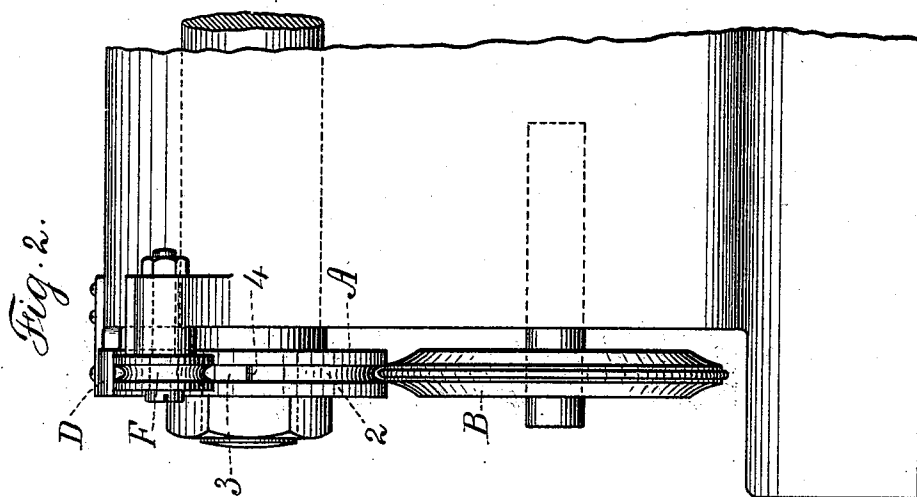
(No Model.)

F. ECAUBERT.

MEANS FOR FORMING SPECTACLE BOW WIRE OR OTHER ARTICLES.

No. 518,807.

Patented Apr. 24, 1894.



Witnesses:
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UNITED STATES PATENT OFFICE.

FREDERIC ECAUBERT, OF BROOKLYN, NEW YORK.

MEANS FOR FORMING SPECTACLE-BOW WIRE OR OTHER ARTICLES.

SPECIFICATION forming part of Letters Patent No. 518,807, dated April 24, 1894.

Application filed January 8, 1894. Serial No. 496,027. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC ECAUBERT, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Reducing Wires for Spectacle-Bows or other Articles, of which the following is a specification.

In Letters Patent No. 498,466, granted to me May 30, 1893, a mechanism for manufacturing wire for spectacle bows is represented, in which a roller is provided having a groove corresponding in shape to the wire or other article to be rolled and having flattened places or recesses, so that the wire is reduced at some places more than at others, whereby the wire for the spectacle bow is left thicker at the places where the bridge-piece and temple joints are connected; and associated with this form roll is a presser roll for forcing the wire into the groove and a means for drawing the wire along after it has been rolled, so as to obtain uniformity in the distances between the portions of the wire that are left thicker than the other portions. I have discovered that when the wire is held in the groove of the form roll for about half the circumference of such form roll, the intimate contact and friction of the surfaces of the wire with the surfaces of the form roll is sufficient to prevent the wire slipping endwise in the groove or the roller moving faster than the wire is drawn through and reduced, so that by making the groove in the form roll exactly the shape and of the measurements required for the wire that is being operated upon, and by providing means for holding the wire into the groove for about one-half of the circumference of the form roll, more or less, the wire can be rolled through and then removed from the groove in the form roll and the shape of the wire will be accurate in every particular and the measurement between one part and another will be perfect, so that by this means the spectacle wire can be continuously rolled through between the form roll and a presser roll and reduced to the shape and size required and then pass away from the groove of the form roll and be cut up into lengths required for the spectacle or eye-glass bows at the places designated by marks upon the wire itself that are produced

by the form roll, so as to obtain absolutely accurate work and without the necessity of employing separate devices for drawing the wire along or for rolling the wire up around a form.

In the drawings, Figure 1 is an elevation representing the device in one of the forms made use of by me. Fig. 2 is a side elevation, and Fig. 3 is a plan view.

The form roll A is made with a groove 2 around its periphery and this groove is deepened or widened, or both, at such places as may be required for giving to the wire the proper shape as it is rolled through between the form roll A and the presser roll B; and it is advantageous to employ a cylindrical presser roll B setting closely against the surface of the form roll A, but if the exterior surface of the wire that is passed through between the form roll and the presser roll is to be rounding or to receive any other shape, there may be a peripheral groove in the presser roll B in the proper position in relation to the form roll A. I have shown the rib as upon the presser roll B, so as to form a groove in the wire. I have represented a depression in the bottom of the groove of the form roll at 3, so that the wire at this part is left thicker, and a small projection or chisel point may be provided to indent the wire at the place where the same is to be cut off or to receive some connection to the wire, or a slight depression 4 may be made in the bottom of the groove of the form roll at the place where a mark is to be left upon the wire to indicate a point of separation or a point of connection to the wire of some other article, so that by correctly laying out and constructing the groove in the form roll the wire that is rolled therein will be of exactly the shape required, and the form roll itself will become a measure of the distance between one thickened part and another as the wire is rolled through in the manner hereinafter indicated.

In my application, Serial No. 432,849, filed May 13, 1892, a form roll is represented with the groove therein passing as a helix or screw around such form roll, and a pin upon which the wire to be reduced is hooked, so that the wire is wound around the helical form roll as it receives shape from such form roll, and the groove in the form roll has depressions and

marks in it somewhat corresponding to those hereinbefore described, but in consequence of the wire remaining wound around the form roll in the shape of a screw, it is necessary to
 5 repeat the indentations, recesses or marks in the groove of the form roll at regular intervals along the entire surface of such screw-shaped groove; this not only involves considerable labor in the preparation of the form
 10 roll, but the risk of inaccuracy is multiplied by the number of depressions and marks employed in such groove.

In the present improvement it is only necessary to have one peripheral groove and
 15 hence the same can be made with greater accuracy and with much less expense, and I have found that in place of rolling the wire in a screw form within the groove around the form roll or mandrel and only being able to
 20 operate on a length of wire that fills the screw-shaped groove around the form roll, I am enabled to operate upon wire of an indefinite length and pass the same through between the form roll and the presser roll and
 25 properly shape and measure the same so long as the wire remains embedded in the groove for a sufficient distance to be immovable endwise by the strain incident to the reducing or rolling operation; and with this object in view
 30 I make use of any suitable means for holding the wire in the groove of the form roll for about one-half of the circumference of such form roll more or less, and a convenient means for effecting this object is the shoe D
 35 which is made as an arc of a circle and fits closely against the exterior surface of the form roll or wire from a point adjacent to the point of reduction by the roll B and extending around the desired distance for accomplishing the aforesaid object. I find it also
 40 advantageous to employ a holding roll E at a suitable point distant from the point of reduction, so as to lessen the friction upon the surface of the wire that has been reduced
 45 and to hold the same into the groove of the form roll. This holding roll E may be located at any convenient place, and the shoe D may extend on both sides of such roll E as indicated, or only upon one side thereof; and
 50 it is advantageous to make use of a discharge roll or bar at F which causes the wire to leave the groove in the form roll at a convenient place for the same to be led off for use in any desired manner, and if required, a projecting separator G may be employed to run
 55 in the groove of the form roll, but usually this is not necessary. It will now be understood that the pressure applied to the wire in reducing the same to a greater or less extent
 60 forces the wire into the groove with sufficient firmness to cause the wire to assume the shape given to it by the groove alone or by the groove and presser roller jointly, and remaining in the groove a sufficient distance to
 65 prevent the wire slipping endwise in the groove, the groove becomes a perfect measure of the wire, and the slipping of the form

roll upon the wire or of the wire upon the surface of the form roll is effectually prevented.

It will be apparent that this invention is not limited to the production of wire adapted to the manufacture of spectacle and eyeglass frames. The form roll may be adapted to act upon a thin strip or tape of metal or similar material in giving form and shape to such strip; for instance, the form roll may be adapted to impressing upon a thin strip of metal figures, numbers and divisions for metallic measuring tapes, the periphery of the form roll being sufficiently long to contain all the measurements that are applied to the surface of the tape, or any article can be formed by the roll according to the character of the surface of such form
 85 roll. The groove in the form roll being larger at one place than at another, and the wire being pressed into and filling such larger or deeper places, acts in a manner similar to gear teeth and absolutely prevents slip of one part on the other so long as the wire is held to the form roll and does not spring away therefrom, and I do not limit myself as to the means employed in holding the wire in the groove, as the wire may be held in
 95 the groove by any competent means and then pass off at an inclination at one side of the wire that is passing in, as indicated by dotted lines at H.

I claim as my invention—

1. The combination with a presser roll, of a form roll having a surface adapted to the production of a wire or strip that is thicker at one part than it is at another, and means for holding the wire or strip in contact with the surface of the form roll a sufficient distance to prevent slip of the form roll upon the wire and that the wire passed through will hence be accurate in its shape and measurements, substantially as set forth.

2. The combination with a presser roll, of a form roll, the surface of which is recessed and adapted to the production of a wire or strip that is thicker at one part than at another, means for holding the wire in contact with the surface of the form roll, so that such wire is carried around by the form roll a sufficient distance to prevent slip between the surface of the form roll and the wire, and means for separating the wire from the form roll, substantially as set forth.

3. The combination with a presser roll, of a form roll, the surface of which is recessed and adapted to the production of a wire or strip that is thicker at one part than at another, a roller for holding the wire in contact with the surface of the form roll, so that such wire is carried around by the form roll a sufficient distance to prevent slip between the surface of the form roll and the wire, substantially as set forth.

4. The combination with a presser roll, of a form roll, the surface of which is recessed and adapted to the production of a wire or

strip that is thicker at one part than at another, a shoe and roller for holding the wire in contact with the surface of the form roll, so that such wire is carried around by the form roll a sufficient distance to prevent slip 5 between the surface of the form roll and the wire, substantially as set forth.

5. The combination with a presser roll, of a form roll, the surface of which is recessed 10 and adapted to the production of a wire or strip that is thicker at one part than at another, a shoe and roller for holding the wire

in contact with the surface of the form roll, so that such wire is carried around by the form roll a sufficient distance to prevent slip 15 between the surface of the form roll and the wire and means for removing the wire from the groove, substantially as set forth.

Signed by me this 5th day of January, 1894.

F. ECAUBERT.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.