

(No Model.)

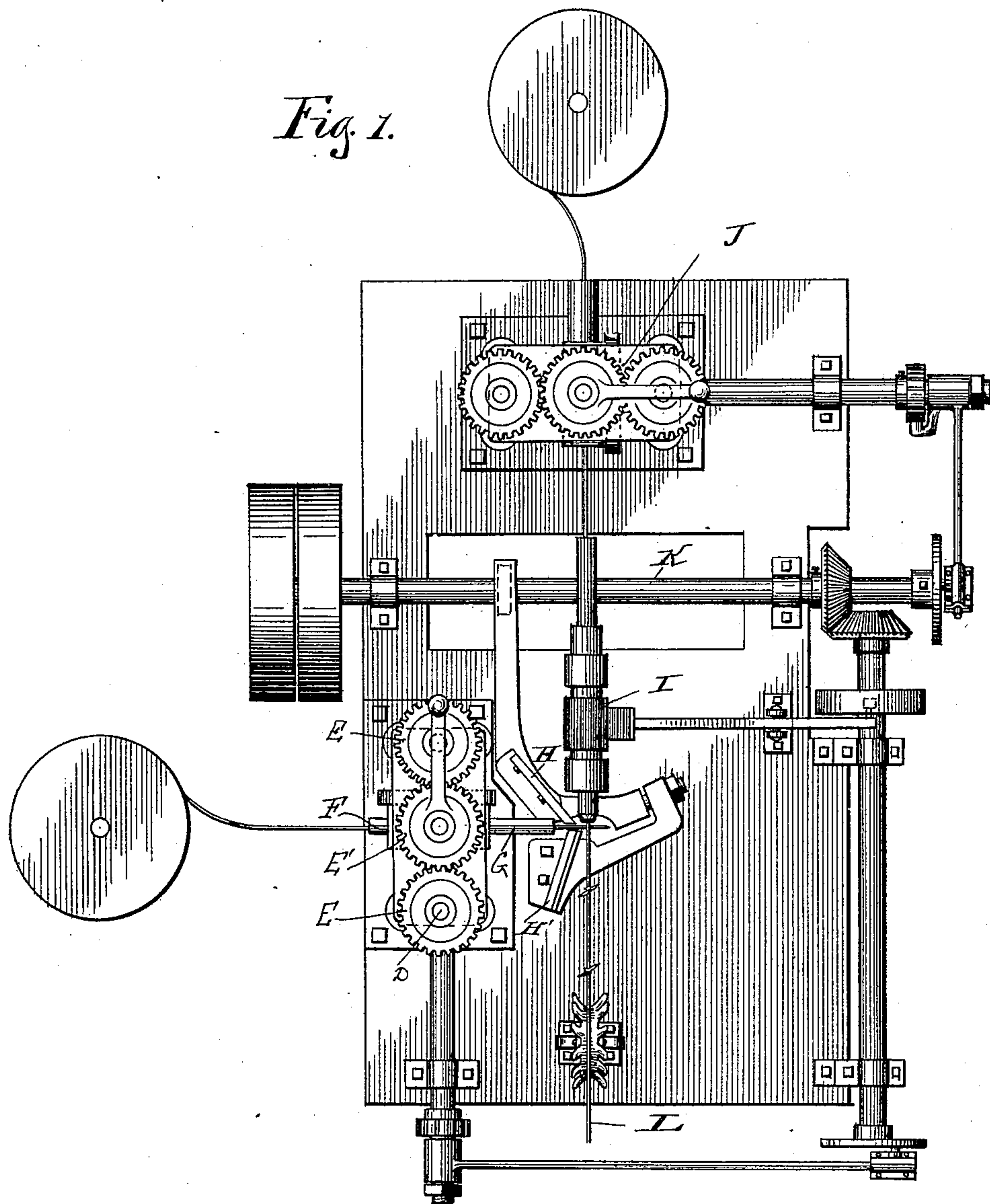
3 Sheets—Sheet 1.

W. GENT.

PROCESS OF FORMING FENCE WIRE BARBS.

No. 395,892.

Patented Jan. 8, 1889.



Witnesses,

L. F. Mann
Frederick Goodwin

Inventor,

William Gent

By *Offield, Scovel & Phelps,*
Attys.

W. GENT.

PROCESS OF FORMING FENCE WIRE BARBS.

No. 395,892.

Patented Jan. 8, 1889.

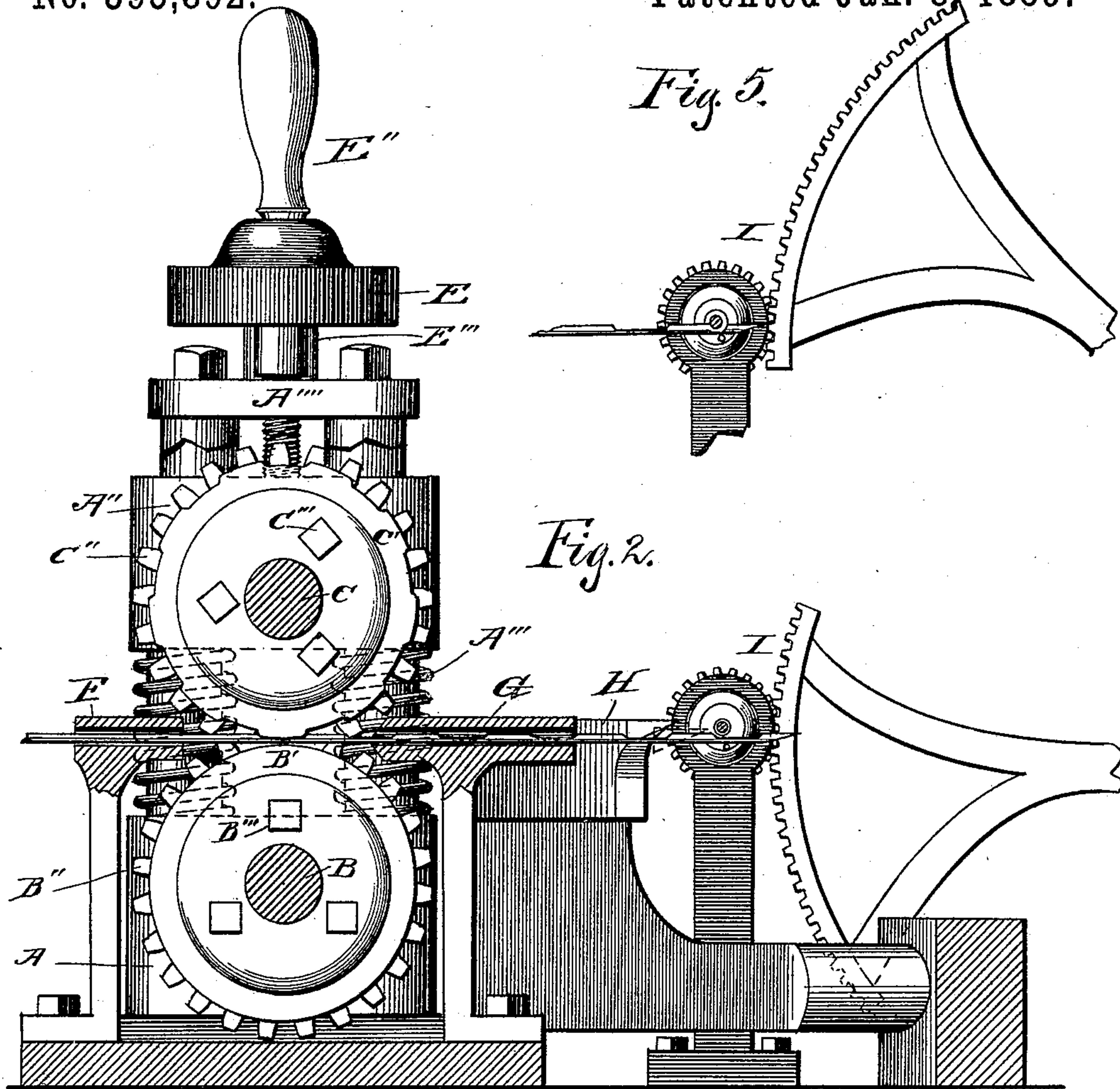
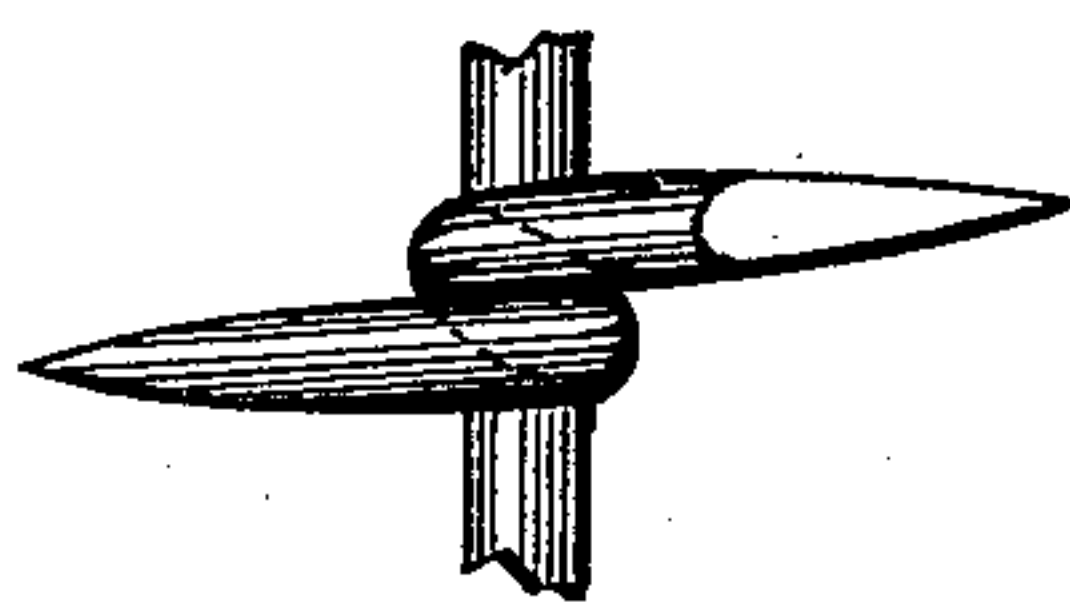


Fig. 5.

Fig. 2.

Fig. 4.



Witnesses,
L. J. Mame
Frederick Goodwin

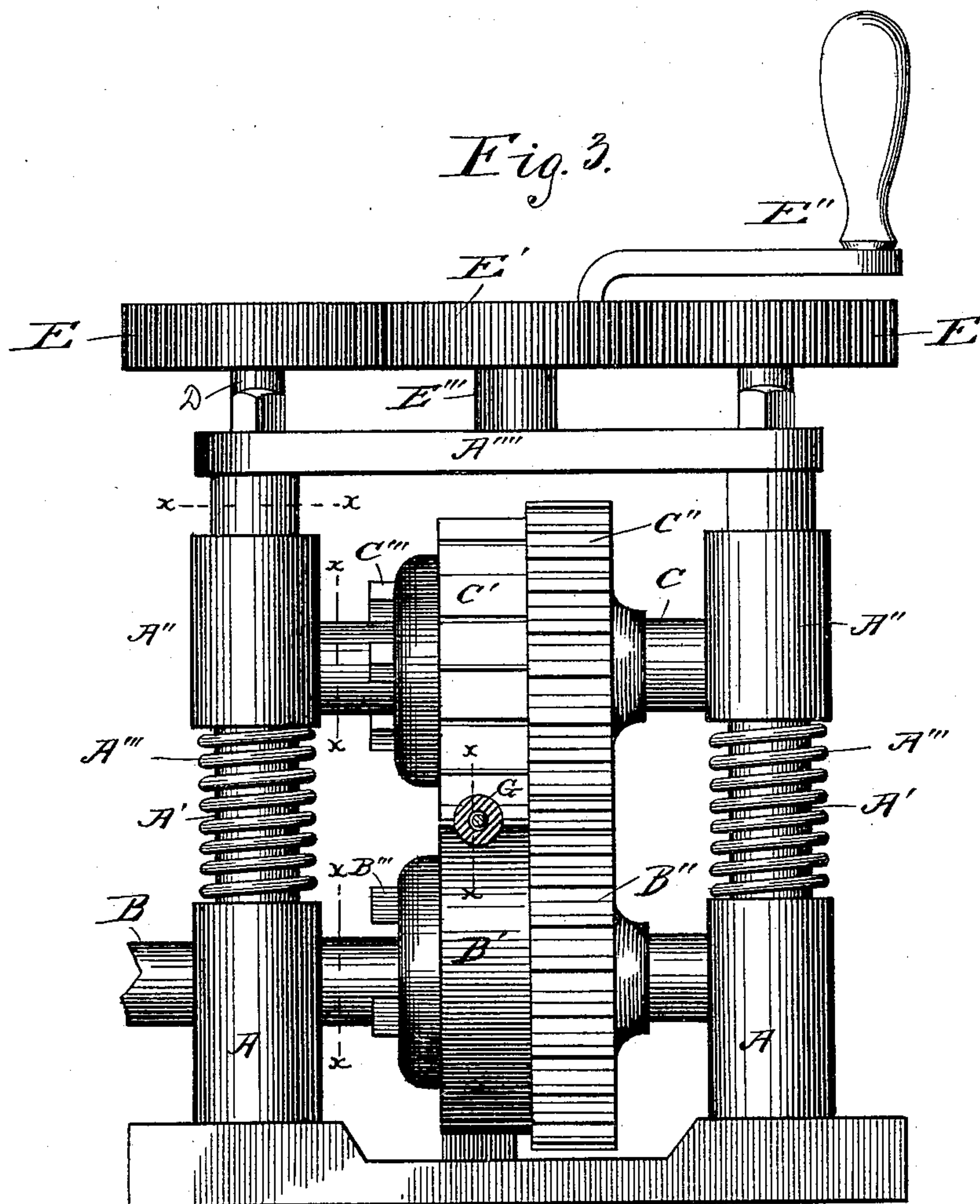
Inventor,
William Gent
By, Alfred S. Phelps,
Att'y.

W. GENT.

PROCESS OF FORMING FENCE WIRE BARBS.

No. 395,892.

Patented Jan. 8, 1889.



Witnesses,
L. S. Mann
Frederick Goodum

Inventor,
William Gent
By *Offield, Smith and Phelps,*
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM GENT, OF ROCKFORD, ASSIGNOR TO HIRAM ELLWOOD, OF DE KALB, ILLINOIS.

PROCESS OF FORMING FENCE-WIRE BARBS.

SPECIFICATION forming part of Letters Patent No. 395,892, dated January 8, 1889.

Application filed April 16, 1887. Serial No. 235,042. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GENT, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Process of Forming Fence-Wire Barbs, which I desire to protect by Letters Patent of the United States, and of which the following is a specification.

10 In the manufacture of barbs for wire fences two principal considerations have been paramount: first, the adaptation of the barb to the longitudinal wire in such manner that it shall maintain its position, and not be liable
15 to be turned or twisted upon the wire; secondly, the provision of a sharp or "needle" point, which shall be effective in repelling stock. The form of barb which has been found to maintain its position upon the longitudinal wire most satisfactorily is the barb made from sheet metal; but it has been found impracticable with due regard to economy of manufacture to give the barb made from sheet metal sufficiently acute points to perform the functions required of fence-barbs.
25 It is of course possible to procure a sharp point upon a sheet-metal barb by filing or grinding after the cutting of the barb; but in practical manufacture this operation of filing
30 or grinding is impracticable, it being necessary, in order to produce barb fence-wire at current market rates, to form and sharpen the barb at a single operation. In consequence of this necessity the sheet-metal barb, although it possesses considerable advantages over the round barb in the matter of a secure bearing or setting upon the longitudinal wire, has given way to the barb formed of round wire, in which the sharp or needle point is obtained by a single diagonal cut or shear, and the ingenuity of inventors in this line has been principally devoted to securing the proper firmness of setting by wrapping the barb about the longitudinal wire or wires in
45 various shapes and convolutions; and to overcoming in this way the natural inaptitude of a round barb-wire for secure fastening upon the longitudinal fence-wire.

50 My present invention has for its object the production of a barb which shall combine the several advantages of the flat and the round

barb; and to that end I have invented a process of manufacturing barbs out of round wire and applying them to a longitudinal strand entirely distinct and apart from 55 methods heretofore employed for manufacturing and securing round-wire barbs to longitudinal strands, whereby I obtain a fence made entirely of round wire, and in which the setting of the barbs upon the longitudinal 60 strands is as firm and secure as though the barbs were made originally of sheet metal, and with a simplicity of construction equal to that of a fence having sheet-metal barbs.

To this end my invention consists in flattening 65 the wire from which the barbs are made for short distances at intervals of its length, round portions being left between adjoining flattened portions, in dividing said wire into barbs, by diagonally shearing the round parts 70 left between the flattened parts, and applying the barbs so obtained to the longitudinal strand by wrapping them about the strand in such manner that the flattened portion shall rest against the longitudinal strand and the 75 round and pointed ends shall project therefrom, forming the repelling points or barbs of the fence.

In the drawings annexed hereto and forming a part of this specification, I have shown 80 a mechanism adapted to carry out the process above referred to, said mechanism being one of many equivalent forms which might be devised for the purpose.

In the drawings, Figure 1 is a plan view of 85 the machine; Fig. 2, a side elevation, a portion thereof being removed and a part being in section on the lines *x x*, Fig. 3. Fig. 3 is a front view of the machine. Fig. 4 shows the barb wrapped about the wire, and Fig. 5 illustrates the wrapping of the barb. 90

Bases A support perpendicular standards A', upon which followers A'' slide up and down, these followers being supported by helical springs A''', coiled about the standards A' 95 and resting upon the bases A. A top piece, A''', rests upon and secures together the upper ends of the standards A'. The position of the followers A'' with reference to the bases A is determined by two screw-shafts, D, 100 screw-threaded into top piece, A''', and bearing upon followers A'', whereby said follow-

ers may be pushed down against the upward pressure of springs A'''. Simultaneous movement of these screw-shafts is secured by means of gear-wheels E, one attached to each of said screw-shafts, said gear-wheels being operated by means of a central gear-wheel, E', meshing therewith and supported upon an upright, E'', attached to the top piece, A''', near its center, the gear-wheel E' being provided with a crank, E'', whereby it may be rotated upon its upright E'' to vertically adjust the followers.

Journaled in bases A is the shaft B, carrying a roller, B', preferably of chilled iron, to which is secured by tap-bolts B''' a gear-wheel, B''. A second shaft, C, is journaled in the followers A'', and has attached thereto a second roller, preferably of chilled iron, the outer cylindrical surface of which is ribbed longitudinally. This roller C' has connected with it by means of tap-bolts C''' a gear-wheel, C'', adapted to mesh with gear-wheel B''. Tubular guides F are provided for directing the wire from which barbs are to be made between the rollers, and a tubular guide, G, for directing the course of the wire after it has left the rollers. In front of these rollers and the several devices described are located shears II II', for severing the barbs, at the same time giving them the desired needle-point by means of a diagonal cut, twisting mechanism I, for twisting the barb about the longitudinal fence-wire, and feed mechanism J, for feeding on the longitudinal strand, that the barbs may be applied to it at proper intervals. These several parts of the machine are of ordinary construction, and being well-known to persons skilled in the art of manufacturing barb-wire, do not require detailed description in this specification.

To operate the machine, the wire from which the barbs are to be made is inserted between the rollers B' C', these rollers having been previously adjusted to their relative positions. Power is applied to one of the shafts, preferably B. The barb-wire is fed forward either by the friction between it and the rollers or by independent means, and each of the ribs or projections formed upon the outer cylindrical face of the roller C' produces a flattening or indentation upon the wire, these ribs being each of a proper length to flatten such a portion of the wire as may be sufficient to wrap about the strand of longitudinal wire, and the ribs being separated from each other from center to center by a distance equal to the length of the desired barb. The effect upon the wire will obviously be to produce a succession of flattened portions separated by round portions. This wire is then pushed forward un-

til it comes between the shears II II', which are operated at suitable intervals by means of cam or other appropriate connections with the main shaft K, so as to sever the barb-wire 65 diagonally at each point where the round wire is left between the flattened portions, thus producing a barb having at its center a flattened portion and at each end a round portion provided at each end with a sharp or 70 needle point. This barb may be twisted around the longitudinal strand of fence-wire (represented in the drawings by the letter L) simultaneously with the shearing or subsequently thereto by the twisting mechanism I 75 or other appropriate means.

By this process I obtain from a round wire a barb which, so far as its capability of permanent and secure setting upon a longitudinal wire is concerned, has all the advantages 80 of a barb made from sheet metal, and which at the same time has preserved the capability of taking a needle-point from the single operation of shearing, and when this barb has been wound around the longitudinal strand I have 85 obtained a fence-wire which, in security of the barb and effectiveness in repelling stock, is equal to any known fence-wire, while at the same time it rivals every known form of barb fence-wire in simplicity and economy of construction, presenting a combination of effectiveness and cheapness not heretofore obtained. 90

As will be observed, the machine which I have described will have a tendency to flatten 95 the wire on both sides, though, perhaps, to a greater degree upon one side than the other. It is obvious that by constructing the lower roller, B', with a circumferential groove fitted to the wire the flattening effect may be confined to one side of the barb. It is immaterial to my present invention whether the barb is flattened on one side or both. 100

Having thus described my invention, what I claim, and desire to protect by Letters Patent, 105 is—

The method of forming and applying barbs to the supporting-wires in wire-fencing, which consists in flattening the round wire from which the barbs are to be formed at certain 110 intervals throughout its length, then coiling the same at the foremost flattened portion around the supporting-wire, and simultaneously or subsequently severing the wire at the round portion between the flattened parts by 115 a diagonal cut to form the barbs, and continuing the operation, substantially as described.

WM. GENT.

Witnesses:

L. L. MORRISON,
HENRY L. FERRIS.