(No Model.)

W. H. DAYTON.

WIRE SWAGING MACHINE.

No. 492,572. Patented Feb. 28, 1893.

Fig. 2.

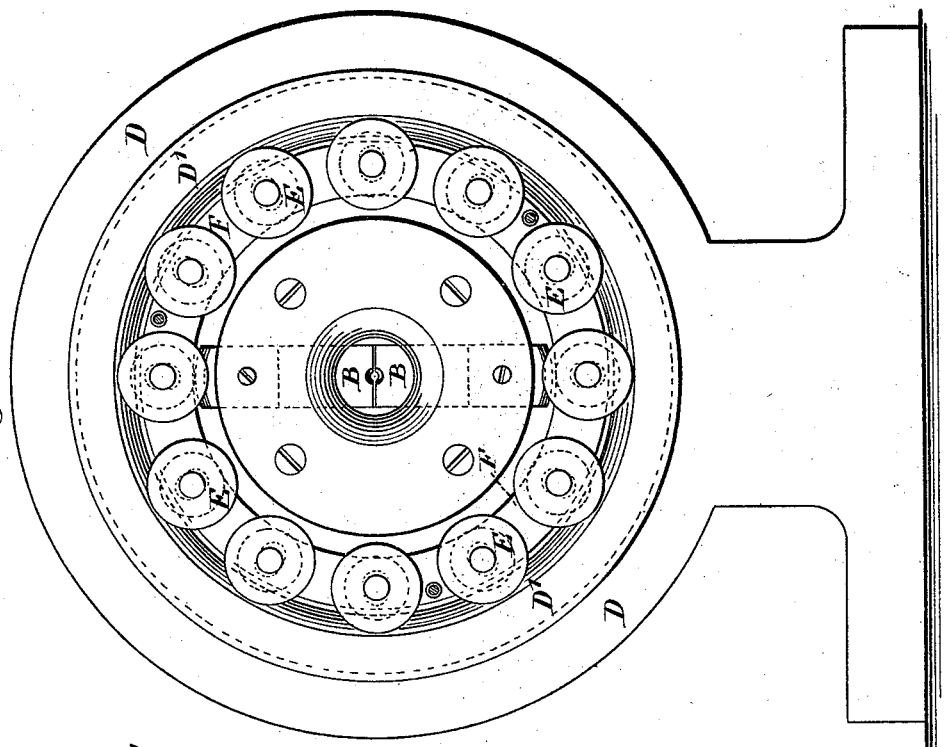

Fig. 1.

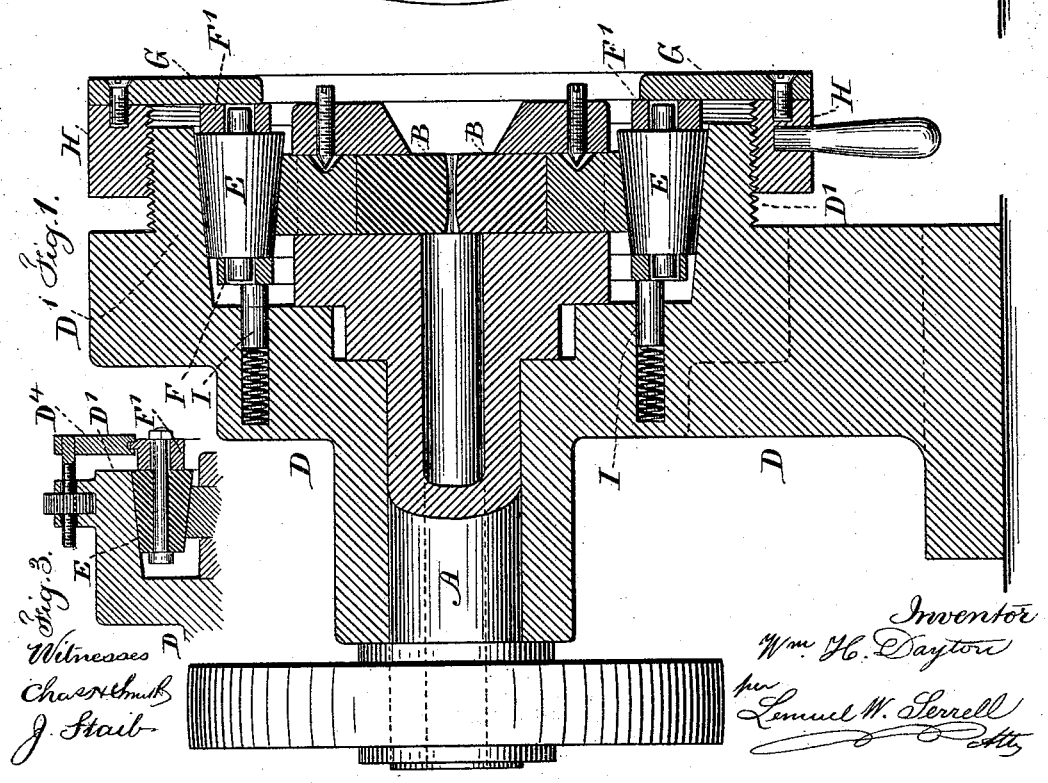

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM H. DAYTON, OF TORRINGTON, CONNECTICUT, ASSIGNOR TO THE EXCELSIOR NEEDLE COMPANY, OF SAME PLACE.

WIRE-SWAGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 492,572, dated February 28, 1893.

Application filed May 23, 1892. Serial No. 433,965. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DAYTON, a citizen of the United States, residing at Torrington, in the county of Litchfield and State of Connecticut, have invented an Improvement in Swaging-Machines, of which the following is a specification.

In Letters Patent No. 474,548, granted to me May 10, 1892, a revolving shaft with swaging dies is represented and wedge acting surfaces for varying the positions of the dies and regulating the opening and closing of such dies during the swaging operation, so as to vary the size of the round article that is being swaged in different portions thereof. In my present invention the same operations are performed, and the present improvement relates to tapering rolls to which an endwise motion is given in relation to the revolving shaft and swaging dies, in order that the swaging dies may be closed to a greater or less extent during the swaging operation to vary the size of the round article in different portions thereof.

In the drawings Figure 1 is a vertical section representing the swaging dies and rolls. Fig. 2 is a face view of the apparatus with some of the parts removed, and Fig. 3 is a sectional view of a modification.

The revolving shaft A and the swaging dies B are of any desired character, such for instance as those shown in my patents Nos. 376,144; 408,294, or 460,566, and the shaft A is suitably supported by a head D having a projecting rim or shell D′, and the range of rolls E is within the shell D′ and around the shaft A and its dies B.

The rolls E instead of being cylindrical, as in my aforesaid patents, are more or less tapering, so as to act like wedges when an end movement is given to such rolls in relation to the swaging dies B, that is to say, the rolls E may be moved endwise in the direction of the axes, or the shaft A may be moved endwise to bring the swaging dies B into different positions in relation to the rolls E; in either instance the wedge action of the rolls is the same.

It is generally preferable to place the rolls E with their axes parallel to the axis of the shaft A and to mount these rolls E in circular rings F F′ that are connected together, so that the group of rolls and the rings that support the same can receive motion endwise of the rolls and parallel to the axis of the shaft A. In this case the interior surface of the shell D′ is slightly conical, and the outer ends of the swaging dies B are slightly beveled at the same angle as the tapering rolls, and the bearings or holes in the rings F F′ for the axes of the rolls E should be elongated in the direction of the radii to allow for the rolls being moved endwise within the shell D′ toward the smaller diameter of such shell, or outwardly toward the larger diameter, and when moved inwardly the dies B will be brought closer together in the swaging operation, and when the rolls are moved outwardly the dies B will be farther apart in the swaging operation, thereby allowing for varying the size of the different parts of the round article that is being swaged.

In order to give motion bodily to the group of rolls any suitable mechanism may be employed; I have represented the face ring G to which is connected a screw ring H screwing upon the exterior of the shell D′. By rotating this screw H and face ring G the group of rolls will be pressed inwardly, and upon releasing or unscrewing the ring H the rolls will move outwardly, either automatically or by the action of a spring follower, illustrated at I, Fig. 1.

I find it the most advantageous to retain the rolls in their proper relative positions by supporting the axles of the rollers in the rings F F′, but the axles of such rolls may be in the form of bolts passing through the rolls and projecting from one ring, to which ring a motion can be given in either direction by suitable mechanism, such for instance as a clip D^4 acted upon by a screw, shown in Fig. 3. In all instances the opening and closing of the dies will be regulated by the relative position of the conical or tapering rolls to the swaging dies.

In my patent No. 376,144 there are followers or die blocks intervening between the dies and the rollers that act to close the dies inwardly, and in my patent No. 460,566, there are also die blocks or followers between the dies and the rollers acting upon the same. It is to be understood that these die blocks or followers

are usually provided and intervene between the rollers that act to close the dies and the dies themselves.

I claim as my invention—

1. The combination with the revolving shaft and the swaging dies carried by the same, of a group of tapering rolls, a shell within which such rolls are supported and mechanism for adjusting the tapering rolls endwise and in their relation to the swaging dies, substantially as set forth.

2. The combination with the revolving shaft and the swaging dies carried by the same, of a group of tapering rolls, a shell surrounding the rolls having a slightly conical interior surface, a ring for supporting the axes of the tapering rolls, and screw mechanism for adjusting the ring and rolls in relation to the swaging dies, substantially as set forth.

3. The combination with the revolving shaft and the swaging dies carried by the same, of a group of tapering rolls, a shell within which such rolls are supported and mechanism for adjusting the action of the tapering rolls in their relation to the swaging dies by an endwise movement, substantially as set forth.

Signed by me this 18th day of May, 1892.

WILLIAM H. DAYTON.

Witnesses:
ALBERT SPERRY,
CHAS. L. MCNEIL.