(No Model.)

W. H. DAYTON.

MACHINE FOR SWAGING NEEDLE BLANKS.

No. 515,576. Patented Feb. 27, 1894.

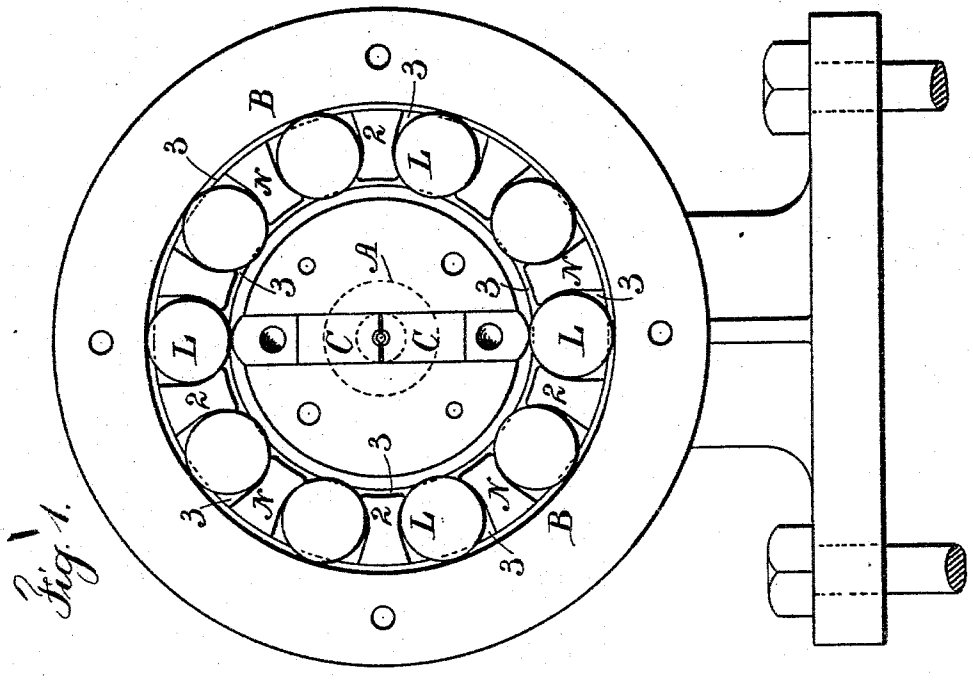

Fig. 1.

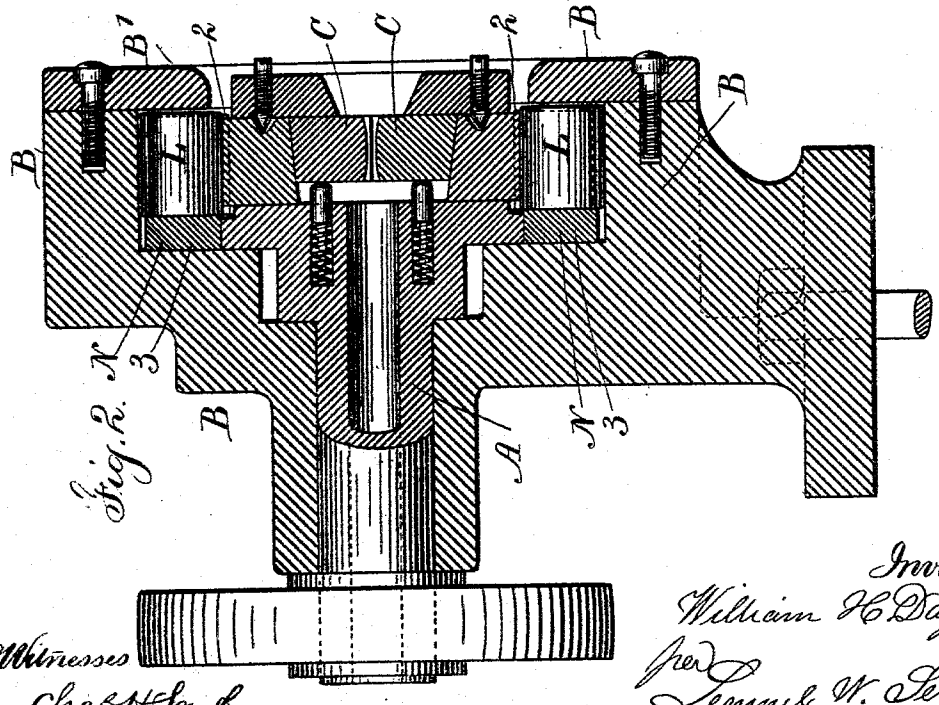

Fig. 2.

Witnesses
Chas. H. Smith
J. Stair

Inventor
William H. Dayton
per Lemuel W. Serrell
Atty

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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

MACHINE FOR SWAGING NEEDLE-BLANKS.

SPECIFICATION forming part of Letters Patent No. 515,576, dated February 27, 1894.

Application filed October 2, 1893. Serial No. 486,330. (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 Machines for Swaging Needle-Blanks and other Articles, of which the following is a specification.

This improvement relates to that class of machines for swaging wire, needle blanks and other articles, in which a head with dies in a mortise across at one end of the head, is revolved within a stationary shell, there being a circular range of rollers between the revolving head and the interior of the circular shell. A machine of this kind is represented in Letters Patent No. 376,144, granted to me January 10, 1888. In machines of this character it has been usual to sustain rollers, in the circular range of rollers, by axes or pivots at the respective ends, such pivots or axes being received into holes within circular rings, and in consequence of the wear to which the parts are subjected it has been usual to elongate the holes radially, and the rings have been rotated within the head as the rollers were moved progressively by contact with the outer ends of the swaging dies as such dies were carried around by the revolving head. In practice I have found that the pivots or axes of the rollers are liable to wear away, and when such roller axes become loose the rollers themselves do not act reliably and uniformly upon the swaging dies. My present improvement is made with reference to sustaining the rollers in their proper positions in the circular range of rollers and at the same time dispensing with the axes or pivots of the rollers.

In carrying out my invention I provide a ring fitting loosely within the stationary shell and which ring is wider than the length of the rollers and thinner than the diameter of one of the rolls, and into this ring notched recesses are formed for receiving the rolls, such notched recesses being smaller at their inner edges than the diameter of the rolls, so that the rolls cannot fall inwardly, and the recesses are wide enough for the rolls to remain in such positions without undue friction against the surfaces of the ring at the recesses, thereby the rolls, which are plain cylinders, are held in position within the circular head by the notched ring.

In the drawings, Figure 1 is an elevation of a swaging head with the cap plates removed. Fig. 2 is a section representing the rolls constructed according to the present improvements.

The tubular shaft A is supported in a suitable shell B which is provided with a stand or support, and the interior of the shell B is circular and of the proper diameter for receiving within the shell the dies C which occupy a transverse mortise in the head portion of the revolving shaft A. These dies may be of any desired character and either one or two pairs of dies may be made use of, and the rolls L are of the proper size for the space between the interior of the shell B and the ends of the dies C so as to act at the outer ends of such dies to close them toward each other as the shaft A and dies are rotated.

Instead of providing axes or pivots at the ends of the rolls L, such rolls L are simply made as short cylinders, and such rolls are held in their proper positions by a ring N, which ring is turned up to fit loosely within the shell B and not to come into contact with the outer ends of the dies C or their followers, and, into the ring, holes are bored of slightly larger diameter than the rolls L, such holes passing in a sufficient depth to receive the rolls, and such holes open as notches through the inner edges of the ring and also through the outer edges of the ring, in order that the rolls may project sufficiently inwardly for the dies or their followers to come into contact with such rolls successively for closing the dies, and the outer edges of the notches in the ring N allow the rolls to press against the interior surface of the shell B, so that the rolls are held in their proper relative positions by the partitions 2, 2 projecting from the circular portion 3 of the ring N. It will now be apparent that the rolls L are free to roll against the interior surface of the shell B as such rolls are acted upon by the dies, and as the rolls travel progressively around upon the interior surface of the shell the ring N is carried along with such rolls,

and such ring serves the purpose of keeping the rolls at the proper distances from each other so that they may act properly upon the dies, and the wear is almost exclusively upon the rolls by the contact therewith of the dies or followers, and when such rolls become worn or injured they are easily taken out and others substituted, and it is only necessary to keep the surfaces of the parts sufficiently lubricated to cause the rollers to freely turn in their respective notched recesses, and at the same time there is but little friction between the rollers and the partitions, because there is no work performed by the ring N except that of steadying the rolls and holding them in their proper relative positions for acting upon the dies or their followers.

It is generally preferable to employ a ring B′ secured to the end of the shell B for holding the rolls and the ring from end movement while the machine is in operation; and it is to be understood that this present improvement is available in any rotary swaging machine of the general character herein described.

I claim as my invention—

1. The combination with a revolving shaft and the dies carried by the same, of a circular shell surrounding the shaft and dies, a ring fitting loosely into the shell and having recesses opening through the outer and inner portions of the ring, and short cylindrical rollers within such recesses to roll against the interior surface of the shell and to move the dies inwardly, substantially as set forth.

2. The combination with a revolving shaft and dies carried by that shaft and opening from and closing toward the center, of a surrounding circular shell, short cylinders between the shell and the end of the shaft and rolling against the interior of the shell in closing the dies, and a ring within the shell having projecting partitions that intervene between the cylinders and retain them in their proper relative positions substantially as specified.

Signed by me this 27th day of September, 1893.

W. H. DAYTON.

Witnesses:
GEO. T. PINCKNEY,
A. M. OLIVER.