

(No Model.)

2 Sheets—Sheet 1.

J. LE BLANC.
SCREW SWAGING MACHINE.

No. 516,396.

Patented Mar. 13, 1894.

FIG. 1

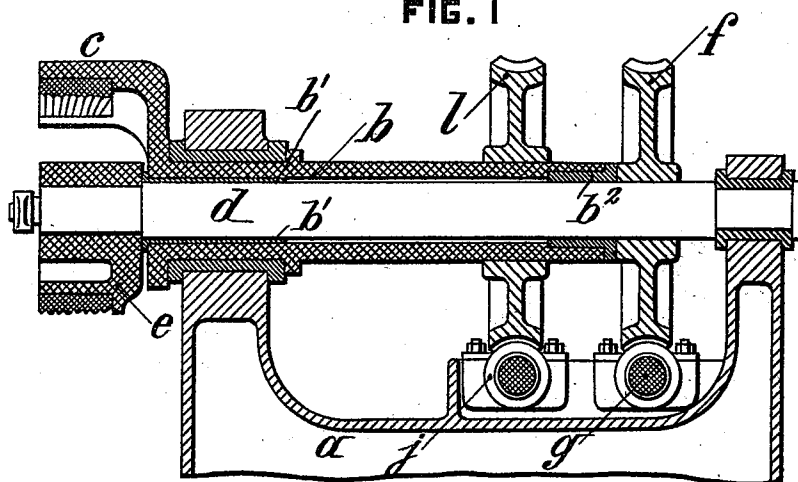
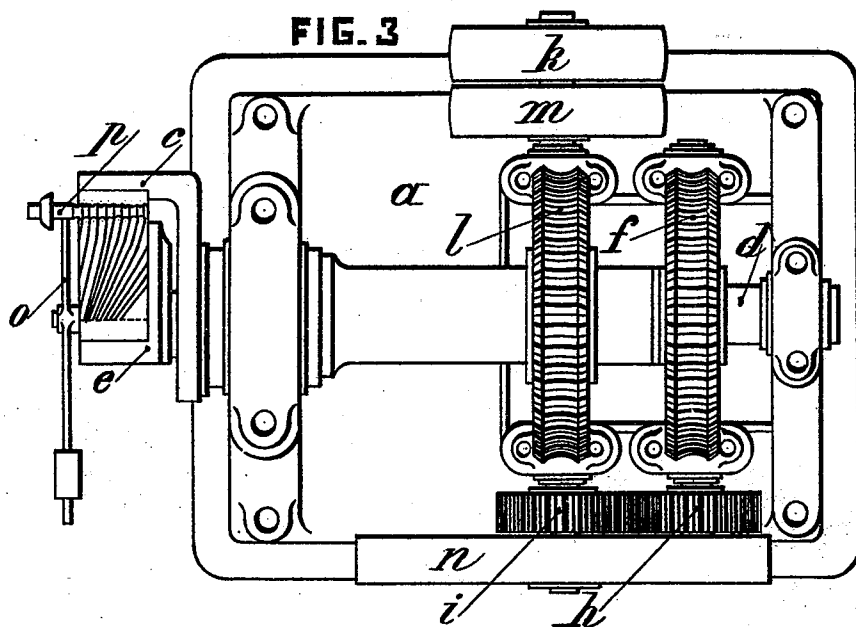


FIG. 3



WITNESSES:

E. M. Clark
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INVENTOR

J. Le Blanc

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Munn & Co

ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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SCREW SWAGING MACHINE.

No. 516,396.

Patented Mar. 13, 1894.

FIG. 2

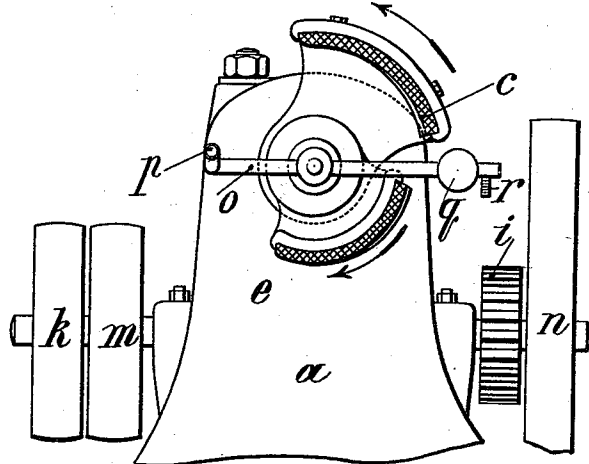


FIG. 4

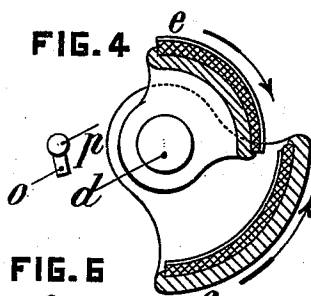


FIG. 5

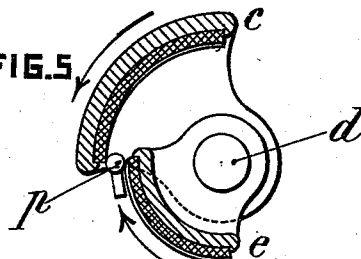


FIG. 6

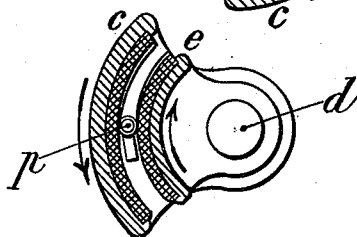
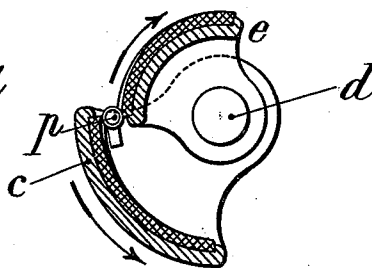


FIG. 7



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UNITED STATES PATENT OFFICE.

JULES LE BLANC, OF PARIS, FRANCE.

SCREW-SWAGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 516,396, dated March 13, 1894.

Application filed January 19, 1893. Serial No. 458,996. (No model.) Patented in France December 2, 1891, No. 217,805; in Belgium May 28, 1892, No. 99,873, and in Italy May 31, 1892, LXII, 497.

To all whom it may concern:

Be it known that I, JULES LE BLANC, of the city of Paris, France, have invented an Improvement in Screw-Swaging Machines, (for which I have obtained Letters Patent in France for fifteen years, dated December 2, 1891, No. 217,805; in Belgium for fifteen years, dated May 28, 1892, No. 99,873, and in Italy for fifteen years, dated May 31, 1892, No. 497, Vol. LXII,) of which the following is a full, clear, and exact description.

My invention relates to machinery or tools whereby pieces of metal are rolled between two segmental parts turning in opposite directions in such manner as to form various kinds of articles such as screws, bolts, rods, moldings, shafts, and the like.

In order that my said invention may be understood and put into practice, I have represented the same in the accompanying drawings, in which—

Figure 1 shows a vertical longitudinal section of the machine. Fig. 2 is a vertical transverse section thereof. In both of said figures the machine is shown with its several parts in the desired position for the first stage of the operation. Fig. 3 is a plan of the machine, but showing the finished piece in the fourth and last stage of the operation. Figs. 4, 5, 6 and 7 show each one of the four successive stages of the manufacturing. Figs. 4 and 5 also illustrate slight modifications of the rotatable dies.

Similar letters of reference indicate similar parts in the several figures.

According to my invention I provide a main frame *a*, carrying two bearings, in one of which is a hollow shaft *b*, carrying an external segmental wing *c*; passing through the interior of the sleeve shaft is another shaft *d*, carrying an internal segmental wing *e*, and the aforesaid segmental wings *c* and *e* are so arranged, that as they are rotated in opposite directions, they pass each other in concentric circular planes at a fixed distance from one another, and should be formed with or carry dies when required to produce the desired forms upon the pieces to be operated upon. On the internal shaft *d* is mounted a toothed worm wheel *f*, which is driven by a worm *g*,

on a transverse shaft which by means of the pinions *h* and *i*, engaging with one another, is driven from a parallel transverse first motion shaft, also carrying a worm *j*, gearing with and driving a second toothed worm wheel *l*, keyed on the external or sleeve shaft *b*. The sleeve *b* is held out of contact with the shaft *d* by means of short sleeves *b'* and *b''* respectively located at the ends of the sleeve *b*. A suitable fly wheel *n*, may be provided; a guide or carrier *o*, loosely held on the segment end of the shaft, serves to receive the piece *p*, to be worked. The carrier *o* is provided with a counter-weight *q*, as shown in Fig. 2, for restoring it to its normal position, and is adapted to rest on a stop *r*.

The foregoing describes an application of my invention, but I do not limit myself to the precise arrangement of framework and driving devices. By placing a piece of metal to be worked on the guide or carrier, and the rotation of the segmental wings being effected in reverse directions, the piece will be taken in between the wings, which produces the impression of threads or grooves or otherwise and finally throws out the finished piece.

This special arrangement of machine enables the scales of iron to get out while allowing the tools to work in an equal manner, in order to shape a piece of metal during a fraction of a turn of the machine; the piece to be shaped turning on its axis without getting out of order.

As shown in Figs. 2, 6 and 7, the thread-forming dies carried by the segments *c* and *e* are preferably slightly eccentric so that the blank will be compressed during the rotation of the said segmental dies. In the modification illustrated by Fig. 5, only one of the dies has an eccentric screw-forming thread, but it will be obvious that the blank *p* will be subjected to a gradual compression. When the dies are constructed as represented in Fig. 4, a gradual compression of the blank does not take place, the dies being perfectly concentric.

The supply or feeding of the machine can be effected in any convenient manner; thus I may, for example, apply a table in front of the machine in such manner that it will only be necessary to place thereon pieces of hot

iron, the one after the other, and to push them into place in order that they come on the guide, or I can establish at the head of the machine any continuous supplier or feeder, 5 facilitating a large production.

I claim—

10 In a machine for the manufacture of screws and other articles, the combination, with two concentric segmental die holders mounted on parallel shafts which are journaled in stationary bearings held at an invariable distance from each other, of a counterbalanced

work holder held loosely on one of the said shafts, substantially as shown and described.

The foregoing specification of my new or 15 improved machine or tool for the manufacture of screws, rivets, bolts, moldings, shafts, and the like signed by me this 17th day of December, 1892.

JULES LE BLANC.

Witnesses:

ROBT. M. HOOPER,
ALBERT MOREAU.