

No. 714,282.

Patented Nov. 25, 1902.

A. COLLET.

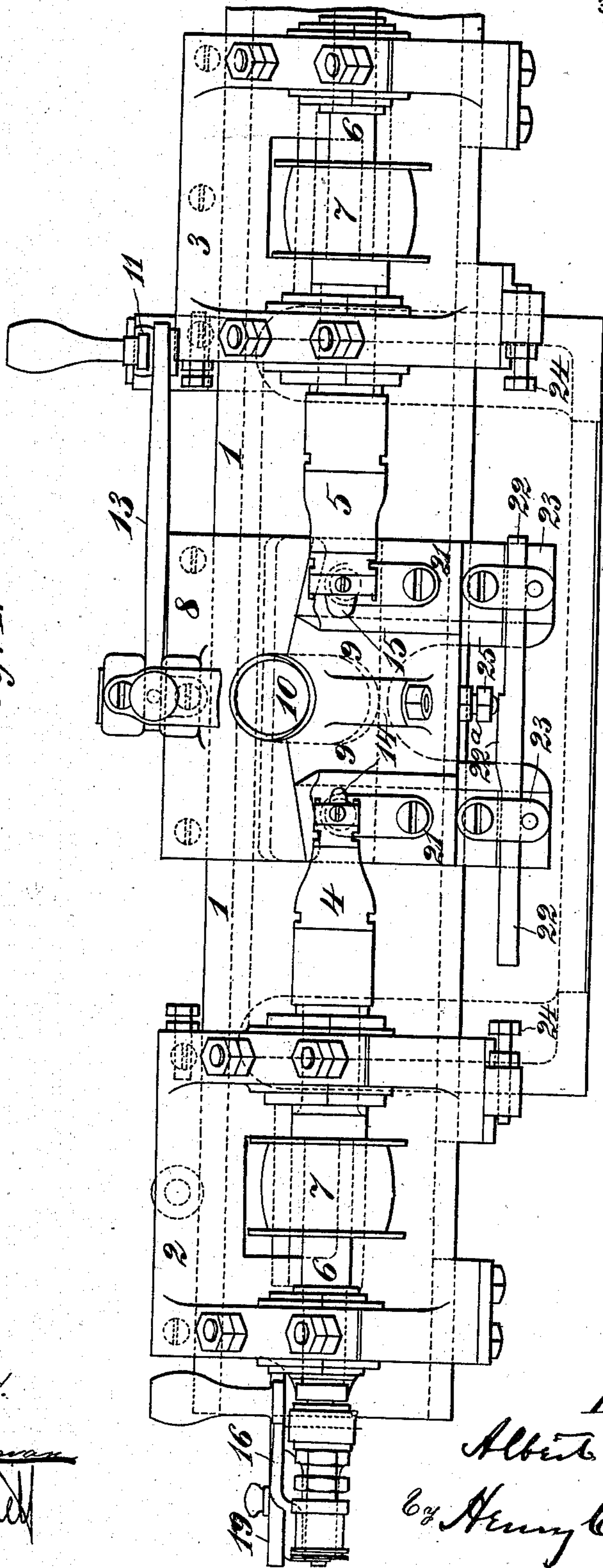
MACHINE FOR TURNING TREENAIL BILLETS OR THE LIKE.

(Application filed Feb. 16, 1901.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



Witnesses.

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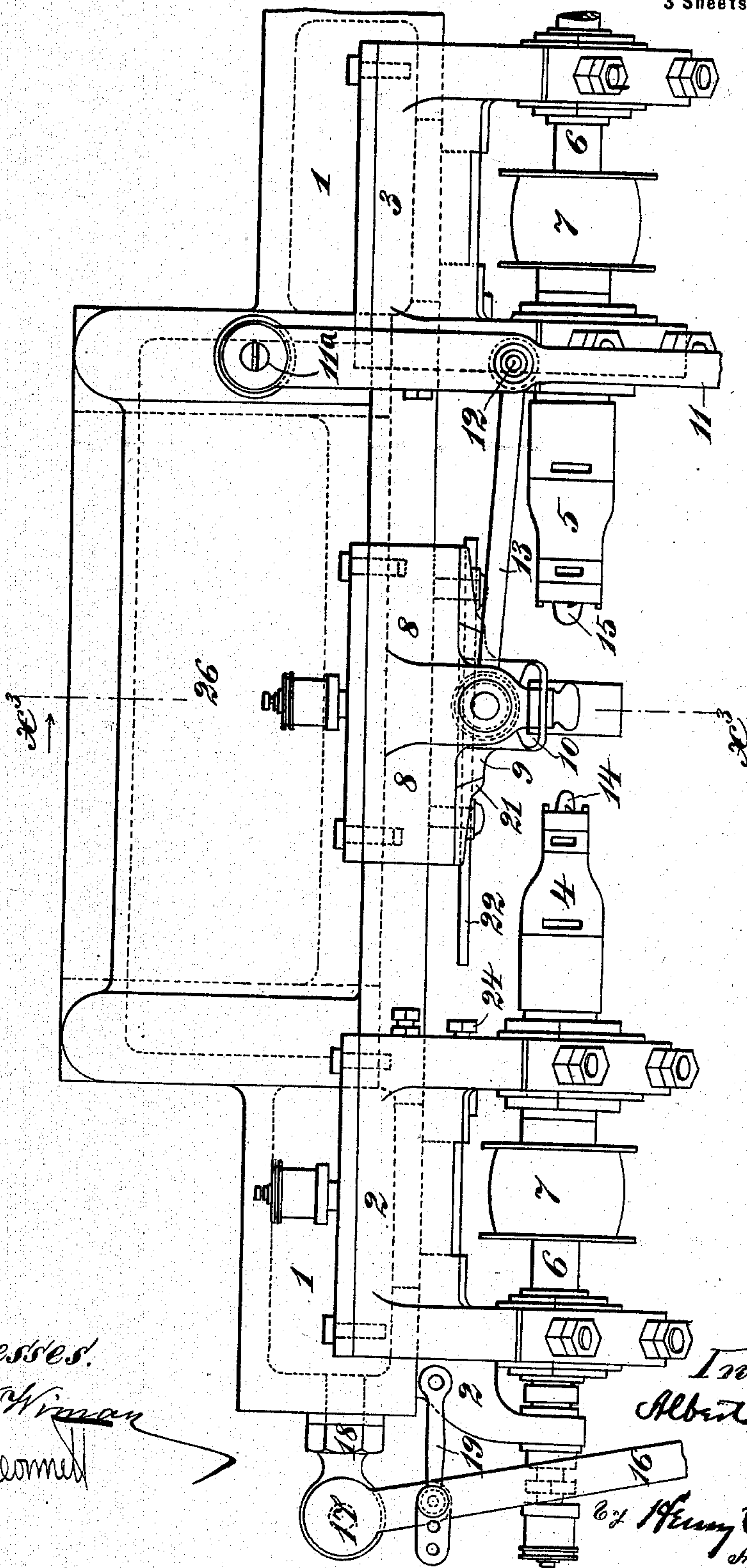
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3 Sheets—Sheet 2.

Fig. 2.



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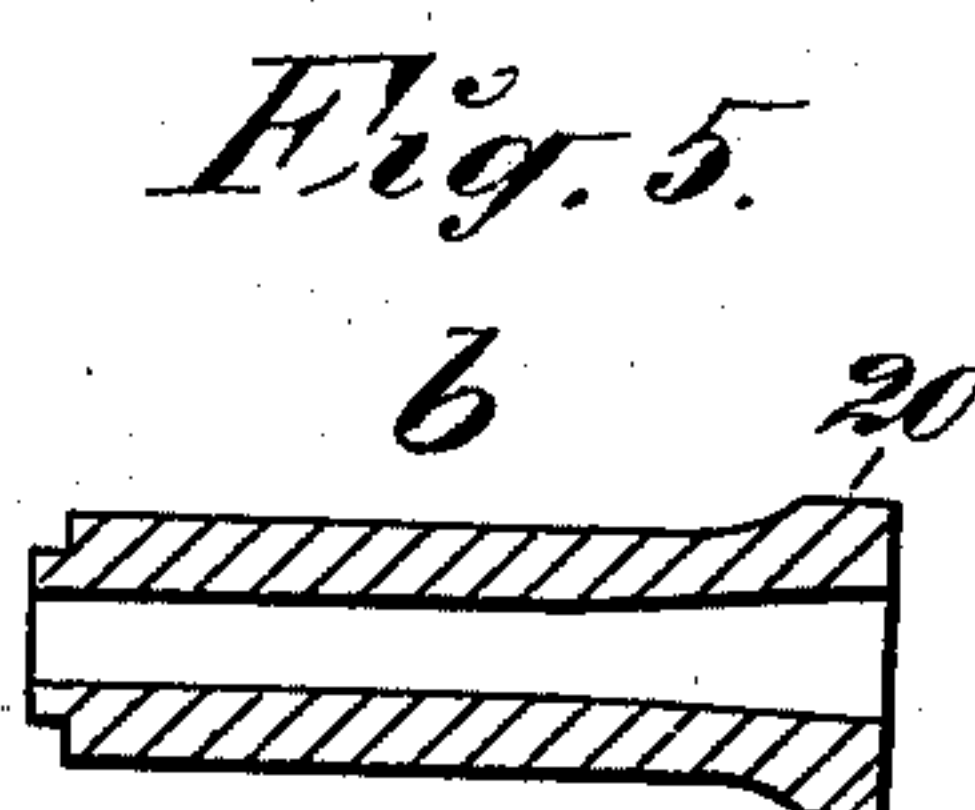
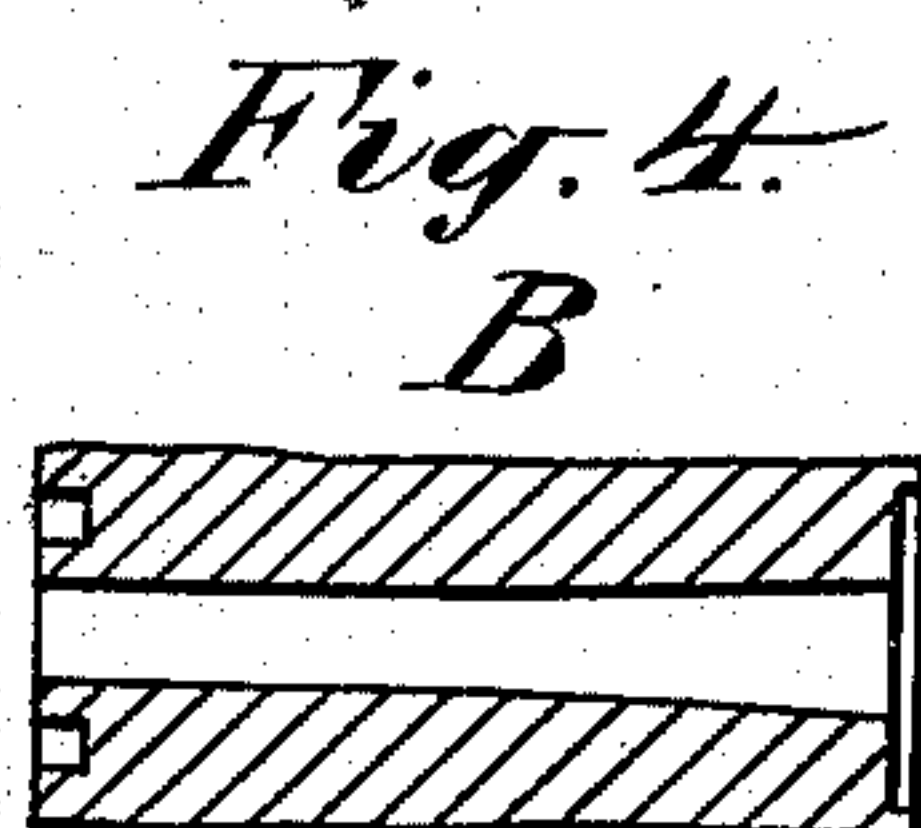
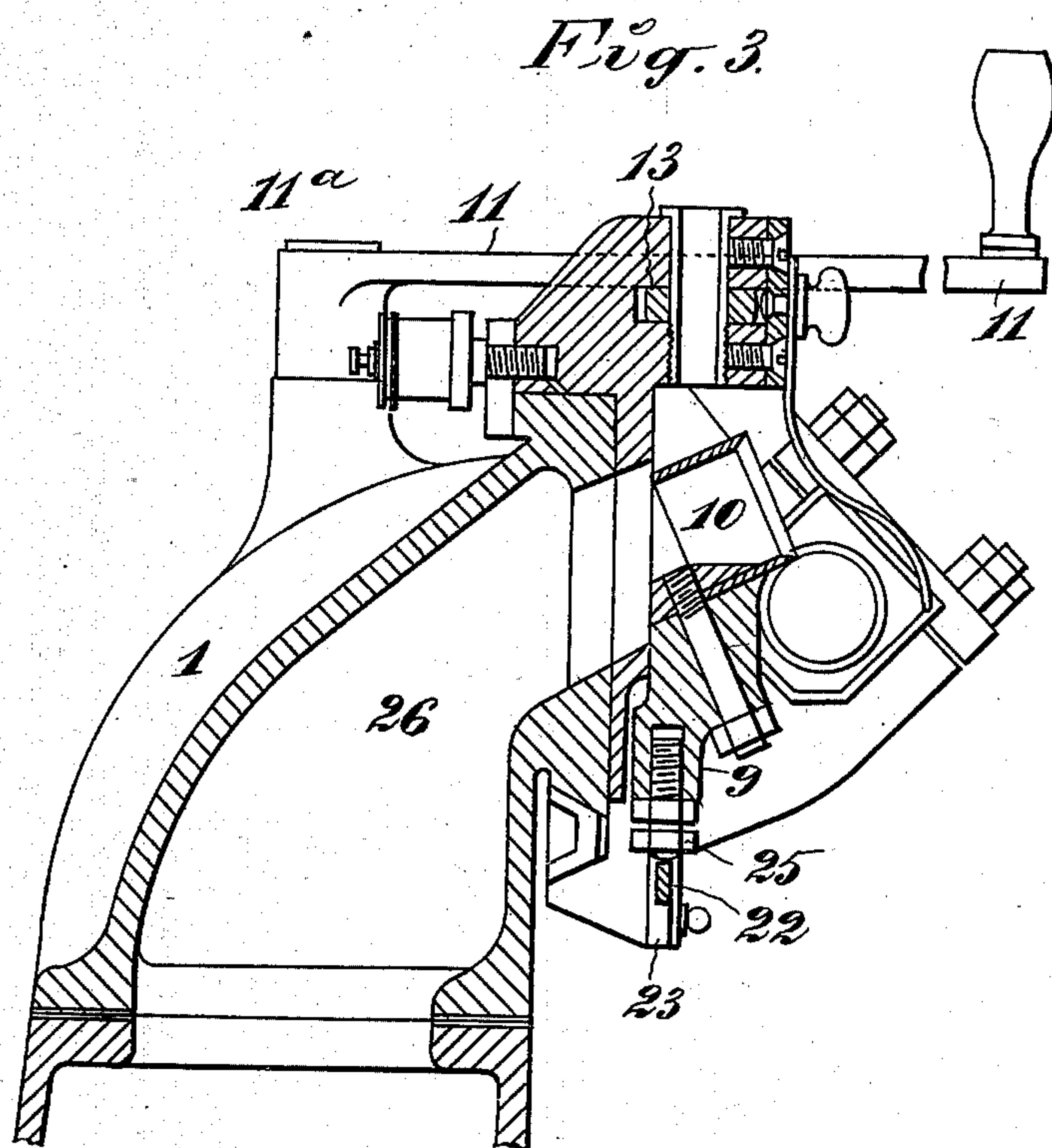
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR TURNING TREENAIL-BILLETS OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 714,282, dated November 25, 1902.

Application filed February 16, 1901. Serial No. 47,533. (No model.)

To all whom it may concern:

Be it known that I, ALBERT COLLET, a citizen of the Republic of France, residing in Paris, France, have invented certain Improvements in Machines for Turning Treenail-Billets or the Like, of which the following is a specification.

The object of this invention is, in the main, to provide a machine for turning a treenail-billet preparatory to cutting a screw thereon. A treenail is in the nature of a tubular screw of wood to be driven into a hole in a railway tie or sleeper to receive a screw employed for securing a rail or other part of the trackway to the sleeper. Ordinarily in making the treenail the billet of which it is formed is first bored through longitudinally, then turned to form a blank, and then screw-threaded externally. The present application relates to a machine for turning the billet or piece. The mechanisms for effecting the boring and screw-threading are embodied in other applications.

The machine which forms the object of this application is adapted only for turning into a cylindrical form the bored billet or piece, and it will be understood that the invention resides in the machine and not in the product produced, and it is not limited to any special use to which the product may be applied.

In the accompanying drawings, which illustrate an embodiment of the invention, Figure 1 is a front elevation of the machine. Fig. 2 is a plan thereof. Fig. 3 is a transverse vertical section at line x^3 in Fig. 2. Fig. 4 shows in longitudinal section the bored billet or piece of wood ready to be turned, and Fig. 5 is a similar view showing the blank after it has been turned and before it has been screw-threaded.

1 is a suitable frame or bed, on which are mounted two brackets 2 and 3, which carry the rotating puppets 4 and 5, which in turn carry the billets to be turned. The bracket 2 is movable horizontally; but the bracket 3 is fixed or secured in place.

In the respective brackets are rotatively mounted and aligned shafts 6, each having fixed on it a driving-pulley 7. One of these shafts carries the puppet or head 4 and the other

carries the puppet 5. The shafts 6 rotate continuously at the same speed and may be driven from any source of power desired.

Between the brackets 2 and 3 is mounted a tool-carriage 8, adapted to slide on the bed 1, being operated by a lever 11. This lever is fulcrumed at 11^a on the bed and coupled at 12 by a rod or link 13 to the carriage, as seen in Fig. 2. On the carriage is secured a tool-holder 9, in which is mounted the tool or cutter 10, which is in the form of a steel tube brought to an edge at its cutting and where it is applied to the wood.

The billet B, Fig. 4, previously bored, is chucked between the heads or puppets 4 and 5 and these set to rotating. The billet does not move endwise, but the tool-carriage 8 moves, thus causing the cutter 10 to traverse the billet and turn or cut it to the proper form or contour seen in the blank b, Fig. 5.

It may be stated here that the movability of the bracket 2 enables the billet to be entered between the centers 14 and 15 on the respective heads 4 and 5. The displacement of the bracket 2 is effected by means of a lever 16, fulcrumed at 17, Fig. 2, on a support 18, fixed to the bed 1. This lever 16 is coupled to the slidable bracket 2 by a connecting rod or link 19.

In order to be able to give to the blank b the contour or profile shown in Fig. 5—that is, to provide it with an enlargement or boss at one end—it is necessary that the tool or cutter 10 shall be movable toward and from the billet and shall be operated automatically as the turning progresses. To this end the tool-holder 9 is made slidable vertically in guides 21, Fig. 2, on the carriage 8. The movement of the holder 9 is effected by means of a cam-bar 22, mounted loosely in keepers 23 on the carriage, and which is displaced endwise by bunters 24, fixed adjustably in the respective brackets 2 and 3 in alinement with the cam-bar. In the lower part of the tool-carrier is set an adjustable screw-stud 25, which is directly over the bar 22. When the said bar is moved endwise a cam 22^a on its upper surface moves under the stud 25 and elevates the holder 9 and tool 10. The inclined cam on the cam-bar has the proper

length and inclination to impart the necessary movement to the tool to give the desired contour to the finished blank.

The operation is as follows: The workman
 5 chucks a blank B, Fig. 4, in the machine while the carriage 8 is at the right, (as the parts are seen in Figs. 1 and 2,) the chucking being effected through the medium of the lever 16, which shifts the movable bracket 2.
 10 The shafts 6 rotate continuously, so that as soon as chucked the blank is set in motion. He then moves the tool-carriage 8 to the left through the medium of the lever 11 and rod or link 13, so as to cause the tool 10 to pass
 15 over the rotating billet. When the stud 25 on the carriage 8 is elevated by the inclined cam 22^a on the bar 22, the tool 10 is lifted for the length of time necessary to form the boss 20 on the blank. The chips or turnings pro-
 20 duced do not incommode the workman, as they all pass off through the hollow bore of the tool 10, which delivers them into a cavity or passage 26, formed in the frame or bed of the machine, as seen in Fig. 3. This passage de-
 25 flects and guides the chips into a suitable receptacle designed to receive them.

Having thus described my invention, I claim—

1. A machine for the purpose specified, com-
 30 prising a frame, a carriage movable longitu-

dinally thereon, means for moving said carriage, a tool-holder on said carriage, a tubular cutter in said holder, means for holding and rotating the piece of wood to be turned, and automatic means for raising and lower- 35 ing the cutter for modifying the shape of the article turned, substantially as set forth.

2. A machine for the purpose specified, having a frame, a carriage movable along said frame, a lever for moving said carriage by 40 hand, a tubular cutter mounted on said carriage, means for holding and rotating the piece to be turned, the sliding bar 22, adapted to actuate the cutter for modifying the shape of the article turned, and means for operat- 45 ing said bar, substantially as set forth.

3. In a machine for the purpose specified, the combination with the movable carriage having in it a passage 26 for the chips or turn- 50 ings, of the tubular cutter 10, mounted on said carriage in position to discharge its chips into said passage, and means for moving said carriage, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing 55 witnesses.

ALBERT COLLET.

Witnesses:

JULES ARMENGAUD,
 EDWARD P. MACLEAN.