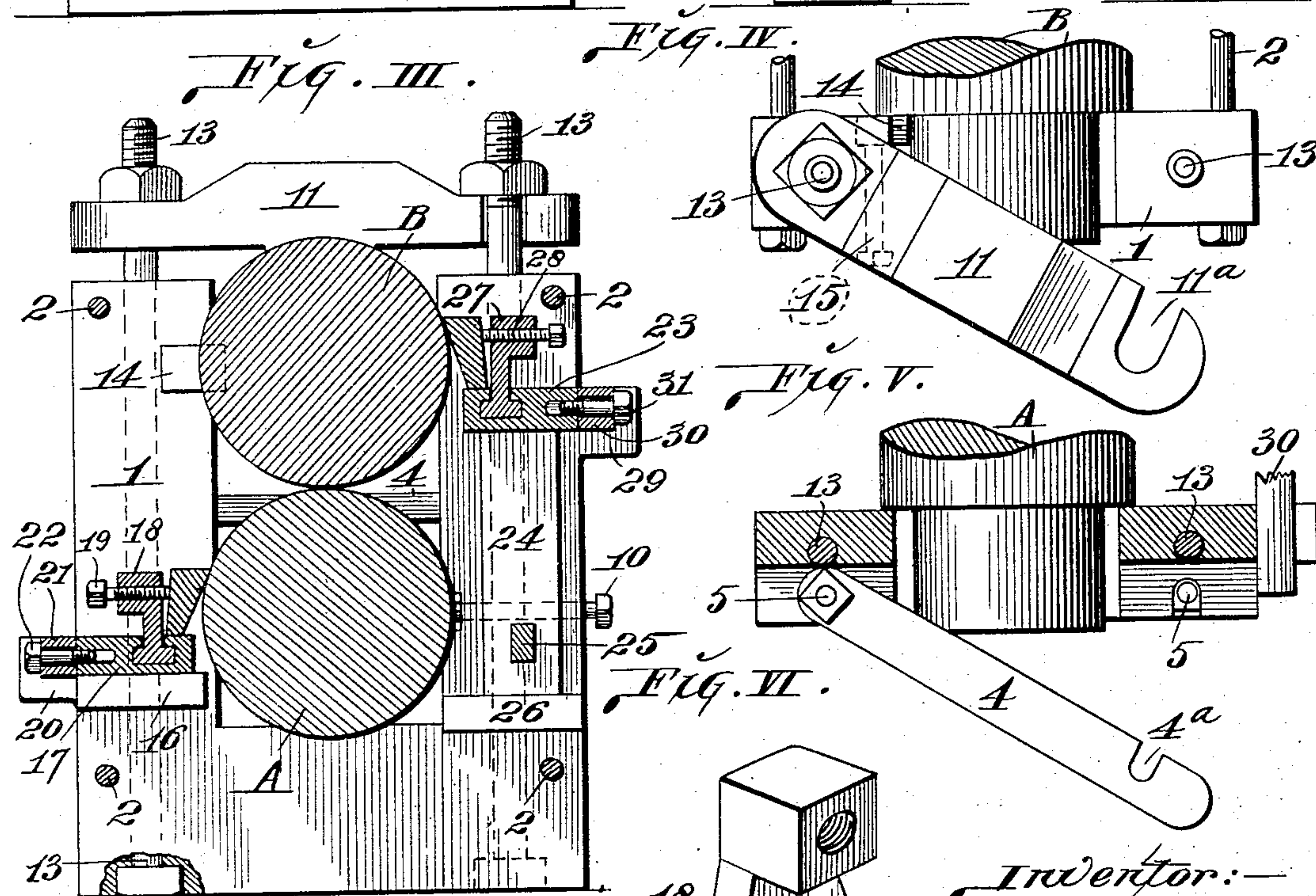
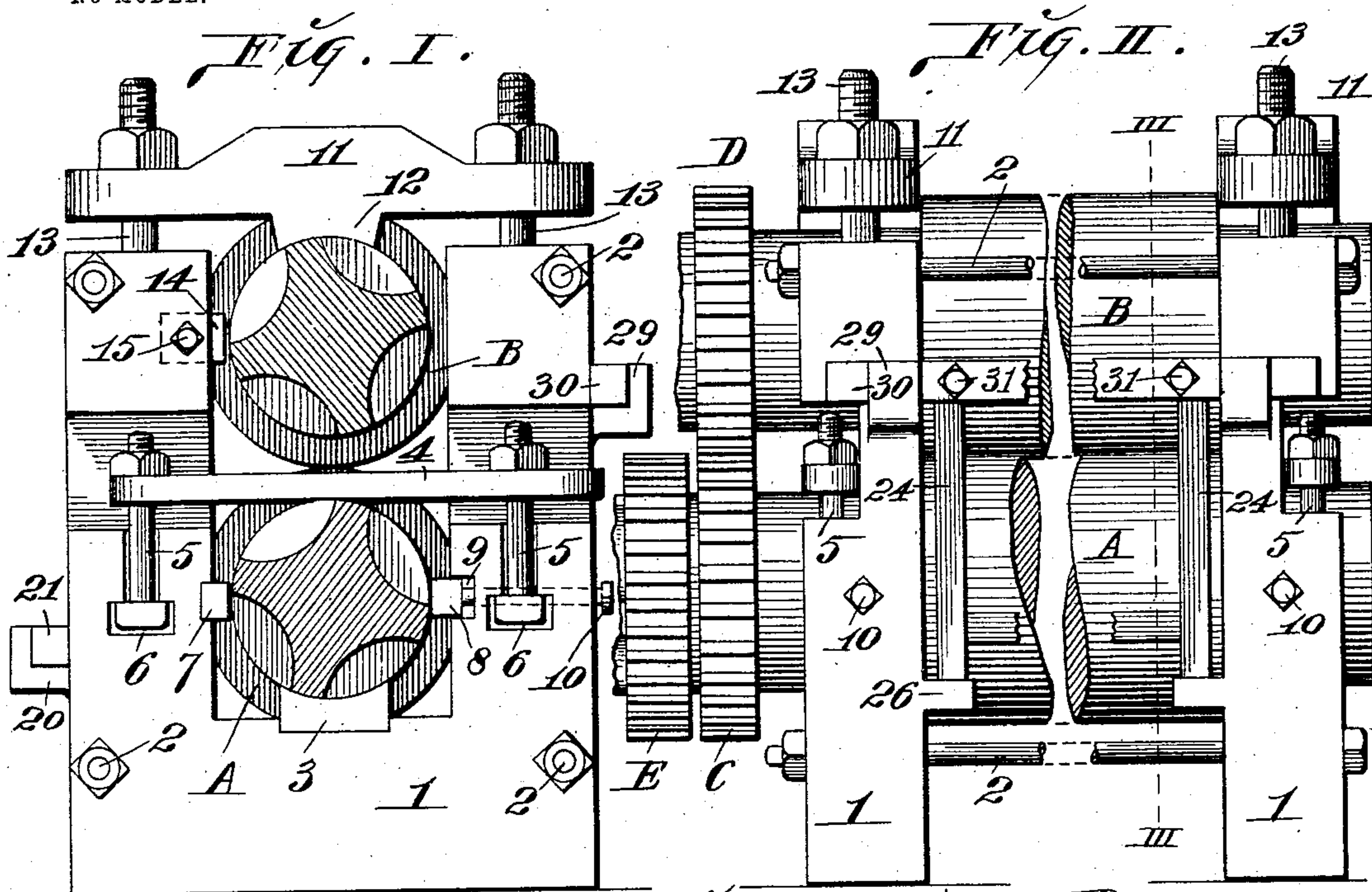


No. 734,997.

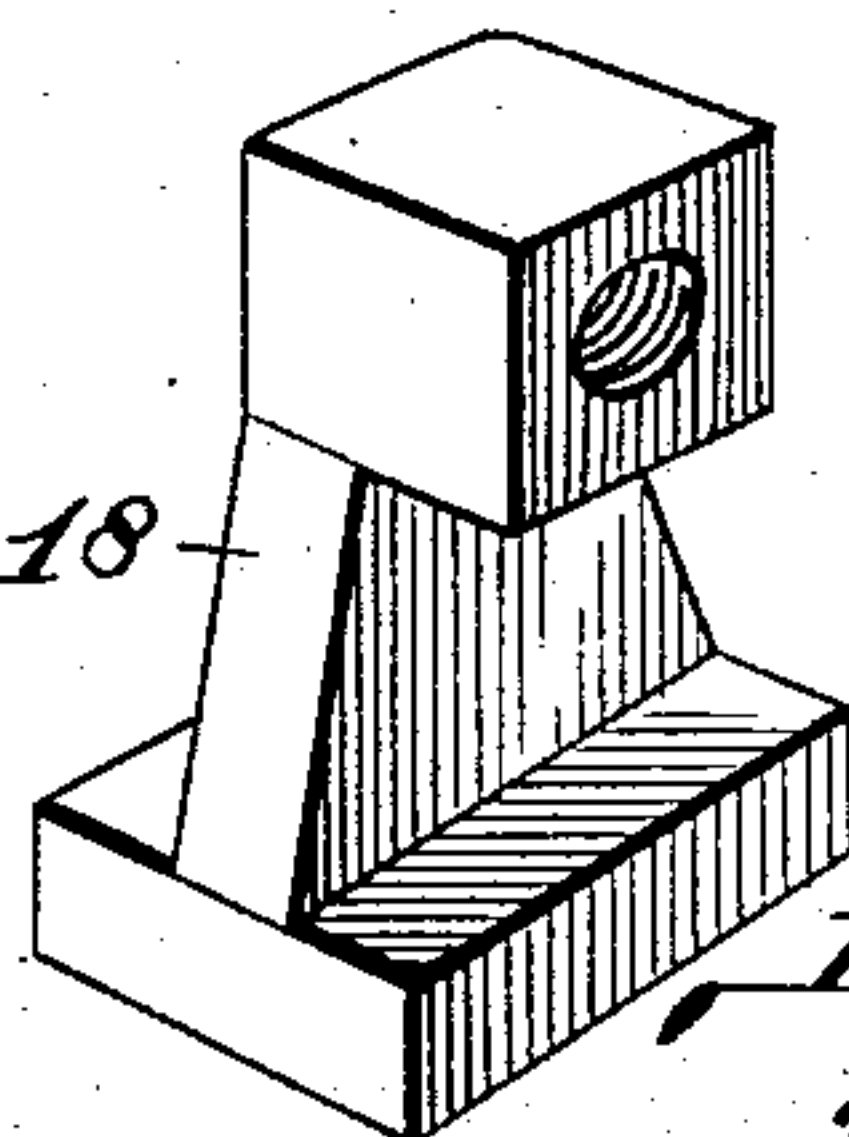
PATENTED JULY 28, 1903.

J. THOMAS.
ROLL TURNING LATHE.
APPLICATION FILED NOV. 10, 1902.

NO MODEL.



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UNITED STATES PATENT OFFICE.

JOHN THOMAS, OF ST. LOUIS, MISSOURI.

ROLL-TURNING LATHE.

SPECIFICATION forming part of Letters Patent No. 734,997, dated July 28, 1903.

Application filed November 10, 1902. Serial No. 130,671. (No model.)

To all whom it may concern:

Be it known that I, JOHN THOMAS, a citizen of the United States, residing in the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Roll-Turning Lathes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a lathe for use in turning, dressing, or finishing mill-rolls; and it consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is an end elevation of my lathe with rolls shown mounted therein to be turned. Fig. II is a side elevation partly broken out. Fig. III is a vertical transverse section taken on line III III, Fig. II. Fig. IV is a top view of one end of the lathe, showing one of the top riders swung outwardly. Fig. V is a horizontal section through one of the end frames of the lathe with one of the lower riders shown swung outwardly. Fig. VI is a perspective view of one of the tool-sockets.

1 designates the end frames of the lathe, which are connected by tie-rods 2. Each end frame is of U shape and is adapted to receive the journals of lower and upper rolls A and B to be operated upon. The rolls are designed to be rotated when mounted in the end frames by gears C and D, applied thereto, and a driven gear E, to which power is applied in any suitable manner.

3 are bearing-blocks, one of which is located beneath the journal of the lower roll A, at each end thereof, as illustrated in Fig. I.

4 designates lower riders adapted to rest on the top surfaces of the journals of the lower roll, to which they are held by bolts 5, which pass therethrough and are seated in sockets 6, contained by the end frames 1. Each of the riders 4 is swingingly held by one of said bolts at one of its ends and at the opposite end is provided with a notch 4^a, that is adapted to be fitted to the corresponding bolt 5.

7 designates rear bearing-blocks seated in sockets in the end frames at the back of the journals of the lower roll and adapted to receive the contact of said journals. (See Fig. I.)

8 designates adjustable forward bearing-blocks movably positioned in seats 9 in front

of the lower-roll journals. (See Fig. I.) These adjustable bearing-blocks are adapted to be pressed inwardly to bear against the front faces of the lower-roll journals, to which they are held by adjustment-screws 10, which pass through the forward members of the end frames 1, as seen in Figs. I and III.

11 designates top riders, which are provided with central bearings 12, adapted to rest upon the upper surfaces of the journals of the upper roll B, as seen in Fig. I.

13 designates bolts that pass upwardly through the end frames 1, from the bottoms thereof, and project through the upper ends of said end frames to receive the riders 11, which are held thereby. Each of the riders 11 is provided with a notch 11^a, that is adapted to be fitted to the corresponding vertical bolt 13, while the opposite end of each rider is swingingly held by its corresponding bolt 13. This arrangement provides for the swinging of the riders outwardly, as seen in Fig. IV, to permit the introduction of the rolls in like manner to that in which the lower riders 4 are swung for the same purpose.

14 designates end-thrust bearing-blocks which are seated in the end frames 1, at the inner sides thereof, and arranged to oppose the ends of the bodies of the upper roll B, as seen in Figs. I, III, and IV, to bring one of said bearing-blocks 14 at each end of the upper roll.

15 designates adjustment-screws that pass through the end frames 1 and are adapted to bear against the bearing-blocks 14 and by which said blocks are pressed against the ends of the body of the upper roll to adjust the roll accurately in alignment longitudinally of the lathe and hold it in such condition while it is being operated upon.

16 designates lugs formed upon the inside faces of the end frames 1 and in proximity to the lower roll when said roll is mounted in the lathe, as seen in Fig. III.

17 is a tool-rest mounted on the lug 16, and 18 is a tool-brace slidably seated in the tool-rest 17 and adapted to support a short tool, such as shown in Fig. III, by a set-screw 19, so as to be set to the face of the lower roll A.

20 designates brackets projecting from the end frames 1, and 21 is a cross-bar mounted in said brackets.

22 designates adjustment-screws which pass loosely through the cross-bar 21 and engaging in the tool-rest 17. These adjustment-screws are adapted to be manipulated to move the tool-rest 17 toward or away from the roll A to adjust the tool-carrying socket 18 with respect to the roll.

23 is a tool-rest provided with legs 24, that are joined by a connecting-bar 25. The legs 24 are seated on lugs 26, projecting from the insides of the end frames 1.

27 is a tool-brace slidably seated in the tool-rest 23 and provided with a set-screw 28. The brace 27 is adapted to hold a short tool, such as shown in Fig. III, which is arranged to be held to the face of the upper roll B.

29 designates lugs projecting from the end frames 1 in proximity to the tool-rest 23, and 30 is a cross-bar seated in said lugs in front of said tool-rest.

31 designates adjustment-screws that pass loosely through the cross-bar 30 and are engaged in the tool-rest 23 to provide for the adjustment of said tool-rest to and from the roll B to hold the tool carried by the brace 27 to said roll.

In the practical use of my lathe the rolls to be turned or dressed are introduced into the end frames 1, the riders 4 and 11 being swung outwardly, as shown in Figs. IV and V, for their introduction. The riders are then swung inwardly and held to the journals of the rolls by tightening the nuts on the bolts 5 and 13. The adjustment-screws 10 and 15 are then turned to carry the bearing-blocks 8 and 14 inwardly to set respectively against the forward surfaces of the journals of the lower roll and the end faces of the upper roll. The gearing D, C, and E being applied to the journals of the rolls, power is applied to said gearing to impart rotation to the rolls. The tool-rests 17 and 23 having been placed in position and the tools introduced into the braces 18 and 27, the tool-rests are moved inwardly by the adjustment of the screws 22 and 31 to present the tools to the surfaces of the rolls. Rotation is then imparted to the rolls through the gearing applied thereto, and they are turned and dressed by the tools in the braces, the sockets being manually moved longitudinally of the tool-rests as the work progresses.

I claim as my invention—

1. In a roll-turning lathe, the combination of a pair of U-shaped end frames adapted to receive the rolls adapted to be operated upon, tool-rests arranged in positions adjacent to said rolls when mounted in said frames and adjustable bearing-blocks arranged to bear against the side faces of the journals of the lower roll, substantially as described.

2. In a roll-turning lathe, the combination of a pair of U-shaped end frames to receive the rolls to be operated upon, tool-rests arranged in positions adjacent to said rolls when mounted in said frames, adjustable bearing-blocks arranged to bear against the side faces of the journals of the lower roll, and adjustment-screws arranged to bear against said bearing-blocks, substantially as described.

3. In a roll-turning lathe, the combination of a pair of U-shaped end frames to receive the rolls to be operated upon, tool-rests arranged in positions adjacent to said rolls when mounted in said frames, adjustable bearing-blocks arranged to bear against the side faces of the journals of the lower roll, adjustment-screws arranged to bear against said bearing-blocks, and adjustable end-thrust bearing-blocks arranged to bear against the end faces of the upper roll, substantially as described.

4. In a roll-turning lathe, the combination of a pair of U-shaped end frames to receive the rolls to be operated upon, tool-rests arranged in positions adjacent to said rolls when mounted in said frames, adjustable bearing-blocks arranged to bear against the side faces of the journals of the lower roll adjustment-screws arranged to bear against said adjustable bearing-blocks, end-thrust bearing-blocks arranged to bear against the end faces of the upper roll, and adjustment-screws arranged to bear against said end-thrust bearing-blocks, substantially as described.

5. In a roll-turning lathe, the combination of a pair of U-shaped end frames open at their upper ends to receive the rolls to be operated upon, horizontally-swinging riders pivoted to said end frames, and adapted to bear upon the journals of said vertical rolls, bolts extending through the frame, by which the riders are clamped to the roll-journals, and tool-rests arranged adjacent to the rolls when mounted in said end frames, substantially as described.

6. In a roll-turning lathe, the combination of a pair of U-shaped end frames open at their upper ends to receive the journals of a pair of rolls to be operated upon, a pair of horizontally-swinging riders supported by said end frames, vertical bolts extending through the frame, by which said riders are clamped onto the journals of the lower roll, a pair of horizontally-swinging riders surmounting said end frame, and vertical bolts extending through the frame by which the riders are clamped to the journals of the upper roll, substantially as described.

JOHN THOMAS.

In presence of—

E. S. KNIGHT,
M. P. SMITH.