

No. 719,349.

PATENTED JAN. 27, 1903.

B. S. LOVELAND.
WOOD TURNING LATHE.

APPLICATION FILED JULY 8, 1902.

NO MODEL.

Fig. 1.

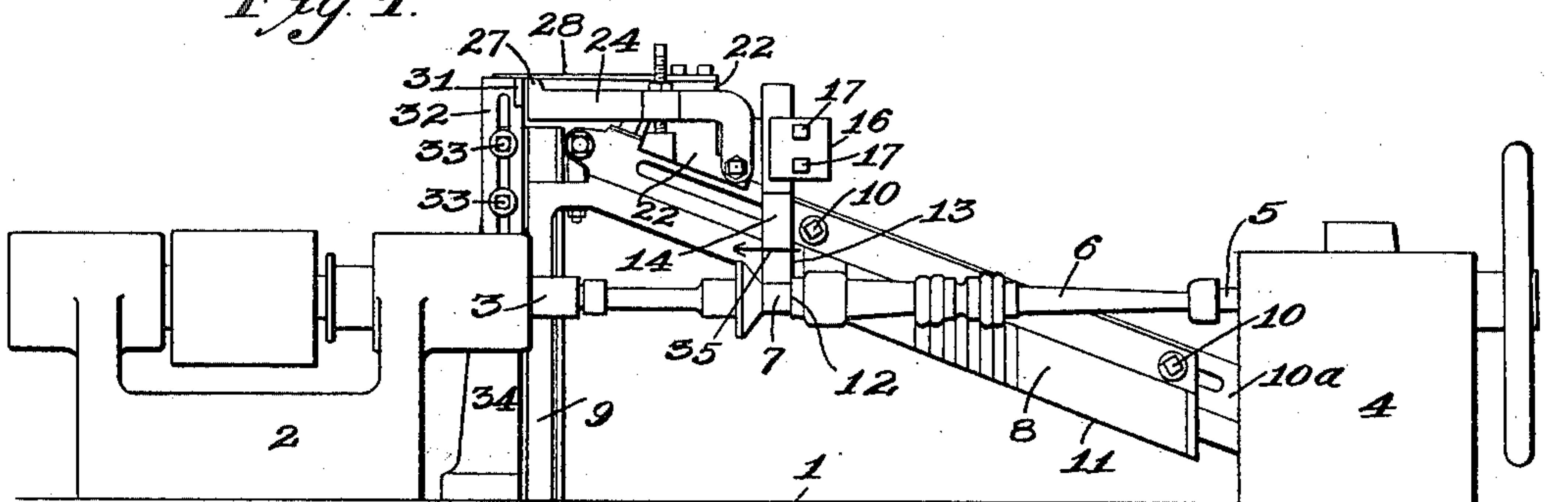


Fig. 2.

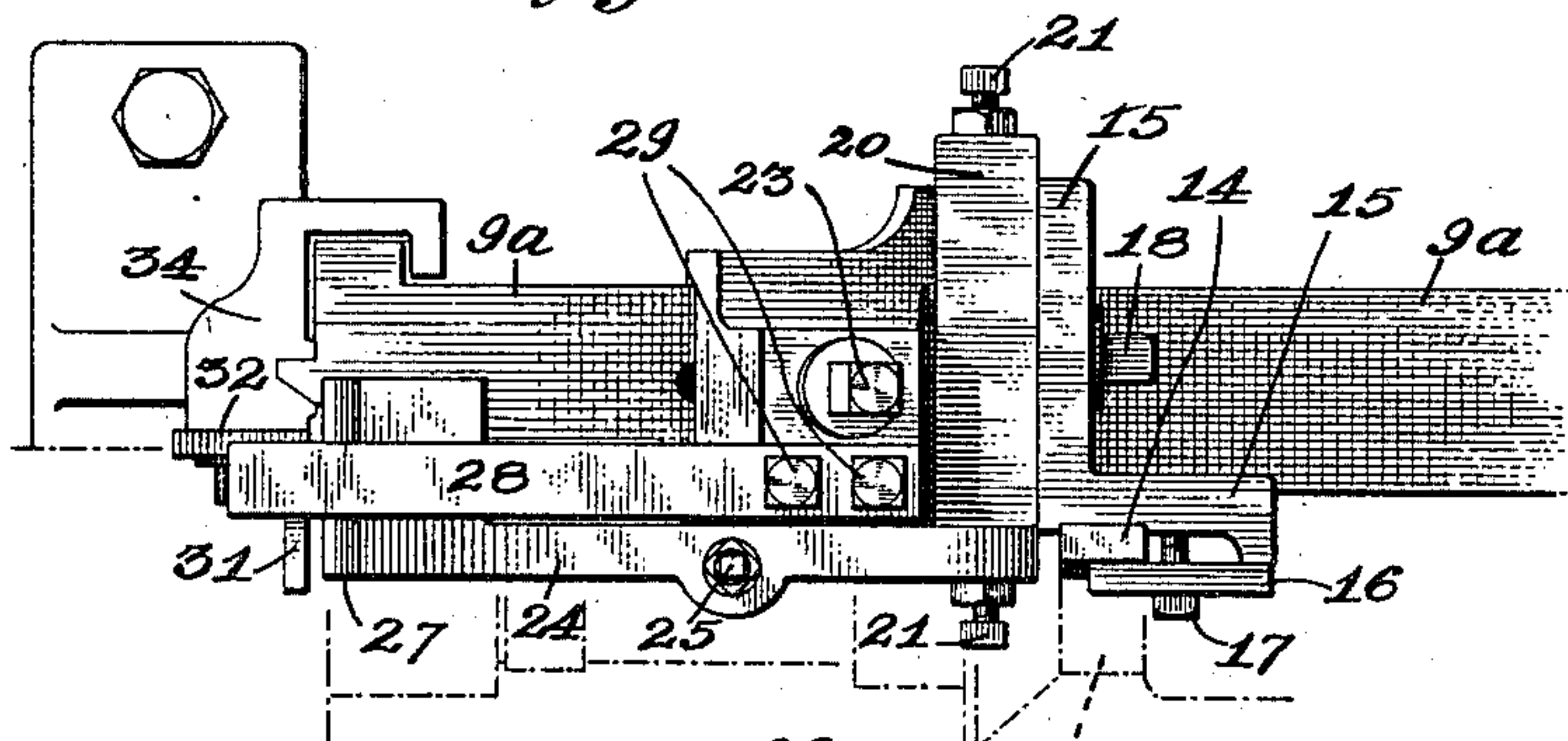


Fig. 4.

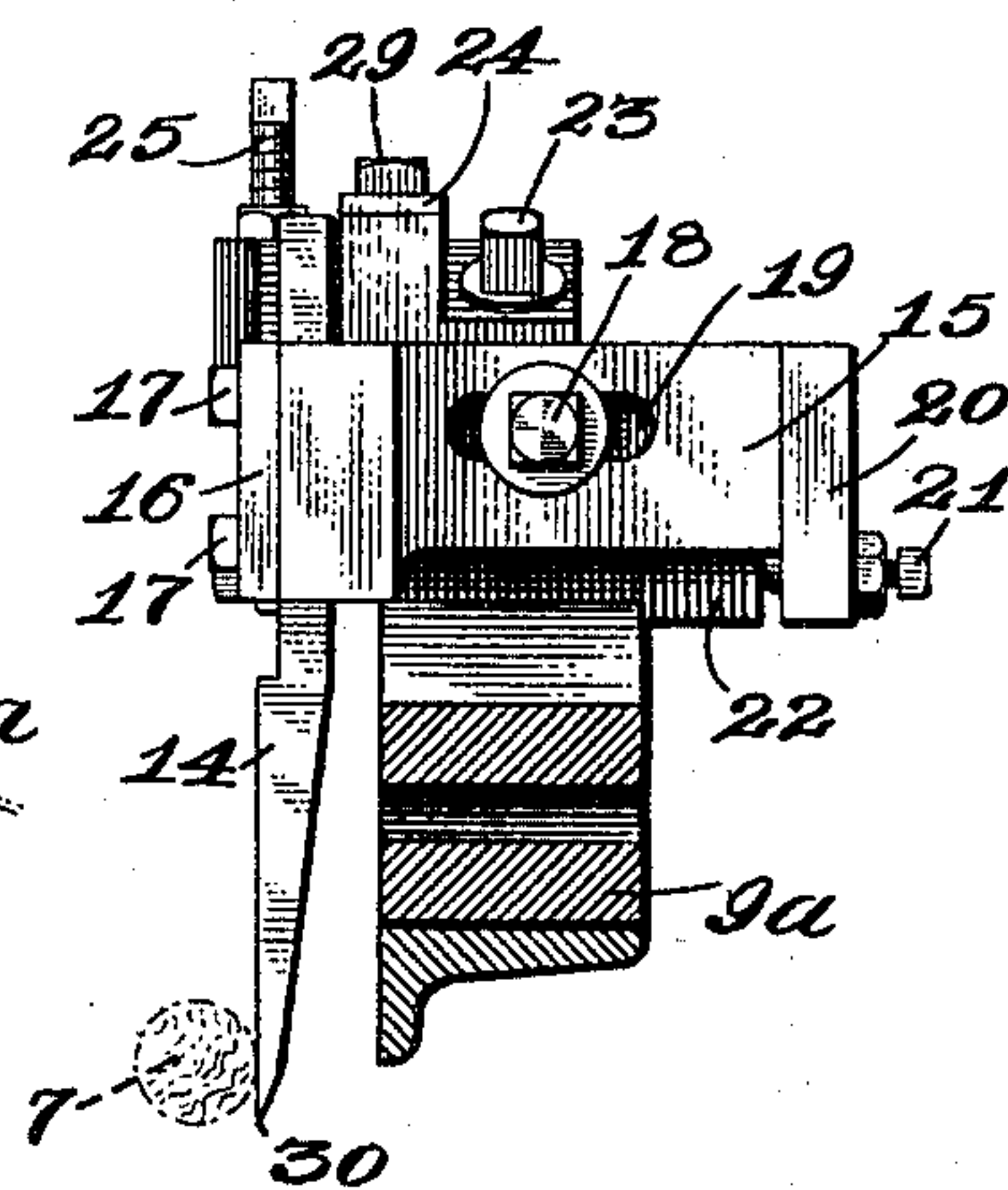
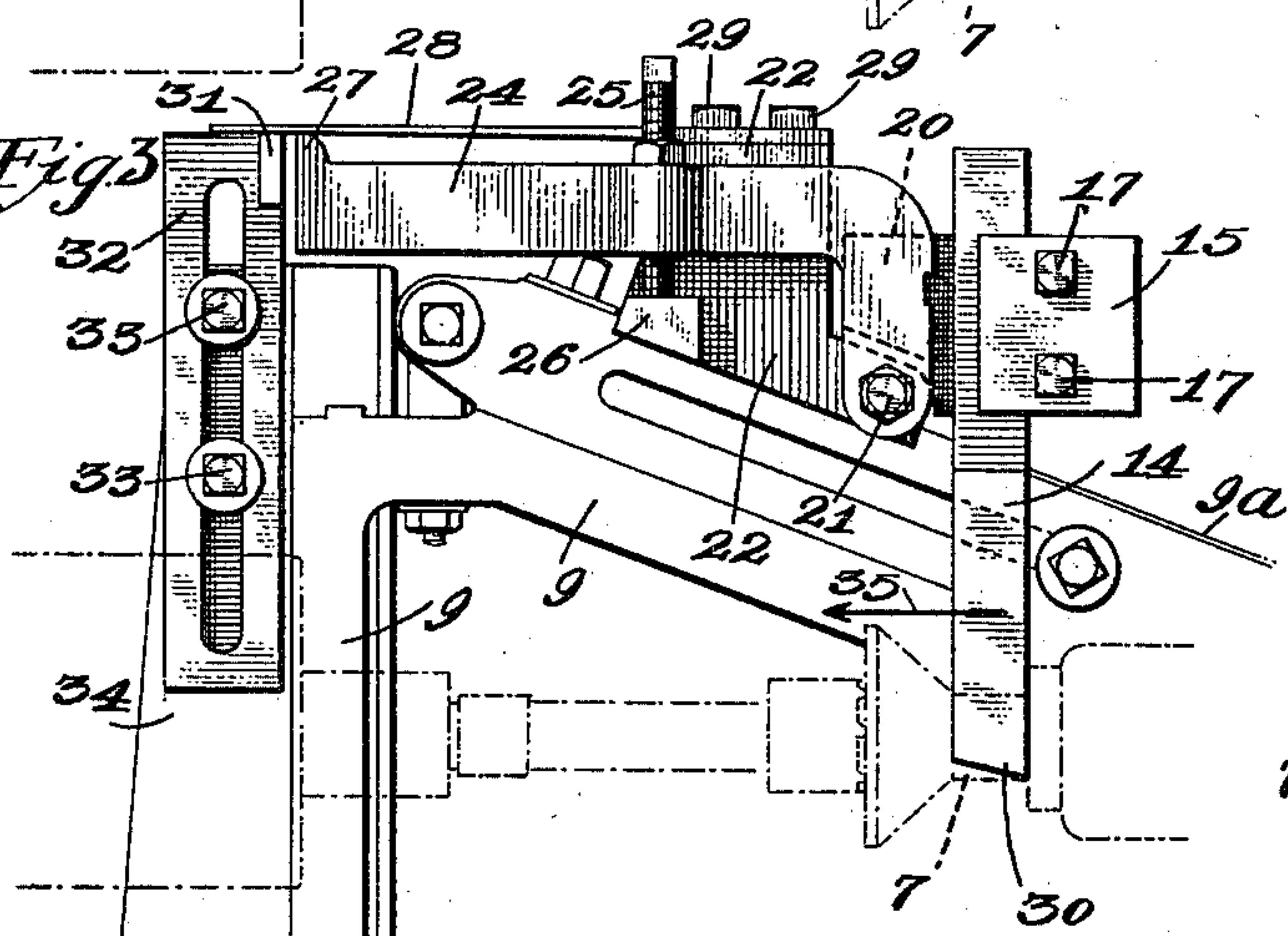


Fig. 3.



Witnesses

L. H. Horner.
M. M. Schnermann

Inventor

Byron S. Loveland
By Rufus B. Fowler
Attorney

UNITED STATES PATENT OFFICE.

BYRON S. LOVELAND, OF WINCHENDON, MASSACHUSETTS, ASSIGNOR TO
BAXTER D. WHITNEY, OF WINCHENDON, MASSACHUSETTS.

WOOD-TURNING LATHE.

SPECIFICATION forming part of Letters Patent No. 719,349, dated January 27, 1903.

Application filed July 8, 1902. Serial No. 114,777. (No model.)

To all whom it may concern:

Be it known that I, BYRON S. LOVELAND, a citizen of the United States, residing at Winchendon, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Wood-Turning Lathes, of which the following is a specification, accompanied by drawings forming a part of the same, in which—

Figure 1 represents a front view of so much of a wood-turning lathe as is necessary to illustrate the character of my present invention. Fig. 2 is a top view of that portion of the mechanism embodying my invention. Fig. 3 is a front view of the same, and Fig. 4 is an end view of the same.

Similar reference-figures refer to similar parts in the different views.

My present invention relates to that class of wood-turning lathes which are provided with a gage-knife for the purpose of bringing the turned work to accurate dimensions and shape, said gage-knife being carried upon a vertically-moving framework; and the object of my invention is to provide means in this class of lathes whereby a tenon can be formed upon the turned work at a single operation; and my invention consists, broadly, in supporting so much of the gage-knife as is employed in forming the tenon in a movable framework capable of holding the gage-knife for finishing the tenon in proper position during the operation of turning, but permitting a slight movement of the knife to allow the work to be removed.

Referring to the accompanying drawings, 1 denotes the bed of a wood-turning lathe; 2, the head-stock, containing a live-spindle 3, by which the work is rotated.

4 denotes a tail-stock containing a spindle 5.

In Fig. 1, 6 denotes a piece of work held between the spindles of the lathe, upon one end of which a tenon 7 has been turned. In Fig. 1 of the drawings the carriage and turning-tools supported thereon are omitted in order to disclose more clearly the gage-knife 8, which is carried upon a vertically-sliding frame 9, as is usual in lathes of this class. The gage-knife 8 is attached by bolts 10 to the upper oblique bar 10^a of the sliding frame 9, and at the proper period in the operation

of turning a downward vertical movement is given to the frame 9, which carries the gage-knife 8 past the turned work, so that its lower or cutting edge 11, which is shaped to conform to the finished work, is carried downward in a vertical plane tangential to the surface of the turned work, thereby shaping the turned stick 6 to correspond with the shape of the gage-knife and at the same time bringing the turned piece to its proper dimensions and finishing its outer surface. As the construction and operation of the gage-knife 8 and its vertically-moving frame 9 is in common use, I have not deemed it necessary to show its construction and method of operation in detail, as they will be understood by persons conversant with this class of turning-lathes.

Whenever it has been necessary hitherto to form a tenon like that shown at 7, Fig. 1, upon turned work, it has been performed at a separate operation, owing to the fact that a gage-knife adapted to finish the tenon and rigidly attached to the oblique bar 10^a would overlap the shoulder 12 of the turned piece, so that when the work was released by sliding the live-spindle away from the work the contact of the shoulder 12 against the edge 13 of the gage-knife 14 prevented the removal of the work. My present invention relates to the means employed for overcoming this difficulty; and it consists in employing a gage-knife 14 for finishing the tenon 7, held in position to finish the tenon, but capable of movement to allow the work to be removed, and I accomplish this result by attaching the knife 14 to a bracket 15 by a clamping-plate 16 and bolt 17. The bracket 15 is adjustably attached by a bolt 18, passing through a slot 19 in the bracket 15, to a rocking bar 20, pivoted by screws 21 upon a block 22, which is adjustably attached by a bolt 23 to the upper or oblique rail 10^a of the frame 9. Extending laterally from the rocking bar 20 and on the opposite side of the bracket 15 is an arm 24, carrying an adjusting-screw 25, with its point bearing upon a lug 26, projecting from the side of the block 22. The free end 27 of the arm 24 receives the pressure of a blade-spring 28, attached at one end to the block 22 by bolts 29. The pressure of the blade-spring 28 upon the end of the arm 24

serves to hold the tip of the adjusting-screw 25 in contact with the lug 26 and maintain the gage-knife in vertical position. As the vertically-sliding frame 9 moves downward 5 and carries the cutting edge 30 past the tenon 7 in order to finish the same the free end of the blade-spring 28 is brought into contact with an arm 31, carried upon a vertically-adjustable plate 32, attached by bolts 33 to the 10 rigid framework 34 of the lathe in order to relieve the arm 24 from the pressure of the spring and allow the gage-knife 14 to be rocked on the pivotal screws 21 21 to swing the lower end of the knife in the direction of 15 the arrow 35 to permit the turned piece 6 to be moved endwise when released by the live-spindle 3 and removed from the lathe. As the vertically-sliding frame 9 is again raised the blade-spring 28 is carried above the arm 20 31 and allowed to rest upon the end 27 of the arm 24, thereby bringing the adjusting-screw 25 into contact with the lug 26 and returning the gage-knife 14 to its vertical position. The gage-knife 14 may be adjusted in position 25 along the oblique rail 10^a of the frame 9 by adjusting the position of the block 22 thereon, and the gage-knife can also be vertically adjusted on the bracket 15.

While the above-described mechanism for 30 holding the gage-knife 14 and permitting its movement to allow the work to be removed from the lathe I deem a desirable form of construction, I do not wish to confine myself to the specific device shown and described 35 for accomplishing that purpose, as I believe it to be broadly new to provide the vertically-moving frame 9 of a gage-lathe with a gage-knife for finishing a tenon which is held in position during the operation of finishing 40 the tenon and at the same time is capable of being moved to allow the removal of the work from the lathe without requiring the spindle to be withdrawn, thereby allowing the spindle to be maintained in position during the 45 turning of successive pieces of work.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a lathe of the class described, the combination with a vertically-moving frame for carrying a gage-knife, of a gage-knife adapted to shape a tenon on the turned work, said knife being capable of movement to allow the work to be removed, substantially as described. 50

2. In a lathe of the class described, the combination with a vertically-moving frame for carrying a gage-knife, of a gage-knife carried by said frame and adapted to shape a tenon, said knife having a pivotal connection with its support, whereby it is capable of a swinging motion, substantially as described. 55 60

3. The combination in a wood-turning lathe of a frame capable of movement in a direction parallel to a plane tangential to the periphery of the turned work, a gage-knife carried by said frame and adapted to shape a tenon on the turned work, said knife having a pivotal connection with its support, whereby it is capable of swinging to allow the work to be removed and means for limiting the swinging motion of said knife in one direction, whereby it is held in position to shape the tenon, substantially as described. 65 70

4. In a wood-turning lathe, the combination with a vertically-moving frame, of a gage-knife supported thereon and having a pivotal connection with its support, whereby said knife is capable of a swinging motion, an adjusting-screw by which its swinging motion is limited in one direction and a spring applied to maintain said knife in its operative position, substantially as described. 75 80

5. In a wood-turning lathe, the combination with a vertically-moving frame, of a block adjustably supported thereon, a bracket pivotally attached to said block, a knife held in said bracket and means for maintaining said knife in its operative position, substantially as described. 85

Dated this 27th day of June, 1902.

BYRON S. LOVELAND.

Witnesses:

HERBERT S. PARK,
LOUIS V. BOSWORTH.