

No. 718,968.

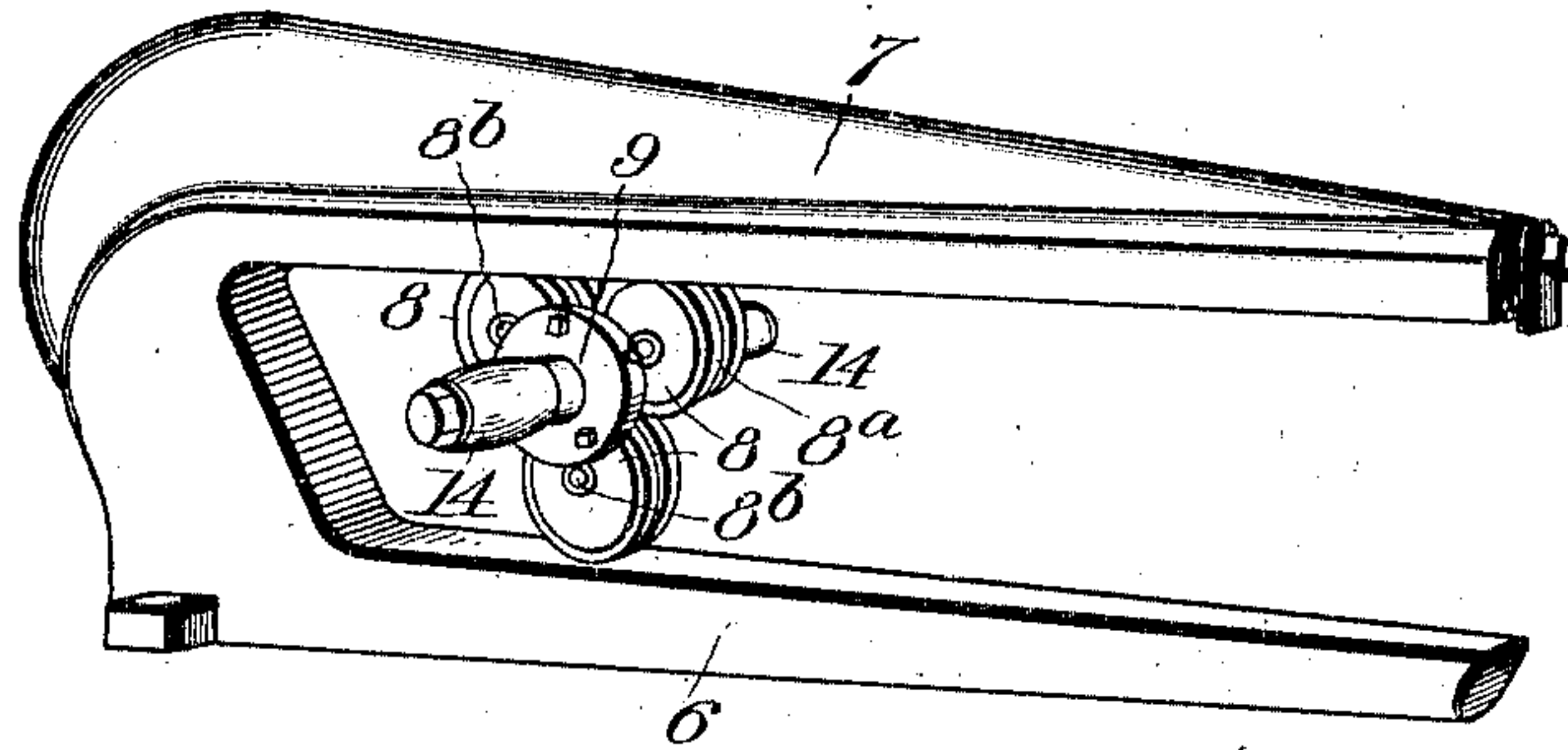
PATENTED JAN. 27, 1903.

A. V. ALLEN.  
GROOVING MACHINE.

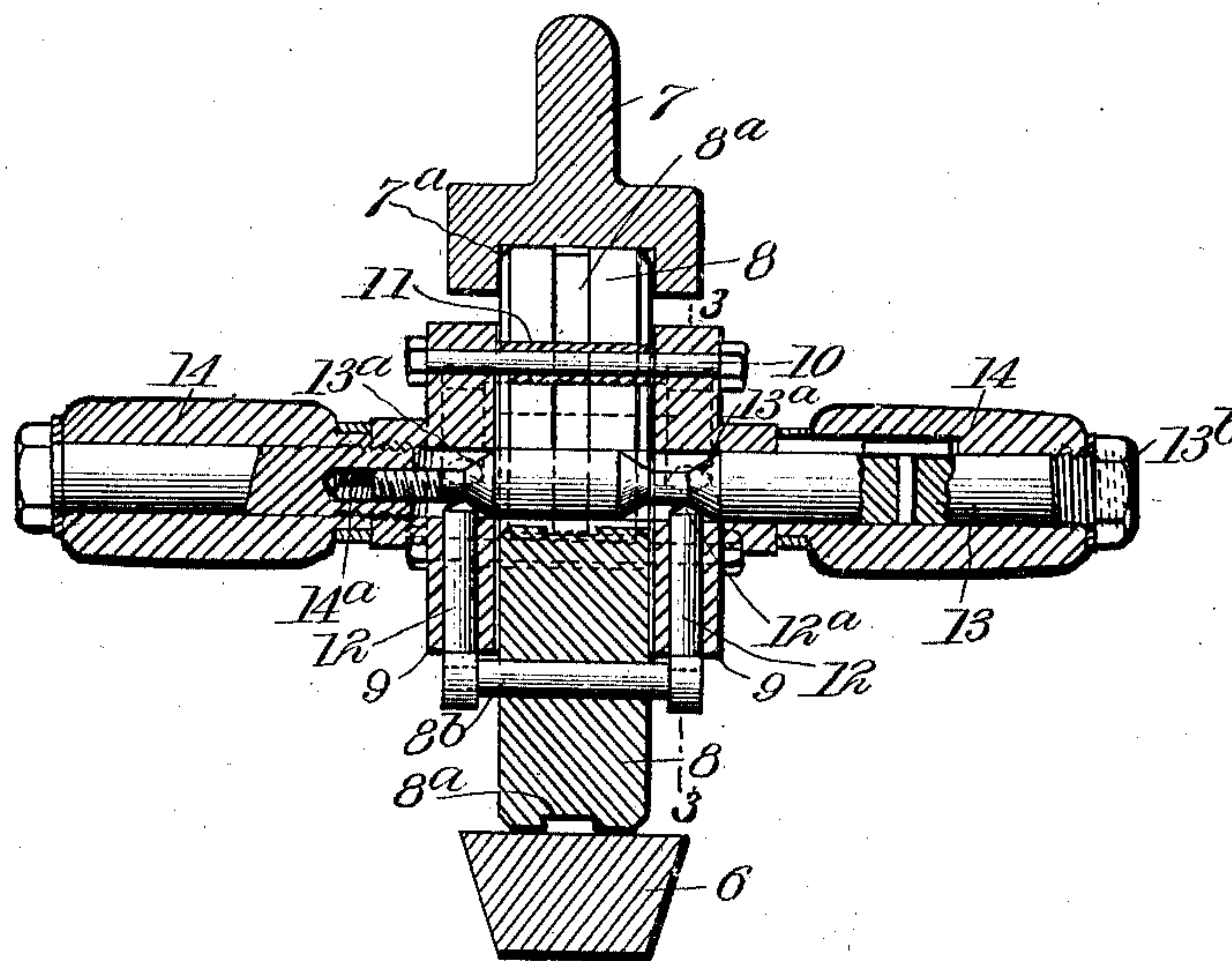
APPLICATION FILED MAY 9, 1902. RENEWED DEC. 29, 1902.

NO MODEL.

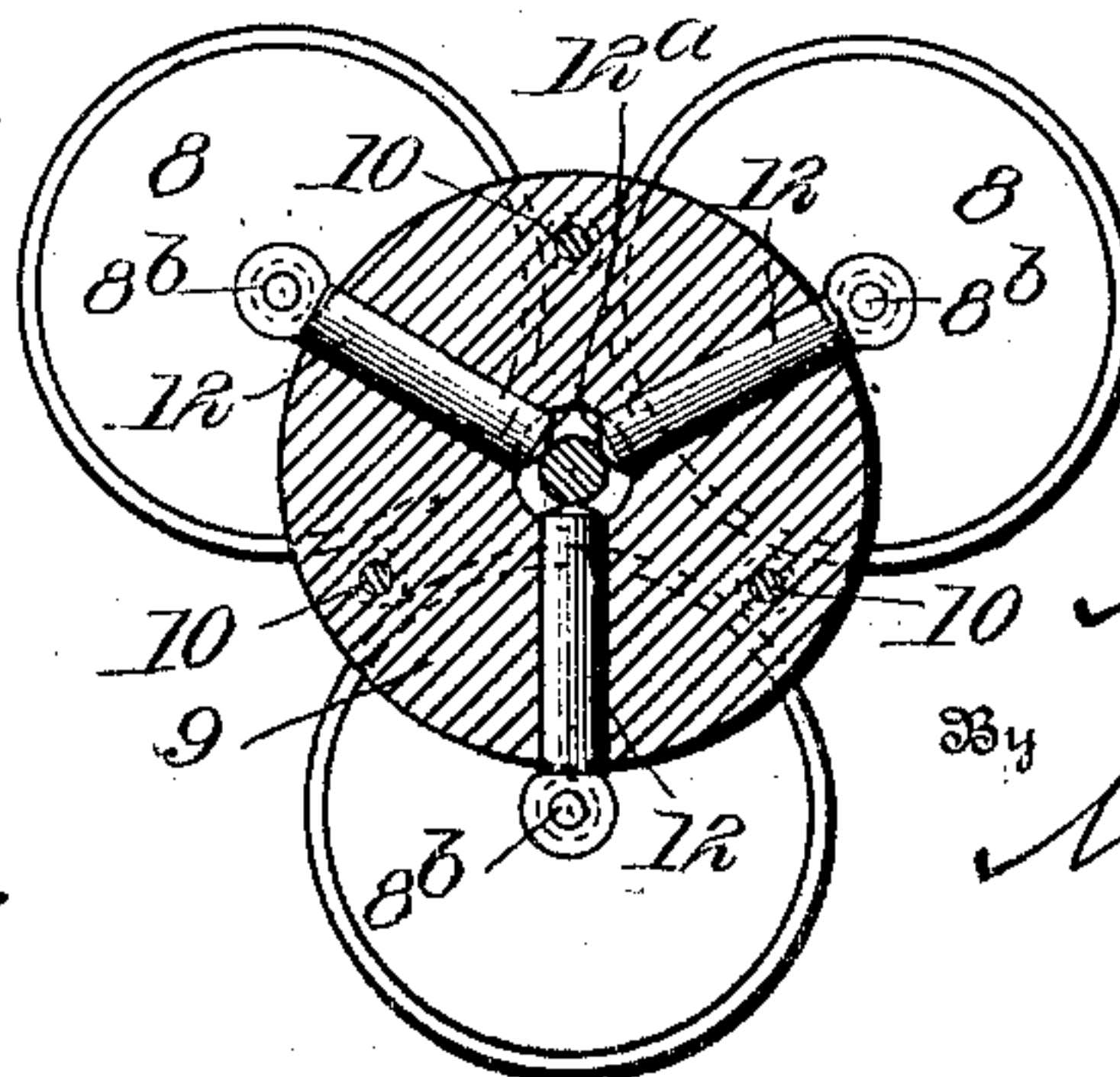
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses

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# UNITED STATES PATENT OFFICE.

AUGUSTUS VALORUS ALLEN, OF JOPLIN, MISSOURI.

## GROOVING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 718,968, dated January 27, 1903.

Application filed May 9, 1902. Renewed December 29, 1902. Serial No. 137,065. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUSTUS VALORUS ALLEN, a citizen of the United States, residing at Joplin, in the county of Jasper and State of Missouri, have invented certain new and useful Improvements in Grooving-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to grooving-machines, and particularly to such machines used in connection with a mandrel for seaming and making tubes of metal, such as stove-pipes.

The machine is of that class in which a grooved wheel is carried back and forth on the blank upon the mandrel.

The object of the invention is to construct a machine having several grooving-wheels, any one of which may be used, according to the width of the groove desired.

A further object of the invention is to form an improved construction whereby the pressure on the blank may be regulated and the machine adjusted to allow for various thicknesses of material.

A further object is to generally simplify and improve the construction of such machines.

In the accompanying drawings, Figure 1 is a perspective view of the machine. Fig. 2 is a cross-section thereof. Fig. 3 is a section on the line 3 3 of Fig. 2.

The machine includes three grooving-wheels set in the same frame and adapted to be carried back and forth upon the mandrel by direct hand-power applied to the frame, one of the wheels bearing on the work and the other two against a parallel guide-arm above the mandrel.

In the drawings the mandrel is indicated at 6, above which is the parallel guide-arm 7, which has on its under side a longitudinal groove 7<sup>a</sup> forming a track for the wheels.

The mandrel and arm may be cast in one piece or cast separately and bolted together, as desired.

The grooving-wheels are indicated at 8, having grooves 8<sup>a</sup> in the periphery thereof, such grooves being preferably of different widths. The carriage carrying the wheels consists of side plates 9, which are preferably circular, joined by bolts 10 and spaced apart by sleeves 11 on the bolts. These plates are bored radially to receive, at a snug fit, stems 12 which project beyond the plates, where bearings are formed for the axles 8<sup>b</sup> of the wheels. The axes of the wheels are at the points of a triangle equidistant from the center of the plates. The inner ends of the stems 12 are conical, as at 12<sup>a</sup>, and impinge against conical shoulders 13<sup>a</sup>, formed in a shaft 13, which extends through the center of the plates and through one of the handles 14, where its outer end is provided with a binding-nut 13<sup>b</sup>. The inner end of the shaft is reduced and threaded to enter a threaded bore 14<sup>a</sup>, formed in the opposite handle.

The conical shoulders on the shaft 13 act as wedges to force out the stems 12, and consequently the grooving-wheels, when the shaft is moved in the appropriate direction longitudinally. Movement in the opposite direction allows the wheels to be drawn in. When set as desired, the adjustment is fixed by the binding-nut 13<sup>b</sup>.

In operation the device is placed with one wheel bearing on the mandrel and two wheels on the guide-arm and is thus rolled back and forth upon the work. Any one of the wheels may be used upon the work by turning the device around.

What I claim is—

1. The combination with a mandrel and a parallel guide-arm, of a carriage having several grooving-wheels one of which bears upon the mandrel and others of which form bearing-rollers against the arm.

2. The combination with a mandrel and a parallel guide-arm, of a groover comprising a carriage, a plurality of grooving-wheels carried thereby part of which bear on the mandrel and part on the arm, and means to ad-



justably spread the grooving-wheels with respect to each other.

3. The combination with a mandrel and a parallel guide-arm, of a groover working between the mandrel and arm comprising a frame, and grooving-wheels carried thereby radially adjustable from a common center.

4. In a groover, in combination, a carriage having radially-adjustable stems therein, and grooving-wheels journaled at the outer ends of the stems.

5. In a groover, in combination, a carriage, a laterally-adjustable shaft therethrough having inclines, and radial bearing-supporting stems resting upon the inclines whereby lateral movement of the shaft will move the stems radially, and grooving-wheels journaled in the bearings.

6. The combination with a mandrel and a parallel guide-arm, of a carriage, having several grooving-wheels, revoluble to present each of said wheels to the mandrel and the

other wheels to the guide-arm to form bearing-rollers.

7. The combination with the mandrel and arm, of the reciprocating carriage having an adjustable grooving-wheel and bearing-rollers, handles on each side of the carriage to move the same, a screw connection between the handles, and means actuated by the screw to adjust the wheel.

8. The combination in a groover of the carriage, the grooving-wheels carried thereby, the handles on each side of the carriage; the screw-shaft connecting the handles, and wedge means actuated by the shaft to spread the grooving-wheels.

In testimony whereof I affix my signature in presence of two witnesses.

AUGUSTUS VALORUS ALLEN.

Witnesses:

EDWARD P. BARR,

RICHARD A. DOOLING.