

J. L. KLINDWORTH.

GAGE FOR SHEARS.

APPLICATION FILED DEC. 10, 1909.

954,396.

Patented Apr. 5, 1910.

2 SHEETS—SHEET 1.

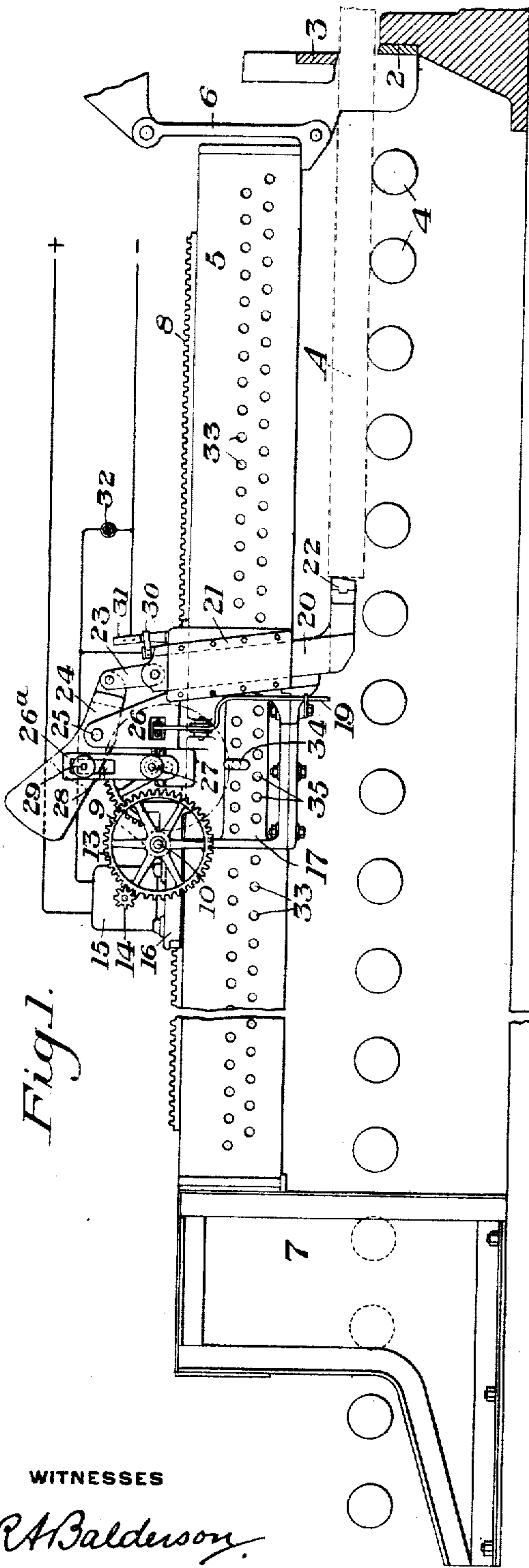


Fig. 1.

WITNESSES

*R. A. Balderson.*

*Walter Jamaries.*

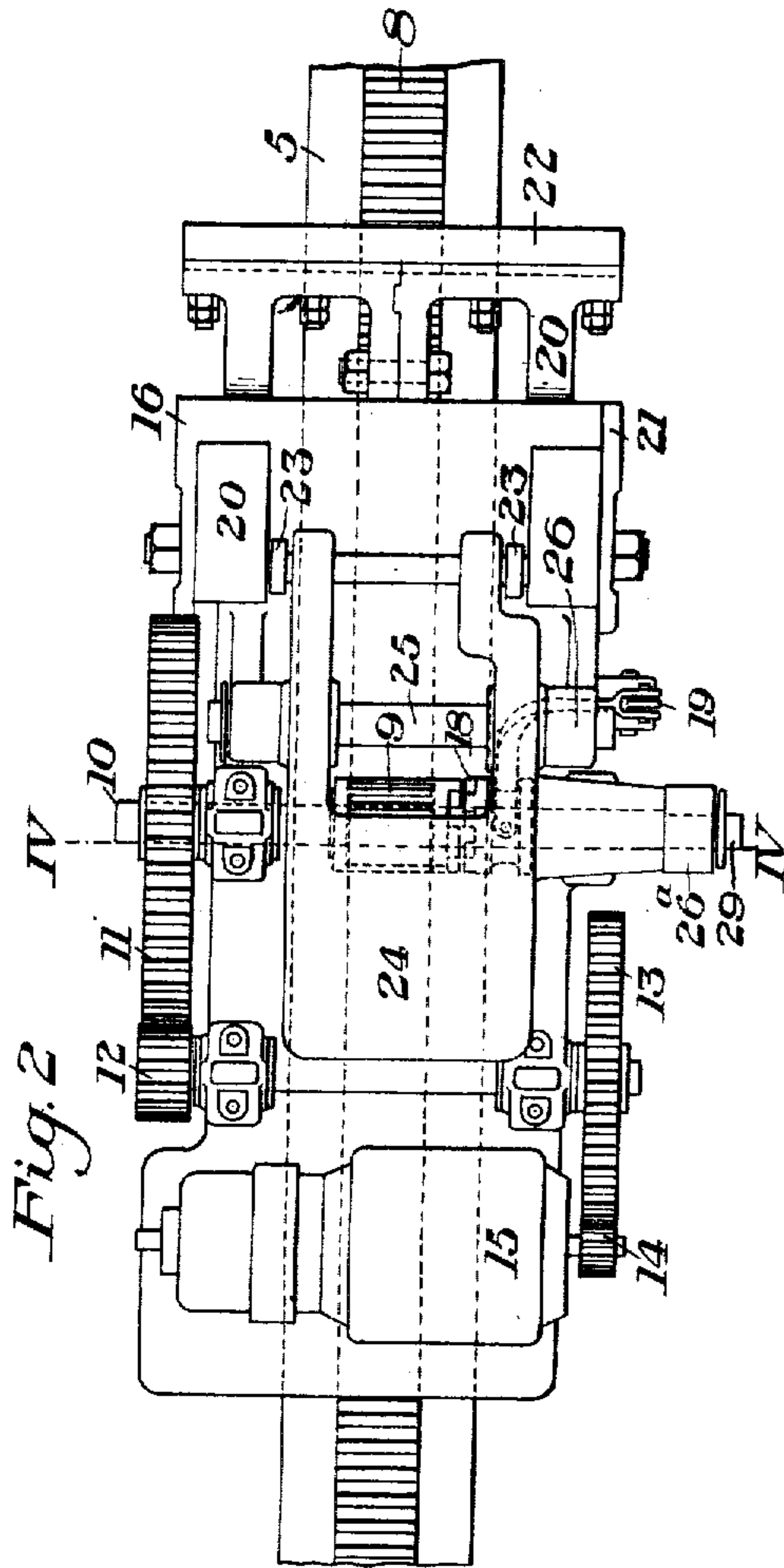


Fig. 2.

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Fig. 4.

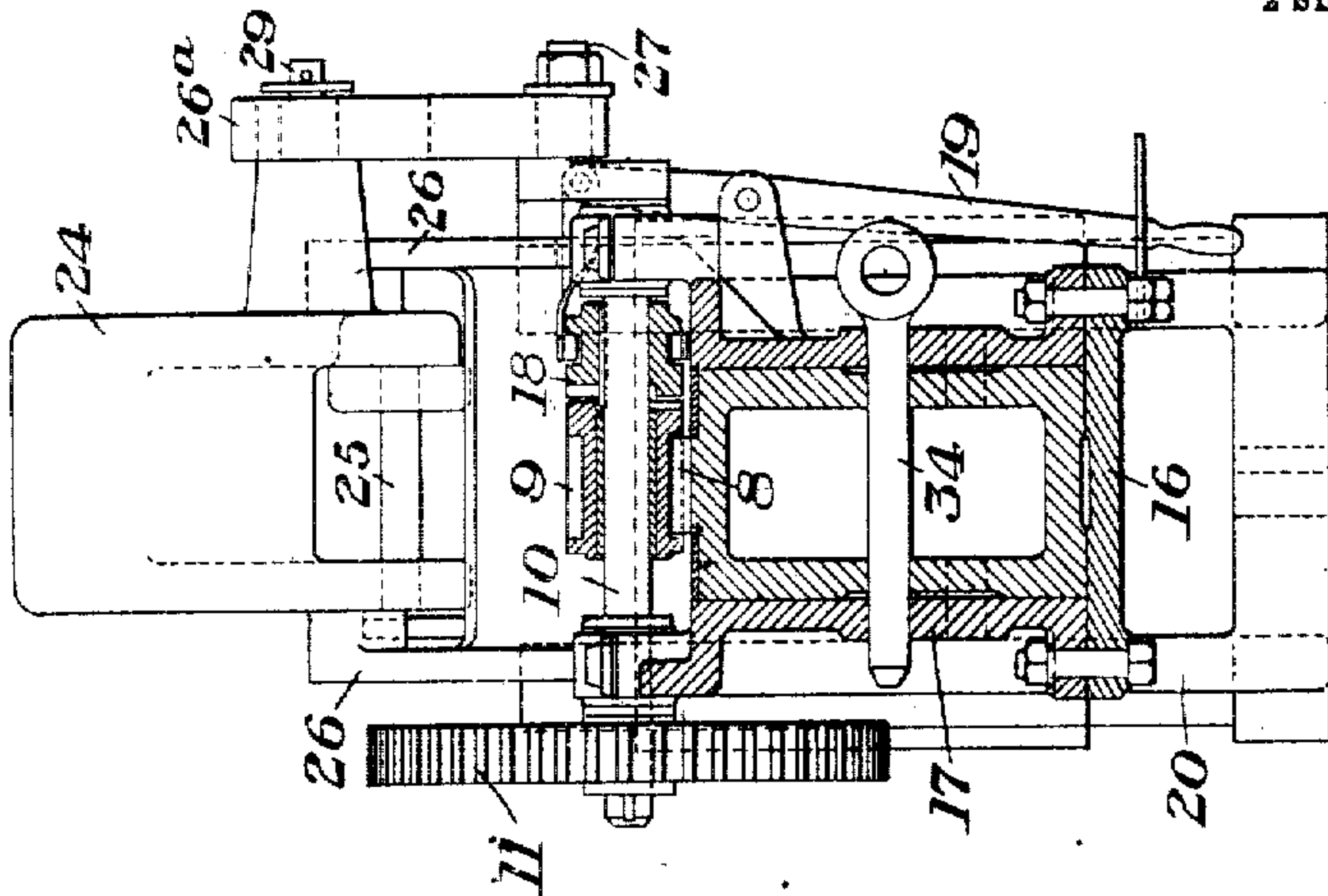
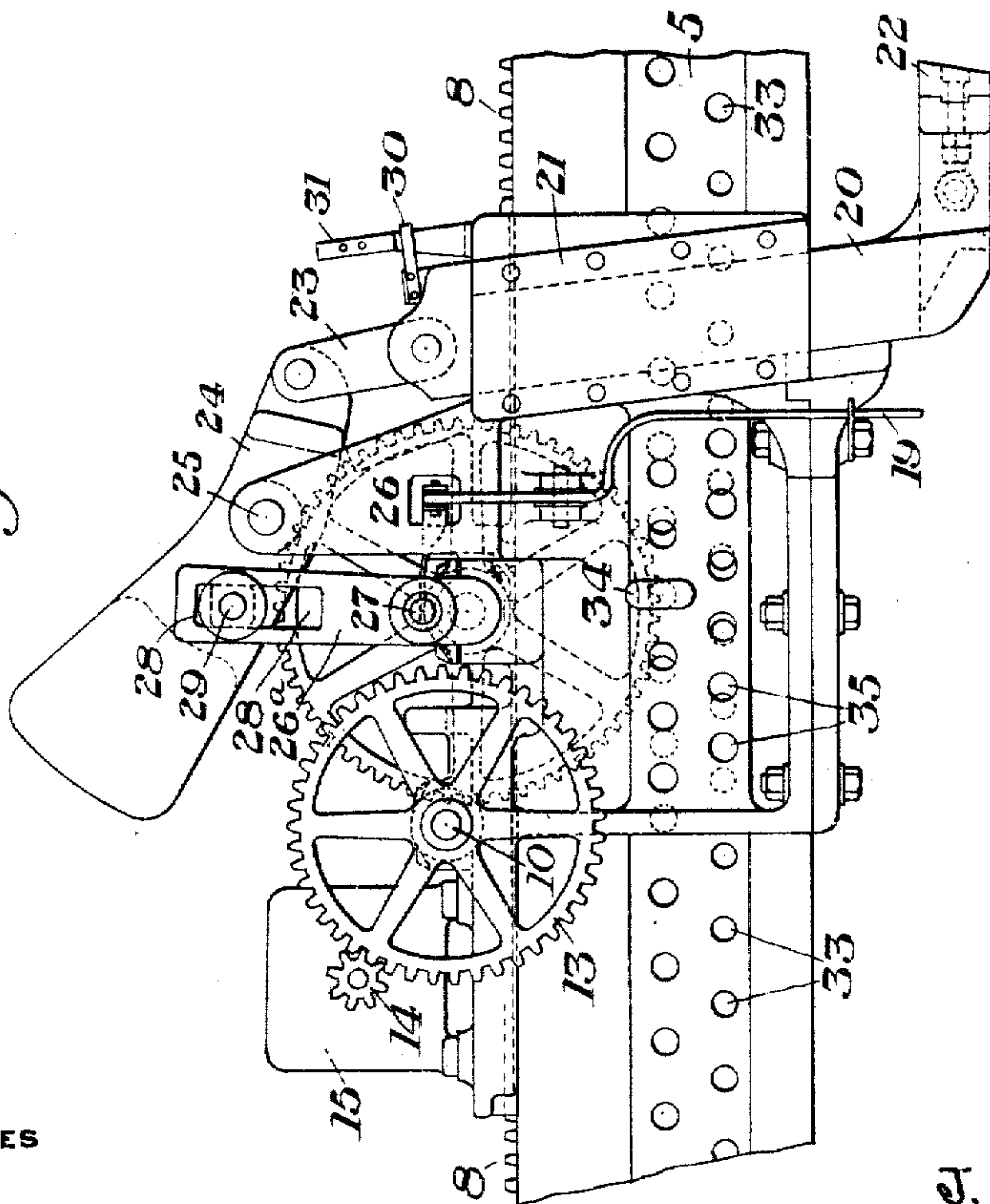


Fig. 3.



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# UNITED STATES PATENT OFFICE.

JOHN L. KLINDWORTH, OF BELLEVUE, PENNSYLVANIA, ASSIGNOR TO MESTA MACHINE COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

## GAGE FOR SHEARS.

954,396.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed December 10, 1909. Serial No. 532,428.

*To all whom it may concern:*

Be it known that I, JOHN L. KLINDWORTH, of Bellevue, Allegheny county, Pennsylvania, have invented a new and useful Improvement in Gages for Shears, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view partly in section of apparatus embodying my invention; Fig. 2 is a plan view of a portion of the apparatus; Fig. 3 is a side elevation of a portion of the apparatus on a larger scale; and Fig. 4 is a section on the line IV—IV of Fig. 2.

My invention has relation to gages for shears and is designed to provide a gage which can be readily adjusted to any desired position to vary the length of the sheared pieces.

A further object is to provide mechanism of simple and efficient character for operating the stop device of the gage.

The precise nature of my invention will be best understood by reference to the accompanying drawings, in which I have shown the preferred form thereof, and which will now be described, it being premised, however, that various changes may be made in the details of construction, arrangement and combination of the various parts by those skilled in the art, without departing from the spirit and scope of my invention as defined in the appended claims.

In these drawings, the numeral 2 designates a portion of the fixed blade of a shear, and 3 the movable blade. This shear may be of any desired type. 4 designates a roller shear table, also of well known type, and which extends rearwardly from the shear.

5 is a bar which is supported centrally over the roller table, a suitable support 6 being indicated for the forward end of said bar, and its rear end being carried upon the frame or abutment 7. This bar is preferably, although not necessarily, made hollow, as shown in Fig. 4, for the purpose of reducing its weight, and is provided on its upper surface with a longitudinally extending rack

8. The teeth of this rack are designed to be engaged by a toothed pinion 9 mounted on a transverse shaft 10, which is connected by reduction gearing 11, 12, 13 and 14, with the shaft of an electric motor 15. The shaft 10, the reduction gearing and the motor 15 are

mounted upon a frame or table 17, which is adapted to travel longitudinally on the bar 5, said frame or table having guiding portions and a plate 16, which surround said bar, as shown in Fig. 4. The pinion 9 is loosely mounted on the shaft 10, and is thrown into and out of driving connection therewith by means of a clutch 18, having a movable member which is splined or keyed on the shaft 10, and is movable into and out of engagement with clutch teeth on the pinion 9 by means of a hand lever 19.

20 designates the stop member of the gage which is arranged to be moved vertically into and out of the line of feed of the piece A (shown in dotted lines in Fig. 1) which is to be sheared. This member is mounted for vertical movement in the inclined guides 21, which are secured to the frame 17, and its lower end is bent forwardly in the direction of the shear, and is preferably provided with a removable face piece 22. The upper end of the stop member is connected by a link 23 with a counterweight arm 24. This arm is pivoted at 25 to a bracket 26, or other support on the frame 17.

26<sup>a</sup> is a link or pitman which is connected at its lower end to a crank pin 27 on the pinion shaft 10, and which is formed at its upper end with an elongated slot 28, which engages a stud or pin 29 on the counterweight lever.

Secured to the upper portion of the member 20 is a circuit-closing or contact member 30, which, as the member 20 is moved up and down in the guide 21, is adapted to make and break an electric circuit by its engagement with a relatively fixed contact 31, carried by the frame 17. The circuit for the motor 15 extends through these contacts, as indicated diagrammatically in Fig. 1.

32 is a push button or other switch by means of which the motor circuit can be closed independently of the contacts 30 and 31.

The operation is as follows: By means of the hand lever 19, the clutch 18 is thrown into engagement, the motor circuit is closed, and the motor operates the pinion 9 to cause the frame 17 to travel to the desired position on the bar 5. This bar is provided with a plurality of apertures or pin holes 33, and the frame or carriage 17 is held in the proper adjustment by means of a pin 34, extending through corresponding openings 35 in the



portion 17 of said frame or carriage. When the proper adjustment of the stop member relatively to the shear has been obtained, the clutch 18 is thrown out of gear. The pieces  
 5 being sheared come in contact with and are stopped on the roller table by the stop member 20. After each shearing operation, the motor circuit is closed by means of the switch 32, and the motor acting through the  
 10 gearing and pitman 26, actuates the counterweight lever 24, to raise the stop member out of the path of the piece A, and permit it to be carried along the table 4. As soon as the piece has passed the stop, the operator again  
 15 closes the motor circuit and the stop member is again lowered to stop position. The circuit of the motor is automatically broken at the contacts 30 and 31, at both the upward and downward limit of movement of the  
 20 stop member.

The advantages of my invention will be apparent to those skilled in the art, since it provides a suitable and efficient gage for use in connection with shears, which can be  
 25 quickly and easily adjusted for shearing pieces of any desired length. It also provides a gage in which the stop member is actuated without any manual labor, except the mere closing of an electric switch at the  
 30 proper time, the other operations being performed automatically. It will be understood that the bar 5 may be of any desired length, so as to give a wide range of adjustment.

35 Various changes may be made in the construction and arrangement of the parts. Thus, instead of a bar 5, I may provide any suitable longitudinally extending guide upon which the operative parts are longitudinally  
 40 movable, the exact form of the stop and its guiding means may be varied, and other changes may be made.

I claim:

1. In a gage for shears, a guide extending  
 45 longitudinally of the shear table, a frame or carriage mounted for longitudinal movement on said guide, a stop member mounted for vertical movement on the frame or carriage, and a motor also mounted on said  
 50 frame or carriage and having actuating connections for operating the said member and also for moving the frame or carriage on the guide, substantially as described.

2. In a gage for shears, a guide bar extending rearwardly from the shear, a frame  
 55 or carriage mounted for longitudinal movement on said bar, a motor mounted on said frame or carriage, a vertically movable stop

member also mounted on the frame or carriage, actuating connections between the  
 60 motor and the stop member, gearing actuated by the motor for shifting the position of the frame or carriage on the bar, and means for securing the frame or carriage in different positions on the bar, substantially  
 65 as described.

3. In a gage for shears, a longitudinally extending guide, a frame or carriage longitudinally adjustable on said guide, a stop  
 70 member mounted for vertical movement on the frame or carriage, a counterweighted lever connected to the stop member, and a motor also mounted on the frame or carriage and having actuating connections with said  
 75 motor, substantially as described.

4. In a gage for shears, a guide extending longitudinally of the rear shear table, a frame or carriage longitudinally movable of the guide, a vertically movable stop member mounted on the frame or carriage, a  
 80 motor also mounted on the frame or carriage and having actuating connections for the stop member, and means controlled by the movement of the stop member for in part controlling the circuit of the motor, substan-  
 85 tially as described.

5. In a gage for shears, a frame or carriage mounted for adjustment toward and away from the shears, a vertically movable stop member mounted on the frame or car-  
 90 riage, a motor also mounted on the frame or carriage and having actuating connections with said stop member, and means whereby the movement of the stop member opens the circuit of the motor in both the upward and  
 95 downward movements of said member, substantially as described.

6. In a gage for shears, a frame or carriage mounted for adjustment toward and away from the shears, a vertically movable  
 100 stop member mounted on the frame or carriage, a motor also mounted on the frame or carriage and having actuating connections with said stop member, and means whereby the movement of the stop member opens the  
 105 circuit of the motor in both the upward and downward movements of said member, together with means for closing the circuit of said motor independently of the movement of said member, substantially as described.  
 110

In testimony whereof, I have hereunto set my hand.

JOHN L. KLINDWORTH.

Witnesses:

JOHN M. GRANT,  
 WM. A. DAVIS.