F. C. BIGGERT, Jr.

SHEAR TABLE AND ACTUATING MECHANISM THEREFOR.

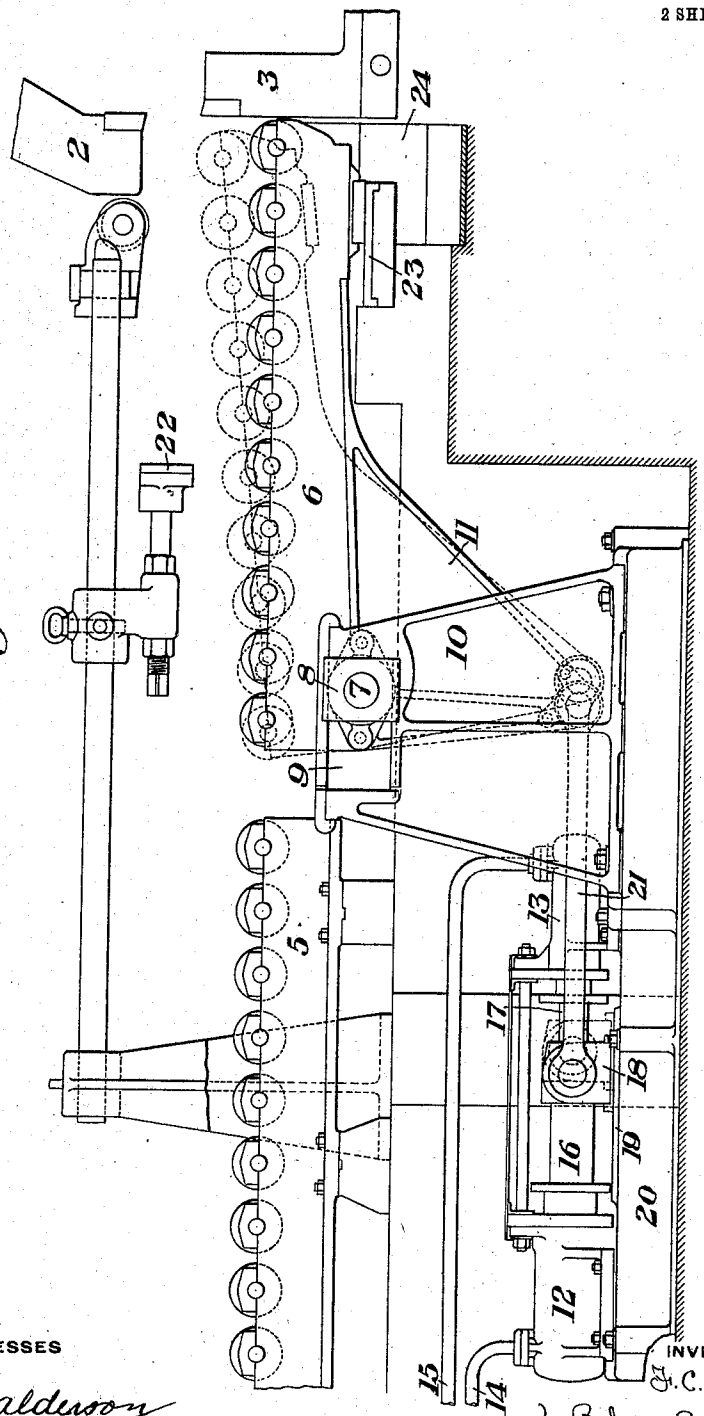
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923,109.

Patented May 25, 1909.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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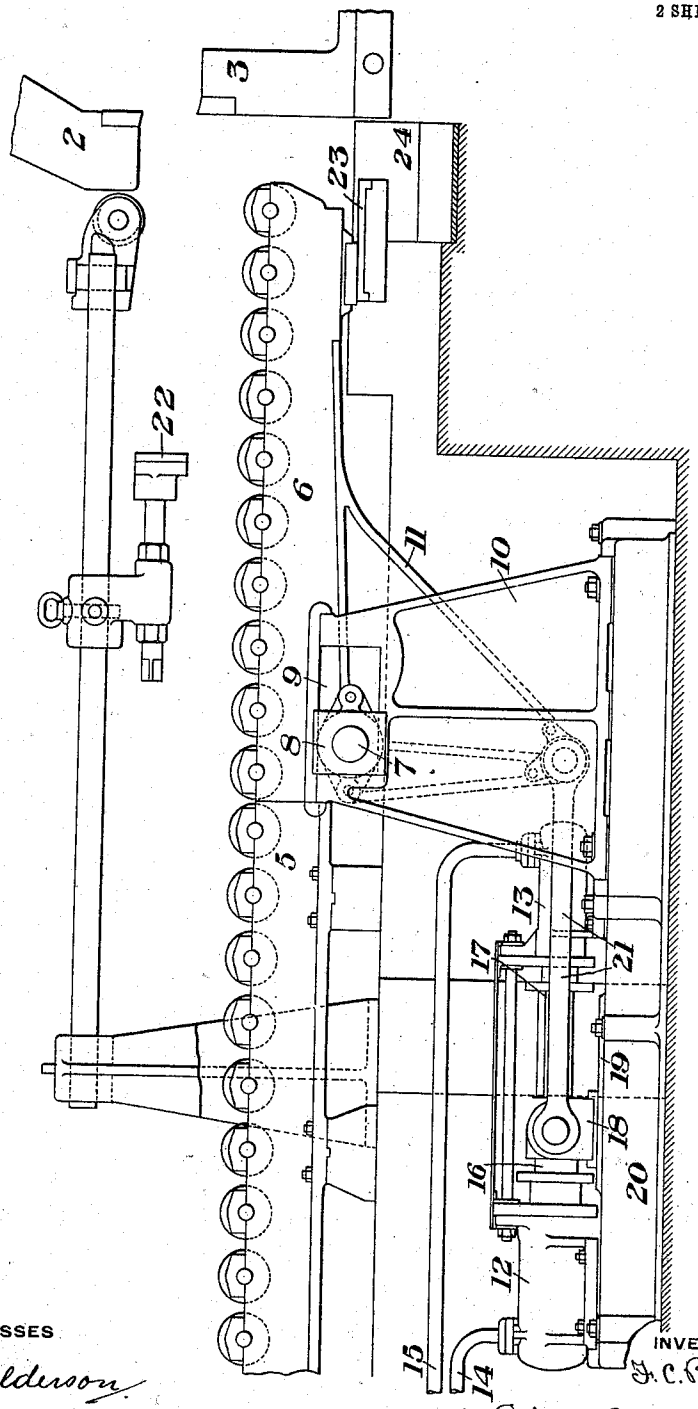
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2 SHEETS—SHEET 2.

Fig. 2.



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SHEAR-TABLE AND ACTUATING MECHANISM THEREFOR.

No. 923,109. Specification of Letters Patent. Patented May 25, 1909.

Application filed December 14, 1908. Serial No. 467,354.

To all whom it may concern:

Be it known that I, FLORENCE C. BIGGERT, Jr., of Pittsburg, Allegheny county, Pennsylvania, have invented a new and useful Improvement in Shear-Tables and Actuating Mechanism Therefor, 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—

Figures 1 and 2 are side elevations of a shear table and actuating mechanism embodying my invention, the two figures showing the parts in different positions.

My invention has relation to that class of shear tables which are capable of being raised and lowered, and also of being moved longitudinally with respect to the shears; and is designed to provide a table of this character together with actuating mechanism therefor of simple and efficient construction and arrangement.

The nature of my invention will be best understood by reference to the accompanying drawings, in which I have shown the preferred embodiment thereof, and which will now be described, it being premised, however, that various changes may be made in the details of construction and arrangement 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 movable shear blade of a power-operated shear of any suitable or well known character; 3 designates the lower or fixed blade, and 5 and 6 indicate the table at the delivery side of the shear machine. The table section 5 is a fixed section of any suitable character and construction, and forms no part of my present invention. The frame of the section 6 is provided with pivots 7 at its lower rear portion, said pivots being journaled in slides 8 which are mounted for longitudinal movement in the openings or windows 9 of the fixed supporting frames or standards 10. It will be understood that one of these frames or standards 10 is located at each side of the table, although the drawings show the arrangement at one side only. The frame 6 is also provided with the depending leg or bracket 11, preferably, although not necessarily, of triangular skeleton form.

12 and 13 designate two power cylinders, preferably single-acting hydraulic cylinders supplied respectively by the pipes 14 and 15, and having the plungers 16 and 17. These two plungers are connected to a cross-head 18 mounted to reciprocate on the slideway 19 of a suitable base 20. The cross-head 18 is connected by one or more links 21 with the lower portion of the depending leg or bracket 11 of the table 6. The forward end of the table is also supported on the slideway 23.

22 designates any suitable adjustable stop for the material being sheared, and which forms no part of the present invention.

The operation is as follows:—When actuating pressure is admitted to the cylinder 12, the plunger 16 is actuated to thereby move the cross-head 18 forwardly. This actuates the link connections 21 to thereby move the slide 8 from the position shown in Fig. 2 to the position shown in Fig. 1. After the slide 8 comes in contact with the forward wall of the opening or window 9, further movement of the plunger 16 will raise the table section 6 into the position shown in dotted lines in Fig. 1. Prior to this time, the weight of the table section has held it down upon the slide way 23 upon which it has been moved toward the shear. The table is now in position to receive the piece coming through the shear, and as the upper shear blade 2 descends, the table is gradually lowered to the position shown in full lines in Fig. 1. To move the table back to the position shown in Fig. 2, pressure is admitted to the cylinder 13, thereby actuating the plunger 17 and the cross-head 18 to draw the table back to this position. It is moved back to this position while the crop ends of the pieces are being sheared off, and to permit such crop ends to drop through between the table and the shear frame in the space 24 provided therefor.

It will be noted that the manner of constructing and supporting the table is extremely simple, and that the different movements thereof can be readily controlled and effected by the operation of the power cylinders 12 and 13.

While I have shown the tables 5 and 6 as

being roller tables, it will be obvious that they may be of any other suitable type. The manner of arranging the two power cylinders and their connection with the table may also be varied in detail without departing from the spirit and scope of my invention. The transverse bar which moves in the slides 23 may be somewhat elastic in character, or elastically supported to cushion the table in its downward tilting movement.

What I claim is:—

1. A shear table mounted for longitudinal movement, and also for vertical tilting movement, a motive device, connections between said device and the table to effect such movements, and means to support and retain the table in its lowered forward position; substantially as described.

2. A shear table slidably supported at its forward end and pivotally and slidably supported at its rear end portion, a motive device, connections between said device and the table for effecting a longitudinal and also a vertical tilting movement thereof, and means whereby the table may be positively retained in its forward lowered position; substantially as described.

3. A shear table having pivots at its rear portion, sliding supports for said pivots, a motive device, and connections between said device and the table for effecting a longitudinal sliding movement and also a vertical tilting movement thereof, said motive device and connections being constructed and arranged to permit the table to be retained in its lowered forward position; substantially as described.

4. A shear table having a sliding support at its forward end portion, pivots at its rear end portion, sliding supports in which the pivots are journaled, means for carrying said supports and for limiting the longitudinal movement thereof, and power cylinders connected to the table; substantially as described.

5. A shear table having a sliding support at its forward end portion, pivots at its rear end portion, movable supports in which the pivots are journaled, and guideways in which said supports are mounted, and which are arranged to permit a limited longitudinal movement thereof, and oppositely acting power cylinders connected to the table; substantially as described.

6. A shear table mounted for longitudinal movement toward and away from the shear, and also for vertical tilting movements, said table having a depending leg below its pivots, a pair of oppositely acting power cylinders, a cross-head to which the plungers of the cylinder are connected, and an operating connection between the cross-head and the depending portion of the table; substantially as described.

7. A shear table mounted for longitudinal and also for vertical tilting movement, a fixed support below the forward end of the table, a motive device, connections between the table and the motive device to effect the longitudinal and the vertical tilting movements of the table, and means for positively retaining the table in its forward lowered position on said support, substantially as described.

In testimony whereof, I have hereunto set my hand.

FLORENCE C. BIGGERT, JR.

Witnesses:
GEO. B. BLEMING,
GEO. H. PARMELEE.