

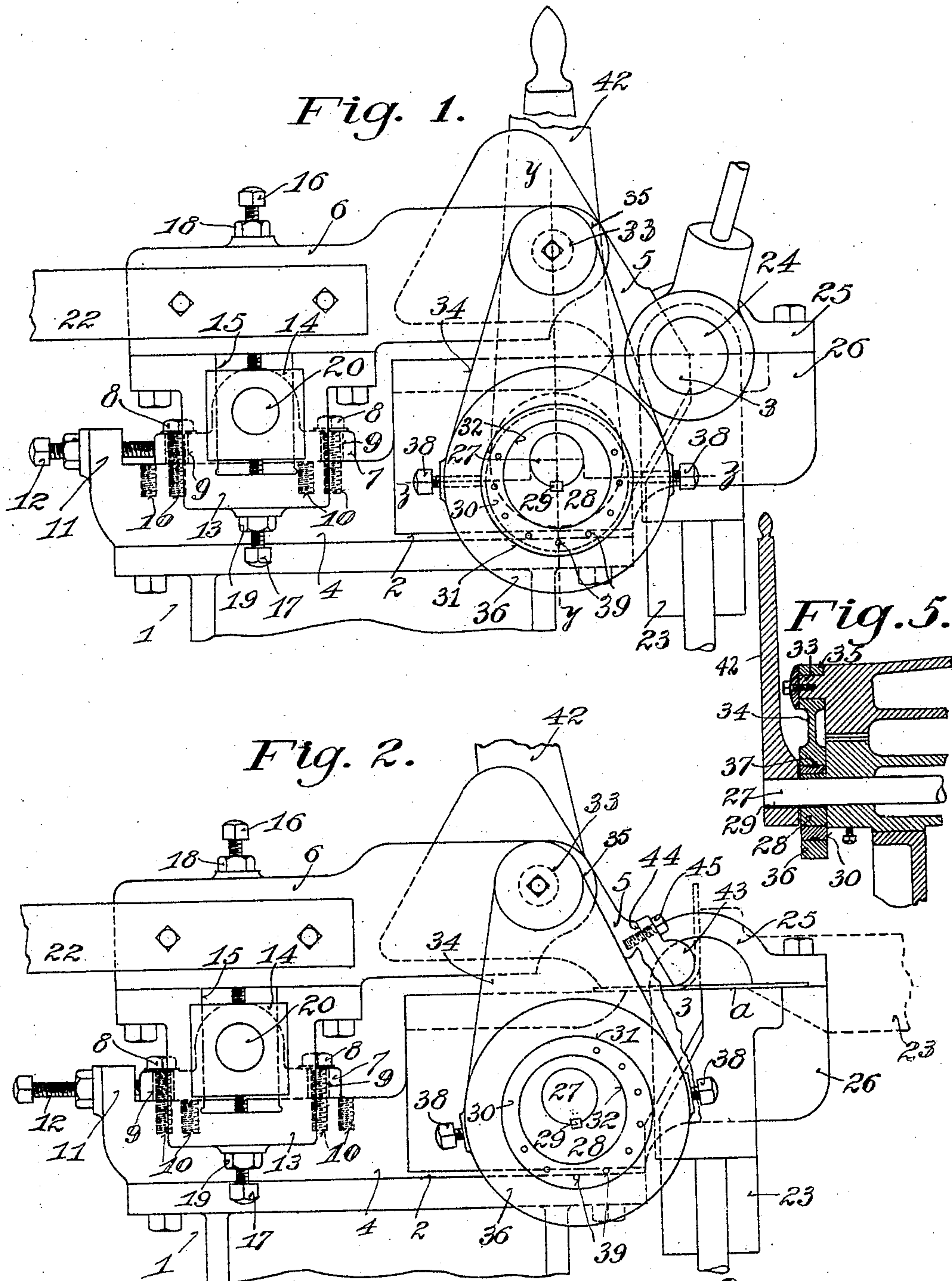
No. 836,676.

PATENTED NOV. 27, 1906.

C. N. FREY.
BRAKE.

APPLICATION FILED JULY 23, 1906.

2 SHEETS—SHEET 1.



Witnesses.

Henry N. Bauer,
Cordelia O. Hearn

Inventor.

Clarence N. Frey,
by A. P. Verbeke, His Attorney.

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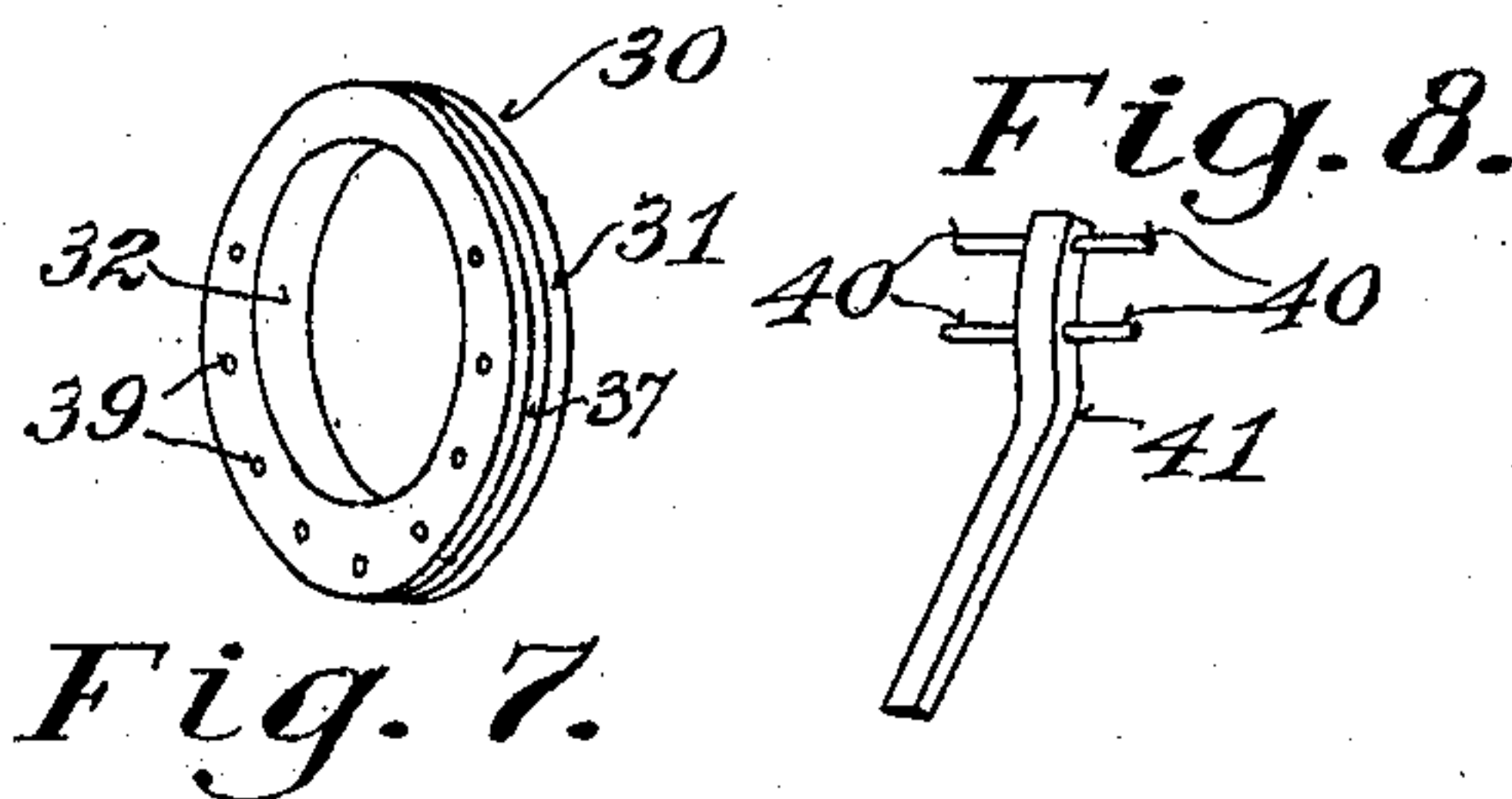
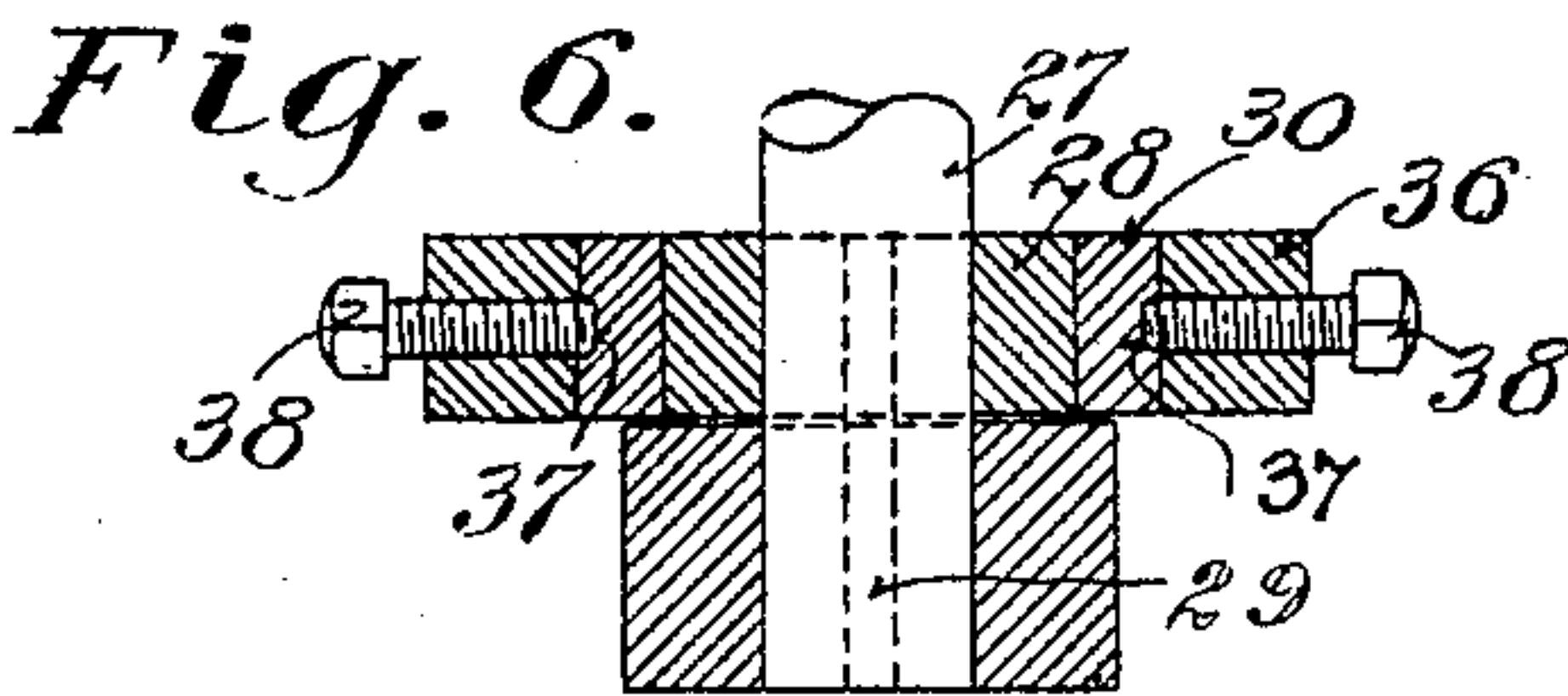
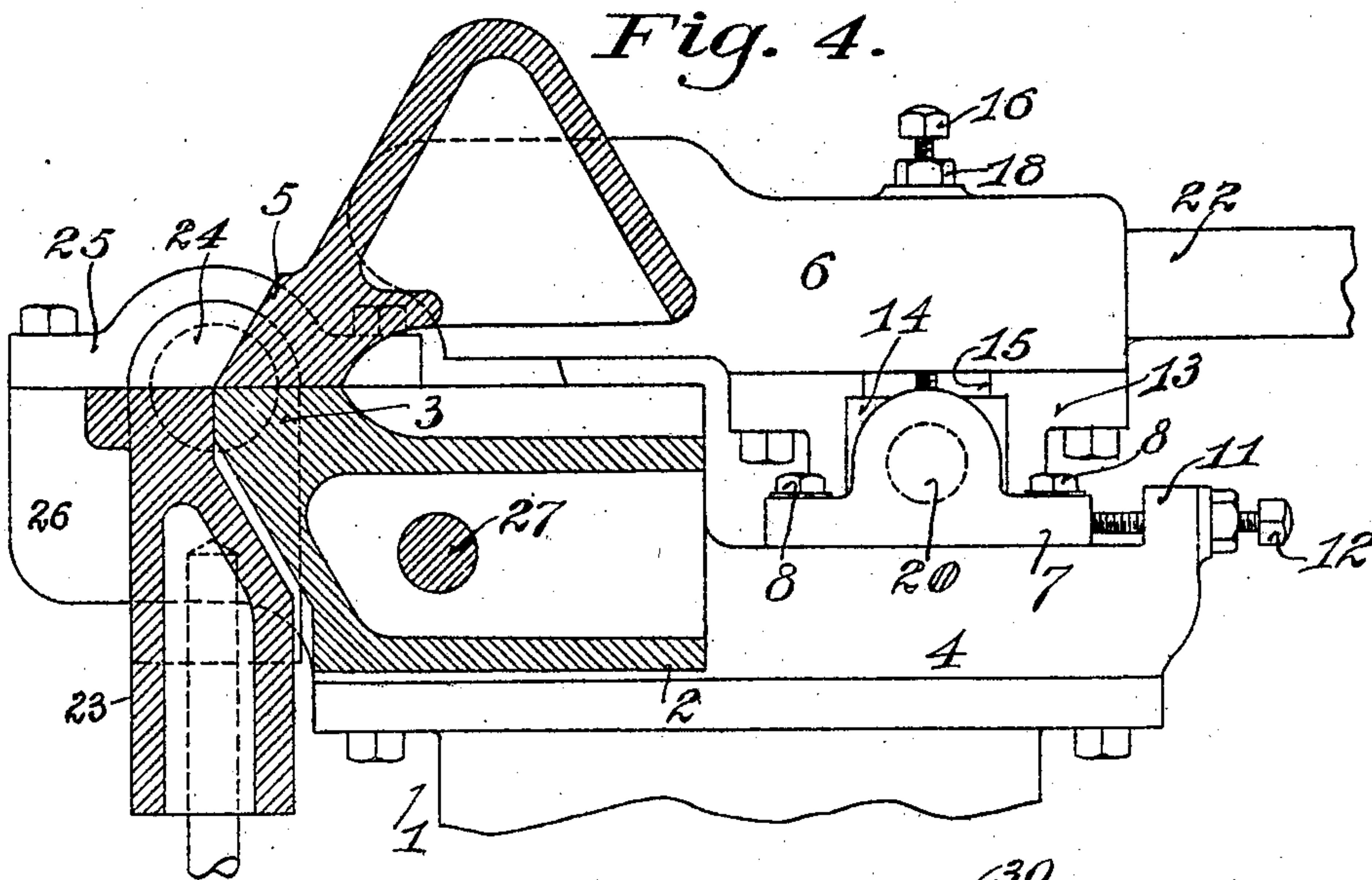
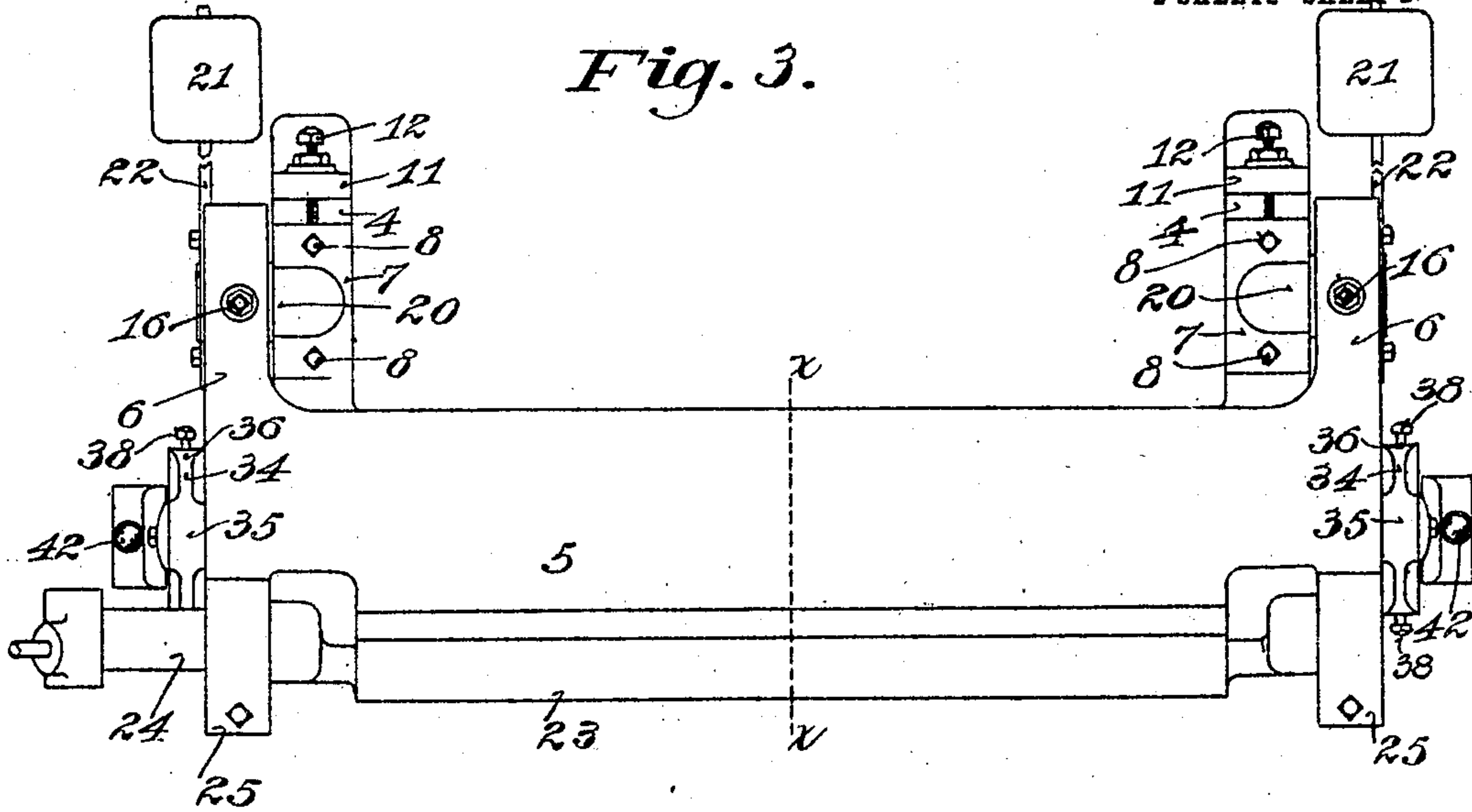


Fig. 8.

Witnesses.

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UNITED STATES PATENT OFFICE.

CLARENCE N. FREY, OF CINCINNATI, OHIO, ASSIGNOR TO THE J. M. ROBINSON MANUFACTURING COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

BRAKE.

No. 836,676.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed July 23, 1906. Serial No. 327,331.

To all whom it may concern:

Be it known that I, CLARENCE N. FREY, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Brakes, (Case B,) of which the following is a specification.

My invention relates to brakes, and has for its object the providing of new and useful instrumentalities in such machines; and the invention will be readily understood from the following description and claims and from the drawings, in which latter—

Figure 1 is an end elevation of my improved device, partly broken away. Fig. 2 is a similar view of the same, showing the upper or movable clamping-jaw provided with a rounding nose-piece and adjusted to a position rearward of that shown in Fig. 1 for accommodating the nose-piece and also showing the bending-leaf in turned or raised position in dotted lines for bending the sheet about the nose-piece. Fig. 3 is a plan view of my improved device, partly broken away. Fig. 4 is a cross-section of the same on the line $x x$ of Fig. 3. Fig. 5 is a detail of the eccentric adjustment for the movable clamping-jaw shown in section on the line $y y$ of Fig. 1. Fig. 6 is a section of the same on the line $z z$ of Fig. 1. Fig. 7 is a perspective view of the adjustable eccentric, and Fig. 8 is a perspective view of the pin-wrench for the same.

1 represents the frame.

2 is a bed-piece extending the entire width of the machine. This bed-piece comprises a lower clamping-jaw 3 and has at each end thereof a rearward extension 4.

5 is a movable clamping-jaw which has a rearward extension 6 at each end thereof. A stud-block 7 is adjustably secured to each of the rearward extensions 4 by having bolts 8 extend through slots 9 in the stud-blocks and selectively threaded into threaded apertures 10 of the rearward extensions 4. Each of the rearward extensions has an ear 11, into which a bolt 12 is threaded, the bolt taking against the stud-block on said extension for backing the same. A stirrup 13 depends from each rearward extension 6 and has a bearing 14 slidable in a slideway 15 therein, the bearing being adjusted to height by means of adjusting-bolts 16 17, secured in place by jam-nuts 18 19. Stud 20 project out-

wardly from the stud-blocks and form pivots in the bearings 14 for the movable clamping-jaw, which latter may be counterweighted by means of a weight 21 on an arm 22, extending rearwardly from the movable clamping-jaw.

23 is a bending-leaf trunnioned at each end on a trunnion 24, rocking in a bearing 25 in a cheek 26 at each end of the bed-piece. Normally the outer forward clamping edges of the clamping-jaws and the inner upper bending edge of the bending-leaf meet at the axis of the trunnions 24, as indicated in Fig. 1. In machines of this character it is desirable to clamp the sheet or stock (shown at a) to be bent firmly between the clamping-jaws prior to being bent by means of the bending-leaf, and I accomplish this in superior manner, while providing wide range of adjustments of the upper clamping-jaw by the means herein shown and described.

27 is a shaft extending throughout the width of the machine. At each end thereof it has an eccentric 28 firmly secured thereto, as by means of a key 29.

30 is a ring whose outer face 31 is eccentric to its inner face 32. One of these eccentric rings extends about each of the eccentrics 28. At each end of the movable clamping-jaw there is a stud 33. There is a link 34 at each end of the machine having a bearing 35 extending about the stud 33 and a bearing 36 extending about the eccentric ring 30. The ring is provided with an annular groove 37, into which bolts 38, threaded into the bearing 36 of the link, take for limiting the endwise movement of the ring and clamping the ring in adjusted position with relation to its bearing, the ring being rotatively adjustable. For accomplishing the adjustment of the ring it is provided with holes 39, into which the pins 40 of a pin-wrench 41 are adapted to take. Each end of the shaft 27 is also provided with an operating-lever 42, or suitable other means for rocking said shaft may be provided.

When the upper clamping-jaw is in normal position—that is, with its clamping edge meeting the clamping edge of the lower clamping-jaw and the inner upper bending edge of the bending-leaf—the axis of the stud 33 is vertically above the axis of the shaft 27, with the highest part of the eccentric face of the eccentric 28 at the bottom, so as to practically

form a lock against the yielding of the upper bending-jaw, the highest part of the eccentric 30 also being under the shaft 27. This also forms a construction by which great pressure can be brought to bear upon the sheet being clamped for straightening it out and clamping it between the jaws. If now it is desired to adjust the limit of depression of the upper clamping-jaw for accommodating any given thickness of stock or for other purpose, the bolts 38 are slightly unscrewed for releasing their clamping action on the eccentric ring and the eccentric ring is turned in its bearing so as to shift its radial position and bring a part of it of less diameter under the shaft 27, the same adjustment being made at each end of the machine, and the bolts 38 then turned against the eccentric ring for holding the same in position.

As illustrating an operation and the range of adjustment of the machine I have in Fig. 2 shown it as employed in bending the rounded corners on heavy steel plates used in safe construction. When so employed, the movable clamping-jaw is provided with a rounding nose-piece 43, secured to the forward slanting face 44 of the movable clamping-jaw by means of bolts 45, and for accommodating this rounding nose-piece the movable clamping-jaw is adjusted rearwardly by moving back the stud-blocks 7, as indicated by the relative positions of the stud-block in Figs. 1 and 2. The eccentric ring is also turned in its bearing for bringing a part of its periphery of less diameter under the rock-shaft 27. A comparatively slight adjustment of this ring about its axis permits a comparatively great rearward recession of the upper clamping-jaw.

The eccentric 28 permits a comparatively large opening between the clamping-jaws for the admission and handling of stock between the same, and the eccentric 30 permits a wide range of adjustment for different thicknesses of stock and for different positions of the movable clamping-jaw relatively to the lower clamping-jaw.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a brake, the combination, with a pair of clamping-jaws and a bending-leaf, of a link pivoted relatively to said clamping-jaws, the pivotal connections of said link comprising an eccentric ring rotatively adjustable.

2. In a brake, the combination, with a pair of clamping-jaws and a bending-leaf, of a link pivoted relatively to said clamping-jaws, the pivotal connections of said link comprising an eccentric ring rotatively adjust-

able and an eccentric within said ring, and means for rocking said last-named eccentric.

3. In a brake, the combination, with a lower clamping-jaw, an upper pivoted clamping-jaw, and a bending-leaf, of means for adjusting the pivotal position of said upper clamping-jaw, a link at each end of said clamping-jaws, pivotal connection for each of said links for each of said clamping-jaws, said pivotal connections comprising an eccentric ring, and means for adjusting said ring.

4. In a brake, the combination with a lower clamping-jaw, an upper pivoted clamping-jaw, and a bending-leaf, of means for adjusting the pivotal position of said upper clamping-jaws, a link at each end of said clamping-jaw, pivotal connection for each of said links for each of said clamping-jaws, said pivotal connections comprising an eccentric ring and means for adjusting said ring, and a rock-shaft having an eccentric journal in each of said eccentric rings.

5. In a brake, the combination, with a pair of clamping-jaws and a bending-leaf, of a pivoted link at each end of said respective clamping-jaws, the pivotal connections of said links comprising inner rocking eccentrics and outer bearings adjustable about the latter and on said links.

6. In a brake, the combination, with a pair of clamping-jaws and a bending-leaf, of links between said clamping-jaws, and a plurality of relatively adjustable eccentrics one within the other forming pivotal connection for each of said links.

7. In a brake, the combination, with the clamping-jaws and a bending-leaf, of a link pivoted to said jaws at each end thereof, a rock-shaft having an eccentric journal at each end thereof, and an eccentric on each of said links adjustable about each of said eccentric journals, and means for rocking said shaft, substantially as described.

8. In a brake, the combination, with a lower clamping-jaw, an upper movable clamping-jaw, a link at each end of the latter pivoted thereto, a rock-shaft, an eccentric at each end thereof, an eccentric ring for each of the latter having an annular groove, said links respectively having bearings about said rings, and set-bolts in said bearings extending into said respective annular grooves, substantially as described.

In testimony whereof I have signed my name hereto in the presence of two subscribing witnesses.

CLARENCE N. FREY.

Witnesses:

HENRY N. BAUER,
CORDELIA O'HEARN.