

No. 630,082.

Patented Aug. 1, 1899.

A. CHARLET.

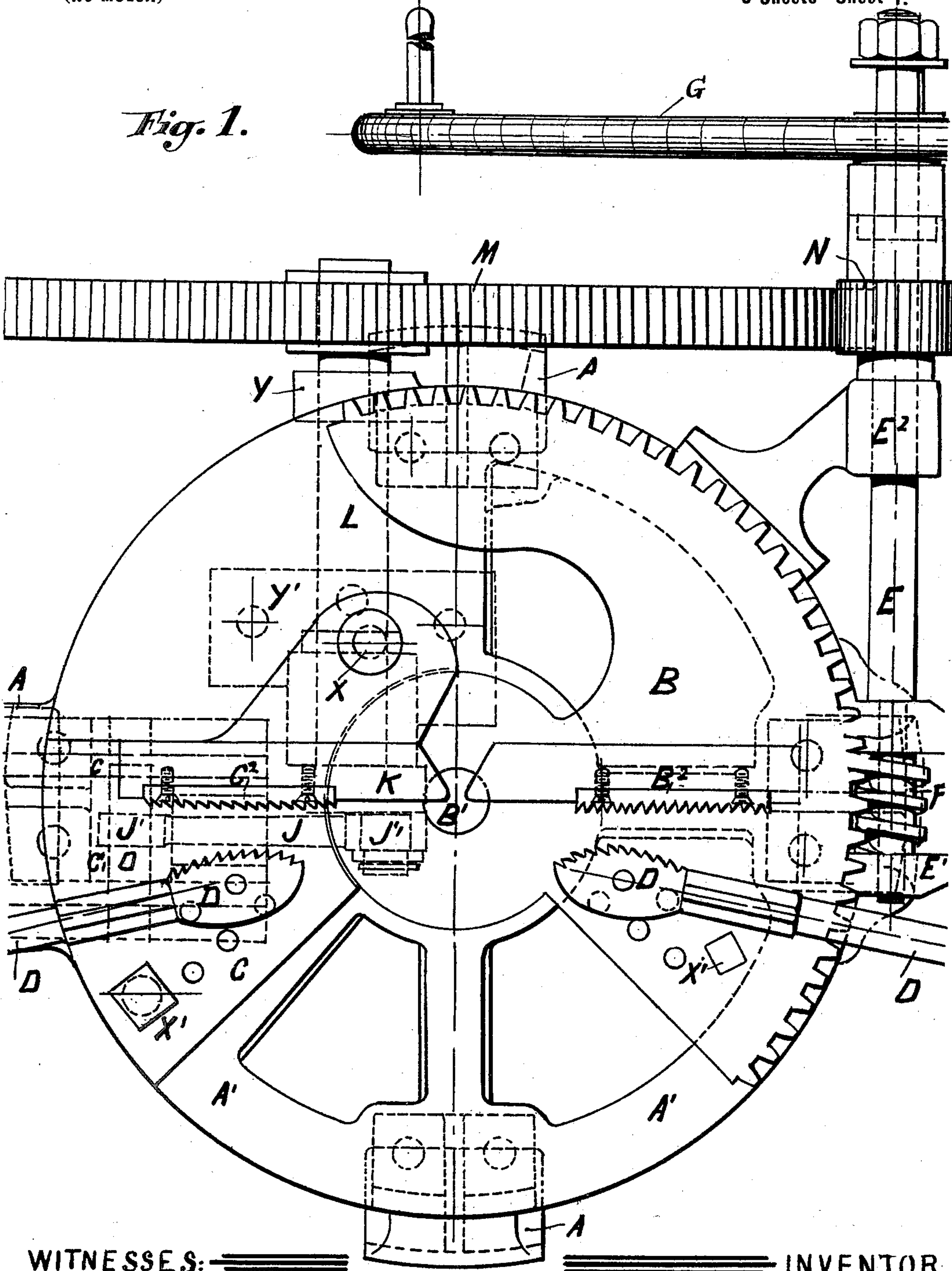
MACHINE FOR JUMPING, WELDING, AND BENDING METAL BARS.

(No Model.)

(Application filed Mar. 18, 1899.)

5 Sheets—Sheet 1.

Fig. 1.



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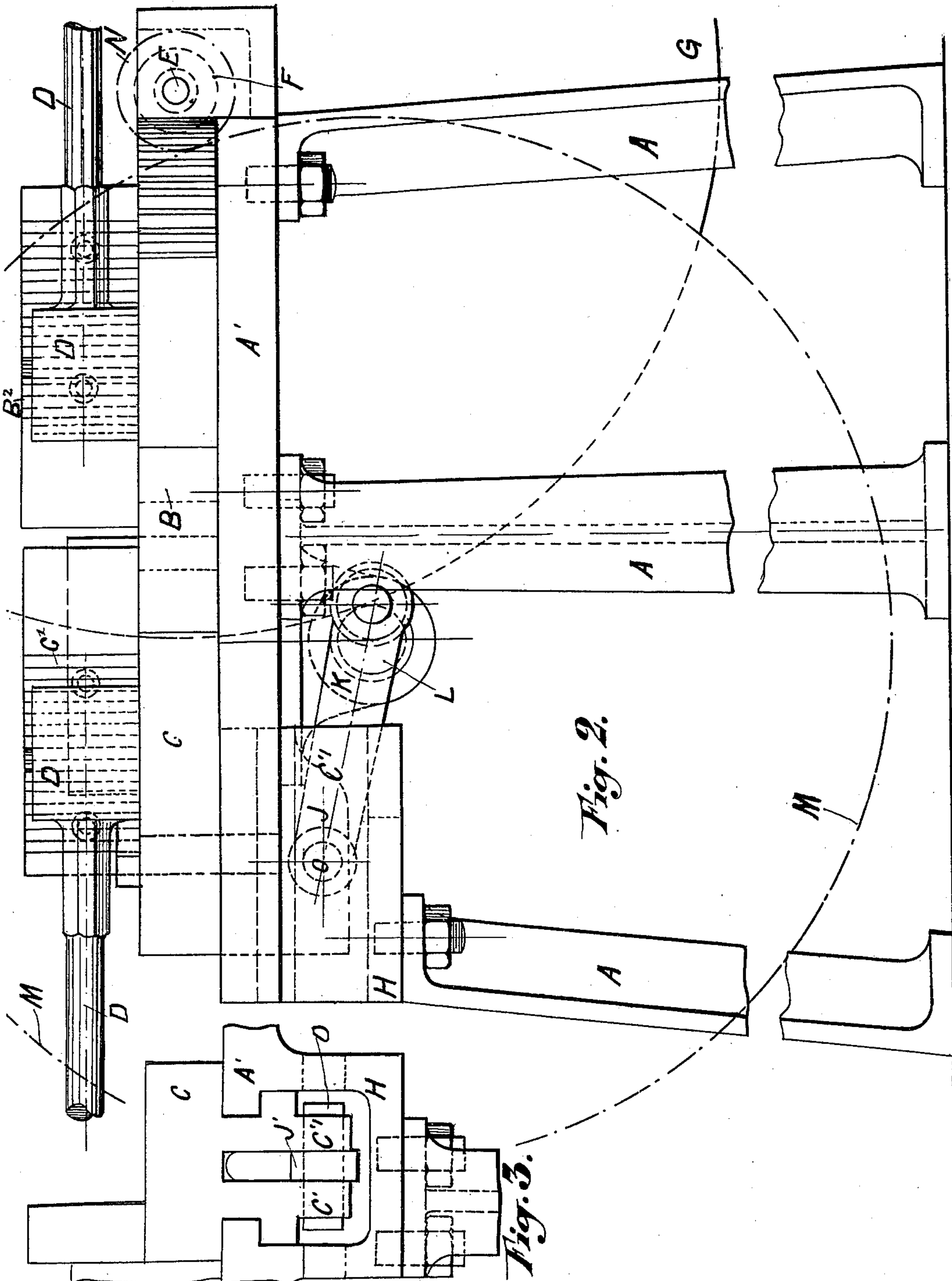
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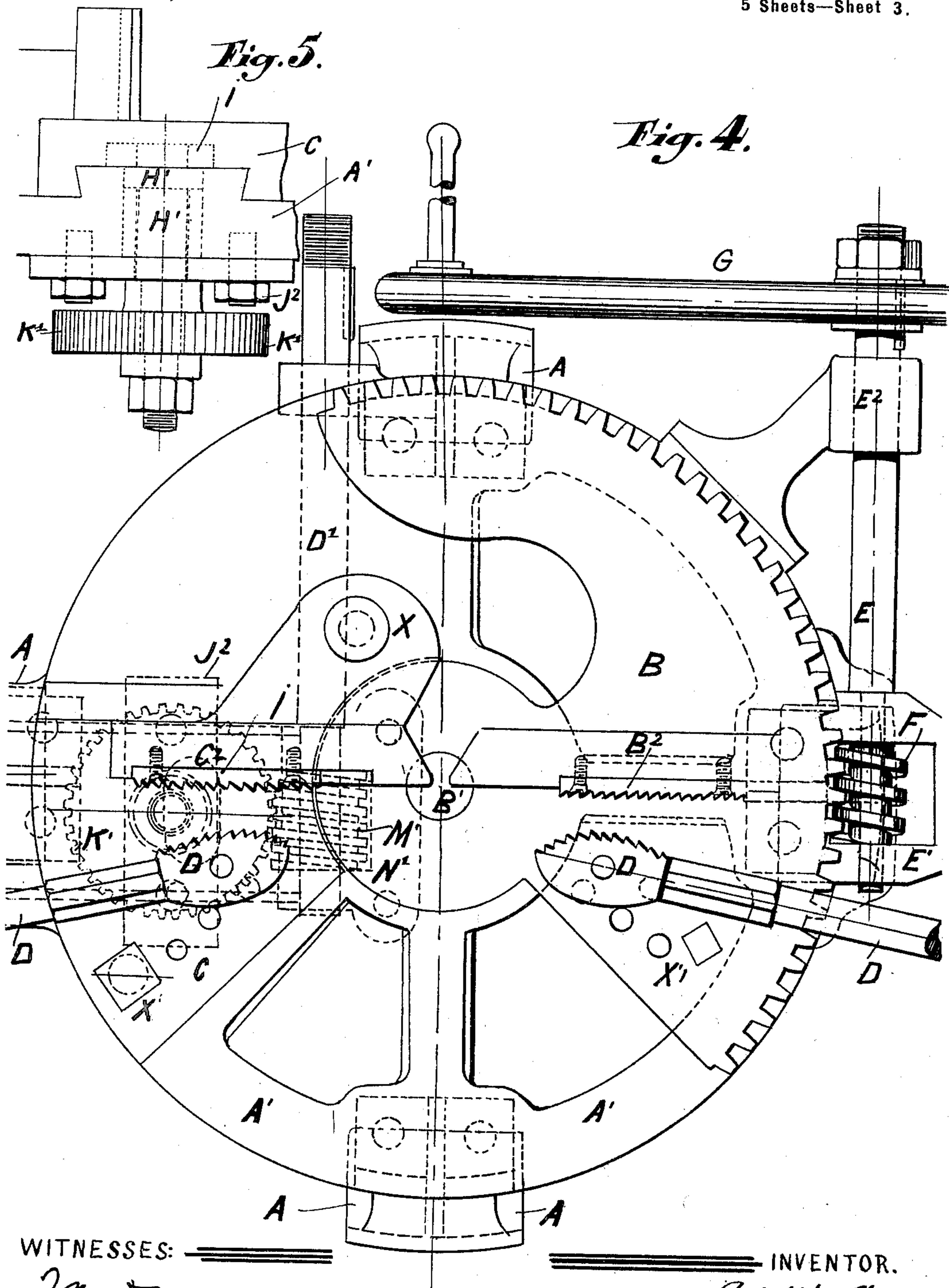
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Fig. 5.

Fig. 4.



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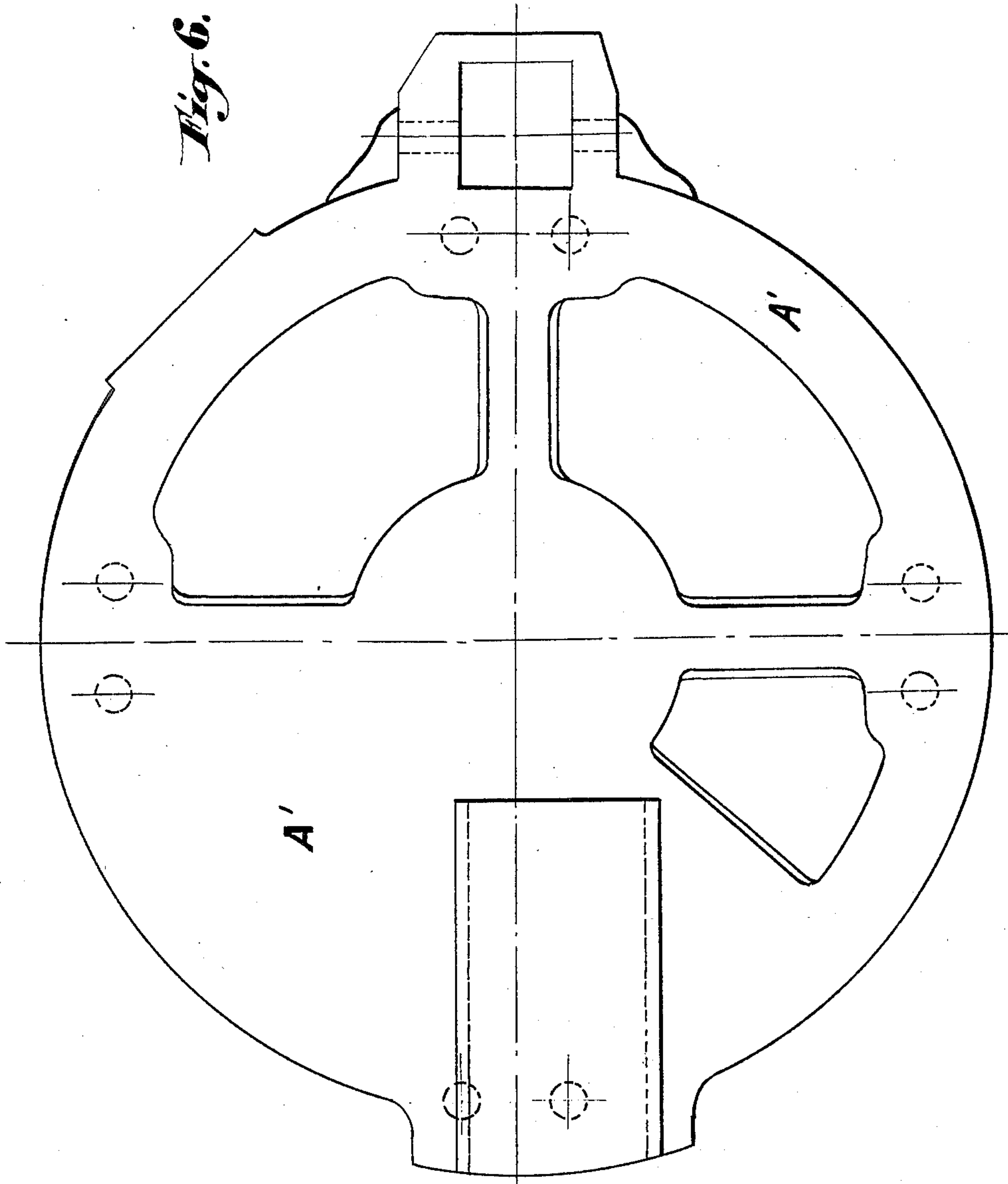
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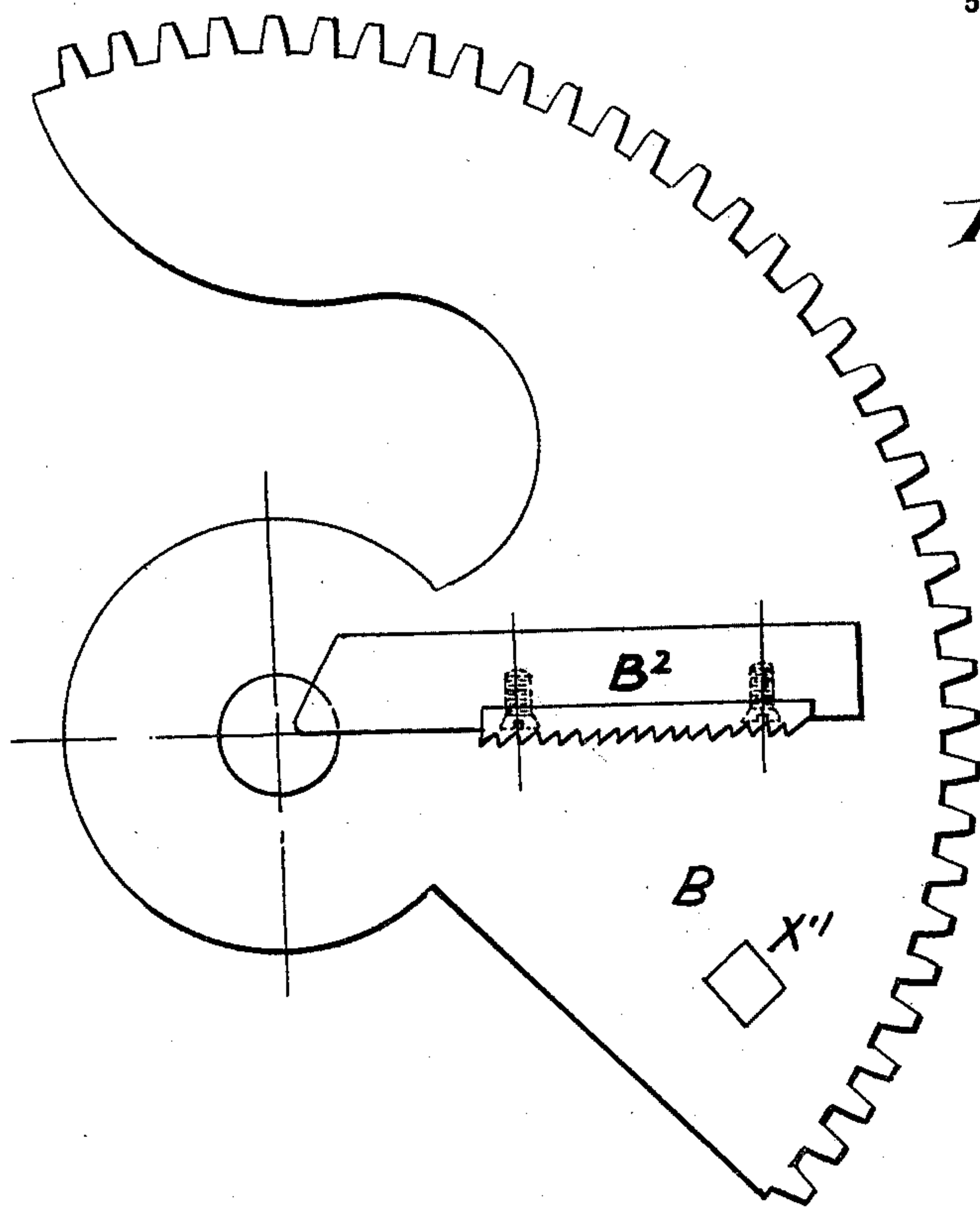
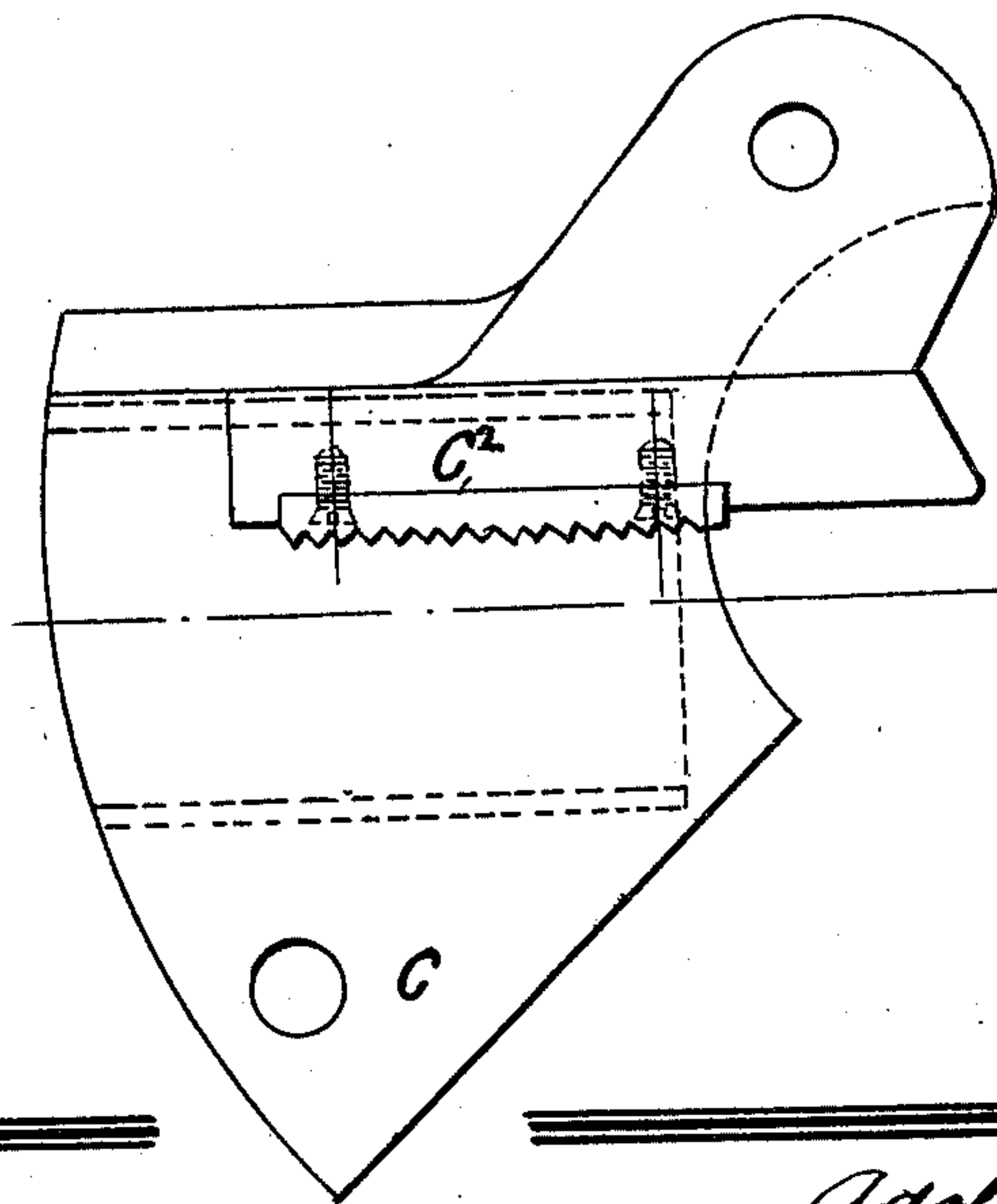


Fig. 7.

Fig. 8.



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UNITED STATES PATENT OFFICE.

ADOLPHE CHARLET, OF BRUSSELS, BELGIUM.

MACHINE FOR JUMPING, WELDING, AND BENDING METAL BARS.

SPECIFICATION forming part of Letters Patent No. 630,082, dated August 1, 1899.

Application filed March 18, 1899. Serial No. 709,603. (No model.)

To all whom it may concern:

Be it known that I, ADOLPHE CHARLET, a subject of the King of Belgium, residing at Brussels, Belgium, have invented certain new and useful Improvements in Machines for Jumping, Welding, and Bending Metal Bars, of which the following is a specification.

This invention relates to machines for jumping, welding, or bending metal bars of any shape, whether round, square, or U or I shaped; and the object of the invention is to provide a machine of this nature which shall be simple and compact in construction and which shall be very efficient for the purpose for which it is intended.

The invention consists in a machine for jumping, welding, or bending metal bars and in the combination and arrangement of its various parts, substantially as will be hereinafter pointed out, and finally embodied in the clauses of the claim.

The invention is fully illustrated in the accompanying drawings, wherein—

Figure 1 is a top plan view of a preferred form of the machine. Fig. 2 is a view in side elevation thereof. Fig. 3 is a view of a certain detail involved in the said preferred form of the machine. Fig. 4 is a top plan view of a certain modified form of the machine, and Figs. 5 to 8 are views of certain details embodied in said modified form of the machine.

A in the accompanying drawings designates several uprights or standards upon which is sustained, being bolted thereto, a circular bed-plate A'.

H is an integral box that is formed near the edge and on the under side of the bed-plate A', said bed-plate being provided with an opening over this box which is of less width than the space within the latter.

Upon the bed-plate A' is mounted a pair of carriers B and C, the carrier B being sector-shaped, having a toothed perimeter, and being pivoted on a bearing B', projecting upwardly from the bed-plate, and the carrier C, having a rectilinear movement radially with reference to said bed-plate, being connected for such movement by projections C' C¹, that extend downwardly into the box and are formed in any suitable manner, so as to engage the portions of the under side of the bed-plate that overhang said box. Several remov-

able pins X X' are provided for anchoring or positively securing either of these carriers to the bed-plate, said pins extending through suitable apertures formed in both the bed-plate and the carriers. Upon the upper face of each carrier is formed a grip B² C², having a toothed acting surface and extending radially with reference to the bed-plate, the inner or adjoining ends of said grips being in proximity to each other, as clearly shown in Figs. 1 and 4. D are gripping-levers also having toothed acting surfaces and one being fulcrumed in opposition to each of the grips B² and C². These gripping-levers may be adjusted to various fulcruming-points relatively to the grips.

L is a revoluble shaft journaled in a horizontal position beneath the bed-plate and in suitable brackets Y Y', carried by the latter. The inner end of said shaft is provided with a crank K, whose crank-pin works in the head J¹ at one end of a connecting-rod J, the head J' on the other end of said connecting-rod receiving a pin O, that penetrates the projections C' C¹ and being disposed between said projections. The shaft L carries at its outer end a gear M, that is in mesh with a pinion N, loosely mounted upon a horizontal shaft E, that is journaled in brackets E' and E², which are secured to the bed-plate A'.

G is a drive-wheel which is carried upon the free end of the shaft E and which is provided with one member of a suitable clutch, the other member of which the pinion N carries.

The shaft E constitutes the spindle of a worm F, which engages the teeth of the sector-shaped carrier B, the shaft being adapted to be rotated, so as to operate the worm by virtue of a suitable key connection which it has with the drive-wheel G, the latter being movable longitudinally on the shaft, so as to effect an engagement through the key connection with said shaft or through the clutch connection with the pinion N.

The foregoing particular description is directed to the preferred form of the machine, as shown in Figs. 1, 2, and 3.

In the modified construction illustrated in the remaining figures the construction and the direct operating means for the sector-shaped carrier are the same as in the preferred

form of the machine already described, the principal differences between the two forms of machine shown residing in the construction and arrangement of and means for operating the other carrier. In this instance the carrier C is provided on its under side with a dovetailed groove with which engages a similarly-shaped projection on the upper face of the bed-plate A'. Said carrier is operated by the crank-pin of a horizontally-revoluble crank H', said crank-pin working in a recess I, formed in the carrier and being rigidly connected to and adapted to be rotated by a worm-wheel K', which is disposed beneath the bed-plate A'. Said worm-wheel is driven by a worm M', carried on a spindle D', that is suitably fulcrumed in the bed-plate A' and which may be driven in substantially the same manner as the shaft L of the preferred form of my machine or by virtue of a direct connection with the gear G.

In order to perform the operation of bending metal bars by means of the machine constructed after the principles of my invention, the bar is placed upon the carriers B and C and secured between the toothed acting-surfaces of the grips B² C² and gripping-levers D by manipulating the latter with its previously-heated portion in coincidence with the approximating ends of the grips B² C². Thereupon, having anchored the carrier C by the bolts X X', the shaft E is rotated, and this effects a rotation of the carrier B and the consequent bending of the bar at its heated portion—that is to say, the portion in coincidence with the approximating ends of the grips B² C². If it is desired to effect a jumping or welding of metal bars, the carrier B is anchored and a rotation of the shaft L will effect rectilinear movements of the carrier C either through the medium of the crank connection of the preferred form of my invention or the worm-wheel and worm connection, according as the one or the other of these mechanisms is employed.

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

1. In a machine for bending and jumping or welding metal bars, the combination, with a suitable frame including a bed-plate, of a pair of carriers whereof one has rectilinear and the other rotary movement, said last-named carrier being provided with concentric gear-teeth, gripping devices mounted on each carrier, a pair of revoluble shafts having suitable operating means, operative connection between one of said shafts and the rectilinearly-movable carrier, and a worm carried on the other of said shafts and engaging the gear-teeth of

the other of said carriers, substantially as described.

2. In a machine for bending and jumping or welding metal bars, the combination, with a suitable frame including a bed-plate, of a pair of carriers whereof one has rectilinear and the other rotary movement, said last-named carrier being sector-shaped and having peripheral gear-teeth, gripping devices mounted on each carrier, a pair of revoluble shafts having suitable operating means, operative connecting means between one of said shafts and the rectilinearly-movable carrier, a worm mounted on the other of said shafts and engaging the teeth of the said sector-shaped carrier, and means for detachably securing either of said carriers to the bed-plate, substantially as described.

3. In a machine for bending and jumping or welding metal bars, the combination, with a suitable frame including a bed-plate, of a pair of carriers whereof one has rectilinear and the other rotary movement, gripping devices mounted on each carrier, a pair of revoluble shafts, operative connecting means between one of said shafts and the rectilinearly-movable carrier and between the other of said shafts and the rotary carrier, a drive-wheel mounted on one of said shafts, and disconnective connecting means between said drive-wheel and the shaft carrying it and also between said drive-wheel and the other of said shafts, substantially as described.

4. In a machine for bending and jumping or welding metal bars, the combination, with a suitable frame including a bed-plate, of a pair of carriers whereof one has rectilinear and the other rotary movement, said last-named carrier being sector-shaped and having peripheral gear-teeth, gripping devices mounted on each carrier, a pair of revoluble shafts, a crank carried by one of said shafts, a rod connecting said crank and the rectilinearly-movable carrier, a worm mounted on the other of said shafts and engaging the teeth of said sector-shaped carrier, gearing operatively connected to said first-named shaft, a drive-wheel mounted on the other of said shafts and having a disconnective key engagement therewith, and a clutch adapted to connect said drive-wheel and the gearing, substantially as described.

In testimony that I claim the foregoing I have hereto set my hand this 2d day of March 1899.

ADOLPHE CHARLET.

Witnesses:

P. POHLE,

GREGORY PHELAN.