

No. 734,161.

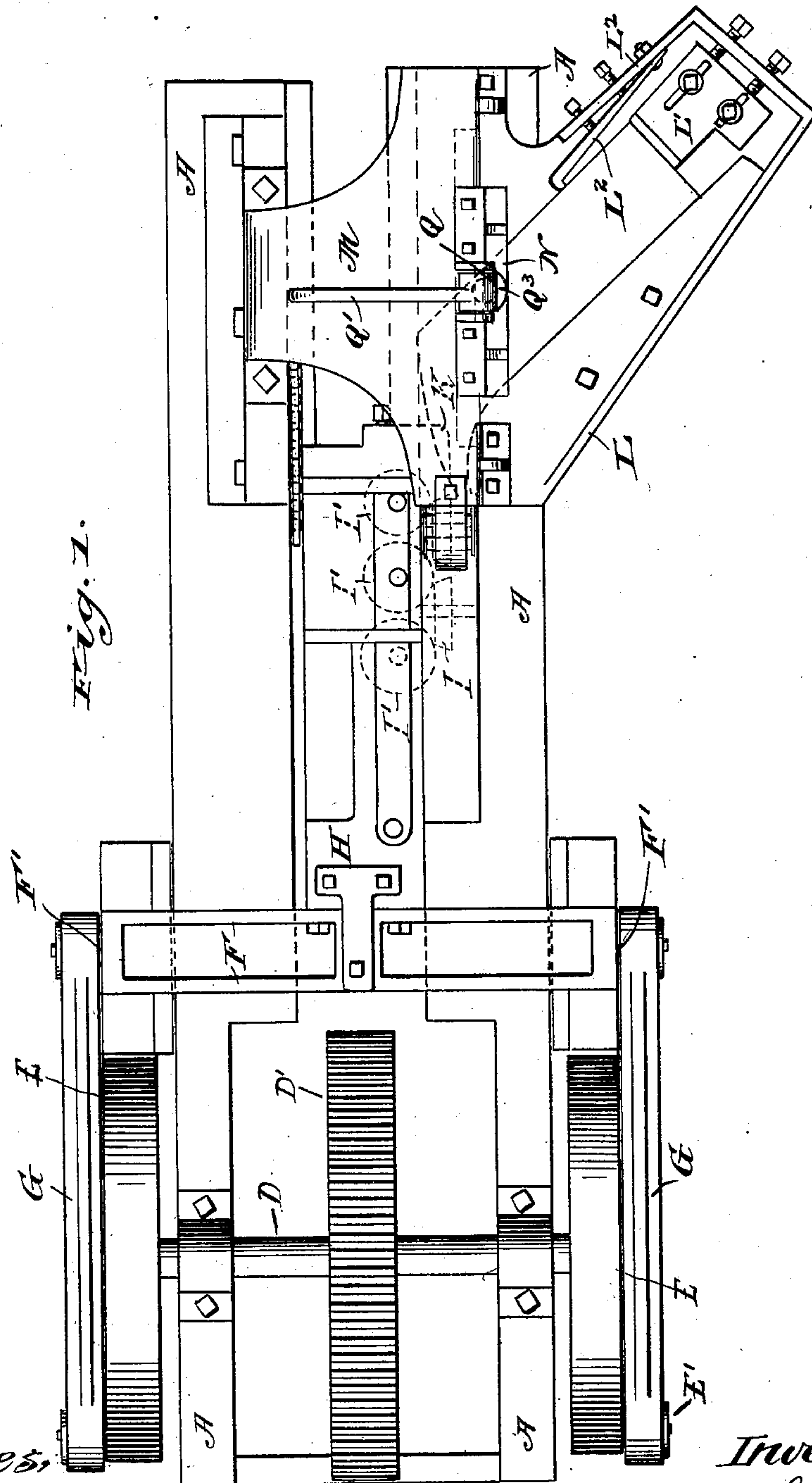
PATENTED JULY 21, 1903.

W. A. CLARKE.  
UPSETTING MACHINE FOR PLOWSHARES.

APPLICATION FILED APR. 17, 1903.

NO MODEL.

4 SHEETS—SHEET 1.



Witnesses,  
J. S. Mann,  
Frank A. Tucker.

Inventor,  
William A. Clarke  
By L. N. Wornum,  
Att'y.

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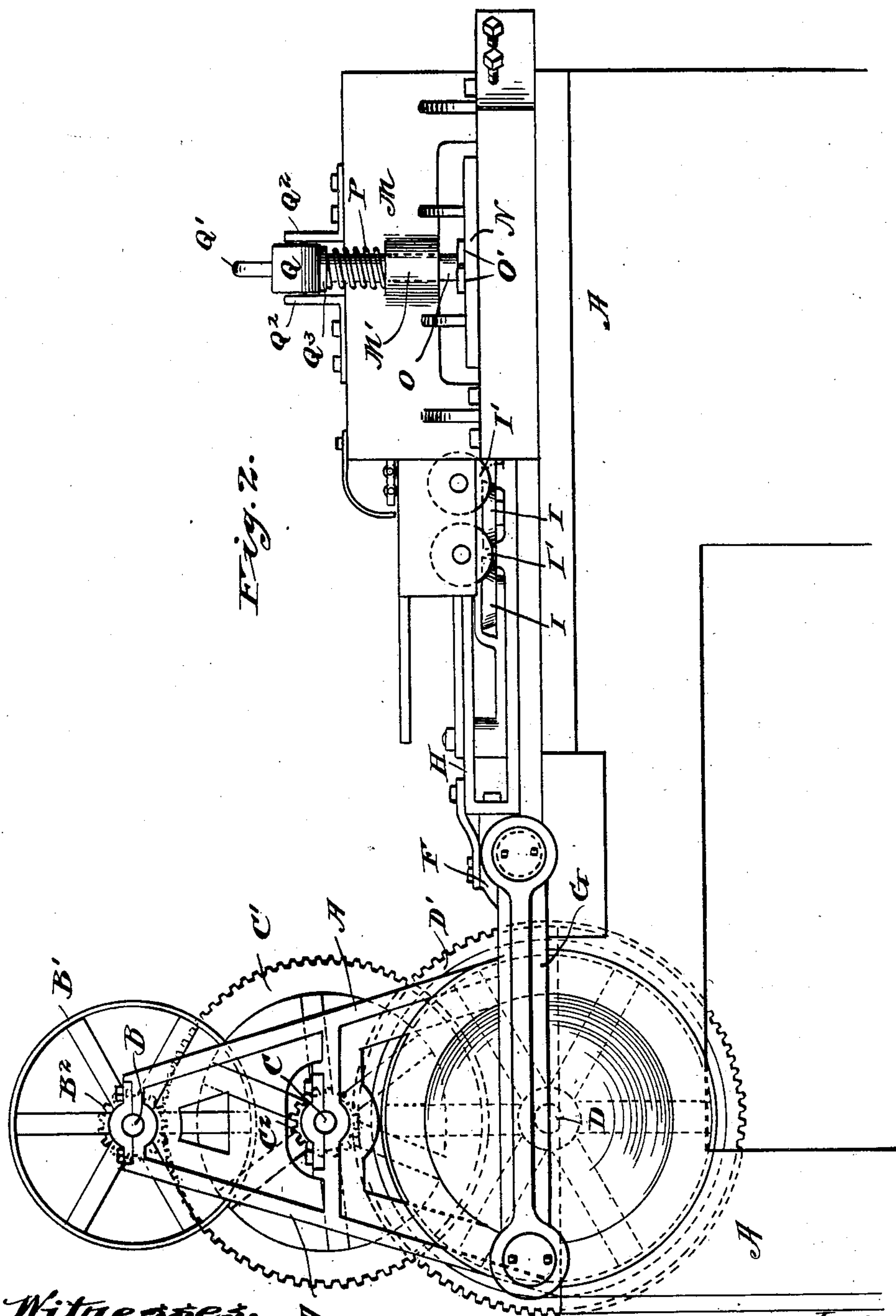
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NO MODEL.

4 SHEETS—SHEET 2.



Witnesses,  
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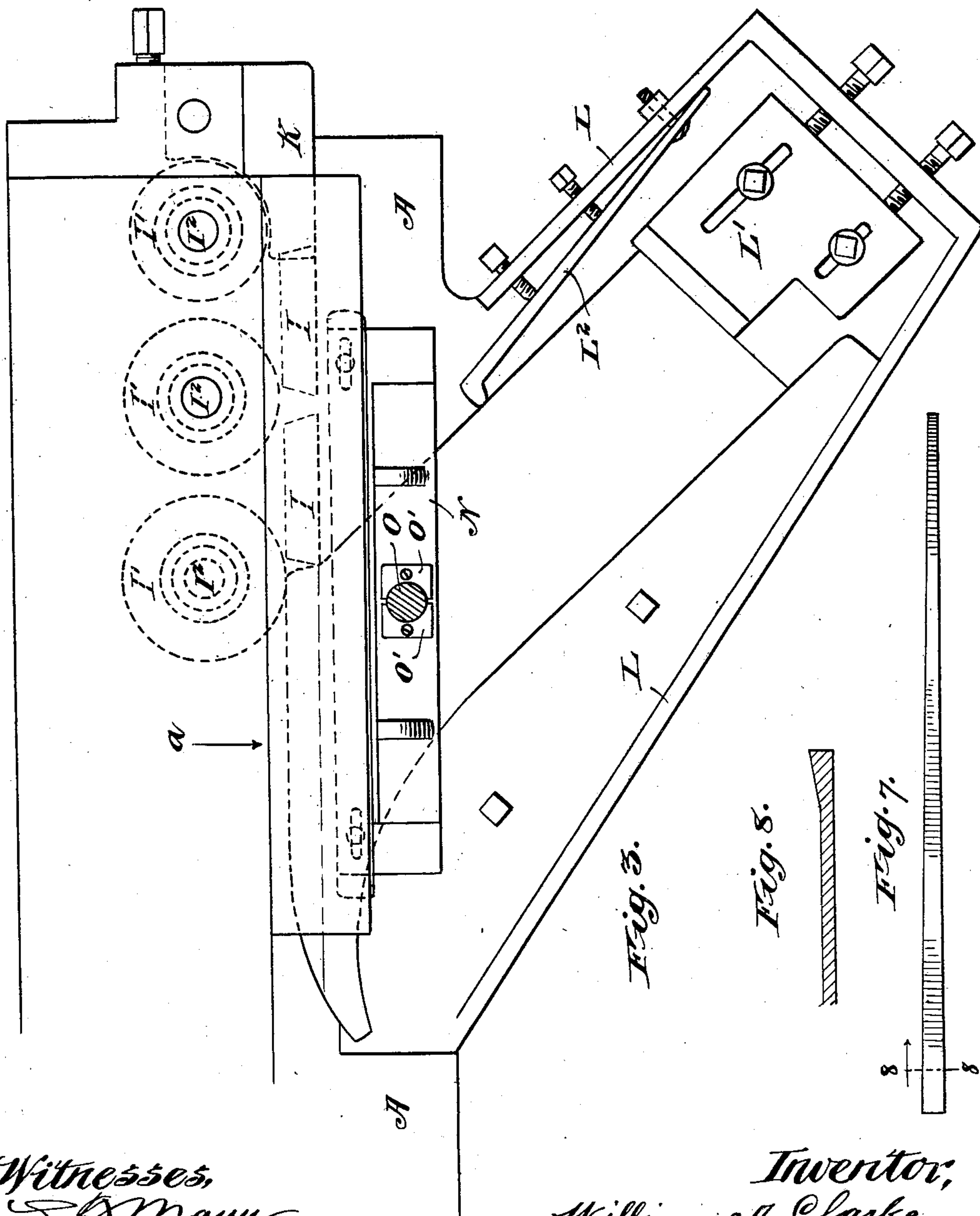
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NO MODEL.

4 SHEETS—SHEET 3.



Witnesses,  
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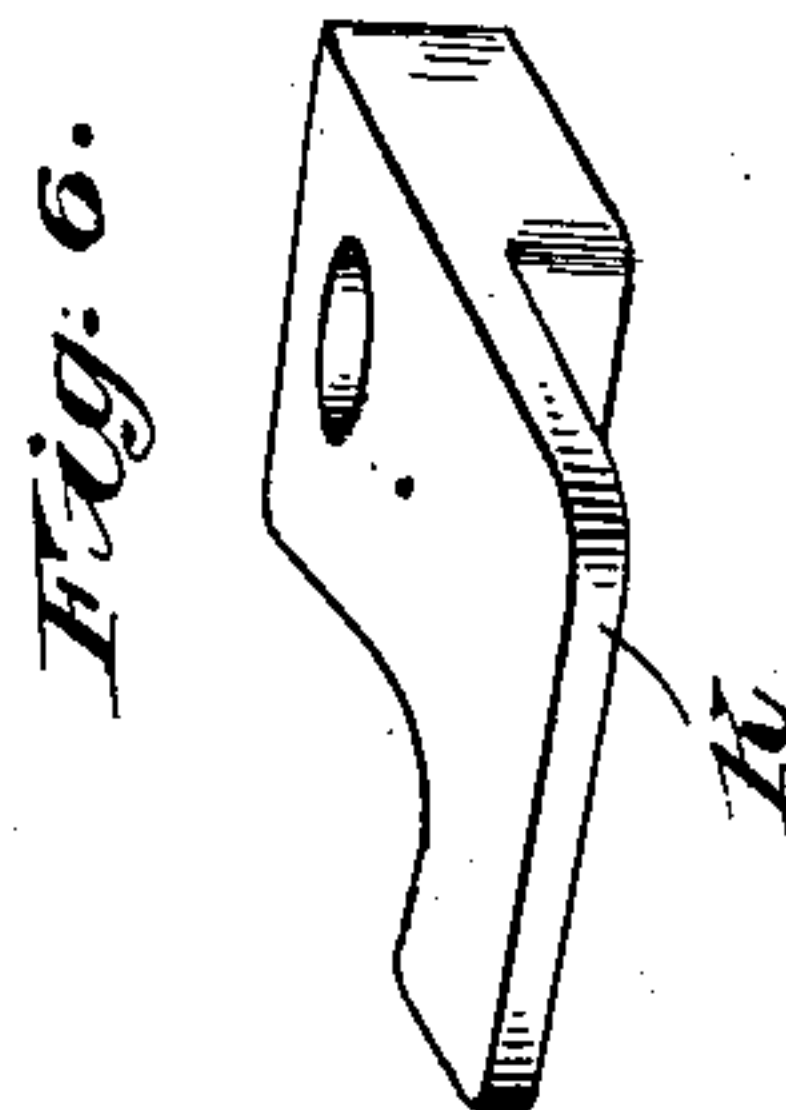
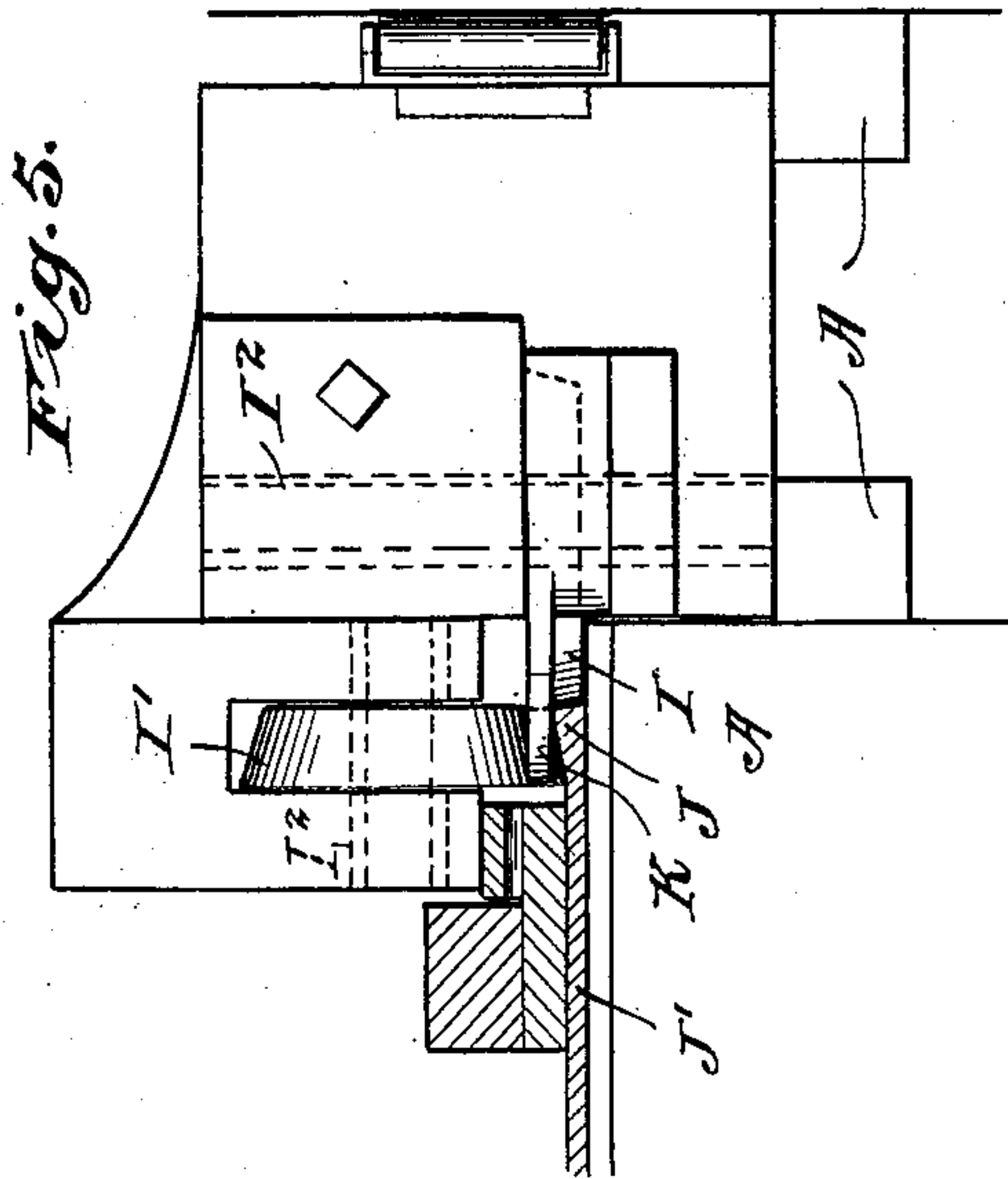
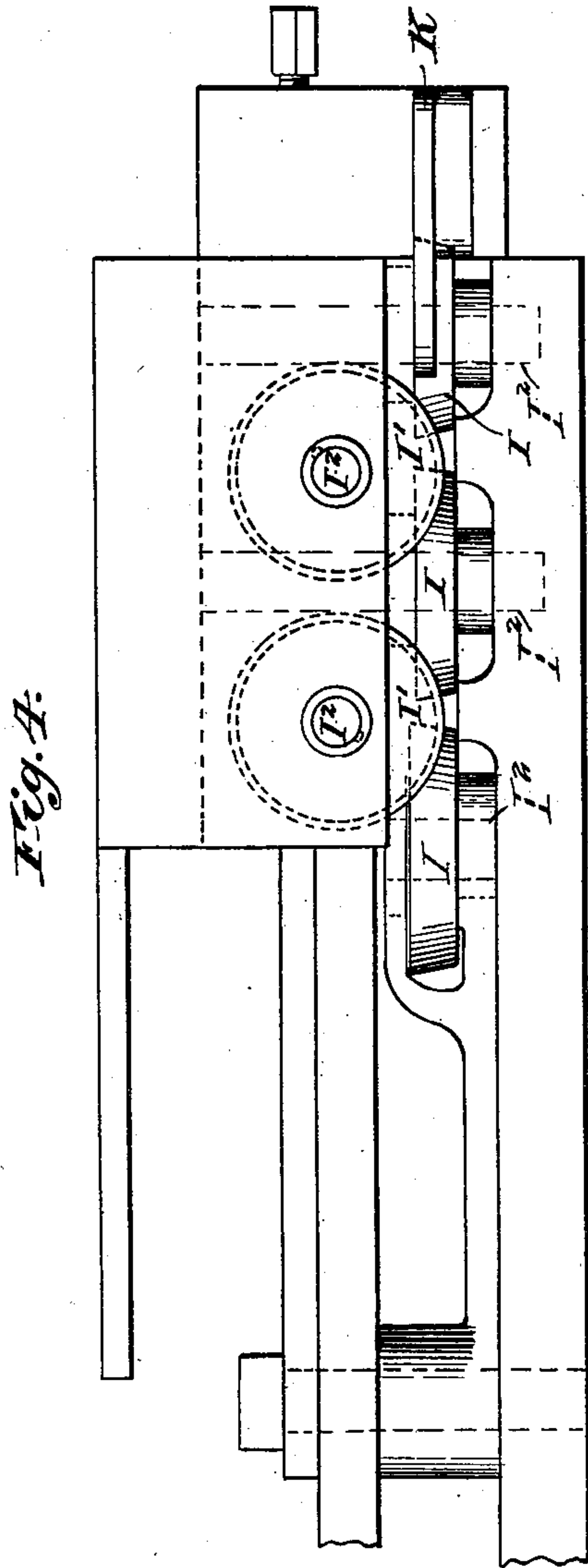


W. A. CLARKE.  
UPSETTING MACHINE FOR PLOWSHARES.

APPLICATION FILED APR. 17, 1903.

NO MODEL.

4 SHEETS—SHEET 4.



Witnesses,  
J. S. Mann,  
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Att'y.

# UNITED STATES PATENT OFFICE.

WILLIAM A. CLARKE, OF ROCKFORD, ILLINOIS, ASSIGNOR TO THE  
WEYBURN COMPANY, OF ROCKFORD, ILLINOIS, A CORPORATION  
OF ILLINOIS.

## UPSETTING-MACHINE FOR PLOWSHARES.

SPECIFICATION forming part of Letters Patent No. 734,161, dated July 21, 1903.

Application filed April 17, 1903. Serial No. 153,078. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. CLARKE, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Upsetting-Machines for Plowshares, of which the following is a specification.

The object of my invention is the production of a machine for upsetting, and thereby thickening, the oblique ends of plowshares to adapt such upset plowshare ends to be more perfectly and firmly welded to their landsides; and it consists, essentially, of a longitudinally-slidable carriage carrying two sets of rolls, in form frustums of cones, each set mounted at substantially right angles to the other, the bases of the set of horizontal rolls being uppermost and the tops—small ends—of the set of vertical rolls being adjacent to and very nearly in contact with the edges of the bases of the horizontal rolls. For the carriage described above a track is provided; also, a holder to support the plowshares while being upset. Suitable mechanism for operating the reciprocating carriage is likewise requisite.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a top plan view of a machine embodying my invention with parts omitted. Fig. 2 is a side elevation of the same complete. Fig. 3 is an enlarged view of parts shown in Fig. 1 with some parts wanting and others in positions different from those shown in the last-mentioned figure. Fig. 4 is an enlarged side elevation of the machine-carriage. Fig. 5 is a rear elevation of the carriage shown in Fig. 4 with parts omitted and other parts in section. Fig. 6 is an enlarged isometric detailed view of the plowshare presser-foot of the machine. Fig. 7 is a view of the end of an upset plowshare, as seen at *a* in Fig. 3, after it has been upset. Fig. 8 is a section at the dotted line 8 8 in Fig. 7 of the upset end of a plowshare.

Like letters of reference indicate corresponding parts throughout the several views.

A is the main frame and bed-piece of the machine.

B, Fig. 2, is a shaft mounted in the frame A.

B' B<sup>2</sup> are respectively a driving-pulley and a pinion mounted fast on the shaft B.

C is a shaft mounted in the frame A.

C' C<sup>2</sup> are respectively a gear-wheel and a pinion, the former meshing with the pinion B<sup>2</sup>, mounted fast on the shaft C.

D is a shaft mounted in the frame A.

D' is a gear-wheel mounted fast on the shaft D and meshing with the pinion C<sup>2</sup>.

E represents balance-wheels provided with wrist-pins E' and mounted fast on the ends of the shaft D.

F is a cross-head provided with wrist-pins F' and slidably mounted on the frame A.

G represents pitmen connecting the wrist-pins E' of the balance-wheels E with the wrist-pins F' of the cross-head F.

H is a carriage rigidly connected at one end with the cross-head F and slidably mounted on the bed-piece A of the machine.

I I' are two sets of upsetting-rolls, (in form frustums of a cone,) each set mounted on the axes I<sup>2</sup> in the longitudinally-slidable carriage H at substantially right angles to the other set, the bases of one set of rolls I being horizontal and uppermost and the tops or small ends of the other set of rolls I' being vertical and adjacent to the bases of the horizontal rolls I and very nearly in contact with the edges thereof. The joint operation of the rolls I I', having the peripheral forms shown and being arranged and mounted in the manner hereinbefore described, will produce the upset J, Figs. 5, 7, and 8, on the share J'.

K is a presser-foot rigidly connected with and projecting from the longitudinally-slidable carriage H in front of the upsetting-rolls I I' and into close proximity to the upper face of the plowshare J'.

L is a bed to support a plowshare, as J', while it is being upset and is rigidly connected with the main frame of the machine.

L' L<sup>2</sup> are adjustable stop-gages to adapt the bed L to receive plowshares of different sizes.

M is a housing rigidly secured to the part A and provided with a vertical socket M'.

N is a clamp for securing the share J' into the bed L while the rolls I I' are upsetting such share. The bed L and clamp N together constitute the share-holder of the machine.

O is a circular stem slidable in the socket



M' and loosely jointed by its lower end to the clamp N at O'.

P is a spring-encircling the stem O and normally holding the clamp N elevated a little distance above the bed A.

Q Q' represent a cam-lever mounted in the bearings Q<sup>2</sup>, the former resting upon the cap Q<sup>3</sup> of the stem O.

By reason of the thinness of a plowshare, that it may not be too clumsy and heavy, and the difficulty of maintaining it at a welding heat for a sufficient length of time, on the one hand, and the danger of burning the metal composing it, on the other, the welding of the same to a landside is a difficult operation, and when the welding is accomplished the thickness of the share at and about the weld is usually considerably diminished. By upsetting the oblique end of the share a greater body of metal is brought together at the place of welding, thereby reducing the difficulty of the operation and leaving its thickness ample along the line of the weld between the share and landside.

The operation of my machine is as follows: The share, being of the desired form and size and being heated to the proper temperature at the end to be operated upon, is placed in the bed L and secured therein by means of the clamp N, which is forced and held down upon the share by means of the cam-lever Q Q'. The machinery is then set in motion and the carriage H thereby caused to move from the position shown in Fig. 1 to that shown in Fig. 3. The passage of the rolls I I' along and over the plastic metal of the oblique end of the share gives it the upset shown in Figs. 5, 7, and 8, the presser-foot K passing along close to the upper face of the heated share end and preventing it from buckling.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for upsetting plowshares, in combination, a longitudinally-slidable carriage, two sets of upsetting-rolls—in form, frustums of a cone—each set mounted therein, at substantially right angles to the other set, the bases of one set of rolls being horizontal and uppermost, and the tops or small ends of the other set of rolls being vertical

and adjacent to the bases of the horizontal rolls and very nearly in contact with the edges thereof, a track for the carriage to travel upon and a holder to support a plowshare while it is being upset, substantially as and for the purpose specified.

2. In a machine for upsetting plowshares, in combination, a longitudinally-slidable carriage, two sets of upsetting-rolls—in form, frustums of a cone—each set mounted therein, at substantially right angles to the other set, the bases of one set of rolls being horizontal and uppermost, and the tops or small ends of the other set of rolls being vertical and adjacent to the bases of the horizontal rolls and very nearly in contact with the edges thereof, a presser-foot projecting from the longitudinally-slidable carriage in front of the upsetting-rolls and into close proximity to the upper face of the plowshare being upset, a track for the carriage to travel upon and a holder to support a plowshare while it is being upset, substantially as and for the purpose specified.

3. In a machine for upsetting plowshares, in combination, a longitudinally-slidable carriage, two sets of upsetting-rolls—in form, frustums of a cone—each set mounted therein, at substantially right angles to the other set, the bases of one set of rolls being horizontal and uppermost, and the tops or small ends of the other set of rolls being vertical and adjacent to the bases of the horizontal rolls and very nearly in contact with the edges thereof, a presser-foot projecting from the longitudinally-slidable carriage in front of the upsetting-rolls and into close proximity to the upper face of the plowshare being upset, a track for the carriage to travel upon, a holder to clamp a plowshare while it is being upset and a cam-lever for operating the holder-clamp, substantially as and for the purpose specified.

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

WILLIAM A. CLARKE.

Witnesses:

L. L. MORRISON,  
A. R. MORGAN.