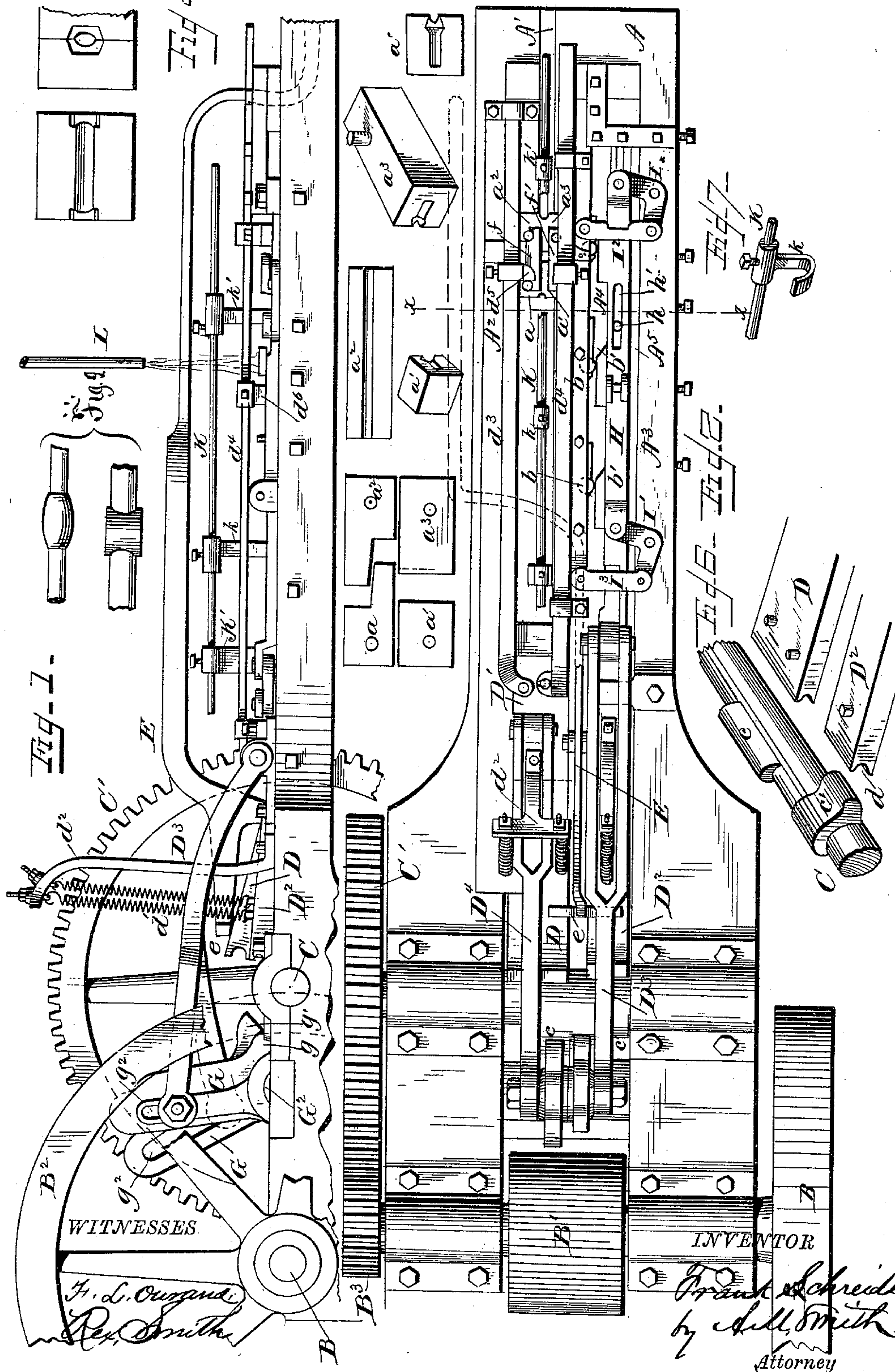


2 Sheets—Sheet 1.

MACHINE FOR UPSETTING CARRIAGE TOP IRONS.

No. 373,614.

Patented Nov. 22, 1887.



(No Model.)

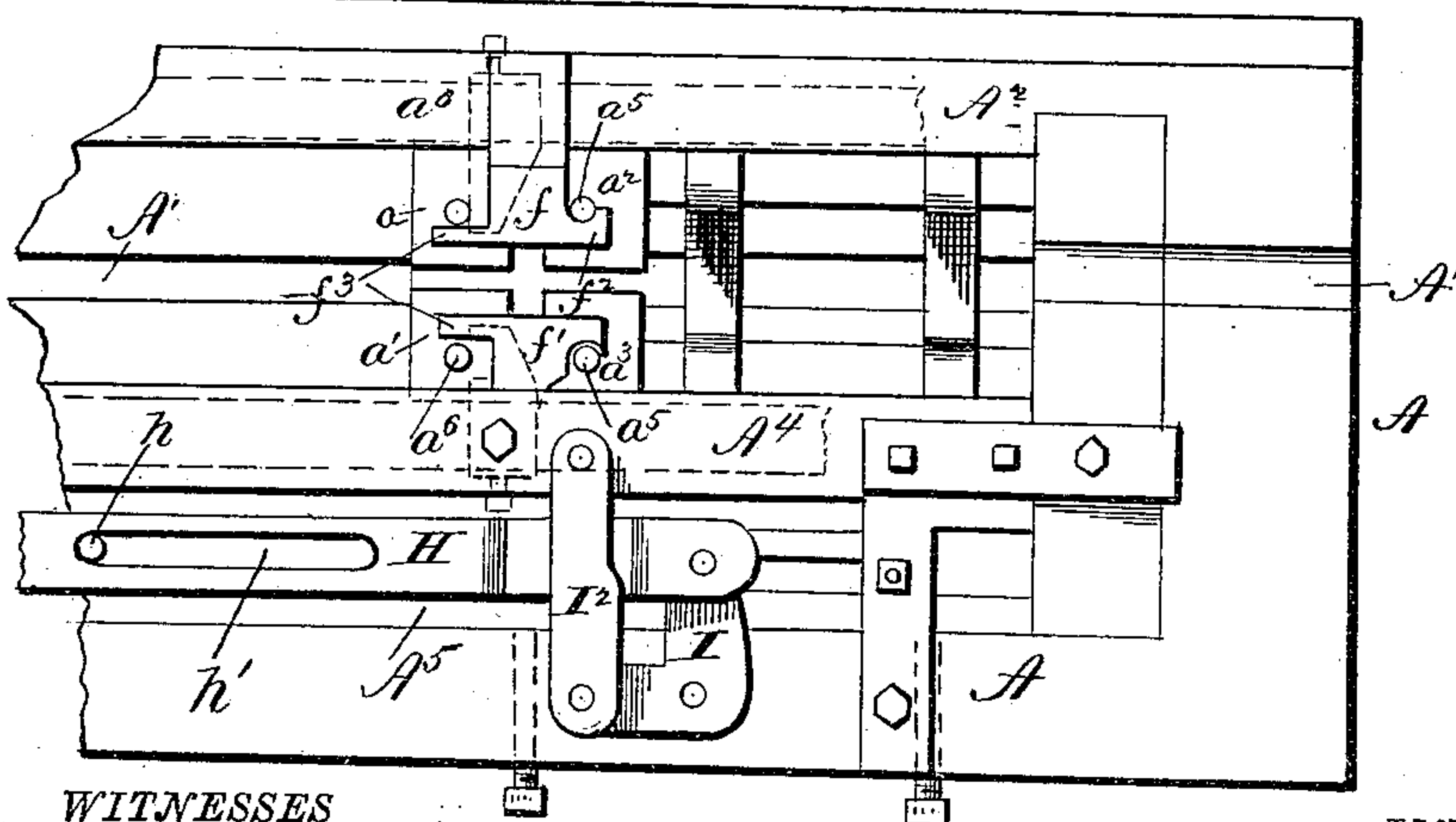
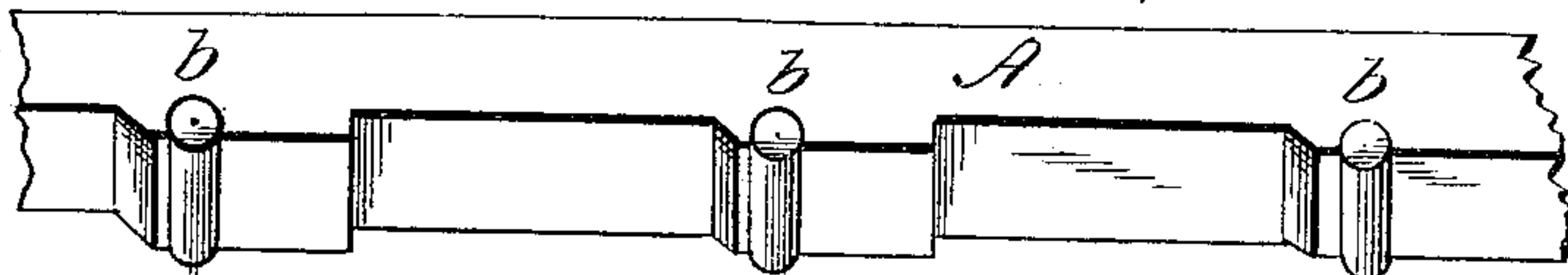
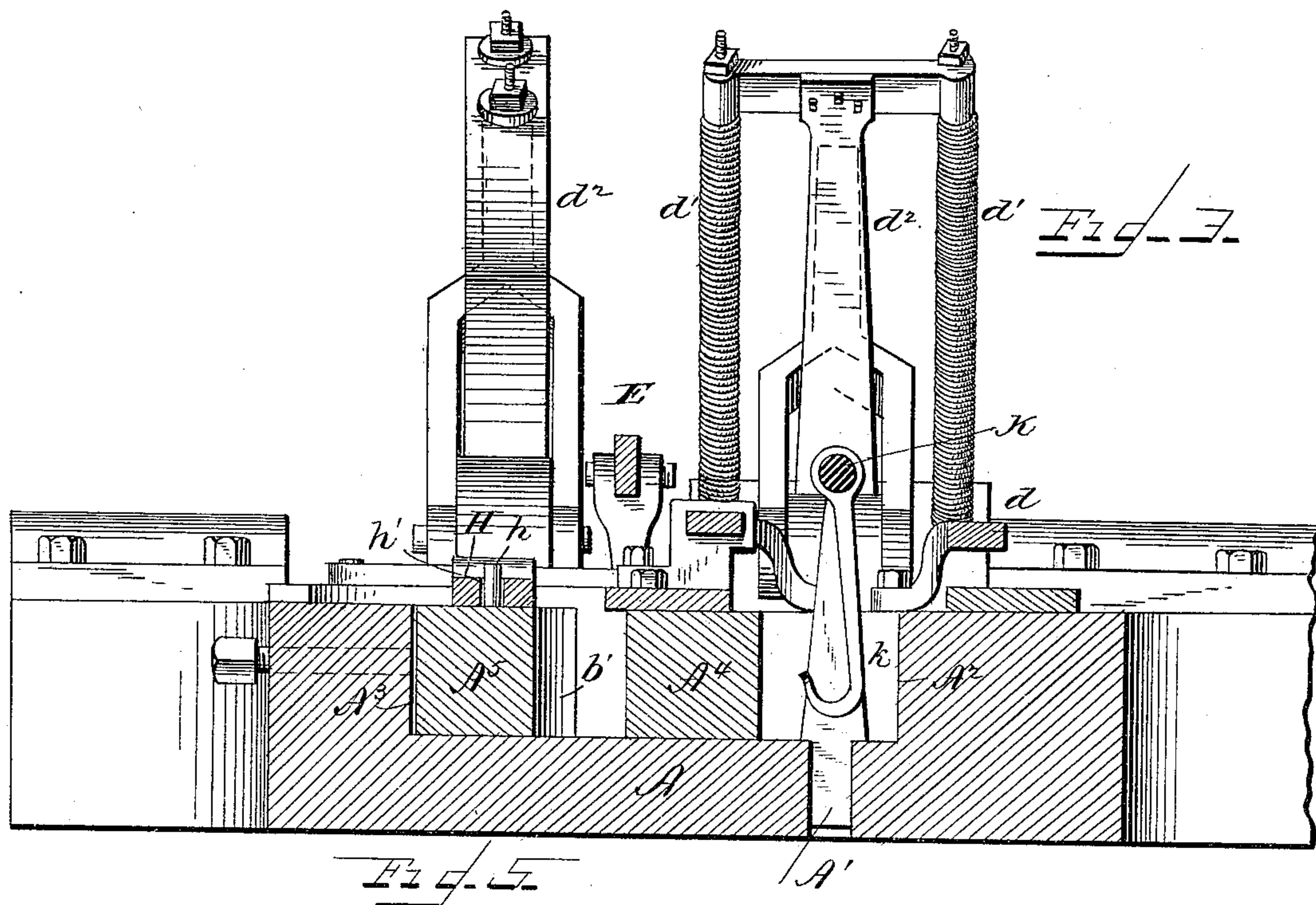
2 Sheets—Sheet 2.

F. SCHREIDT.

MACHINE FOR UPSETTING CARRIAGE TOP IRONS.

No. 373,614.

Patented Nov. 22, 1887.



WITNESSES
J. L. Osgood,
Rex. Smith.

INVENTOR
Frank Schreidt,
by J. M. Smith
Attorney

UNITED STATES PATENT OFFICE.

FRANK SCHREIDT, OF MANSFIELD, OHIO, ASSIGNOR TO THE SCHREIDT & MILLER COMPANY, OF SAME PLACE.

MACHINE FOR UPSETTING CARRIAGE-TOP IRONS.

SPECIFICATION forming part of Letters Patent No. 373,614, dated November 22, 1887.

Application filed January 12, 1886. Serial No. 188,300. (No model.)

To all whom it may concern:

Be it known that I, FRANK SCHREIDT, of Mansfield, county of Richland, and State of Ohio, have invented a new and useful Improvement in Machines for Upsetting Carriage-Top Irons, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to the means for gagging the amount of stock or iron to be upset to form the knuckles and collars or other protuberances on carriage-top and similar irons, to the means for suspending the irons to be operated upon within the machine in proper relation to the clamping and upsetting dies, and to the means for actuating the movable portions of the clamping-dies, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation (partly broken away) of a machine embracing my improvements. Fig. 2 is a plan view of the same. Fig. 3 represents a transverse vertical section on the line xx , Fig. 2; Fig. 4, a partial plan view of the portion embracing the clamping and upsetting dies; Fig. 5, a perspective view of a portion of the clamping-bar; Fig. 6, a perspective view of the ends of the plunger-rods and of their actuating-cams; Fig. 7, a perspective view of one of the suspending-hooks, and Fig. 8 detail views of the dies employed. Fig. 9 shows forms of the blanks after being acted upon by the dies.

The machine in its organization is similar to that described in another application filed by me of even date herewith, and it need, therefore, be described in detail only so far as is necessary to an understanding of the present improvements.

A represents the longitudinally-slotted portion or table of a frame of any suitable construction, in the rear end of which, in suitable bearings, is mounted the main driving-shaft B, provided with a band-wheel, B', through which it is operated from any convenient motor with a fly-wheel, B², and at one end with a pinion, B³, engaging and actuating a spur-gear, C', fast on a shaft, C, located in bearings in

the frame in front of shaft B, for imparting a continuous rotary movement to the latter in the direction indicated by the arrow 2.

The shaft C has a cam projection or rib, c , formed upon it, which acts on a plunger rod or bar, D, connected with the plunger-block or cross-head D', for operating the movable part or parts of the die, as explained in my other application referred to, and upon the shaft C, near the cam c , is another cam-shaped projection or rib, c' , through which the movable clamping portions of the die are moved toward the fixed clamping portions for causing said portions to clamp or grasp and hold the iron to be operated upon by the dies, as will be explained.

The table portion A of the frame, as stated, has a longitudinal slot formed in it at A', and it is also recessed longitudinally in its upper face, forming fixed vertical ledges A² and A³, between which the parts of the die and the means for moving the movable parts thereof rest.

a and a^2 indicate two parts of the die, which rest against the ledge A², and are held against lateral movement thereby.

a' and a^3 indicate the laterally-movable portions of the die. These rest against a longitudinal bar, A⁴, adapted to move laterally in the recess in the table; and A⁵ is a longitudinally-movable bar or rod for actuating the bar A⁴ and moving it and the movable portions a' and a^3 of the clamp laterally for grasping the iron.

The bar A⁴ (see Fig. 5) has in its face adjacent to bar A⁵ a series of projecting friction-rollers, $b b$, and the bar A⁵ on the side adjacent to said rollers has a series of cam or wedge shaped projections, $b'b'$, which, as the bar A⁵ is moved longitudinally forward, crowd the rollers $b b$ and the bar A⁴, in which they are mounted, laterally, thereby moving the parts a' and a^3 of the clamping-die laterally for clamping the iron to be operated upon against the parts a and a^2 . The bar A⁵ has a longitudinal movement or forward thrust imparted to it for actuating the bar A⁴ and parts a' and a^3 of the die, as explained, by means of a pivoted rod or bar, D², projected within reach of

and adapted to be operated upon by the cam projection c' on the shaft C.

The rear end of the bar D^2 is grooved at d , (as in the end of bar D, see Fig. 6,) to adapt it to engage and be acted upon by the cam c' , and is upheld by a yielding rod and spring at d' , connecting it with a supporting standard or arm, d^2 , on the rear end of bar A^5 , in such manner as to be above the path of the cam c' , except when depressed by the attendant by means of a lever, E, the foot e of which overhangs also the bar D, for simultaneously depressing it and adapting it to be acted upon by the cam c , in a manner fully described in another application referred to.

The cam c' is in advance of the cam c relative to the direction of rotation of the shaft C, and acts to cause the iron to be clamped between the movable parts a' and a^3 and the fixed parts a and a^2 thereof, as relates to the clamping action, after which the cam c acts through the plunger rod or bar D and cross-head or plunger D' for moving the parts a and a' in the operation of upsetting the iron.

The parts a^2 and a^3 of the die are stationary in the process of upsetting the iron, and may abut against the rear face of the forward wall of the recess in the table for that purpose; but in the drawings they are shown supported against the upsetting thrust of the plunger and movable dies by means of brackets f and f' , secured, one to the longitudinal side wall, A^2 , and the other to the laterally-moving bar A^4 , said brackets overhanging the parts of the die, as shown in Fig. 4, and provided on their forward edges with hooks f^2 , which engage pins a^5 on the parts a^2 and a^3 of the die, preventing longitudinal movement of said parts, and on their rear edges with tongues or spurs f^3 , which engage pins a^6 on the parts a and a' of the die, permitting longitudinal movement of said last-named parts, but preventing lateral movement except as the parts a' and a^3 move with the bar A^4 .

For withdrawing the bar A^5 and the plunger D after they have been operated to clamp and upset the metal, as described, I connect them through rods D^3 and D^4 to slotted arms G and G' , pivoted on a short shaft or shafts at G^2 , and provided with forwardly-projecting toes g and g' , which overhang the cams c' and c , and are acted upon thereby, said cams serving to rock the arms G and G' back on their pivot, and so to retract the bar A^5 and the plunger for releasing the bar of iron after it has been operated upon, in a manner that will be readily understood. By adjusting pivots connecting the ends of rods D^3 and D^4 with the arms G and G' up or down in the slots g^2 therein the backward movement or thrust of the rod or bar A^5 and of the plunger D' can be varied, as desired, for varying the throw of the movable parts of the dies and the consequent amount of stock that can be upset thereby.

The plunger D' has rods d^3 and d^4 secured to and moving with it, which project rear-

wardly and move in suitable guiding and steadying brackets on the table, and have tappets d^5 and d^6 secured to them, which, as the plunger D' is withdrawn, come in contact with the pins a^6 on the movable parts of the die, and serving to retract the latter, and thereby to release the iron operated upon. The bar A^4 and movable clamping portions of the die may be moved laterally for releasing the iron by means of a spring, as described in my other application referred to.

The bar A^5 has on its upper face a pin, h , which passes through a slot, h' , in a bar, H, resting and sliding on the bar A^5 , the slot and pin referred to limiting the relative longitudinal movement of bars A^5 and H.

The ends of bar H have pivoted to them one arm each of two bell-crank levers, I and I' , which are pivoted at their angles to the side A^3 of the frame, the other arms of said levers being connected by links I^2 and I^3 with the bar A^4 , said links, acting like the links of a parallel-rule, steadying the movements of the bar A^4 and assisting to move it up to and to withdraw it from its work of clamping the irons.

K is a rod secured and supported at its rear end in a standard or bracket, K' , secured to any suitable fixed portion of the frame, the rod K projecting forwardly from its support and overhanging the slot in the frame and the longitudinal opening between the parts of the die. Upon this rod are secured adjustably two or more pendent hooks, k and k' , one in front and a second in rear of the die, and within which the iron to be operated upon is laid, said hooks being of suitable length and arrangement to hold the iron in proper relation to the parts of the die.

The dies may be similar in construction to those described in my other application referred to, that shown in Fig. 8 being composed of four parts, a , a' , a^2 , and a^3 , adapted to both clamp and upset the metal between them, as explained, and to form an angle and knob or collar thereon, while the two parts shown in Fig. 8^a, forming one half of the die, are shown provided with sockets hexagonal or polygonal in form, and in both ends of said half of the die, adapting it to be turned end for end when one side becomes worn or otherwise rendered unfit for further use.

L represents an end of a pipe, which in practice is connected with a water-supply tank or reservoir for supplying water to and keeping the dies cool when in use.

Parts of the machine not specifically described may be constructed and arranged as in my other application referred to, or in any suitable manner.

Having now described my invention, I claim as new—

1. In a machine for upsetting carriage-top and other similar irons, the cam projection on the shaft for actuating the cross-head or plunger, in combination with the slotted vibrating arm for retracting the plunger, and

the rod connecting said plunger and slotted arm, adjustably connected with said slotted arm, substantially as described.

5 2. The cams on the rotating shaft for operating through suitable connections the clamping portions of the die and a plunger and cross-head actuating the upsetting portions of the die, in combination with the slotted vibrating arms, also actuated by said cams for
10 retracting the plunger and clamping devices and adjusting their throw, substantially as described.

3. In a machine for upsetting carriage-top and other irons, the combination, with the
15 clamping and upsetting dies, of the suspending-hooks for holding the iron in proper relation to said dies, substantially as described.

4. The combination, with the clamping parts of the die, of the laterally-moving bar with

its friction-rollers, the longitudinally-moving 20 bar having the cam or wedge projections for actuating the movable parts of the clamp, and the vibrating links for guiding and steadying the movements of said moving bar, substantially as described.

5. The combination, with the dies, of the 25 laterally-moving bar A⁴, the longitudinally-moving bar A⁵, the cam for actuating, and the vibrating arms and adjustable connections for retracting said bar A⁵, substantially as described. 30

In testimony whereof I have hereunto set my hand this 7th day of January, A. D. 1886.

FRANK SCHREIDT.

Witnesses:

SAMUEL MARRIOTT,
EFFIE DOTY.