

(No Model.)

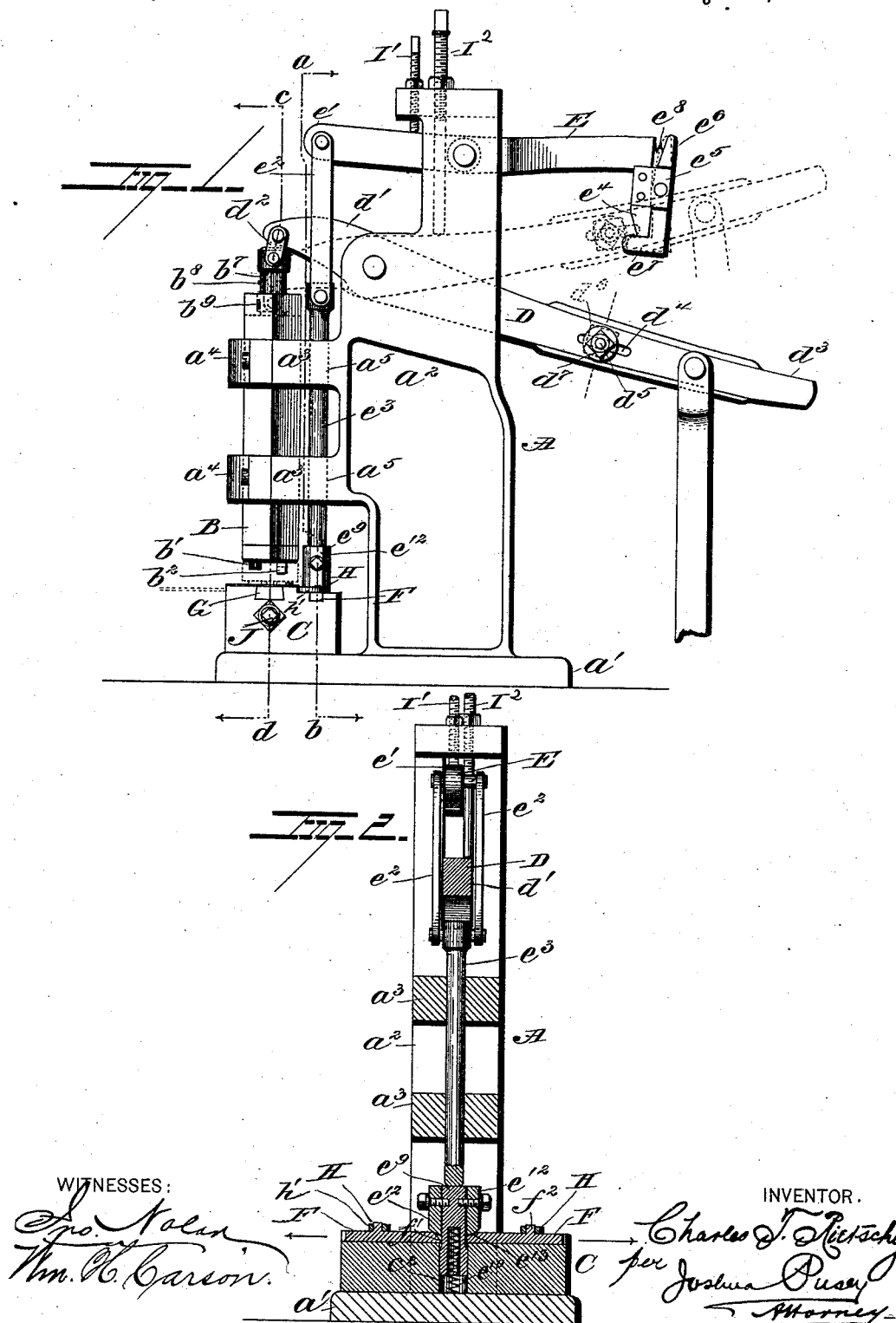
3 Sheets—Sheet 1.

C. T. RIETSCHY.

MACHINE FOR ATTACHING FORKS TO UMBRELLA STRETCHERS.

No. 383,075.

Patented May 15, 1888.

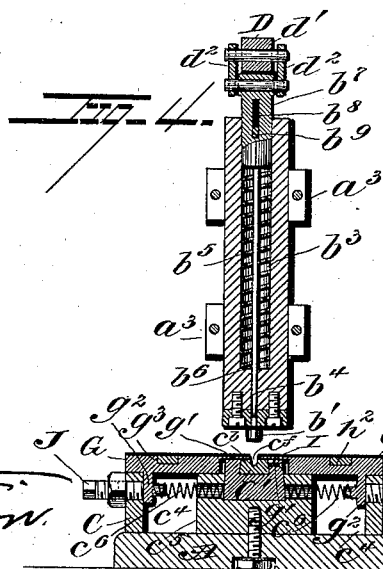
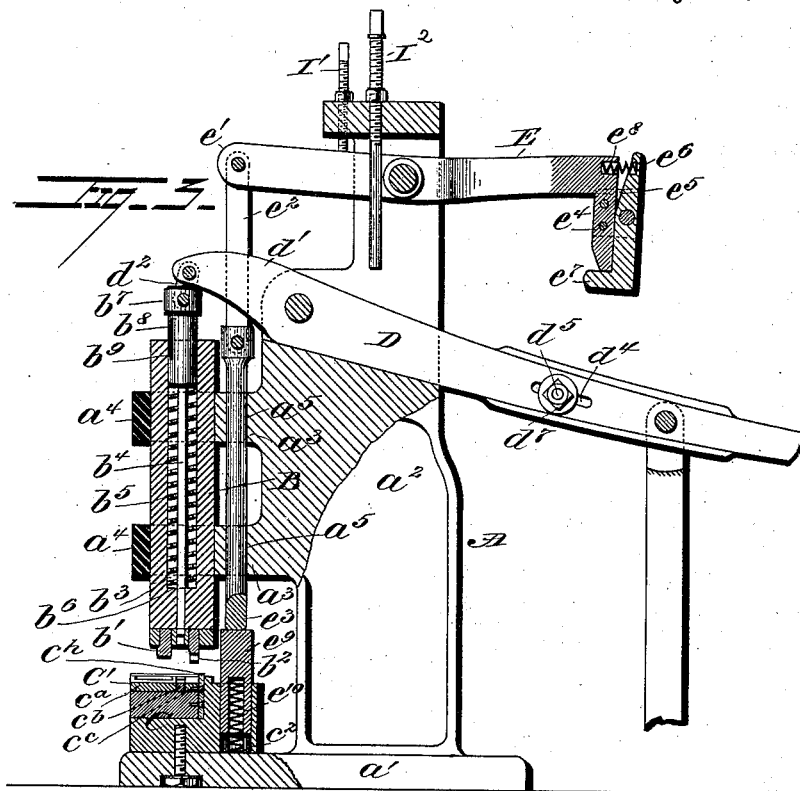


C. T. RIETSCHY.

MACHINE FOR ATTACHING FORKS TO UMBRELLA STRETCHERS.

No. 383,075.

Patented May 15, 1888.



WITNESSES:

Geo. J. Mason
Wm. H. Carlson

INVENTOR

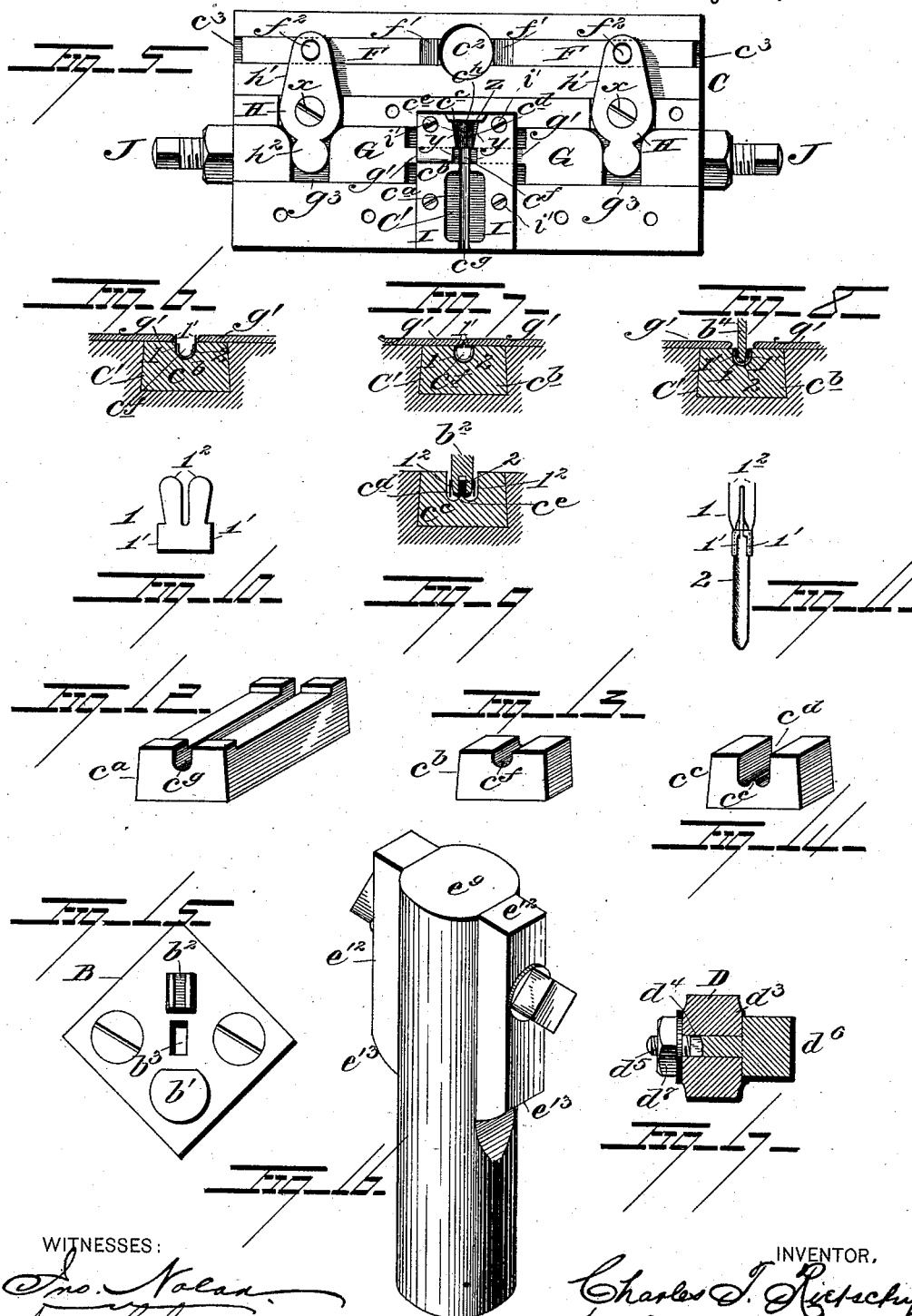
Charles T. Rietschy
per Joshua Pussey,
Attorney.

C. T. RIETSCHY.

MACHINE FOR ATTACHING FORKS TO UMBRELLA STRETCHERS.

No. 383,075.

Patented May 15, 1888.



WITNESSES:

Geo. Nolan
Wm. C. Carson

INVENTOR,

Charles T. Rietschy
per Joshua Dusey
Attorney

UNITED STATES PATENT OFFICE.

CHARLES T. RIETSCHY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
JAMES IRWIN BARNHURST, OF SAME PLACE.

MACHINE FOR ATTACHING FORKS TO UMBRELLA-STRETCHERS.

SPECIFICATION forming part of Letters Patent No. 383,075, dated May 15, 1888.

Application filed February 4, 1888. Serial No. 263,053. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. RIETSCHY, a citizen of the United States, residing at the city and county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Attaching Forks to Umbrella-Stretchers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

Figure 1, Sheet 1, is a side elevation. Fig. 2 is a transverse vertical section, as on line *a b*, Fig. 1. Fig. 3, Sheet 3, is a longitudinal vertical sectional elevation. Fig. 4 is a transverse vertical section, as on line *c d*, Fig. 1. Fig. 5, Sheet 3, is a plan view of the anvil-block and connections detached. Figs. 6, 7, and 8 are transverse sections through the center of the die, showing the several successive positions into which the "fork" is bent. Fig. 9 is a like section through the rear of the die and slotted projection on the lower end of the reciprocating hammer, showing the position of the limbs of the fork when said projection is down. Fig. 10 is a view of one of the blank forks. Fig. 11 is a view of a portion of an umbrella-stretcher with attached fork. Figs. 12, 13, and 14 are perspective views of the die-blocks detached. Fig. 15 is a lower end view of the reciprocating hammer. Fig. 16 is a perspective view of the sliding piece and vertical cam blocks secured thereto. Fig. 17 is a transverse section, as on line *e f*, Fig. 1.

The nature of this invention is an organization or combination of mechanism whereby the usual blank sheet-metal forks may be readily bent up and attached to the ends of the fluted or "Paragon" frame umbrella-stretchers, in order to form the lateral lugs to which the ribs are pivoted.

The invention, as generally stated, consists in the combination, with a recessed anvil or die, of a reciprocating hammer arranged with relation thereto and provided with a bifurcated or slotted projection and a stud on its lower end in line with said die, and a spring-controlled plunger working in said hammer, together with transversely-reciprocating wings or jaws arranged and operating with reference to said die and plunger, whereby upon the

bifurcated sheet-metal blank or fork and the stretcher being placed in proper position upon said die and the reciprocating hammer caused to descend the said stud and slotted projection will impinge against the stretcher and fork, respectively, and force the same into the die, thereby turning the said fork up around the sides of the stretcher and expanding the limbs thereof, whereupon the transversely-reciprocating jaws, being forced together against the upturned ends of said fork, bend said ends horizontally. Said jaws immediately returning to their former position, the reciprocating plunger, which works in the hammer, descends and forces said horizontally-bent ends of the fork down into and against the sides of the stretcher. This completes the operation, and the parts resume their normal position for a succeeding one.

The invention consists, also, in certain details of construction, which will be hereinafter fully specified, and pointed out in the claims.

Referring to the annexed drawings, A represents the frame-work of the machine, consisting of the bed-plate *a'* and slotted standard *a''*. The latter is provided with recessed forward projections, *a'''*, which form, in conjunction with the recessed pieces *a'*, boxes or guides for the vertically-reciprocating hammer B. The lower end of this hammer has formed or secured thereto two studs or projections, *b'* *b''*, one of which, *b''*, is slotted or bifurcated, as shown. To the bed-plate *a'* is secured a rectangular anvil-block, C, which contains a die, C', in line vertically with said hammer and its studs. The construction of this die will be hereinafter particularly described.

Within the hammer B is a longitudinal opening, *b'''*, in which is contained a thin rectangular plunger, *b''''*, which is kept normally elevated by means of a spiral spring, *b'''''*, which bears against an offset, *b''''''*, near the bottom of the recess, and against a vertically-movable head, *b'''''''*, to which the upper end of said plunger is connected. In order to prevent the plunger from being forced out of the opening *b'''*, the head *b'''''''* is provided with a longitudinal slot, *b''''''''*, through which and the hammer B a pin, *b'''''''''*, is inserted.

Within the slotted standard *a''* there is piv-

oted a lever, D, whose short arm d' is connected with the head b' by means of links d'' . The long arm d^3 of this lever has a lateral longitudinal slot, d^4 , through which passes the screw-threaded shank, d^5 , of a spud, d^6 , on one side of the arm d^3 , which spud is secured in place by means of a jam-nut, d^7 , that is screwed up on shank, d^5 , against the opposite side of the arm.

Pivoted in the standard a^2 , above the lever D, is a lever, E, whose forward end, e' , is connected by means of links e^2 with a plunger, e^3 , working in holes a^5 in the projections a^3 , just in the rear of the hammer B. On the opposite end of said lever E is a downward extension, e^4 , having lateral lugs e^5 , to which is pivoted a short vertical lever, e^6 , whose lower arm has an inward projection, e^7 , and against whose upper arm and the end of lever E bears a small compression-spring, e^8 .

In the block C, in line vertically with the plunger e^3 , is a hole, c^2 , which contains a sliding piece, e^9 . The latter is kept normally elevated by means of a spring, e^{10} , which bears upon the bottom of the hole c^2 and extends into a recess, e^{11} , in said piece. The plunger e^3 rests upon the top of the piece e^9 , and is practically a continuation thereof.

To the opposite upper sides of said piece e^9 are secured two vertical blocks, e^{12} , whose lower ends, e^{13} , are oppositely beveled, as shown. These beveled ends e^{13} impinge against the correspondingly beveled ends f' of horizontal blocks F, which reciprocate in guideways c^3 in the anvil-block C. In the top of the latter, on each side of the die C' , is a transverse block, G, whose inner or forward end has formed or secured thereto a wing or jaw, g' , which normally extends to or nearly to the edge of the central recess, c^1 , in the die. On the under side of each of said blocks G, near the rear end thereof, is a downward projection, g^2 , which extends into a space or channel, c^4 , in the anvil-block C. Against this projection g^2 and the opposite recessed wall, c^5 , of said channel c^4 bears a spring, e^6 , which keeps the block G, or, rather, its jaw g' , normally extended and away from the die-recess, c^1 , as shown clearly in Fig. 4. At a point, x , between the blocks F and G is pivoted a small lever, H, whose arm h' is loosely connected with a pin, f^2 , on the block F, and whose other arm, h^2 , fits within a recess, g^3 , in the block G.

The die C' is detachable from the anvil-block C, as seen, and consists, preferably, of three separate blocks, $c^a c^b c^c$, (shown detached in Figs. 12, 13, and 14, respectively,) whose upper surfaces are recessed, as shown—that is to say, the rear block, c^a , has a deep recess, c^d , with a central ridge, c^e . The middle block, c^b , which is directly in line vertically with the plunger b^4 , has a U-shaped recess, c^f , and the forward block, c^c , has a correspondingly-shaped recess, c^g . On each side of said die-recesses are plates I, which are secured upon the die-blocks by means of screws i' . The inner

edges of these plates are offset at y , as seen in Fig. 5, so that a blank, 1, may be readily placed upon the die, within the space z , formed between the offsets.

The above is a general description of the construction of the machine. Its operation is briefly as follows: The blank 1 is first slid sidewise into the recess z , and the stretcher 2 is placed upon the same with the curved side downward, the end of said stretcher abutting against a rear projection, c^h . The arm d^3 of the lever D is then elevated by any suitable mechanism operated by foot or other power, and the hammer B is thus caused to descend, the stud b' thereupon pressing the stretcher down into the die, and consequently the blank 1, thereby bending the latter (in block e^b) into a U shape around the stretcher. The slotted stud or projection b^3 at the same time strikes the limbs 1^2 of the blank and bends the same outward, as shown. The spud d^6 on the side of the lever-arm d^3 , as the latter ascends, strikes against the curved projecting end e^7 of the vertical spring-controlled lever e^6 on the end of lever E, and slightly elevates the latter, thereby forcing down the plunger e^3 , and therewith the piece e^9 and its cam-blocks e^{12} , which latter press the contiguous blocks F outward. The levers H, connecting said blocks F with the spring-actuated blocks G, force the latter inward, and the jaws g' on the ends thereof thus bear against and force the upturned ends l' of the forks inward or horizontally, as shown in Fig. 7. The spud d^6 as it ascends being disengaged from the curved end of lever e^6 , the larger lever, E, and coacting parts resume their normal position, whereupon, as the arm of lever D further ascends, the plunger b^4 is forced down against said horizontal ends l' , and presses the same down into and against the inner sides of the stretcher, as clearly seen in Fig. 14. The lever D now being released, the parts resume their normal position for a succeeding operation, and so on continuously. By means of the slot d^4 in the lever D the position of the spud d^6 may be readily changed, in order that it will properly strike the spring-lever projection e^7 when either the latter or the spud becomes worn.

l^2 l' are adjusting screws and nuts for limiting the throw of the levers D and E, respectively, and J are like screws and nuts for adjusting the movement of the spring-actuated blocks G.

Having thus described my invention, I claim as new and wish to secure by Letters Patent—

1. In a machine of the class recited, the combination of the hammer, the plunger b^4 , the die, and the transverse wings or jaws, all arranged and operating with relation to each other as shown and described, together with the mechanism for relatively operating said devices, substantially as and for the purpose set forth.

2. The combination of the die, the vertically-reciprocating hammer, the plunger b^4 , the le-

ver connected with said plunger, the transverse reciprocating jaws, the plunger e^3 , with which said jaws are connected, and devices, substantially as described, for relatively operating said hammer and plungers, together with the supporting-frame, substantially as and for the purpose set forth.

3. The combination of the die, the vertically-reciprocating hammer, the plunger b^4 , the lever D, connected with said plunger, the transverse reciprocating spring-controlled jaws, the plunger e^3 , with which said jaws are connected, the lever E, connected with said plunger e^3 , the pivoted spring-controlled projection on the end of said lever E, and the spud on the arm of lever D, substantially as and for the purpose set forth.

4. The combination of the die, the vertically-reciprocating hammer, the plunger b^4 , the lever connected with said plunger, the transverse reciprocating spring-controlled jaws, the plunger e^3 , the cams e^{12} , the blocks F, engaging said cams, and the pivoted lever connecting said blocks and jaws, together with devices for operating said hammer and plungers, substantially as and for the purpose set forth.

5. In a machine of the class recited, the combination of the die, the vertically-reciprocating hammer provided with the stud and slotted projection on its lower end, the spring-controlled plunger working centrally in said hammer, the lever D, the plunger e^3 , its lever E, the spring-elevated cam-blocks, the beveled horizontal blocks engaging therewith, the oppositely-reciprocating wings or jaws loosely connected with said blocks, together with the spud on lever D and pivoted spring projection on lever E, said spud and projection arranged with relation to each other, all substantially as and for the purpose set forth.

6. In a machine of the class recited, the combination of the stationary die, the vertically-reciprocating hammer provided with the stud and slotted projection on its lower end, the spring-controlled plunger working centrally in said hammer, the lever D, provided with the slot therein, the plunger e^3 , its lever E, the spring-elevated cam-blocks, the beveled horizontal blocks engaging therewith, the re-

ciprocating wings or jaws connected loosely with said blocks, together with the spud adjustably secured in said slot, and the pivoted spring-controlled projection on lever E, arranged with relation to the movement of said spud, all substantially as and for the purpose set forth.

7. In a machine of the class recited, the combination of the die, the vertically-reciprocating hammer provided with the stud and slotted projection on its lower end, the spring-controlled plunger working centrally in said hammer, the lever D, the plunger e^3 , its lever E, the spring-elevated cam-blocks, the beveled horizontal blocks engaging therewith, the transversely-reciprocating jaws loosely connected with said blocks, the spud on lever D, and the pivoted spring projection on lever E, arranged with relation to the movement of said spud, together with the adjusting screws and nuts for limiting the throw of levers D and E, respectively, all substantially as and for the purpose set forth.

8. In a machine of the class recited, the combination of the die, the vertically-reciprocating hammer provided with the stud and slotted projection on its lower end, the spring-controlled plunger working centrally in said hammer, the lever D, the plunger e^3 , its lever E, the spring-elevated cam-blocks, the beveled horizontal blocks engaging therewith, the transversely-reciprocating spring-controlled wings or jaws loosely connected with said blocks, the spud on lever D, and the pivoted spring projection on lever E, arranged with relation to the movement of said spud, together with the adjusting screws and nuts for limiting the throw of said wings, substantially as and for the purpose set forth.

9. In a machine of the said class, the combination, with the die, of the laterally-offset plates I, secured on said die, substantially as and for the purpose specified.

In testimony whereof I have hereunto affixed my signature this 24th day of January, A. D. 1888.

CHARLES T. RIETSCHY.

Witnesses:

JNO. NOLAN,
ANDREW ZANE, Jr.