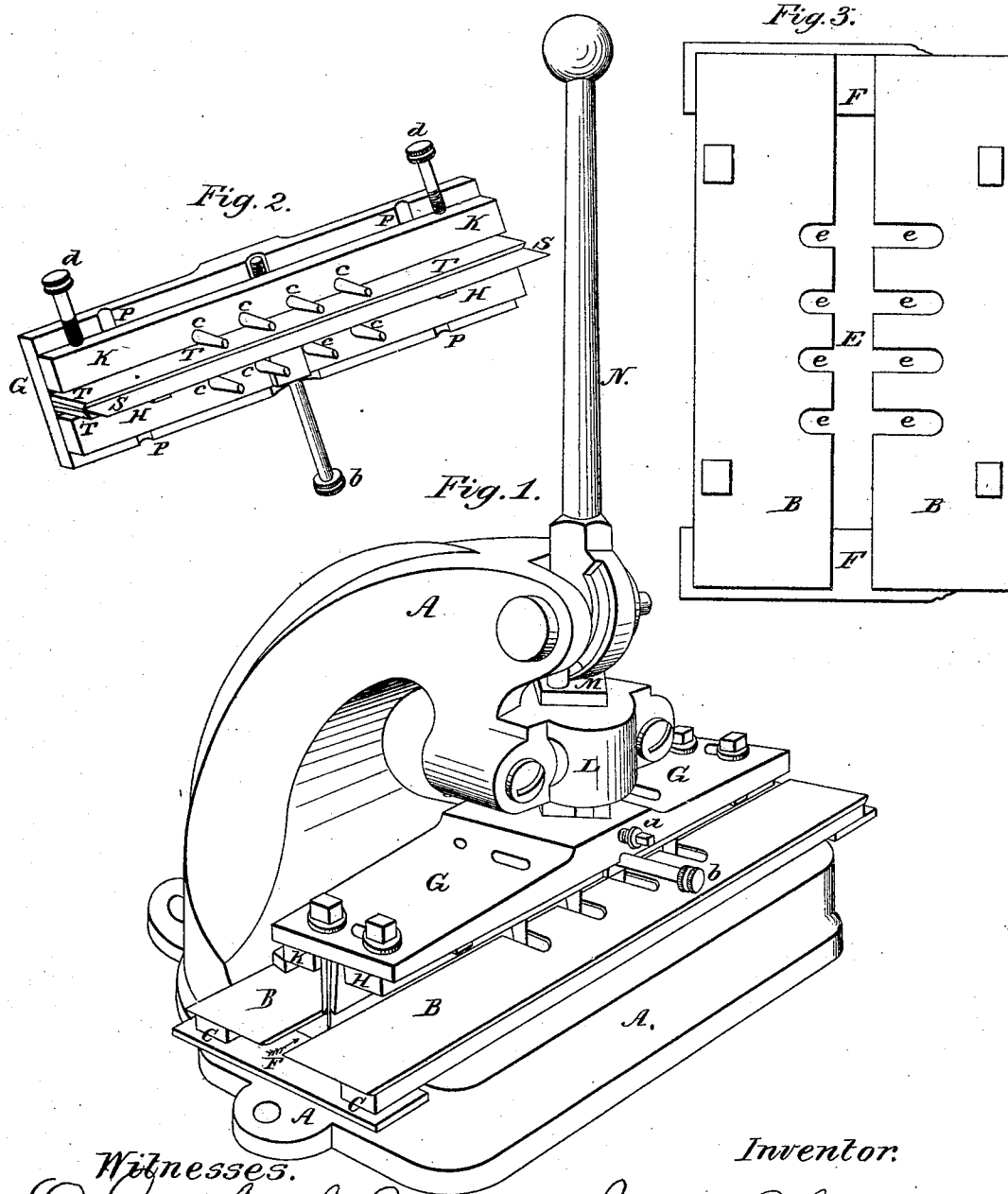


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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN MACHINES FOR PUNCHING, SPLITTING, AND CREASING BRIDLES.

Specification forming part of Letters Patent No. **145,292**, dated December 9, 1873; application filed March 5, 1873.

### *To all whom it may concern:*

Be it known that I, JOSIAH B. GATHRIGHT, of the city of Louisville, State of Kentucky, have invented a new and useful Machine for Punching, Splitting, and Creasing the Crown-Pieces of Bridles, of which the following is a correct specification, reference being had to the accompanying drawings, which form a part of this specification.

The object of my invention is to provide a machine which will facilitate the punching, splitting, and creasing of the "crown-pieces" of that class of bridles in which the crown-pieces are distinct pieces from the cheeks, and are connected to the cheeks by buckles. In these bridles the crown-piece is cut the width of the cheek-piece and throat-strap combined, and each end of the crown-piece is split a distance of seven inches, more or less, so as to afford an end for buckling each of these to. It is necessary to crease along this split to give a proper finish, and four holes, more or less, are wanted in each strap—that is, eight holes in each end of the crown-piece—for buckling to cheeks and throat-straps, and for adjusting. To do this punching, splitting, and creasing accurately is tedious, as heretofore done, but, with the invention below described, it can be done rapidly.

In the drawing, A A is a cast frame, consisting of a base-plate seven or eight inches in width in each direction, and a strong arm projecting up from the rear, and arching half-way over. The plate N is a lever pivoted in suitable bearings in the end of this arm, and is provided with an eccentric, which operates to force down the plunger M. The eccentric has a groove on its side parallel to its face, in which a crooked pin or elbow (attached securely to M) rides, and lifts the plunger during the upward movement of the lever. The plunger M has suitable bearings, L. G is a strong bar, two and a half inches wide by seven inches long, more or less, fitted at its center upon the lower end of the plunger, and securely held by screw *a*. H and K (see Fig. 2) are two bars, about one-half an inch thick and three-fourths of an inch wide, and K is securely attached to bar G, so as to be a fixed base, by which the knife and bar H may be operated, as hereafter described. Along the center of each bar, and

about one inch apart, four punch-tubes are screwed into each bar. The holes made in the bar to admit the tube ends extend through the bar, and corresponding openings are made up through bar G, so that the punchings may pass through. P P are two supporting and guiding pins for the movable punch-bars and knife while moving. The screws *d d* pass through bar K, and are so attached to the knife S as to move it in either direction, as may be desired. One or more similar screws, as *b*, enables us to move the punch-bar H nearer to or farther from K and the knife at will. Both punch-bars may, of course, be made adjustable by having an additional bar or base from which to operate them, or the knife may be movably secured to bar G and serve as a basis for holding and moving the bars. The knife S is long enough to cut a slit seven inches long, more or less, and has width of blade enough to bring its edge slightly below the level of the punch-points, when its back rests against bar G. T T are creasing-blades. They are about three-thirty-seconds of an inch thick, and cover the knife on each side from its back down to a point about one-eighth of an inch, more or less, from its edge. The lower edges are beveled inwardly toward the knife along their entire length, thus giving an edge which, when pressed with force upon the leather, makes an impression similar to that made by the creasers heretofore in use. This method of creasing avoids the necessity of doubling back each strap while creasing the other, which gave a wrinkled surface to the leather. The base-plate of cast frame A has a wide rectangular groove across its upper surface, immediately under and parallel to bar G. This groove is two and one-half inches wide, more or less, and about three-fourths of an inch deep, and into this is fitted the wooden block or other substance upon which the punching or cutting is to be done. Two parallel bars, C C, serve to continue the sides of the groove upward above the level of the block, and form a guiding-chute, F, for the strap. These bars should be about one-fourth of an inch thick, and may be cast as part of the base-plate or attached to it afterward. B B are thin metal plates securely fixed upon the bars C C, and extend out over the chute, to keep the strap down and prevent its being

drawn up by adhering to the punches and knife. The openings *e e*, as seen in Fig. 3, are to accommodate the punches, while the longitudinal opening or space between the two bars *B B* is left to accommodate the movements of the knife.

It will now be seen that, if a crown-piece strap be placed in the chute *F* and the lever *N* be brought down, eight holes will be punched in the strap, a slit made the length of the knife, and creases made along each side of the slit. Four of the holes will be on each side of the slit, and by moving the punch-bar by the thumb-screw, the punches may be set so as to punch each strap along its center. In the same manner the slit may be made at any place desired by means of screws *d d*. To adapt the chute to the crown-straps of different widths, and at the same time to cause the strap to pass into any desired position with respect to the knife and punches, an inner chute is formed by arranging two movable parallel bars so that one will be on each side of the main chute just within the bars *C C*. These guide-bars may be moved independently toward and from each other at will, by means of screws passing through the bars *C C*; or their ends may be turned back at right angles, so as to lie against the ends of bars *C C*, with a slot in the arms so turned back, through which thumb-screws pass into the ends of *C C*. These thumb-screws have shoulders, and when the bars are placed in desired position, a turn of the thumb-screw clamps the arms between the screw-shoulders and the ends of *C C*, thus holding them.

In place of the slot and screw-clamp, the arms turned back may be notched, and a spring placed above with a catch. When it is desired to move the bars either way, this spring-catch is lifted by one finger, while the bar is moved to desired position, when the spring-catch is released, and, catching into a notch, holds the bars fast.

Simple bars, of different widths, may be used to slip in along the sides of the chute, and contract it from either side at pleasure; but this does not allow such an infinite variation as the other plan.

To aid in setting accurately the punch, bars, and knife for the various sizes of the crown-piece, the end of bar *G* may be laid off, like a rule, into inches and fractions thereof, and similar divisions, corresponding exactly to the above, may be marked on plates *B B* near their ends, by which the guide-bars, which

form the variable chute, may be set in the desired position with respect to the knife and punches. Any suitable material may be used below to cut and punch upon. If wood be used, a board of suitable width and thickness to fill the groove, with eight holes through at the points where the eight punches come down, and tough wooden pins driven into these holes, will afford a good punching-surface on ends of these pins, and the pins may be easily replaced when worn.

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

1. The punch-bars *H* and *K*, with their punches, with their lines of punch-tubes adjustable with respect to each other, substantially as and for the purpose herein shown and described.

2. The punch-bars *H* and *K*, with their punches, and knife *S*, adjustable with respect to each other, substantially as and for the purpose herein shown and described.

3. The bar *G*, in combination with punch-bars *H* and *K*, with their punches, also with knife *S*, substantially as and for the purpose herein shown and described.

4. The punch-bars *H* and *K*, with their punches, knife *S*, and variable chute *F*, arranged in relation to each other substantially as and for the purpose herein shown and described.

5. In combination with the knife *S*, the creasers *T* and *T*, substantially as and for the purpose shown and set forth.

6. In combination with the bars *H* and *K*, knife *S*, and chute *F*, the plates *B B*, with their openings *E* and *e*, and substantially as herein shown and described.

7. A machine combining the lines of punch-tubes, a knife, and creasers, substantially as herein shown and described.

8. A machine for punching, splitting, and creasing the crown-pieces of bridles, combining the frame *A*, cam-lever *N*, plunger *M*, bar *G*, punch-holders *H* and *K* and their punches, knife *S*, creasers *T T*, guide-chute *F*, flanges *B B*, and openings *E*, *e*, and *c*, substantially as herein shown and described.

Witness my hand this 24th day of February, 1873.

JOSIAH B. GATHRIGHT.

Witnesses:

H. GREENEBAUM,  
H. P. GILLOCK.