

UNITED STATES PATENT OFFICE.

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PERFORATING CANCELING-STAMP.

SPECIFICATION forming part of Letters Patent No. 486,906, dated November 29, 1892.

Application filed March 19, 1892. Serial No. 425,566. (No model.)

To all whom it may concern:

Be it known that I, JOHN STENWALL, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Perforating Canceling-Stamps, of which the following is a specification.

The object of this invention is to provide a device of a strong, simple, and durable construction for use as a canceling and perforating stamp and by means of which a number of checks or papers may be simultaneously and easily perforated and canceled and to adapt the device for use in banks and counting-houses, where large numbers of checks or papers are required to be canceled and where it is desirable that the canceling-instrument should be capable of operating upon a stack or pile of checks at a time.

To this end my invention comprises a bed-plate adapted to be fastened to a table or other support and furnished with a die-plate, in connection with a group of punches adapted and arranged to perforate canceling characters—such, for example, as the letters "Paid"—a plunger, and punch-plate secured thereto and having holes through which the punches pass and in which they loosely fit and by which the punches are loosely suspended by their heads, so that they may be free to self-adjust themselves to the die-plate and the guide-plate, said plunger reciprocating in a suitable guide to which the guide-plate for the punches is attached, the plunger being operated by a lever having a pivoted toggle-link connecting the same with the plunger to give a knee-joint or toggle-lever action to the plunger, said punches being of different and graduated length, so that the different sets or series of punches shall come into operation successively, and the punches of the same length or series being arranged with approximate equality of number at each end and at each side of the center of the plunger, so that the plunger may operate squarely and the varying lengths of the different sets of punches not tend to tilt the plunger or cause it to bind in its guides or to throw a side strain upon the punches themselves in their guide-plate and die-plate.

The invention consists in the novel devices

and novel combinations of parts and devices herein shown and described, and more particularly pointed out in the claims.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a plan view of a perforating canceling-stamp embodying the invention. Fig. 2 is a side elevation of the same. Fig. 3 is a central longitudinal section. Fig. 4 is a detail elevation of the punch and plungers. Fig. 5 is a plan view of the die-plate. Fig. 6 is a sectional view of the plunger, showing one longitudinal line of the punches, taken on the broken line 6 6 of Fig. 4. Fig. 7 is an enlarged detail sectional view showing the form of the punches and the manner of suspending the same loosely from the plunger by the punch-plate.

In the drawings, A represents a table or other support to which the bed-plate B is secured by screws *a*. The die-plate C is furnished with a series of holes *c*, one for each of the punches, and is rigidly secured to the bed-plate B by four pins or rivets *c'*, the bed-plate B having a recess *b* to receive the die-plate.

Secured rigidly to the bed-plate B by dowels *b'* and screw-bolt *b²* is a frame-block D, furnished with a guide or slideway D' for the plunger F and a guide-plate G for the punches H. The frame-block D is furnished with a cap-plate P, secured over the guide D' by screws *p*, and which is furnished with a hole or bearing P' for the stem F' of the plunger to fit in. The punches H are each furnished with a head *h*, the heads of all the punches fitting loosely in a transverse slot or recess *f* in the lower face of the plunger F, and the punches are all suspended loosely from the plunger F by a punch-plate F², secured rigidly to the plunger F by screws *f'*. The punch-plate F² is furnished with a series of holes *f²*—one for each of the punches—which are made somewhat larger than the diameter of the punches, so that the punches will fit loosely therein to adapt them to automatically accommodate themselves in position and direction to the guide-holes *g* in the guide-plate G and to the die-holes *c* in the die-plate C. The depth of the slot or recess *f* in the lower face of the

plunger F is likewise somewhat greater than the thickness of the heads h of the punches, so that the heads of the punches will not bind. This is clearly shown in Fig. 7. For the same reason, also, the heads of the punches are made slightly rounding. The stem F' of the plunger is furnished with a slot f^3 to receive the pivoted link R, by which the same is connected to the operating-lever T. The cap-plate P is furnished with ears P^2 , to which the operating-lever T is pivoted by a pin t . The link R is pivoted to the operating-lever by a pin t' , which passes through ears t^2 on the operating-lever T. These ears t^2 constitute the short arm of the operating-lever and, in connection with the link R, give a very powerful pressure, somewhat in the nature or principle of a toggle-lever or knee-joint action as the pivots f^4 , t' , and t approximate a straight line, when the punches H are thrust home in the die-plate, as indicated in Fig. 3. The punches H have each square cutting faces or ends h' , and the entire group of punches may be arranged to perforate any desired character or characters—such, for example, as the letters "Paid." These perforating-punches are of several different lengths, so that they may come into action successively, and thus lessen the force required to operate the stamp. As illustrated in the drawings the punches are thirty-seven in number, and they are arranged in five different series or sets h^2 h^3 h^4 h^5 h^6 , the punches of each set being of the same length and the several sets of punches differing in length from each other slightly. Part of the punches of each set, as is clearly indicated in Fig. 5 by the letters of reference h^2 h^3 h^4 h^5 h^6 , which indicate in this figure the relative position of the several sets of punches, are distributed with approximate equality about the center of the die or plunger, so that the resistance offered by each set of punches shall be distributed with approximate regularity about the center of the operating-plunger. Dotted lines xx and yy are drawn on the angle or inclination of a line extending from the shortest punches on one side to the longest punches on the other and are intended to indicate the distribution or arrangement of part of the short punches on one side and part on the other and part of the long punches on one side and part on the other. It will be seen or understood that the punches are each so small that it would not be possible to make a dotted line simply across the punches individually to indicate the shorter punches behind, and the extended dotted lines xx and yy are simply an expedient to indicate the length of punches behind those which are shown in this figure. This prevents any side strain or binding strain being thrown either upon the punches in their guide-plate or upon the plunger in its guideway and very materially increases the durability of the machine, and also insures its easy and proper operation.

The frame-block D is furnished with a rub-

ber or yielding stop d for the handle-lever T to strike or rest against.

As the punches H are suspended loosely and freely from the plunger by their heads and can readily accommodate themselves to the guide-plate G and die-plate C, they operate freely and easily and without binding, and there is little danger of their becoming broken or injured; but if any punch should be broken or injured or become worn or the whole set of punches become worn it or they can be readily replaced by simply taking off the removable punch-plate. As the punches fit loosely and freely in the punch-plate F^2 , there is no difficulty or labor required for securing or adjusting the punches in proper position, as is the case where the punches are secured rigidly to their operating-plunger.

The punch-plate F^2 is secured rigidly and firmly to the plunger F by four screws f' . The punch-guide plate G is secured rigidly to the frame-block D by screws or pins g' , the block D being furnished with a suitable recess to receive it.

The thickness of the guide-plate G is such, in connection with the space c^2 for the paper between the die-plate C and said guide-plate G, that the stroke of the plunger will not draw the shortest punches entirely through or out of said guide-plate.

As illustrated in Figs. 4, 5, and 6, some of the longest set of punches are preferably distributed or arranged at each end and each side of the rectangular area occupied by the punches.

As the punches have square ends or cutting-faces, they will wear evenly and regularly and make clean-cut perforations through the paper.

The punch-plate F^2 being rigidly and directly secured to the operating-plunger, which is connected positively with the operating-lever, serves as a positive device for withdrawing the punches H by the reverse stroke of the lever T from the package of checks or papers being perforated or canceled, while the punch-guide plate G co-operates therewith in this operation to strip the papers or checks from the punches and prevent the same from being torn, as all the punches are withdrawn therefrom simultaneously. This positive withdrawal of the punches by operation of the lever T on its reverse stroke is an important feature, as owing to the multitude of perforating-punches and the pile or thickness of paper perforated thereby a spring would not practically serve to perform this function; and for a like reason the punch-guide plate G, with its separate guide-holes g for each of the punches, is an important element to effect the withdrawal of all the punches simultaneously from the pile of papers, as it prevents the tearing or mutilation of the papers by supporting the same close around and between each and all of the punches.

I claim—

1. The combination, in a canceling-stamp,

with a die-plate, of a plunger having a group of punches loosely suspended therefrom and arranged to perforate a canceling character or characters, a guide for said plunger, and a fixed guide-plate for guiding said punches, said guide-plate for said punches being secured rigidly to said plunger-guide, substantially as specified.

2. The combination, in a canceling-stamp, with a bed-plate and die-plate secured thereto, of a guide for said plunger, a group of punches having heads and arranged to perforate characters, a punch-plate secured to said plunger and having holes in which said punches loosely fit and from which plate said punches are loosely suspended by their heads, the holes in said punch-plate being of larger diameter than the punches, and a guide-plate for said punches, having holes therefor registering with the die-holes in said die-plate, said punch-guide plate being secured to the plunger-guide, substantially as specified.

3. The combination, in a canceling-stamp, with a bed-plate and die-plate secured thereto, of a plunger, a guide for said plunger, a group of punches having heads and arranged to perforate characters, a punch-plate secured to said plunger and having holes in which said punches loosely fit and from which punch-plate said punches are loosely suspended by their heads, and a guide-plate for said punches, having holes therefor registering with the die-holes in said die-plate, and a lever and connecting-link for operating said plunger positively in both directions, substantially as specified.

4. The combination, in a canceling-stamp, with a bed-plate and die-plate secured thereto, of a plunger, a guide for said plunger, a group of punches having heads and arranged to perforate characters, a punch-plate secured to said plunger and having holes in which said punches loosely fit and from which punch-plate said punches are loosely suspended by their heads, a guide-plate for said punches, having holes therefor registering with the die-holes in said die-plate, a lever for operating said plunger, a cap secured to the guide for said plunger and furnished with ears to which said operating-lever is pivoted, and a connecting-link pivoted to said plunger and to the short arm of said lever and having a toggle or knee joint action therewith, substantially as specified.

5. The combination, with bed-plate B, having die-plate C secured thereto and furnished with holes *c*, of frame-block D, secured to said bed B and furnished with plunger-guide D' and punch-guide G, having holes *g*, plunger F, having stem F' and slot or recess *f*, punch-plate F², having holes *f*² to receive the punches, of larger diameter than the punches, punches H, having heads *h*, by which they are loosely suspended from said plate F², cap P, secured to said block D and having a hole or bearing P' for the stem of said plunger, and ears P²,

link R, and operating-lever T, substantially as specified.

6. The combination, in a hand perforating-stamp, with a die-plate, of a plunger having a group of punches loosely suspended therefrom and arranged to perforate characters and a fixed guide-plate registering with said die-plate for guiding said punches, said punches being in two or more different sets or series of graduated or different lengths, so that the several sets or series will come into operation successively, and said punches having square ends or cutting-faces, substantially as specified.

7. The combination, with a die-plate, of a plunger having a group of punches loosely suspended therefrom and a fixed guide-plate registering with said die-plate for guiding said punches, said punches being in two or more different sets or series of graduated lengths, so that the several sets or series will come into operation successively, and the punches of the same length being distributed around the center of the plunger, thus causing the plunger to operate squarely, notwithstanding the different lengths of the punches, substantially as specified.

8. The combination, in a perforating-stamp, of a group of punches having heads and arranged to perforate characters, a plunger carrying a punch-plate furnished with holes slightly larger in diameter than the punches and in which the punches fit loosely, said punches being loosely suspended from said plate by their heads, a guide for said punches, and a female die, substantially as specified.

9. The punch-carrying plunger F, having slot or recess *f* to receive the heads of the punches and provided with removable punch-plate F², secured to said plunger and furnished with a series of holes for the punches of larger diameter than the punches, and a group of punches loosely suspended by their heads from said punch-plate, said slot or recess in the plunger being but slightly deeper than the thickness of the punch-heads, so as to operate all the punches simultaneously and at the same time leave the punches loose and free to adjust themselves in position in respect to their guide-plate and the die-plate, in combination with a fixed die-plate and a fixed guide-plate for said punches, substantially as specified.

10. The combination, in a perforating-stamp, with a bed-plate and die-plate secured thereto, of a reciprocating plunger, a fixed guide for said plunger, a group of punches having heads and arranged to perforate characters, a punch-plate secured to said plunger and having holes in which said punches loosely fit and from which plate said punches are loosely suspended by their heads, a fixed guide for said punches arranged just above the die-plate, so that the same will operate also as a stripper-plate to strip the paper from the punches as they are withdrawn, an oper-

ating-lever, and connecting-link for operating said plunger positively in both directions to perforate the paper and withdraw the punches therefrom, substantially as specified.

- 5 11. The combination, with bed-plate B, having die-plate C, furnished with holes *c*, secured thereto, separate frame-block D, secured to said bed B and furnished with plunger-guide D', and a separate or removable
10 punch-guide plate G, having holes *g* for the punches, of plunger F, having separate punch-plate F², furnished with holes for the punches, punches H, furnished with heads *h*, separate or removable cap P, secured to said block D,
15 operating-lever T, pivoted to said cap P, and connecting-link R, pivoted to said lever and to said plunger, substantially as specified.
12. The combination, in a hand-operated

perforating-stamp, with a die-plate, of a plunger carrying a group of punches, the punches 20 being in two or more sets of slightly-different lengths to cause the same to come into operation successively, an operating-lever T, and connecting-link R, pivoted to the short arm 25 of said lever and to said plunger, the two pivots of said link and the fixed pivot of said lever being combined and arranged, substantially as shown and described, so that said 30 three pivots approach more nearly a straight line, and thus increase the power of the lever as the successive sets of punches come into operation, substantially as specified.

JOHN STENWALL.

Witnesses:

H. M. MUNDAY,
LEW. E. CURTIS.