J. C. PARKER & C. T. KEET.

PERFORATING MACHINE.

APPLICATION FILED JUNE 29, 1916.

1,259,551. Patented Mar. 19, 1918.

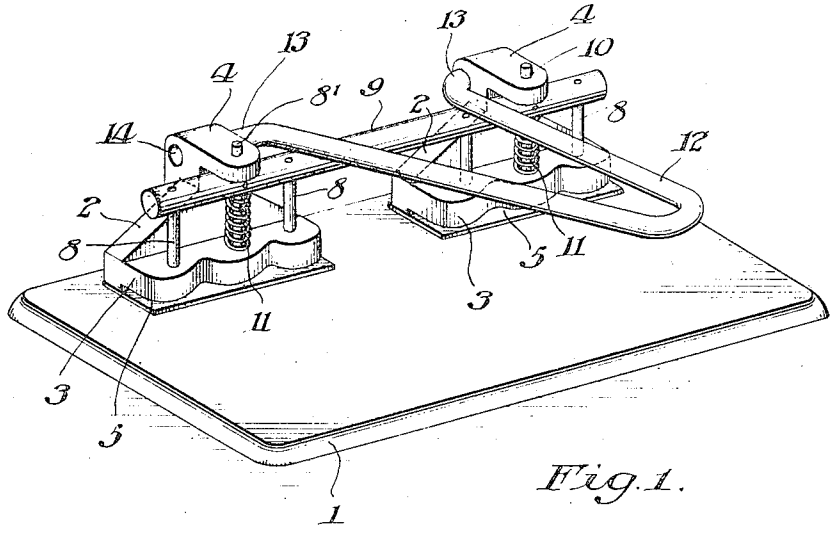


Fig. 1.

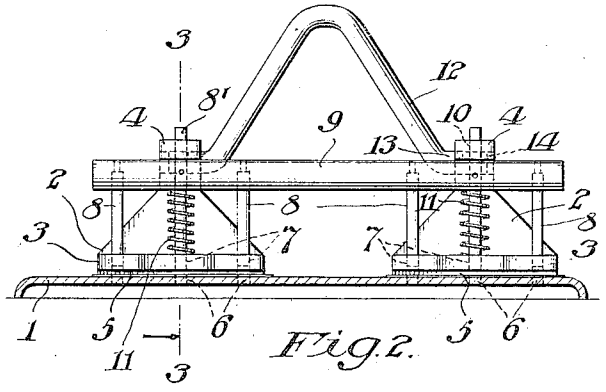


Fig. 2.

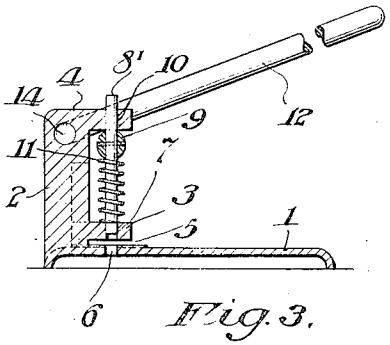


Fig. 3.

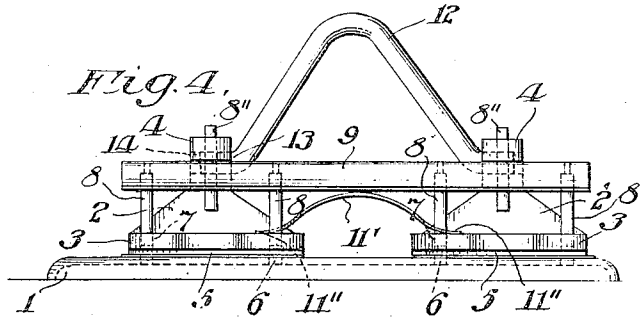


Fig. 4.

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UNITED STATES PATENT OFFICE.

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PERFORATING-MACHINE.

1,259,551. Specification of Letters Patent. Patented Mar. 19, 1918.

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To all whom it may concern:

Be it known that we, JOHN CLINTON PARKER and CLARENCE TRUMAN KEET, citizens of the United States, residing, respectively, at Bala, Montgomery county, Pennsylvania, and Philadelphia, Philadelphia county, Pennsylvania, have invented an Improved Perforating-Machine, of which the following is a specification.

This invention is an improved device designed primarily for perforatng loose leaves to adapt them for insertion in binders or loose leaf books, but it will be understood that it is applicable to perforating sheet material generally to adapt the same for various uses.

The primary object of our invention is to provide a simple, inexpensive and efficient punching apparatus, and we attain this object in a satisfactory manner by a base plate having one or more standards provided with guides and bearings, in combination with a bar having one or more guides and punches controlled so as to avoid binding, means for elevating the bar, and a lever adapted for depressing the bar together with the punches for effecting the perforating operation.

Our device is characterized by its adaptability for variation to different uses as well as by its advantages over prior machines of the same general character due to its simplicity, its facility for the association or dissociation of parts, its small number of separable parts, its reduction of the tendency to get out of order, and its improved control of the punches.

In the accompanying drawings, Figure 1 is a perspective view of a perforating machine embodying our improvements; Fig. 2 is a part sectional front elevation of the same; Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2; and Fig. 4 is a broken front view of a modified construction embodying our improvements.

The mechanism, in the form thereof illustrated in the drawings, comprises the base plate 1 having cast therewith the standards 2 provided with laterally extending guides 3 and 4, forming an integral structure. The guides 3 are disposed above the top of the base 1 a sufficient distance to provide ways 5 for the insertion of sheets to be perforated, the sheets being positioned by contact with the standards at the rear of the ways, and it will be understood that liners may be inserted in the backs of these ways to gage the distance of the perforations from the edges of the paper.

As illustrated in Figs. 1 to 3 inclusive, the base 1 has therein holes 6 and the guides 3 contain holes 7 in alinement with the respective holes 6 for the passage of punches 8 and 8′.

These punches 8 and 8′ are set in a bar 9, the punches 8′ extending upwardly from the bar through the holes 10 in the guides 4.

Coiled springs 11 are disposed on the punches 8′ between the guides 3 and bar 9, to elevate the latter together with the punches connected thereto.

A substantially V-shaped lever 12 is provided with laterally extending journals 13 which are disposed in the bearings 14 of the standards 2, the lever being made of resilient material so that its bifurcations can be pressed together to effect the insertion and withdrawal of the journals relatively to their bearings. This lever is adapted for engaging the bar 9 between the guides 4 for pressing it downwardly against the actions of the springs 11, to cause the punches 8 and 8′ to perforate sheets inserted in the ways 5.

The punches move through the holes or bearings which guide them without deflection or lateral movement due to the means for guiding them truly, thus avoiding usual binding and irregular punching.

It will be understood that if it is desired to vary the character of the perforating operation or the spacing between the holes, one or more of the punches may be removed.

In the form of the device shown in Fig. 4, punches 8 are fixed to the bar 9 but for the punches 8′ there have been substituted the guide pins 8″. These pins may be fixed to the bar 9 and movable through the guides 4 or fixed to the guides 4 and movable through the bar as desired. A half elliptical spring 11′ is provided with bifurcated ends 11″ which straddle punches 8 and bear upon the projections 3, the spring's crown being disposed at the median point of and in contact with the bar 9. The perforating operation involves a comparatively slight angular movement of the lever to effect the necessary depression of the bar 9 in operating the

punches 8 and a comparatively slight movement of the thus flattened spring 11′ to restore the parts to normal position.

Having described our invention, we claim:

1. The combination with a base provided with a standard having bearings for punching devices and a bearing for a guiding device between said bearings first named, of a bar disposed between said first and second named bearings and having fixed thereto punching devices movable in said first named bearings and a guiding device between said punching devices and movable in said second named bearing, a lever fulcrumed on said standard and adapted to move said bar, and a spring adapted to restore said bar when released by said lever.

2. The combination with a base provided with a plurality of standards each having bearings for punching and guiding devices, of a bar having fixed thereto punching devices movable in bearings aforesaid and guiding devices movable in bearings aforesaid, said bar being disposed between said first and second named bearings, a substantially V-shaped lever having its ends fulcrumed in said standards and extending transversely to and adapted for moving said bar, and a spring adapted to restore said bar when released by said lever.

In testimony whereof we have hereunto set our names this 24th day of June, 1916.

JOHN C. PARKER.
CLARENCE T. KEET.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."