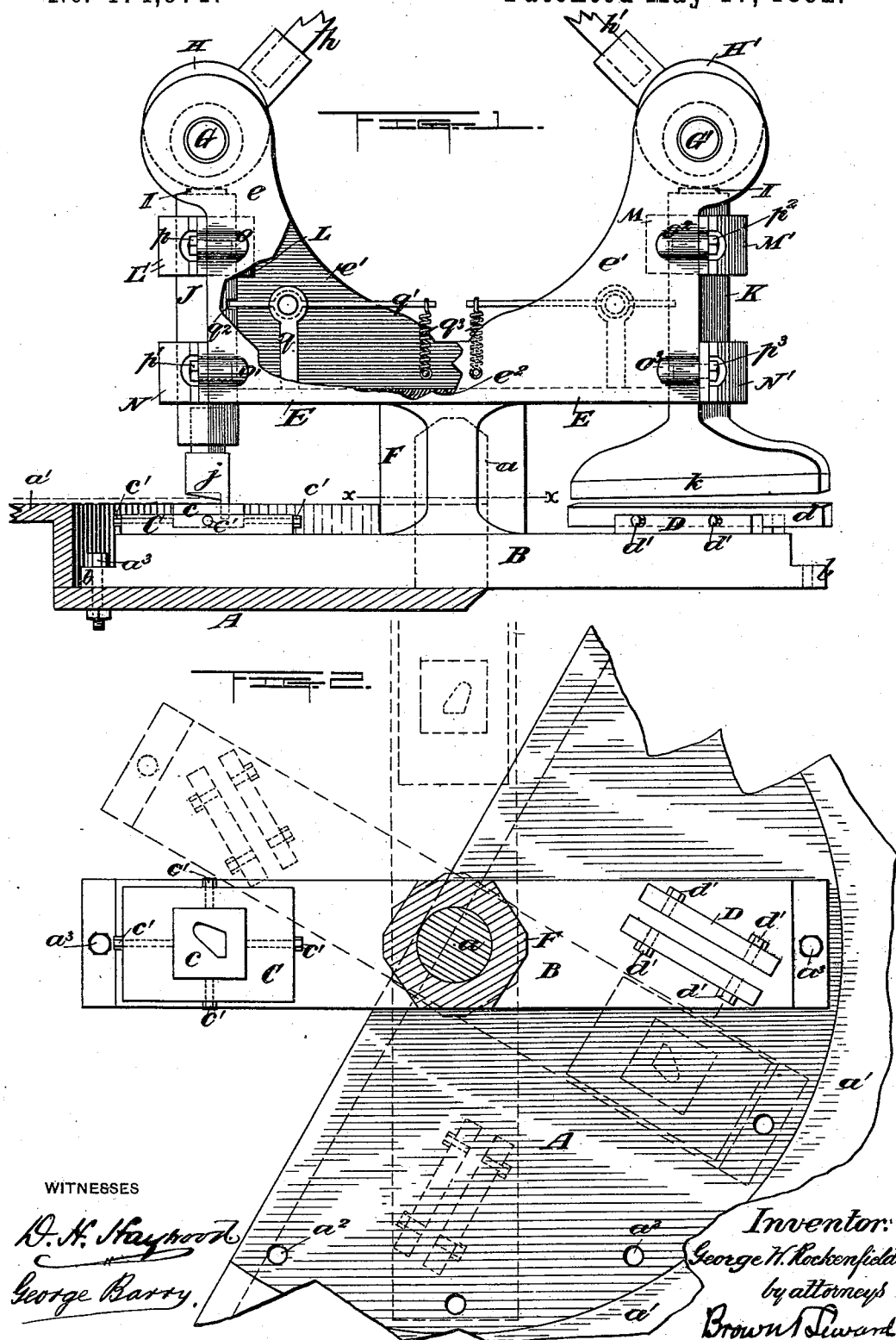


G. W. ROCKENFIELD.
PUNCHING AND SHEARING MACHINE.

Patented May 17, 1892.



UNITED STATES PATENT OFFICE.

GEORGE W. ROCKENFIELD, OF PARKERSBURG, WEST VIRGINIA.

PUNCHING AND SHEARING MACHINE.

SPECIFICATION forming part of Letters Patent No. 474,971, dated May 17, 1892.

Application filed May 6, 1891. Serial No. 391,715. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. ROCKENFIELD, of Parkersburg, in the county of Wood and State of West Virginia, have invented a new and useful Improvement in Punching and Shearing Machines, of which the following is a specification.

My invention relates to an improvement in punching and shearing machines, and more particularly to machines of the above character which are adapted to operate upon saws of various kinds for gumming, cutting, &c.

The object of my present invention is to provide a punching and shearing machine compact and simple in its structure and adapted to be rotated to bring either the punching or shearing tools into the desired position with respect to the work to be operated upon while the latter is held at the desired level to be operated upon.

A further object is to provide simple means for compensating for the wear of the tools and for holding the work at the proper relation thereto.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 is a side view, a portion of the machine being broken away to more clearly show the arrangement for retracting the die; and Fig. 2 is a top plan view on line *xx* of Fig. 1, the lower shear-blade being removed.

A is the bed-plate, which may be attached to a bench in any well-known manner. Permanently attached to the bed-plate A is a pivot *a*, on which the machine is mounted to freely rotate. A curved upwardly-extending rim at the margin of the bed-plate is provided with an outwardly-projected flange *a'* about on a level with the cutting-faces of the tools. The bed-plate is also provided with pin or bolt holes *a²*, adapted to receive a pin or bolt *a³*, which passes through the base of the machine, thereby rigidly holding the same in any required position. Instead of these bolt-holes I may provide a continuous semicircular slot, through which the bolt *a³* may pass. The bolt may be fastened by a nut, as is common.

B represents the base of the machine, which is preferably oblong in shape. It is provided with flanges *b*, through which the adjusting-bolt *a³* passes. A die-holder C is situated

near one end of the base B, and a shear-holder D is situated near the opposite end. A die *c* is shown secured in the holder C in the present instance by means of set-screws *c'*. The shear-holder C is set diagonally across the base and has one shear-blade *d*, secured therein in the present instance by means of set-screws *d'*. The base B is permanently attached to the superstructure E by means of a neck F, into which the pivot *a* projects through the middle portion of the base. The parts E, F, and B are preferably cast in one piece. The superstructure E consists of two plates *e* and *e'*, uprising from the plate *e²* at the upper end of the neck F. Cams H and H' are mounted upon suitable supports G G' between the upper ends of the plates *e e'*, the said cams being provided with operating-levers *h h'*. The cams H H' operate the punches and shears. The punch-holder is denoted by J and the holder for the upper blade of the shears by K. They are each provided at their upper ends with removable bearing-pieces I, so that whenever the punch or shear is shortened by wear or otherwise it may be compensated for by inserting a thicker piece and so causing the cams to give the proper throw. The punch and shear holders J K are square in cross-section and are inserted diagonally between the plates *e e'*. The upper parts of the holders are secured in a sliding position between inner and outer sections of angular boxes L L' M M'. The lower parts are secured by recessing the base *e²* and then securing the angular box-sections N N'. Lugs *o o' o² o³* are cast on the outside of the plates *e e'*. The angular boxes are secured to the plates by means of bolts or screws *p p' p² p³*, passing through flanges on said boxes and into the lugs. The bottom of the punch-holder J is recessed to receive the shank of a punch *j*. The shear-holder K has the upper blade *k* either cast integrally therewith or fastened thereto.

Between the plates *ee'* are mounted spring-retractors, which are constructed as follows: A post *q* is fixed to the plate *e²* in any suitable manner. On the top of this post is mounted a bar or rod *q'*, one end of which enters a recess *q²* in the punch or shear holder and the other end is attached to a retracting-spring *q³*, which spring is made strong enough to re-

tract the punch-holder by means of the bar q' whenever the cam-operating lever is raised. Another retracting-spring operates on the shear-holder in the same manner.

5 By the above construction and arrangement of parts I am enabled to swing the punching and shearing tools into position to operate upon the saw or other article in any direction, while the structure as a whole is compact and
10 simple and may be readily adjusted to various ordinary supports.

What I claim is—

The combination, with a bed-plate having

an elevated flange adapted for forming the work-support, of a punching and shearing machine pivotally secured to the bed-plate and 15 having the cutting-faces of its tools substantially in the plane of the elevated flange of the bed-plate, and means for adjusting the punching and shearing machine in rotary ad- 20 justment, substantially as set forth.

GEORGE W. ROCKENFIELD.

Witnesses:

H. J. RAICHE,

O. J. HULL.