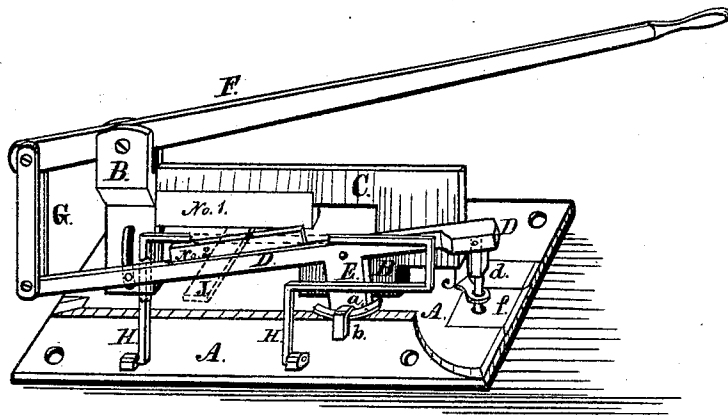


C. SWANSON.

Combined Punching and Shearing-Machines.

No. 145,694.

Patented Dec. 16, 1873.



Witnesses,
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UNITED STATES PATENT OFFICE.

CHARLY SWANSON, OF NEWTON, IOWA.

IMPROVEMENT IN COMBINED PUNCHING AND SHEARING MACHINES.

Specification forming part of Letters Patent No. **145,694**, dated December 16, 1873; application filed November 4, 1873.

To all whom it may concern:

Be it known that I, CHARLY SWANSON, of Newton, in the county of Jasper and State of Iowa, have invented a Combined Punch and Shears, of which the following is a specification:

My invention is a simple, strong, and durable machine, designed to be used alternately for cutting and punching metals. It consists in mounting a compound lever upon a frame, specially formed and adapted therefor, and combining therewith a punch and die and shear-blades, in the manner and for the purposes hereinafter fully set forth.

My drawing is a perspective view, illustrating the construction and operation of my invention.

A A represent the base of my machine, in the form of an oblong metal plate. It is increased in thickness through its longitudinal center, where the frame is secured thereto, and also under the punch, where the die is inserted and secured thereto. B B are the uprights of the skeleton metal frame, cast solid with the base A A, or rigidly secured thereto in any suitable manner. C C are the horizontal bars or plates that form part of the skeleton frame. They may be cast solid with the base and uprights, or attached thereto in any suitable way that will produce a rigid, solid frame and support for the operative parts of the machine. D D is a lever, mounted upon the skeleton frame B C, and has its pivot and fulcrum in the right-hand upright B. A bolt or screw serves as a pivot and fulcrum. A cam or pin attached to the left portion of the lever D travels in a segmental slot formed in the left-hand upright B, and serves to retain and guide the movable lever in its operations of punching and shearing. E is a branch of the lever D, and depends from the point where the lever is pivoted. *a* is a flange of segmental form, on the bottom of the branch E. *b* is a bearing, of elbow form, attached to the base A immediately under the pivoted point of the lever D. It bears upon the flange *a* on the branch E, and aids in retaining and guiding and steadying the movements of the lever D, which carries the punch and one of the shear-blades. F is a hand-lever, pivoted in a slot in the top of the left-hand upright B. It extends to the right, over and beyond the machine. G is a com-

mon link-connection, uniting the left ends of the levers D and F. *c* is the punch, pivoted to the right end and short arm of the lever D in any suitable manner. *d* is an adjustable stay-plate, held to the frame B C by set-screws. The punch passes through this plate, and is thereby guided to the die. *f* is a movable die, in the form of a plate, dovetailed in a recess prepared for it in the end of the base A.

Punches and dies of various forms and sizes can be attached, in places prepared for them, to press and perforate metal with any design or form desired.

No. 1 is a shear-blade, fitted and rigidly attached with set-screws, or in any suitable way, to the left end of the upper frame-bar C. No. 2 is a corresponding blade, attached in a similar manner to the moving lever D. H H is an adjustable holder, of bench form, pivoted to ears projecting from the base A, or in any other suitable manner. It serves to hold the metal in place, and horizontal, when placed in the shears to be cut, as illustrated by the bar J. By this means one person can operate the shears.

When a bar is properly placed in the shears, and under the holder H, it needs no further attention, and the operator can press down the lever F and cut the bar off at the point desired, and then replace it and cut it again, if required.

The manner and convenience of using my machine, alternately as a punch and shears, are obvious, and the advantages of my long and compound levers to gain power are apparent.

I am aware that a punch and shears have been combined; but I claim that my manner of combination and form of machine is a new and valuable improvement.

My machine may vary in size, to suit different work-shop uses.

I claim as my invention—

The base A A, frame B B C C, the lever D having pendent branch E with flange *a*, and carrying a punch and a shear-blade, the lever F, link-coupling G, stay-plate *d*, die *f*, and holder H, when combined to form a punch and shears, substantially as described.

Witnesses: CHARLY SWANSON.

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