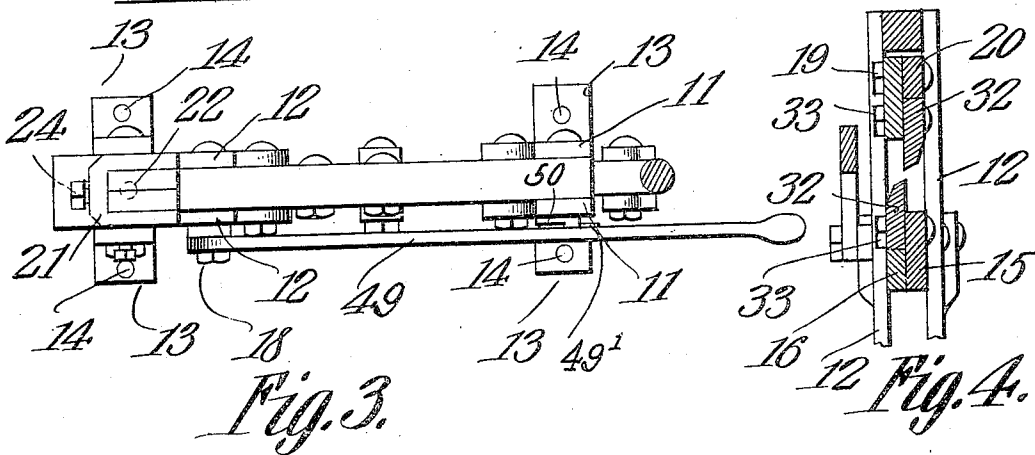
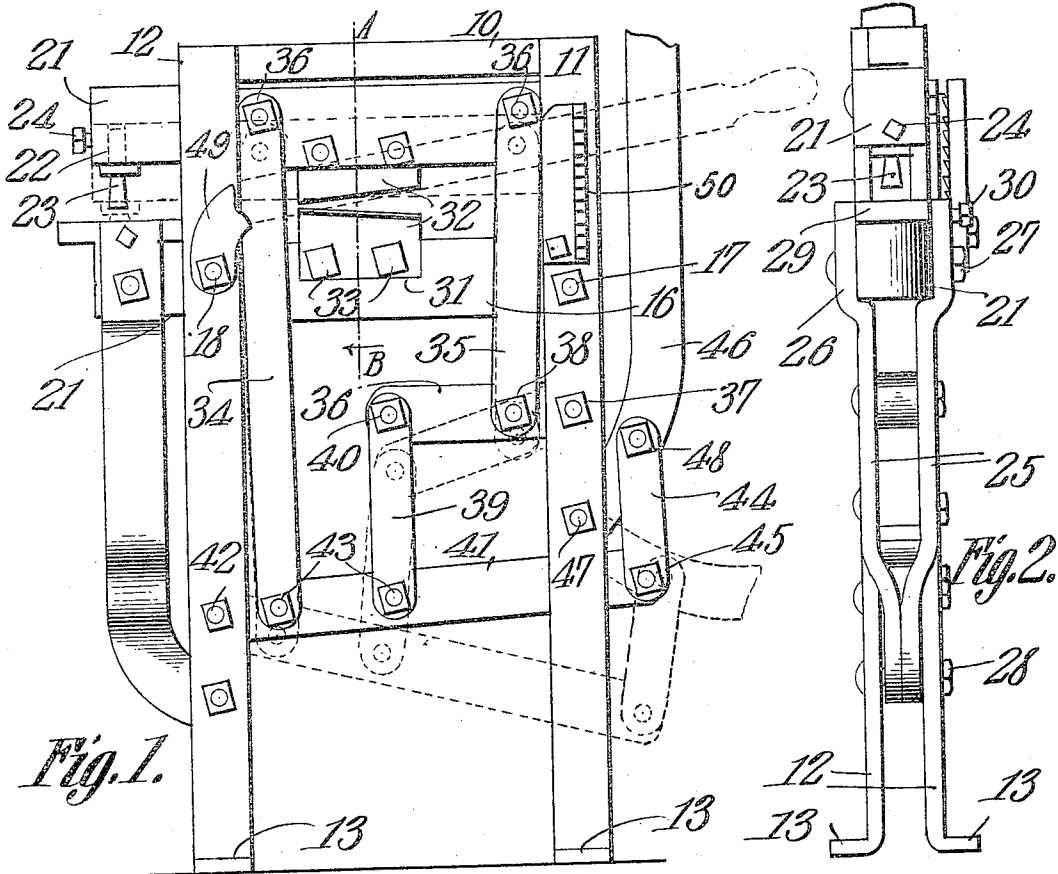


C. PETERSON.
PUNCH AND SHEAR.
APPLICATION FILED JULY 2, 1908.

Patented Dec. 7, 1909.

942,409.



Inventor
Charles Peterson.

Witnesses

E. J. Stewart
E. J. Smith

384
C. A. Snow & Co.
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES PETERSON, OF STANCHFIELD, MINNESOTA.

PUNCH AND SHEAR.

942,409.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed July 2, 1908. Serial No. 441,527.

To all whom it may concern:

Be it known that I, CHARLES PETERSON, a citizen of the United States, residing at Stanchfield, in the county of Isanti and State of Minnesota, have invented a new and useful Punch and Shear, of which the following is a specification.

This invention relates to machine tools of the type used for punching and shearing sheet metal and the like, with special reference to hand operated tools of this description.

One object of the invention is to simplify the general construction of such a tool by making the various parts of bar metal so that the same may be readily constructed without any expensive plant.

Another object of the invention is so to arrange the different operating parts of a hand tool of this character so that the movable tool holder, common in the machines of the class will be moved in a constant parallel relation to the fixed tool holder.

With the above and other objects in view the invention consists in general of a frame composed of rigidly joined bar metal members, tool holders of bar metal, and operating levers and links of the same type of metal.

The invention further consists of certain novel arrangements of details and combinations of parts, hereinafter fully described, illustrated in the accompanying drawings and specifically set forth in the claims.

In the accompanying drawings, like characters of reference indicate like parts in the several views, and: Figure 1 is a side elevation of a machine constructed in accordance with this invention with the shear and punching and operating mechanism shown in raised position in full lines and in lowered position in dotted lines. Fig. 2 is an elevation of the front end of such a machine. Fig. 3 is a top plan view of the machine. Fig. 4 is a detailed section on the line *a b* of Fig. 1.

The numeral 10 indicates the top bar of the machine and to this top bar are rigidly attached by welding two pairs of legs 11 and 12. These legs are each provided with an outwardly turned foot 13 having a hole 14 therein for the holding down bolt. Mounted at a convenient height from the feet 13 is a stationary tool holder comprising a pair of bars 15 and 16. This tool

holder is firmly secured between the pairs of legs by means of bolts. This tool holder is rigidly connected to the pairs of legs by means of bolts 17 and 18. A movable tool holder is mounted above this tool holder and is composed of bars 19 and 20. The ends of both the movable and fixed tool holders extend out beyond the legs 12 as clearly seen in Fig. 3 and these ends are surrounded by U-shaped clamps 21, there being one of these clamps for each of the tool holders. A recess 22 is made in the upper tool holder at the outer end and is arranged to receive the shank of a punch 23, being held in the recess by means of a set screw 24.

In order to brace the outer end of the stationary tool holder 16 there is provided a pair of bars 25 which are of such thickness as to closely fit between the lower end of the legs and extend upward to form off set portions 26 at the upper end which are held to closely embrace the U-shaped clamp 21 and to extend slightly thereabove. These bars are connected to the stationary tool holder by means of a suitable bolt 27 and a similar bolt 28 serves to connect said bars to the legs 12. Between the upper end of the portion 26 of the bars and resting on the stationary tool holder 16 is mounted a die plate 29, this die plate being held in position by means of a set screw 30 passing through one of the ends 26. The members 16 and 20 of the fixed and movable tool holders are each provided with a notch 31 preferably rectangular in form and in each of these notches is held a shear blade 32, being secured therein by means of bolts 33. The bottom of the notches 31 thus form a support for the back of the shear blade while the sides of the members 19 and 15 of the tool holders form a lateral support when taken in connection with the bolts 33. Pivottally mounted on the movable tool holder are links 34 and 35, these being preferably arranged in pairs one on each side of the tool holder and on the same pivot which is preferably a bolt as indicated at 36. For a purpose hereinafter to be explained the links 34 are preferably made somewhat longer than the links 35. These bars are so positioned on the movable tool holder that the pivot end of the bars is in contact with the inner sides of the legs 11 and 12, thus forming a guide for the tool holder and preventing the same from

longitudinal movement. Pivottally mounted between the legs 11 and about opposite the lower end of the links 35 is a lever 36 formed of a single bar of metal, being pivoted to the legs by means of a bolt 37. This lever is also pivottally connected to the lower end of the links 35 by a bolt 38. Bar metal links 39 are connected to the free end of this lever by a bolt 40. A bar metal lever 41 is pivottally attached to the legs 12 by a bolt 42. This lever is pivoted to the links 34 and 39 by means of bolts 43 and the lever extends outward through the legs 11 being there connected to a pair of links 44 by means of a bolt 45. An operating lever 46 is pivoted between the legs 11 by a bolt 47 and the links 44 are connected thereto by a bolt 48.

A guard lever 49 is mounted on the outside of one of the legs 12 being preferably pivoted on the bolt 18. A latch plate 50 of sheet metal is attached by a suitable bolt to one of the legs 11, being formed of sheet metal bent and provided with a notched edge. To engage the notches in the edge of the plate 50, the lever 49 is provided with an outwardly extending lip 49' preferably forged thereon.

It is to be noted that each and all of the parts described, with the exception of the bolt and nut, together with the tools themselves, are made of bar metal and that little or no machine work is required on any part, it being simply necessary to forge and punch the same. It is also desired to call attention to the fact that with the exception of the operating lever, guide lever, braces and U-shaped clip, the parts are made throughout of straight bars and do not even require forging. There has thus been constructed a very simple device easily manufactured of common material usually carried in stock and readily assembled without any particular skill on the part of the workmen.

It is desired to call attention to the fact that by reason of the peculiar arrangement of the lever and links the movable tool holder will be caused to move in a position at all times parallel to the fixed tool holder. Having thus described the invention, what is claimed as new, is:

1. In a machine of the class described a frame comprising a top member and legs attached to opposite sides thereof, a stationary tool-holder secured between the legs, a movable tool-holder slidable between the legs, parallel links attached to the movable holder, oppositely extending levers pivottally connected to the respective links, a link

connection between the levers, and means for actuating the levers.

2. In a combined punch and shear, a frame comprising a top member and legs attached to the top member at the side of each and to form two pairs, a stationary tool holder rigidly held between the pairs of legs, a movable tool holder slidably mounted between the legs, links attached to the movable tool holder bearing against the said links to guide the tool holder, and a system of levers and links attached to the first mentioned links arranged to pivottally move the ends of the tool holder.

3. In a combined punch and shear, a frame comprising a bar metal top and bar metal legs rigidly attached thereto at each side of the end provided with outwardly turned and suitable holding down tool holder, a stationary tool holder comprising a pair of bars in parallel relation held between the legs and extending outwardly therefrom, said bars being provided with a suitable tool holder and one thereof having a tool holding nut, a movable tool holder comprising similarly arranged bars having also a semi-circular recess at the outer end, bar metal links pivottally connected to the movable tool holder having their upper ends bearing against the inner side of the said links, a bar metal lever pivottally connected to one pair of said legs and one pair of said links and passing between the opposite pair of the legs, a second bar metal lever pivottally connected to the second pair of the legs and a second link, a link of bar metal connecting the end of the second lever with a point intermediate the ends of the first lever, an operating lever fulcrumed between the second pair of legs, and links connecting the free end of the first lever with a point adjacent the fulcrum of the third lever.

4. In a machine of the class described a frame, a stationary tool-holder secured thereto, a slidable tool-holder, links pivottally connected to opposite end portions of the slidable holder, oppositely extending upper and lower levers pivottally connected at their outer ends to the frame, said links being connected to the respective levers, a link connection between the levers, and means for actuating said levers.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHARLES PETERSON

Witnesses:

ANDY M. PETERSON,
A. BOLIN.