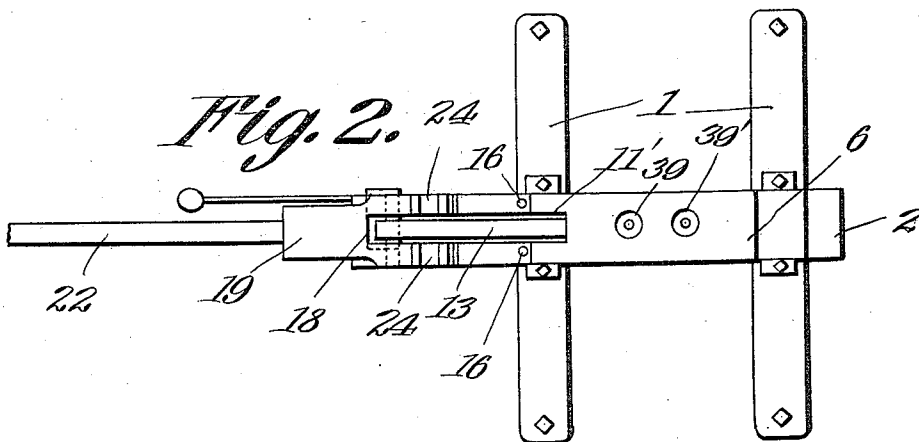
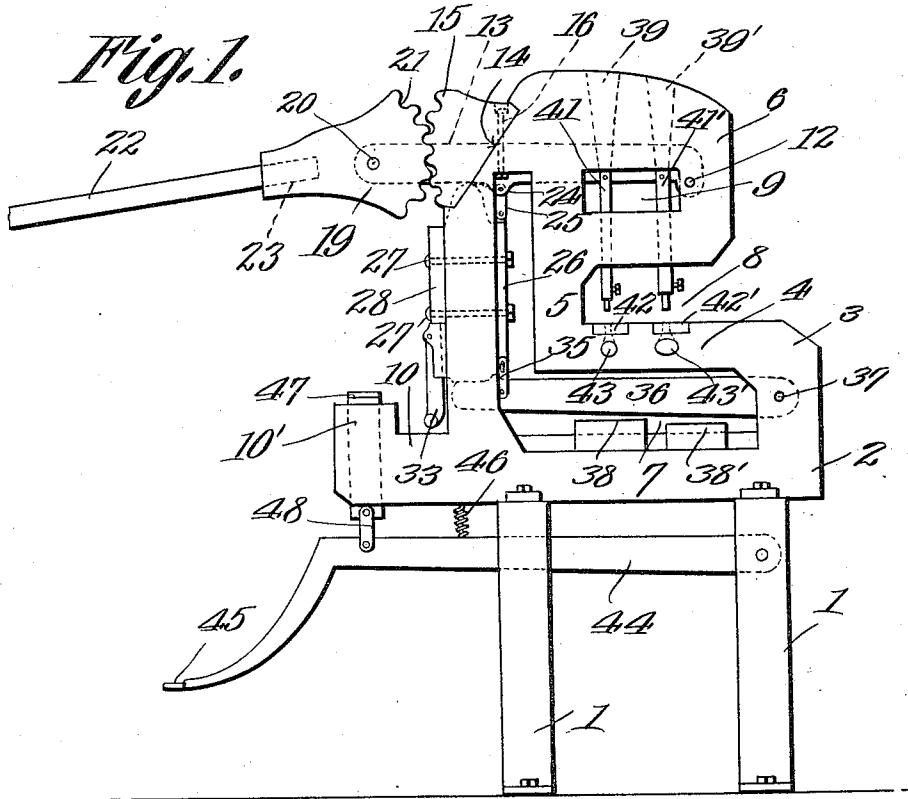


F. W. MILEK.
METAL WORKING MACHINE.
APPLICATION FILED SEPT. 21, 1912.

1,060,274.

Patented Apr. 29, 1913.

2 SHEETS-SHEET 1.



Witnesses
J. B. Woodrow.
L. H. Wilson.

F. W. Milek
Inventor,

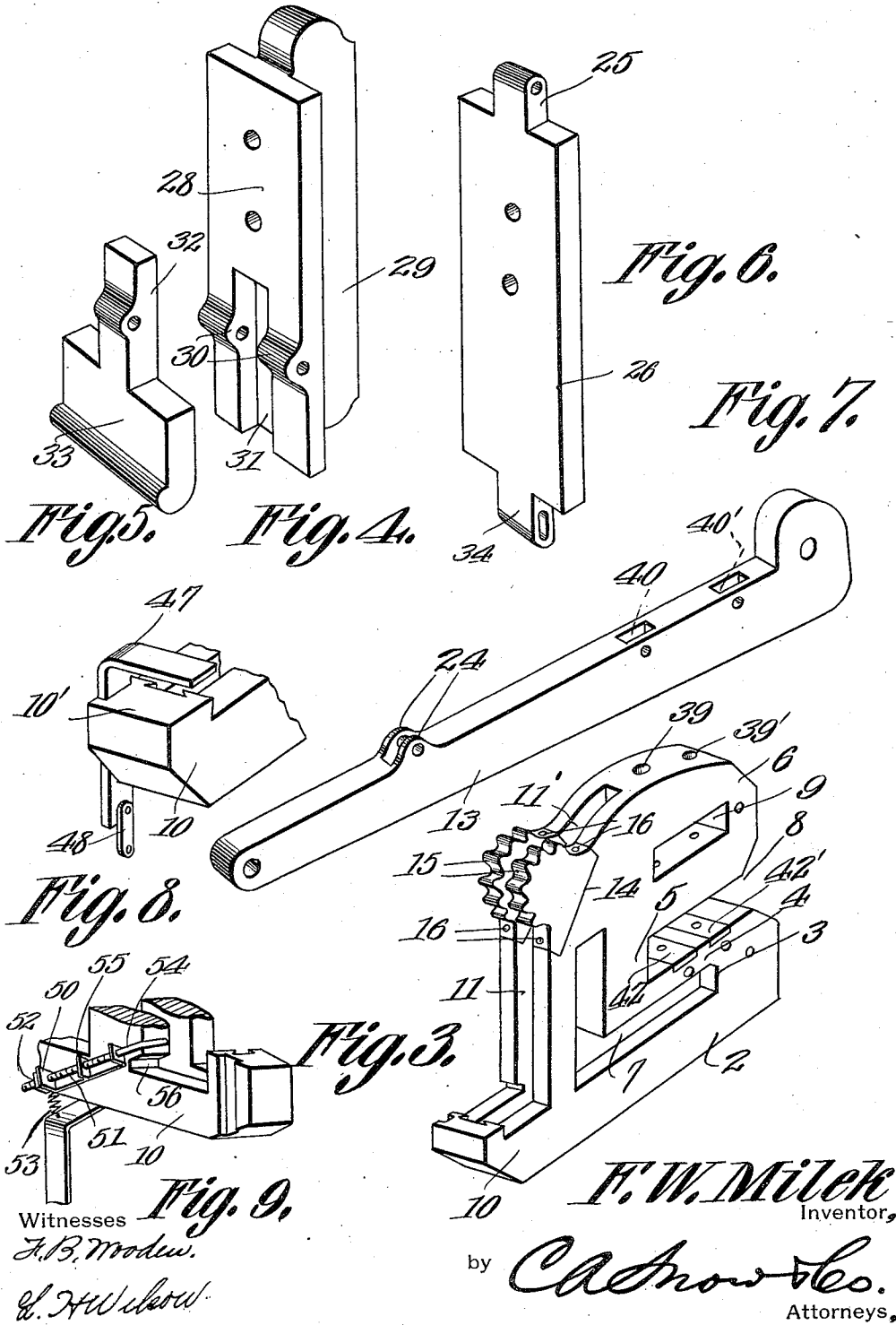
by *C. A. Snow & Co.*
Attorneys.

F. W. MILEK.
METAL WORKING MACHINE.
APPLICATION FILED SEPT. 21, 1912.

1,060,274.

Patented Apr. 29, 1913.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

FREDERICK W. MILEK, OF STURGIS, SOUTH DAKOTA.

METAL-WORKING MACHINE.

1,060,274.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed September 21, 1912. Serial No. 721,632.

To all whom it may concern:

Be it known that I, FREDERICK W. MILEK, a citizen of the United States, residing at Sturgis, in the county of Meade and State of South Dakota, have invented a new and useful Metal-Working Machine, of which the following is a specification.

The present invention relates to improvements in metal working machines.

The primary object of the present invention is the provision of a novel form of main frame and the peculiar arrangement of a tool carrying mechanism, whereby the various tools for punching, cutting and welding metal have imparted to them the maximum power with the minimum exertion, the lever for actuating the complete mechanism being mounted in such a manner as to be guided in the desired vertical plane so that the relative position thereof is maintained at all times.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings Figure 1 is a side elevation of the complete machine. Fig. 2 is a top plan view thereof. Fig. 3 is a perspective view of the frame in skeleton with the various levers and other mechanisms removed. Figs. 4, 5 and 6 are detail perspective views of the tool carrier and a welding tool. Fig. 7 is a perspective view of the frame carried main actuating lever. Fig. 8 is a perspective view of the anvil and clamping mechanisms. Fig. 9 is a view similar to Fig. 8 taken from the other side.

Referring to the drawings, the numeral 1 designates the standards or pedestals which support the integral frame 2, the same being cast so as to provide the upstanding rear portions 3, the inwardly projecting parallel arm 4, and the head 6, connected to the portion 4 through the vertical post 5, the outline of the said frame providing the L-shaped transversely disposed slot 7, the rearwardly opening throat 8 and the transversely disposed rectangular aperture 9, the purpose of which will presently appear.

At the forward lower corner of the frame

is provided the integral foot 10 which constitutes a work receiving means for the frame, the forward edge of the frame being slotted as at 11, the full length thereof, and with the recessed portion 11' adjacent to the top thereof above the aperture 9. In the recess 11' is projected the main mechanism carrying lever 13 which is pivoted removably by means of the pin 12 so that the outer end thereof will project exteriorly of and through the slot in the front of the frame.

The upper corners of the frame upon each side of the slot 11 are recessed as at 14 for the removable reception of the tempered steel toothed segment 15 between which the free end of the lever 13 projects. The bolts 16 are employed to retain the toothed segments 15 relatively to the main frame of the machine.

The outer free end of the lever 13 is projected in the slot 18 of the handle head 19, the same being pivotally connected to the lever 13 by means of the pin 20, so that the teeth 21 of the head 19 will be in mesh at all times with the teeth of the segments 15, the lever 13 holding the head 19, against outward displacement while the toothed plate 15 co-acts to prevent any lateral play and thus insures the desired vertical plane of movement necessary for the manipulation of the lever 13 through the detachable handle 22 which is insertible within the socket 23 of the head 18.

The main actuating lever 13 is provided with the two apertured lugs 24 for connection to the apertured lug 25 of the vertically slidable plate 26, said plate being disposed to fit upon the rear face of the standard 10 and by means of the bolt 27 carrying the tool carrying member 28, which as clearly shown in Fig. 4 is provided with the lug 29 disposed to fit within the slot 11 of the frame and thus with the plate 26 retain the plate and tool carrying member 28 for vertical movement only.

The tool carrying member is provided with the apertured lugs 30 one upon each side of the vertical recess 31 so that the reduced end 32 of the welding tool 33 may be detachably connected to such member 28 in the same manner as the connection of the various tools to the tool carrying member as shown in applicant's pending application filed May 12, 1911, Serial No. 626,835. The slotted lug 34 which is carried by the plate 26 at the lower end thereof is connected

through the medium of the link 35 to the vertically swinging shear blade 36, said shear blade 36 being pivoted in the main frame by means of the pin 37 and movable within the foot portion of the L-shaped slot 7, the cutting edge of the same being disposed for co-action with the several stationary cutting blades 38—38' connected to and carried by the main frame, the same providing means for cutting various thicknesses of metal and through the medium of the reciprocation of the main actuating lever 13.

The punch guiding apertures 39—39' are provided through the head of the frame and lead to the tapered apertures 40—40' formed in the main actuating lever 13 and for the detachable connection of the respective punches 41—44' which are provided within the head 6 of the main frame so that the same will co-act with the removable female punch dies 42—42' disposed in the portion 4 of the main frame, the throat 8 being provided for the introduction of the material to be punched. In order to guide the metal punched from the blank away from the female dies 42—42', the apertures 43—43' are provided in the main frame as clearly shown in Fig. 1. A foot treadle 44 is pivoted below the main frame and has its foot engaging portion disposed to the front and side of the work carrying portion 10 of the main frame, the same being normally elevated by the spring 46 so that the clamping member 47 which is connected to the lever 44 through the link 48 will be normally held upward and out of engagement with the angular portion 10' of the projecting end of the work carrying portion of the frame. By means of this device, a horse shoe or other piece of material, that it is desired to retain during the welding or other operation is held within the work engaging portion to be acted upon by the tool carried by the tool carrying member 28, the same being so constructed as to readily grip or release the same when desired.

Upon the opposite side of the integral foot 10 as shown in Fig. 9, a piece 50 of strap iron is bent to form parallel projections and which are apertured to receive the gage 54, which is bent at right angles so as to pass in front of the forward edge of the machine body. This gage 54 and the spring 51 inserted between the rear projection of the strap 50 and the lug 55 extends to press the same forward. On the other side of the projection 50 is a second lug 52 secured to the gage 54 for regulating the movement of the gage forwardly. The strap 50 is provided with a bolt or pin for attaching it to the machine body and a spring 53 tending to draw the rear end thereof downwardly to the leg or base of the machine. The purpose of this device is to regulate the length of the horse shoe toe by controlling the dis-

tance so that the shoe toe shall project beyond the edge of the upwardly extending part of the arm 10, the right angled end being disposed to engage the horse shoe toe.

From the foregoing description, taken in connection with the drawings it is evident that by constructing the main frame of a machine of this character from a single casting so that the various working parts are constructed of a tempered metal and detachably secured to the said frame, that the same will be more durable and by reason of the fact that the operating handle 23 is so mounted as to co-act with the toothed segment 15 at all times, it is absolutely assured that the mechanism actuating lever 13 will have imparted thereto the necessary vertical reciprocation without any side play which tends to injure the parts and at the same time injure the various tools, that it has been found necessary should be retained in the same relative position at all times.

The peculiar construction and design of the main frame has its special advantages, in that it permits of the ready assemblage of the various detachable parts and at the same time provides slots and throats for the proper introduction of the material to be operated upon so that in a machine of this character, a punch, shear and welding device with the maximum leverage and minimum exertion is provided.

What is claimed is:

1. In a metal working machine, a pedestal, a frame mounted upon the pedestal and provided with a vertical channel in its forward edge, a tool carrying member slidable in the channel, a mechanism actuating lever mounted in the frame, and having one end projecting exteriorly through the channel, said lever being operably connected to the tool carrying member, the upper part of the frame upon both sides of the channel being provided with a toothed segment, and a handle pivoted to the outer end of the actuating lever and having two toothed segments connected thereto and in mesh with the corresponding toothed segments of the frame.

2. In a metal working machine, a frame having a channel open throughout its front edge and an L-shaped slot transversely of the body, said channel and slot providing two spaced tool carrying member guides, a tool carrying member slidably mounted in the channel and held against displacement by the portion of the frame at the front thereof, an actuating lever pivoted in the frame with its free end projecting through the channel and exteriorly of the frame, a toothed segment formed upon the upper front corner of the frame and upon each side of the channel, and a handle pivoted to the free end of the lever, said handle having a slotted head into which the lever is seated

and provided with two toothed segments to coincide with and engage the toothed segments of the frame.

3. In a metal working machine, a frame, having a channel open throughout its front edge and an L-shaped slot transversely of the body, said channel and slot providing two spaced tool carrying member guides, a tool carrying member slidably mounted in the channel and held against displacement by the portion of the frame at the front thereof, an actuating lever pivoted in the frame with its free end projecting through the channel and exteriorly of the frame, a toothed segment formed upon the upper front corner of the frame and upon each side of the channel, a handle pivoted to the free end of the lever, said handle having a slotted head into which the lever is seated and provided with two toothed segments to coincide with and engage the toothed segments of the frame, a plurality of stationary blades mounted in the frame within the base of the L-shaped slot, a movable blade pivoted in the frame for shearing coöperation with the stationary blades, and means for operably connecting the movable blade to the lever.

4. In a metal working machine, a frame having a channel open transversely throughout its front edge, and an L-shaped slot transversely of the body, said channel and

slot providing two spaced tool carrying member guides, a tool carrying member slidably mounted in the channel and held against displacement by the portion of the frame at the front thereof, an actuating lever pivoted in the frame with its free end projecting through the channel and exteriorly of the frame, a toothed segment formed upon the upper front corner of the frame and upon each side of the channel, a handle pivoted to the free end of the lever, said handle having a slotted head into which the lever is seated and provided with two toothed segments to coincide with and engage the toothed segment of the frame, a plurality of stationary blades mounted in the frame within the base of the L-shaped slot, a movable blade pivoted in the frame for shearing coöperation with the stationary blades, means for operably connecting the movable blade to the lever, said frame being provided with a throat open at the rear, and co-acting metal punching means carried by the lever and within the throat.

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

FREDERICK W. MILEK.

Witnesses:

ANDREW MILEK,
GEO. H. KILKER.