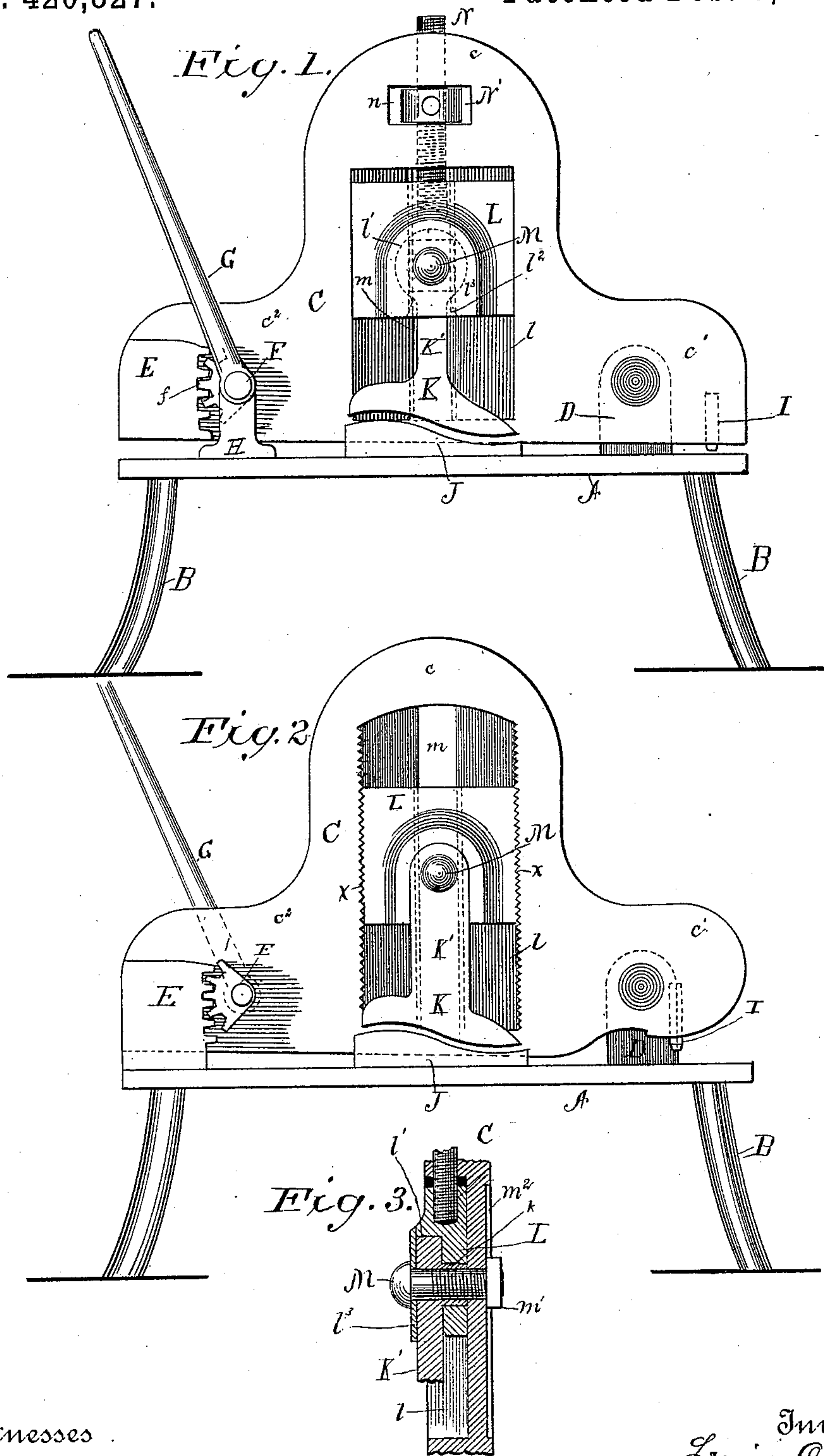


(No Model.)

L. OLSEN & N. E. BURNS.
METAL WORKING MACHINE.

No. 420,827.

Patented Feb. 4, 1890.



Witnesses.

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UNITED STATES PATENT OFFICE.

LEWIS OLSEN AND NEVIN E. BURNS, OF RIVER FALLS, WISCONSIN.

METAL-WORKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 420,827, dated February 4, 1890.

Application filed August 20, 1889. Serial No. 321,365. (No model.)

To all whom it may concern:

Be it known that we, LEWIS OLSEN and NEVIN E. BURNS, both citizens of the United States, and both residing at River Falls, Pierce county, Wisconsin, have invented certain new and useful Improvements in Metal-Working Machines, of which the following is a specification.

Our invention constitutes certain improvements on the apparatus shown in Letters Patent of the United States No. 369,872, granted to us September 13, 1887.

The object of our present invention is to increase the efficiency of the apparatus by making some of the parts adjustable in an improved way and to render the apparatus more powerful by mounting the die or other working-tool on a hinged frame operated by mechanism to raise and lower the die toward and from the work to properly apply the tool to the work.

The details of construction and subject-matter claimed are hereinafter designated.

In the accompanying drawings, Figure 1 is a front elevation of our improved machine; Fig. 2, a front elevation of a modified form of the machine; and Fig. 3 is a detail sectional view of the adjusting mechanism shown in Fig. 1.

The bed-plate A is mounted on suitable standards B, and an upright frame C, shown as formed with a central dome *c* and wings *c'* and *c''* on each side, is hinged at one end to a standard D on one end of the bed-plate. The opposite end of the frame is formed on one side with a rack E, with which gear teeth *f* on a segment or wheel F, secured to an operating-lever G, having bearings in a post H, mounted on the bed-plate in front of the frame. The wing *c'* of the hinged frame is provided with a punch or other tool I. The anvil J, which may be of any desired form, is secured to the bed-plate in front of the frame C. A welding-die K is shown as formed on its under side to conform to the shape of the upper surface of the anvil, and a shank K' projects upwardly from the body of the die, and is enlarged at its upper end and provided with a rearwardly-extending arm *k*, as shown in Fig. 3. The upper end of the shank K' extends into a vertically-adjustable block L, adapted to move in a recess

or guideway *l* in the frame C. The block L is formed with a curved recess or seat *l'* for the enlarged upper end of the shank K', and a flaring opening *l''* extends from the seat to the bottom of the block. The front plate *l'''* of the block is shown as removable, and the arm *k* of the shank K' extends through an aperture in the block. A bolt M extends through the front plate *l'''*, the shank K', and the block L, and through a vertical slot *m* in the frame C. The nut *m'* on the inner end of the bolt slides vertically when the block is adjusted in a guideway *m''*, formed on each side of the slot. The block L and its connecting parts are adjustable vertically by means of a screw-shaft N, which extends through apertures in the dome *c* of the frame C. At its lower end the screw-shaft is secured rigidly to the block L, and about midway between its ends carries an adjusting-nut N' within a recess *n* of the frame C. By turning the nut the screw-shaft, the block, and the other connected parts are adjusted vertically in the frame. By this means the tool may be adjusted to accommodate different sizes of articles or material to be operated upon.

It will be observed that the shank of the tool K is pivoted to the vertically-adjustable block L, so that it will act with equal force on the work and obviate inequalities in the result. When the tool is properly adjusted relatively to the work or to the anvil J, the lever G is operated to raise and lower the frame about its hinge and apply the tool to the work. By this construction great power is afforded and the operation may be performed quickly.

A punch or other tool I may also be worked by means of the operating-lever G.

In Fig. 2 a slight modification is shown, in which the operating-lever G is journaled in the frame C and the rack E is formed on an upright secured to the bed-plate A. The opposite end of the frame is also shown as cut away on its under side to permit a wider range of adjustment of the punching-tool I. The vertically-adjustable block L is shown as formed on opposite sides with teeth *x*, which engage with teeth in the sides of the guide-recess *l*, the adjusting screw-shaft N being omitted. The block may be adjusted

in its guideway by removing it laterally and replacing it at the proper elevation.

We have shown in the drawings a welding-tool connected with the hinged frame; 5 but obviously other tools may be used interchangeably with the welding-tool, and other tools may be substituted for the punch shown at the end of the frame.

We claim as our invention—

10 1. The combination, substantially as here-
inbefore set forth, of the bed-plate, the frame
hinged at one end to the bed-plate, an oper-
ating-lever, teeth connected with the operat-
ing-lever and gearing with a rack for raising
15 and lowering the frame about its hinge, a
tool secured to a vertically-adjustable block
sliding in guideways in the frame, and means
for raising and lowering the block.

20 2. The combination, substantially as here-
inbefore set forth, of the hinged frame, means

for raising and lowering it, the vertically-ad-
justable block sliding in guideways in the
frame, a screw-shaft and nut for adjusting
the block, and the tool pivoted to the block,
for the purpose specified. 25

3. The combination, substantially as here-
inbefore set forth, of the bed-plate, the frame
hinged at one end, a tool secured to one end
of the frame, and an operating-lever connect-
ed with the frame at the opposite end, a ver- 30
tically-adjustable block, and a tool pivoted
to said block.

In testimony whereof we have hereunto
subscribed our names.

LEWIS OLSEN.
NEVIN E. BURNS.

Witnesses:

GEO. THOMAS,
W. H. SANDERSON.