

No. 742,381.

PATENTED OCT. 27, 1903.

W. L. BEAR.  
CONVERTIBLE DEVICE.

APPLICATION FILED FEB. 2, 1903.

NO MODEL.

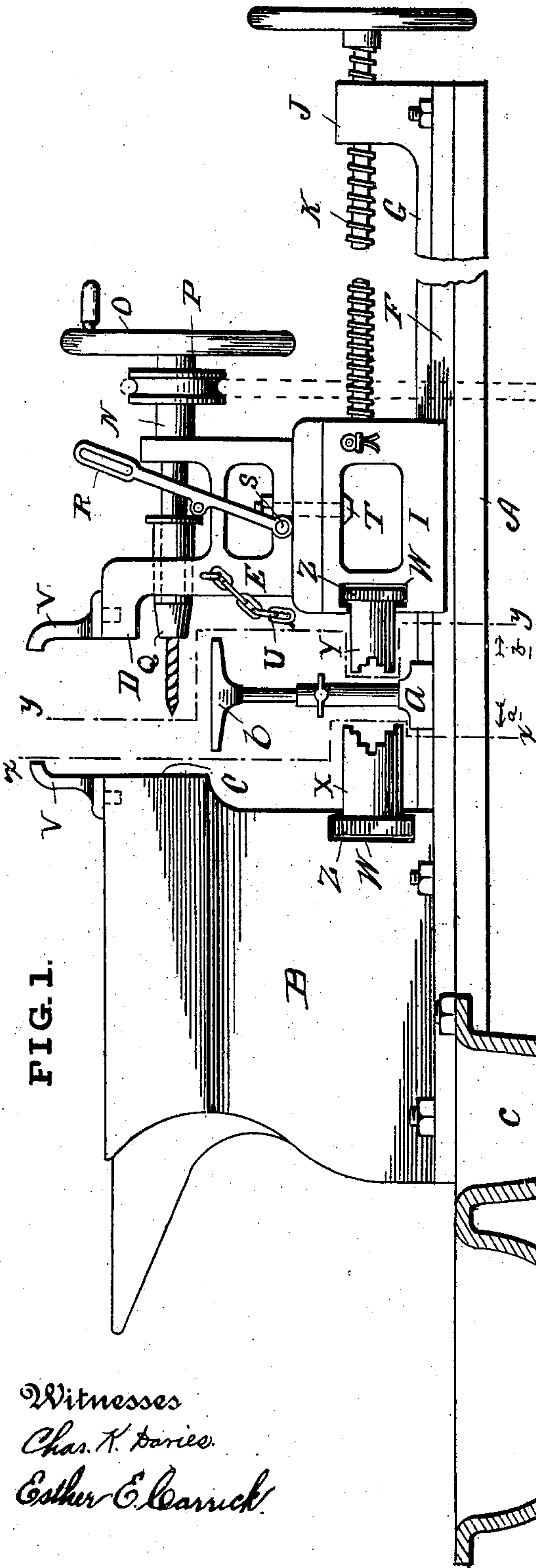


FIG. 1.

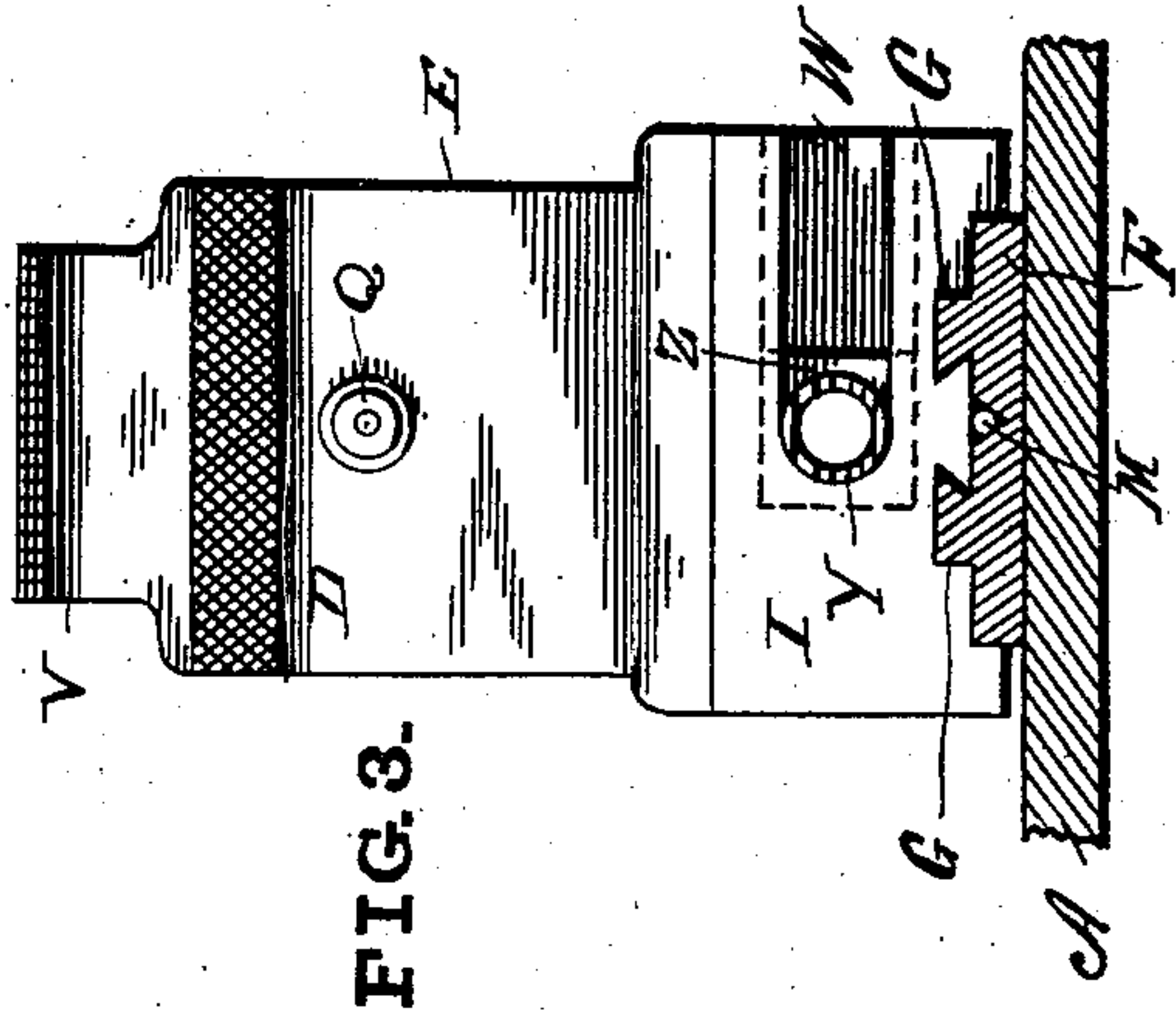


FIG. 3.

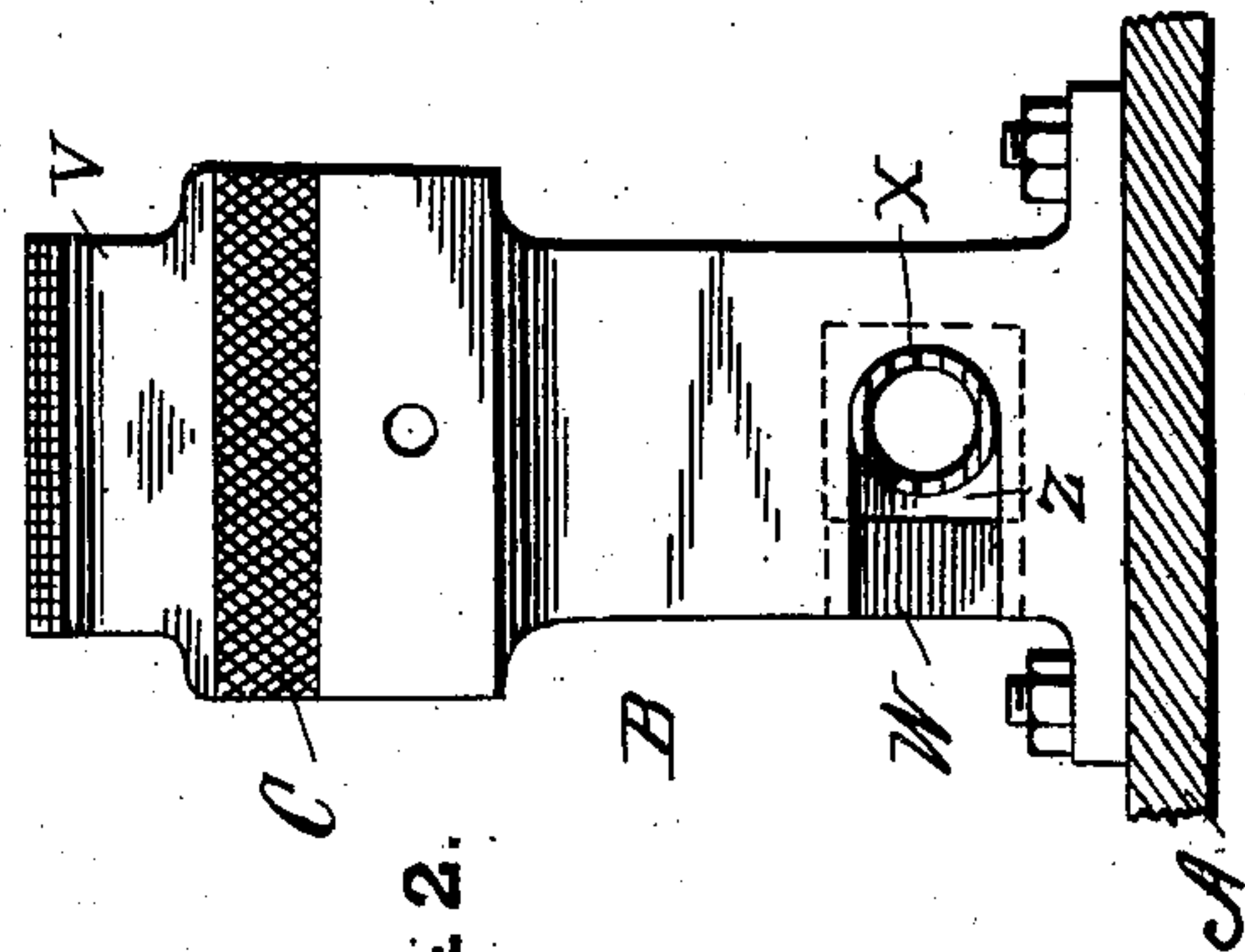


FIG. 2.

Witnesses  
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# UNITED STATES PATENT OFFICE.

WILLIAM L. BEAR, OF WILLIAMSPORT, PENNSYLVANIA.

## CONVERTIBLE DEVICE.

SPECIFICATION forming part of Letters Patent No. 742,381, dated October 27, 1903.

Application filed February 2, 1903. Serial No. 141,487. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM L. BEAR, of Williamsport, county of Lycoming, and State of Pennsylvania, have invented certain new  
5 and useful Improvements in Convertible Tools; and I do hereby declare the following is a full and clear description thereof.

My invention relates mainly to metal and wood working tools.

10 The object of my invention is to provide a compact convertible apparatus with the above object in view.

With these objects in view my improvements consist in the following construction  
15 and combination of parts, the details of which will first be fully described and features of novelty then set forth and claimed.

Figure 1 represents a side elevation and partial section of my combined machine. Fig.  
20 2 is a cross-section taken on the line  $x x$  of Fig. 1 looking in the direction of the arrow  $a$ . Fig. 3 is a cross-section on the line  $y y$  of Fig. 1 looking in the direction of the arrow  $b$ .

In the drawings, A represents a bed-plate  
25 which carries the various features of my combined tool.

B is an anvil securely bolted to the bed A. The horn, face, and hardy of this anvil may be of usual construction; but the rear face or  
30 face opposite to the horn is provided with a face C, having a serrated surface, and forms one of the jaws of the vise, the other jaw D (also serrated) being formed on the frame E.

Mounted on bed-plate A is a supplementary bed-plate F, provided with ways G, along  
35 which is adapted to slide the tool-holding frame I. Upon bed A are formed bearings J, within which the feed-screw K works, the adjustment being made by revolving the wheel  
40 and the handle L in the usual way. The inner end of feed-screw K is seated in the sliding tool-frame I.

M represents balls carried in a trough of the guide-bed F and serve as antifriction-  
45 bearings for the tool-frame I.

Mounted rigidly upon tool-frame I is the frame E, whose jaw D forms one member of the vise. Within this frame E is carried the drill or turning-spindle N, operated by the  
50 end wheel O, (or the pulley P, where power is used.) The drill-bit sleeve Q is carried on the spindle N, and R is a lever pivoted at S

to the frame E and having contact with the sleeve Q for the purpose of feeding the drill to its work. 55

As illustrated, the frames E and I are bolted to each other rigidly; but the whole structure may be made integral, if desired. As a preferred construction I swivel the frame E upon the tool-frame I by means of the bolt T, which  
60 allows the frame E and its attached parts to swing in any direction, whereby drilling may be done with my machine at different angles. A girth-chain U is attached to the side of the frame E and is to be used in connection with  
65 the drill for drilling in any desired position.

When the girth-chain U is used, the tool, the frame, or tool-holder E, carrying the drill, is preferably swung laterally on the bearing T. Only a short section of the chain is shown; but it should be long enough to pass around  
70 an object in front of the drill and back again to the opposite side of the tool-holder. Assume that it is desired to drill a hole in an object, say a pipe. The chain is passed  
75 around the pipe and its free end secured to the tool-holder E on the side opposite that shown in the drawings. The chain simply forms an abutment which holds the object to be drilled against the thrust of the drill. Any  
80 other abutment may be used instead of the girth-chain.

On the upper parts of the jaws C and D, I may attach supplemental jaws V, having tangs which take into the jaw-heads, whereby  
85 they may be removed or replaced at will. These supplemental jaws are well adapted for saddlery work.

In the adjacent faces of the anvil B and tool-holding frame I, I form undercut slots  
90 W, passing from one side to the center of the anvil and frame, as clearly shown in Figs. 1, 2, and 3. In these slotted ways are removably inserted the vise-jaws X and Y, the bases of said jaws being provided with flanges  
95 Z, which fit and slide in the slotted ways W. The jaws X and Y may have any desirable faces. In the present instance I have shown them with concaved serrated jaw-faces, and I have also shown the jaw Y smaller than the  
100 jaw X in order that they will in a measure fit within each other. These jaw-faces are well adapted for pipe-jaws or for clamping any cylindrical object. These jaws may be



removed at any time by simply sliding them out of their recessed ways.

Mounted on the bed A or the ways F is a tool-support *a*, carrying a tool-rest *b*, adapted to be adjustably clamped thereto for use in connection with drilling or turning.

Clamped to the bed A is a forge *c*, adapted for use in connection with the other parts of the combined machine. This forge is provided with the usual air-inlet pipe and water-pot.

The whole combined machine is simple and compact, bringing conveniently together the several operations hereinbefore referred to into one machine.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a convertible machine, the combination of a bed, a standard carrying a platen

or abutment, and a second two-part swiveled standard movable to and from the first standard, having a drill-spindle journaled in the swiveled part of the second standard.

2. In a convertible machine, the combination of a bed, a standard carrying a platen or abutment, a second two-part swiveled standard movable to and from the first standard, having a drill-spindle journaled in the swiveled part of the second standard, and a flexible abutment or chain for holding the work against the drill of the spindle whereby the work may be drilled at different angles.

In testimony whereof I have affixed my signature in the presence of two witnesses.

W. L. BEAR.

Witnesses:

P. J. KELLY,

P. C. MORGAN.