J. SANDSTROM.

PUNCHING MACHINE.

APPLICATION FILED JULY 19, 1916.

1,245,388. Patented Nov. 6, 1917.

Fig. 1.

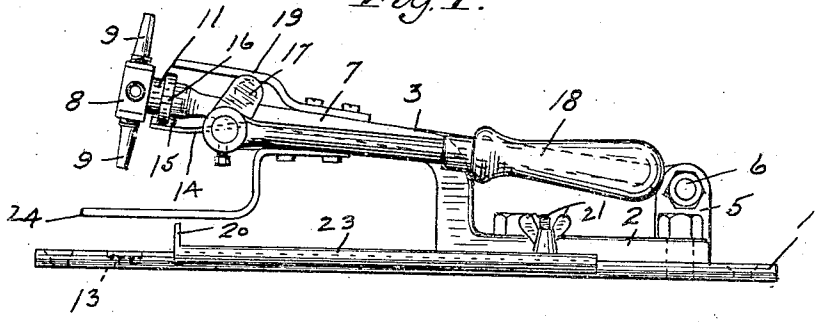


Fig. 3.

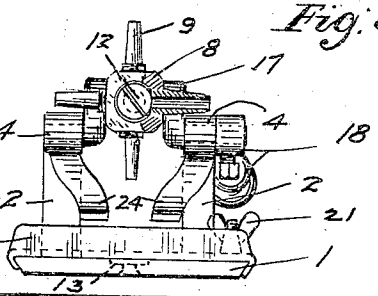


Fig. 2.

Fig. 4.

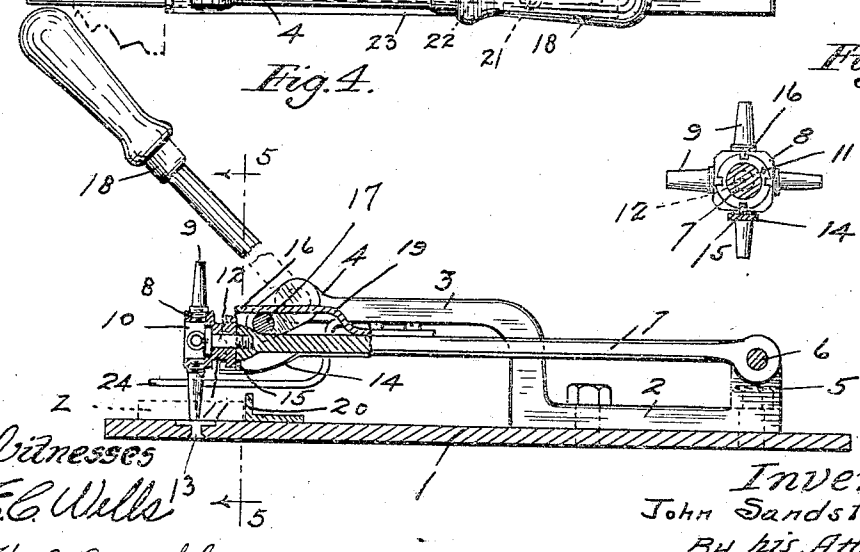


Fig. 5.

Witnesses

E. C. Wells

H. L. Opsahl.

Inventor

John Sandstrom

By his Attorneys

Williamson & Merchant

UNITED STATES PATENT OFFICE.

JOHN SANDSTROM, OF ADAMS, NORTH DAKOTA.

PUNCHING-MACHINE.

1,245,388. Specification of Letters Patent. Patented Nov. 6, 1917.

Application filed July 19, 1916. Serial No. 110,082.

To all whom it may concern:

Be it known that I, JOHN SANDSTROM, a citizen of the United States, residing at Adams, in the county of Walsh and State of North Dakota, have invented certain new and useful Improvements in Punching-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to punching machines, especially adapted for punching holes in relatively soft substances, such as leather; and, to this end, generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claim.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings,

Figure 1 is a side elevation of the invention;

Fig. 2 is a plan view of the same with the end portion of a strap, indicated by means of broken lines, positioned to be punched;

Fig. 3 is a view principally in front end elevation with some parts shown in section;

Fig. 4 is a longitudinal central section taken on the line 4—4 of Fig. 2; and

Fig. 5 is a transverse section taken on the line 5—5 of Fig. 4.

The numeral 1 indicates a base plate adapted to be screwed or otherwise rigidly secured to a suitable support, such as a table or bench. A pair of horizontally spaced bars 2 is rigidly bolted to the rear end portion of the base plate 1 and their forward ends are extended upward and then forward to afford a pair of arms 3, which are located above and parallel to the base plate 1 and have formed in their free ends horizontally alined bearings 4. Integrally formed with the rear ends of the bars 2, is a pair of vertically projecting bearing lugs 5 in which is mounted a horizontal pivot bolt 6.

The rear end of a forwardly projecting horizontally disposed lever 7 is pivoted on the bolt 6 for vertical swinging movement between the arms 3. The forward end of the lever 7 terminates slightly forward of the arms 3. On the free end of the lever 7, is a turret 8 to which is detachably secured several (as shown, four) radially projecting tubular punches 9, of different sizes, the inner ends of which open into a discharge recess 10 formed in the face of said turret. Integrally formed with the back of the turret 8, is a hub 11 which bears directly against the free end of the lever 7 and is provided with an axial bore, through which is extended a headed bolt 12. This bolt 12 is co-axial with the longitudinal axis of the lever 7, has screw-threaded engagement therewith and its head is located within the recess 10 and holds the turret against removal from the lever 7, but with freedom for rotary movement on the longitudinal axis of the lever 7.

The punches 9 are of well known form and have screw-threaded engagement with the turret 8. By rotating the turret 8, the punches 9 may be moved successively into operative or downwardly projecting positions, for coöperation with an anvil 13 of copper or other suitable material set into the base plate 1 with its upper face substantially flushed therewith. The turret 8 is held in predetermined set positions by a spring latch 14 secured to the under side of the lever 7 and has on its free end a detent 15, arranged to enter any one of four circumferentially spaced notches 16 formed in the collar 11. These notches 16 are arranged to properly position and hold a selected punch for action on the anvil 13.

The lever 7 is oscillated to and from an operative position by a crank 17 journaled in the bearings 3. A hand lever 18 is provided for operating the crank 17 and is secured, as shown, to the right hand end thereof, outward of the adjacent bearing 4. The transverse portion of the crank 17 bears upon the upper face of the lever 7, just back of the turret 8, and on an overlying flat finger 19 rigidly secured to the upper face of the lever 7. During the downward movement of the lever 7, the crank 17 bears directly on the lever 7 and during the upper movement thereof, said crank directly engages the finger 19.

A gage 20, which extends transversely of the base plate 1 for sliding movement thereon toward and from the anvil 13, is provided for properly positioning a piece of material to be punched. As indicated by broken lines in Fig. 2, a strap Z is supported on the base plate 1 and properly positioned over the anvil 13 by the gage 20. The ends of the gage 20 are bent down-

wardly and inwardly to engage the beveled longitudinal edges of the base plate 1 for holding the gage against lifting movement therefrom, but with freedom for sliding movement thereon. The gage 20 is held in different set positions, with respect to a positioned punch 9, by a thumb nut-equipped stud 21 anchored to and projecting above the base plate 1. This stud 21 extends through a slot 22 formed in a rearwardly projecting extension 23 on the gage 20 and the head thereof bears directly against the gage extension 23 and frictionally clamps the same onto the base plate 1.

A pair of horizontally projecting stripper fingers 24 is provided for removing the strap Z from a positioned punch 9, after the same has been punched and during the lifting movement of the lever 7. These stripper fingers 24 are rigidly secured, one to each of the arms 3, project horizontally between the turret head 8 and base plate 1 and are edgewise spaced to permit the positioned punch 8 to work therebetween, during its movement to and from an operative position.

By means of the hand lever 18, the crank 17 may be moved from one side to the other of the vertical dead center. When the lever 7 is raised, the crank 17 is rearward of a vertical dead center and the turret head 8 cannot be pressed downward, as the hand lever 18 will engage the thumb nut-equipped stud 21 which acts as a stop. Obviously, by drawing aside the latch 14 and rotating the turret head 8, any one of the different sized punches 9 may be brought into an operative position. The punches 9 can only be set in different positions when the turret head 8 is raised, for the reason that the stripper fingers 24 will interfere with the movement thereof when said turret head is in a lowered position.

What I claim is:—

The combination with a base having an anvil and a pair of arms, of a vertically movable lever pivoted to the base and having on its free end a punch for coöperation with said anvil, a shaft journaled in the free ends of said arms and having a crank connected to the lever inward of the punch for oscillating said lever to move the punch to and from the anvil, and means for oscillating the shaft.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN SANDSTROM.

Witnesses:

C. A. JEGLUM,

A. J. FELT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."