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ADJUSTABLE MACHINE FRAME SUPPORT PROVIDING ALTERNATE
POSITIONS FOR MOUNTING A PIVOTED OPERATING ARM

Filed April 12, 1962

2 Sheets-Sheet 1

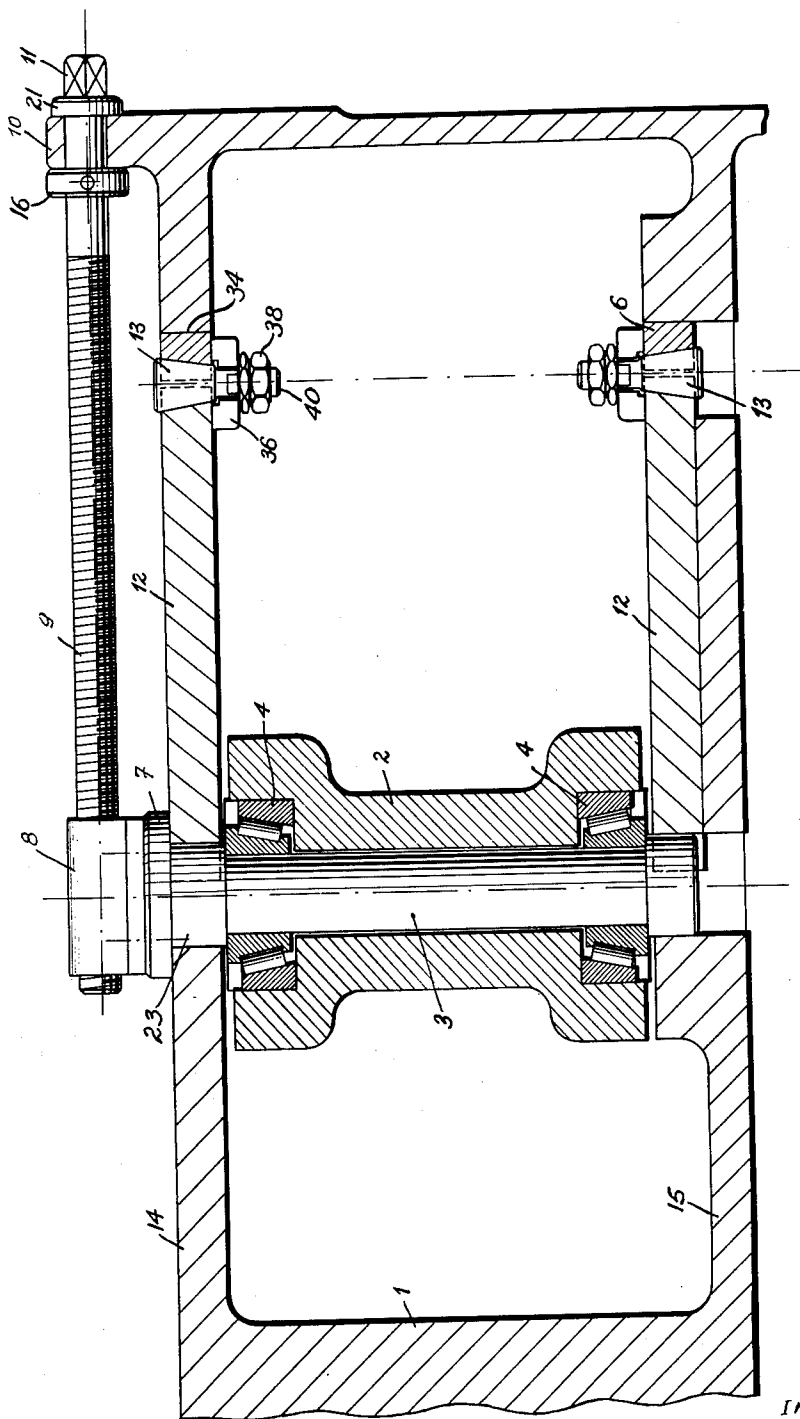


Fig. 1

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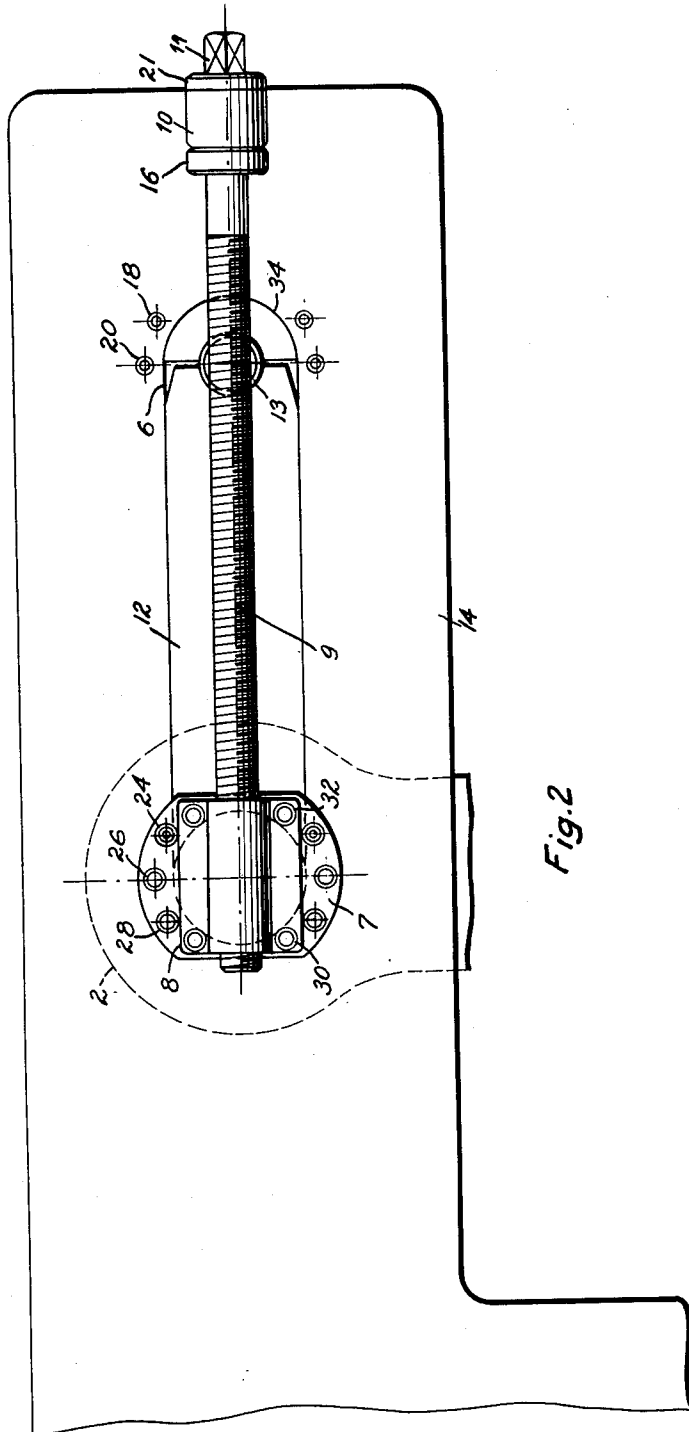


Fig. 2

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1 Claim. (Cl. 308—22)

The present invention relates to an adjustable machine frame support providing alternate positions for mounting a pivoted operating arm which is useful in the frame of a sheet-metal-working machine for the cutting and shaping of round and non-round sheet-metal parts. However, it is apparent that the present invention may be incorporated in almost any machine, whether for sheet-metal work or not, wherein there is required an adjustment or relocation of the pivot point of a pivotable or rockable operating arm.

In this sheet-metal working machine an operating arm is pivotably mounted in the machine frame and is subject to the influence of a control arrangement which influences the operating arm in such fashion that in the case of work by the copying process the movable mounting element halts temporarily in the maximum pivotal position, and in the case of the following process the movable mounting element serves to form a force-increasing transmission.

The primary object of the present invention is to provide an adjustable machine frame support having alternate positions for one end of a pivotable or rockable machine operating arm.

It is a further object to provide an adjustable machine frame support which will securely position one end of an operating arm so as to prevent dislodging even under extreme loading.

It is a further object to provide an adjustable machine frame support having alternate positions for one end of a pivotable or rockable machine operating arm, wherein repositioning may be readily effected by even a relatively unskilled operator.

Further objects and advantages will become manifest in the following description taken in conjunction with the accompanying drawings, in which:

FIGURE 1 shows a front elevation with certain elements in cross-section; and

FIGURE 2 shows a plan view of the parts of the present invention which are essential to the invention.

In the drawings, 1 designates a frame in which there is placed the movably mounted element, constructed as a rocker arm 2. For the mounting of the rocker arm there is provided a shaft 3 which carries roller bearings 4, which serve to receive one end of the rocker arm 2. The opposite end of the rocker arm and its associated structure is not critical for purposes of the present invention and is, therefore, not shown in the drawing. All that must be understood is that the opposite end of the rocker arm is adapted to be rocked or pivoted to serve a useful function in a machine such as one adapted for working on sheet metal. The two ends of the shaft 3 are adapted to be guided in slots 6 which are formed in the transverse ribs 14 and 15 of the frame. One end 23 of the shaft 3, conducted through the transverse rib 14 carries a retaining flange 7 and a spindle nut 8. The

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retaining flange 7 is secured to shaft 3 and is provided with fastening means for securing it, and thus the shaft 3, in either of two positions at the ends of slots 6. With reference to FIG. 2, it is seen that the retaining flange is secured to the ribs 14 in the left position by two sets of screws 26 and 28 on either side of the spindle 9. These screws are received in screw holes in the rib 14 such as are seen at the right end of the slot 6 indicated by numerals 18 and 20. It is seen that the screw holes 24 on either side of the spindle may not receive screws due to the fact that they overlap the slot 6 in this position.

However, these screw holes 24 are utilized in the alternate position of the rocker arm which is at the right end of the slot 6 as viewed in FIG. 2. It is apparent that in the right hand position the screws 28 are not used for the same reason.

The spindle nut 8 is in turn secured to the retaining flange 7 by two sets of screw fasteners 30 and 32 disposed on opposite sides of the spindle 9. The screw threaded spindle nut 8 cooperates with a spindle 9 which extends in the longitudinal direction of the frame 1 and is rotatably mounted at 10. The spindle 9 is provided with a pair of abutment means 16 and 21 disposed on either side of the mounting 10 for preventing axial movement thereof, and is further provided with a square end 11 which is utilized in rotating the spindle by any suitable tool.

Disposed in each of the slots are insert means for preventing movement of the rocker arm and shaft once they are in position. Since the insert means are identical for both slots, only the wedge means for one slot will be described.

The insert means consist of a first insert 12, a second smaller insert 34, and a wedge device consisting of a cone element 13 having a threaded shank 40, an annular clamp 36 and nut means 38. It is readily apparent from the drawing that once the insert means are in position, tightening of the nut means 38 functions to spread the inserts 12 and 34 and thus secure a rigid positioning of the rocker arm shaft due to the force exerted thereon by the inserts 12 in each of the slots.

To reposition the pivot axis of the rocker arm from left to right, both of the wedge devices are removed, thus releasing both of the inserts 12 and both of the inserts 34. The screws securing the retaining flange are then removed. The spindle is then rotated thereby shifting the spindle nut, shaft 3 and the end of the rocker arm to the new right hand position. The retaining flange is then secured in place by screws as before. All the inserts are then reinserted in the spaces left vacant along with the wedge devices. The wedge devices are tightened so as to secure a rigid positioning of the structure as before.

By the described movement of the shaft 3 of the rocker 2 the object is achieved that work-pieces with extreme differences in the dimensions can be machined under optimum conditions with the same sheet-metal-working machine.

What I claim is:

In combination, a machine bearing frame support providing alternate mounting positions for a single shaft having associated roller bearings at the ends thereof, said support being provided with slots formed therein whose

ends define respectively the alternate positions for mounting said single shaft and associated bearings; removable insert means consisting of two separate insert elements in each slot lying within each of said slots; retaining flange means connected to an end of said removable shaft, one end of each of said insert means bearing against said shaft; a removable and separate locking wedge means disposed between the insert elements in each of said slots; and adjusting means for adjusting the position of said shaft comprising a threaded spindle rotatably mounted on said frame support, and a spindle nut at the end of said spindle adjacent to and connected to the retaining flange of said shaft.

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