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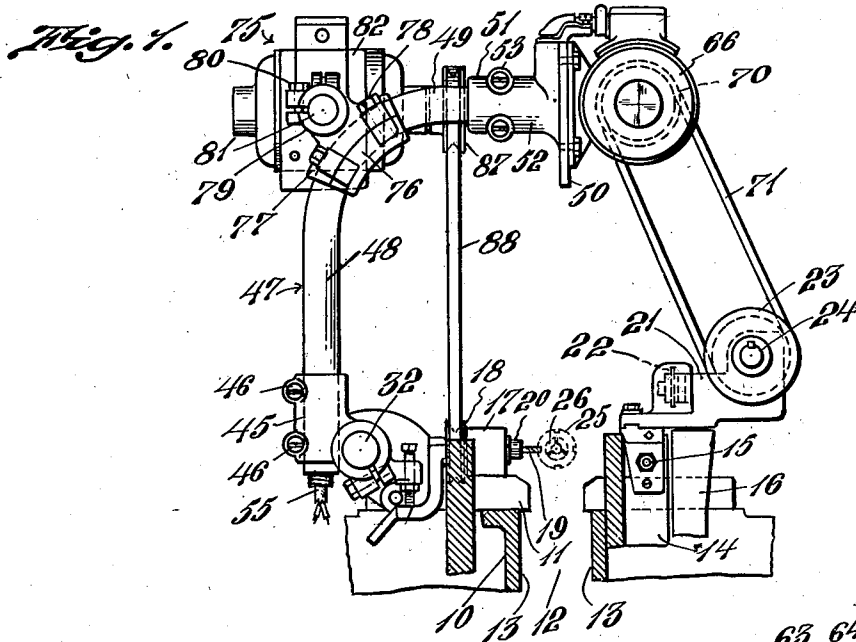
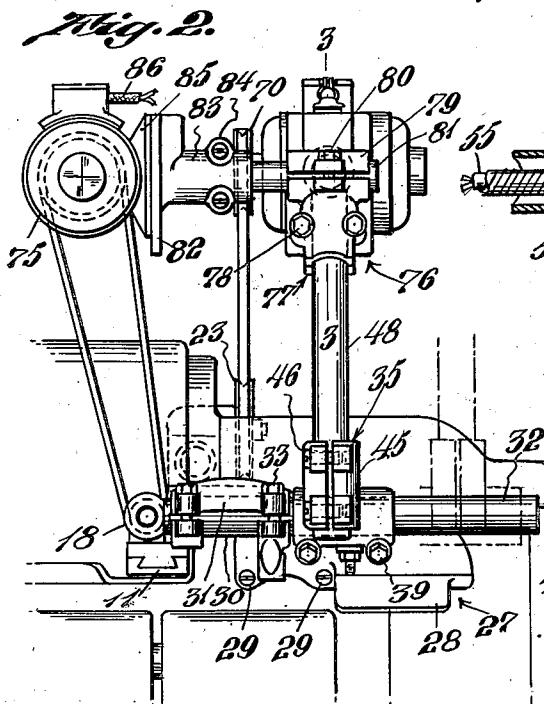
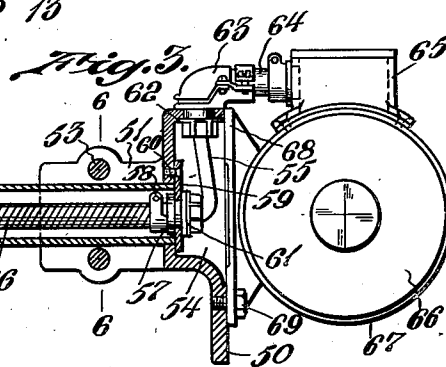
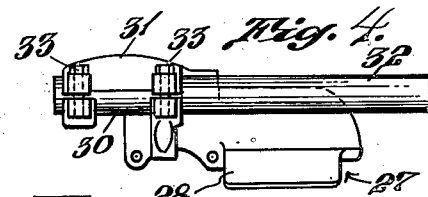
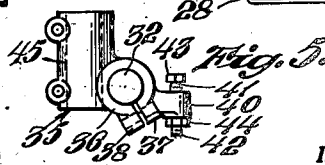
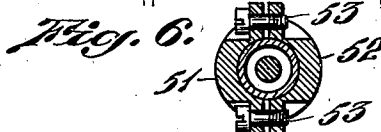
C. A. RICH

2,278,216

MACHINE TOOL

Filed Dec. 27, 1939

2 Sheets-Sheet 1



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**March 31, 1942.**

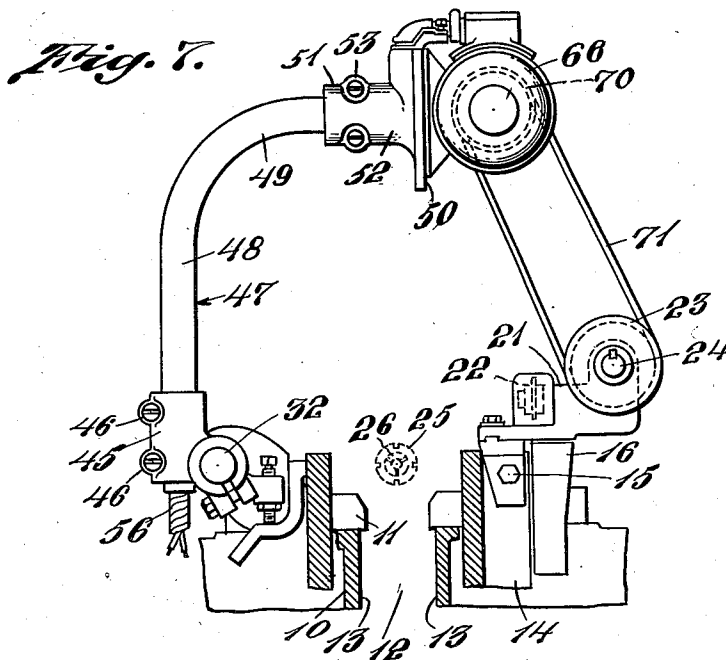
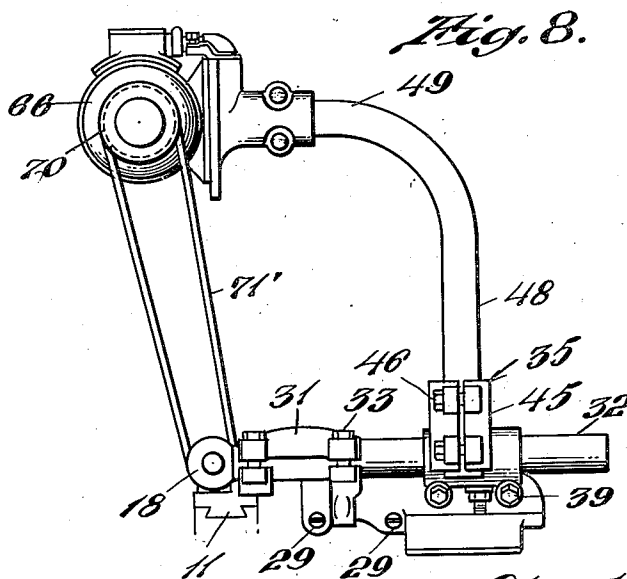
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**2,278,216**

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2 Sheets-Sheet 2



## UNITED STATES PATENT OFFICE

2,278,216

## MACHINE TOOL

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corporation of Rhode Island

Application December 27, 1939, Serial No. 311,158

## 1 Claim. (Cl. 248—16)

This invention relates to a machine tool of the character which has a plurality of attachments optionally usable in connection with different work to be performed such as for instance a screw machine and the invention has for one of its objects to provide means for driving one or more of these attachments directly from an electric motor without the necessity of providing driving stands or complicated belting.

Another object of the invention is to provide a single motor which may be so mounted and adjusted that it will serve to drive any one of a plurality of attachments which may be selected.

Another object of the invention is to provide a motor mounting support upon which more than one motor may be arranged whereby to provide for the simultaneous driving of two or more attachments on the machine.

Another object of the invention is to provide arrangement whereby electric wires for driving the electric motor or motors may be concealed such as for instance by passing them through the hollow support on which the motor is mounted.

With these and other objects in view, the invention consists of certain novel features of construction as will be more fully described and particularly pointed out in the appended claim.

In the accompanying drawings:

Fig. 1 is a fragmental sectional view illustrating a motor stand support arranged with two driving motors and in dotted lines the relative location of the work chuck;

Fig. 2 is an elevation looking at the back of the machine which is partially shown in Fig. 1 and illustrating in outline more of the machine upon which the motor stand support is mounted;

Fig. 3 is a sectional view on substantially line 3—3 of Fig. 2;

Fig. 4 is a detail in elevation of a bracket for mounting a bar upon which the motor stand support is adjustable;

Fig. 5 is an elevational detail illustrating the bracket for mounting the motor stand support upon a slide bar of Fig. 4;

Fig. 6 is a sectional view on substantially line 6—6 of Fig. 3, showing the construction of the split clamping member when engaging the motor stand support arm;

Fig. 7 is a sectional view similar to Fig. 1 showing the motor stand support arranged with a single driving motor;

Fig. 8 is a fragmental elevation of a different position of the motor stand support arranged with a single driving motor.

In the use of a machine tool such for example

as a screw machine, various attachments are placed upon the machine for doing various special work which may be required of the machine. At times one of these attachments will be used and at other times a different attachment will be used. Also it may be desirable to utilize two attachments driven simultaneously from different motors. The present motor mounting relieves the operator of making special arrangements for driving the different attachments and also enables two attachments to be driven simultaneously. The drive of any one attachment may be accomplished by variously adjusting a single motor to different locations and a direct belt drive, usually in a single plane, may be had; and the following is a more detailed description of the present embodiment of this invention, illustrating the preferred means by which these advantageous results may be accomplished:

With reference to the drawings, 10 designates generally a portion of the frame of a screw machine upon which the cross slide 11 is mounted and provided with a suitable means for mounting some attachment. A space 12 is provided between the walls 13 of the frame through which the work pieces pass which are cut off in the spindle and not carried to other stations, or an attachment may be mounted in various other locations on the machine for further work.

I have illustrated a cross drilling attachment 17 as mounted on the cross slide 11, there being provided upon this attachment a pulley 18 and a drill 19 in chuck 20 suitably operated from the pulley 18. Another attachment 21 is illustrated by way of example as being mounted directly upon an upwardly projection portion 14 of the framework 10 of the machine by means of the bolt 15 and consisting of a tool 22 with a pulley 23 mounted upon the shaft 24 which through suitable gearing drives the tool 22. After the tool performs its operation the work drops through the chute 16 into a container therefor. A chuck 25 having jaws 26 through which the work is passed and is gripped is also illustrated in its proper relative position as viewed in Fig. 1, although shown in dotted lines by reason of its being nearer the observer of the figure than the line of section.

On the back of the machine or at the left as shown in Fig. 1, I have provided a bracket 27 shown with the bar which it supports in Fig. 4. This bracket consists of a plate 28 suitably shaped to conform to the machine and mounted by means of bolts 29 upon the framework of the machine. This bracket has a split sleeve consisting of a

lower portion 30 and an upper cap portion 31 for adjustably receiving a bar 32 and clamping the same firmly in position by means of the bolts 33. Bar 32 supports a bracket 35 shown individually in Fig. 5 and consisting of a split sleeve 36 drawn together in clamping position upon the bar 32 through the ears 37 and 38 by bolts 39 (see Fig. 2). This bracket has an arm 40 through which a bearing bolt 41 is threaded so that its end 42 will rest upon a part of the bracket 27 as illustrated in Fig. 1 to assist in adjusting the bracket 35 to locate it in the desired position of rotation about the center of the bar 32 where it will be clamped. This bolt 41 may be adjusted by reason of its head 43 and secured in position by the clamping nut 44 having engagement with the under side of the arm 40. Bracket 35 has formed integral therewith a tubular split sleeve 45 which is drawn together by bolts 46 for mounting the motor stand support 47 which consists of tubular L-shaped member extending upwardly through this bracket and held at the desired adjusted height by the bolts 46.

One leg 48 of this motor stand member 47 extends vertically while the other leg 49 extends horizontally. Upon the end of this horizontally extending leg a plate 50 is clamped by reason of the split bearing having portions 51 and 52 held together by the bolts 53 in adjusted position. This plate is cupped to provide a recess 54 which houses the electrical conducting cable 55 which passes through the tubular motor stand support 47 and is protected by BX covering 56. This BX covering is suitably clamped at the outlet end of the motor stand by the clamp 57 which is secured on the BX covering at 58 and is held by the nut 61 engaging the locking plate 59 secured in the recess by screws 60. This electrical conduit 55 is also clamped as it extends from the recess 54 by a similar construction designated generally 62. The conduit passes through the protecting elbow 63 and tube 64 into the motor casing connecting box 65 in the usual manner. The motor casing 67 is provided with a plate 68 bolted as at 69 to the plate 50 to support the motor in position at the end of the motor stand 47.

By reason of the motor stand being mounted in the tubular split sleeve 45 it may be swiveled around the center of its leg 48 as an axis and the pulley 70 on the armature shaft of this motor may be aligned with the driving pulley 23 and driven by the belt 71 as shown separately in Fig. 7, or in conjunction with another motor in Fig. 1. Also, this motor stand member may swivel about so as to be aligned with some other attachment

such for instance as the attachment 17, as shown in Fig. 8. The manner of swiveling being that the motor 66 as viewed in Fig. 1 would be swung away from the observer until the pulley 70 is in line or in substantially the same plane with the pulley 18 so that a belt 71' might then be provided. Other attachments on the machine might similarly be operated by the adjustment of the motor stand 47 either by the positioning of the bracket 35 as illustrated or by the sliding of the bracket 35 along the bar 32 to the correct position for alignment of the driving belt.

In some cases it is desirable that two attachments be driven simultaneously. In this event an additional motor designated generally 75 will be utilized. In order to support this additional motor I provide a bracket designated generally 76 which consists of an arcuate split sleeve 77 which will fit about the curved elbow of the motor stand support 47 and which may be drawn into clamping position at various locations along the curve of this stand support by the bolts 78. This bracket also provides a split sleeve 79 which by reason of the bolt 80 may clamp a bar 81 in adjusted position in the bracket. This bar 81 in turn supports a plate 82 held in position by the split collar 83 clamped by bolts 84 and upon this plate 82 there is suitably mounted the motor 75 through its base 85.

Electric conductors designated generally 86 extend to some suitable source of supply and may or may not extend through the tubular motor stand support 47. This motor is provided with a pulley 87 upon which is an armature shaft from which a belt 82 extends to the pulley for driving the attachment 17. By this arrangement these two motors drive the two attachments 21 and 17 simultaneously when work which is being operated upon requires such treatment.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible.

I claim:

In a machine tool, a frame adapted to have mounted thereon attachments at different locations, an L-shaped motor support stand having a vertical leg and a horizontal leg, means to swivelly mount the vertical leg of said stand on said frame, the horizontal leg of said stand being adapted to support a motor for movement to various locations to position the motor for driving a selected attachment and lining up a belt for driving an attachment from said motor.

CHARLES A. RICH.