Oct. 8, 1935. C. M. WILSON 2,016,528

COMBINATION MOTORIZED WORK AND MACHINE BENCH

Filed Aug. 4, 1934 2 Sheets-Sheet 1

Fig. 1

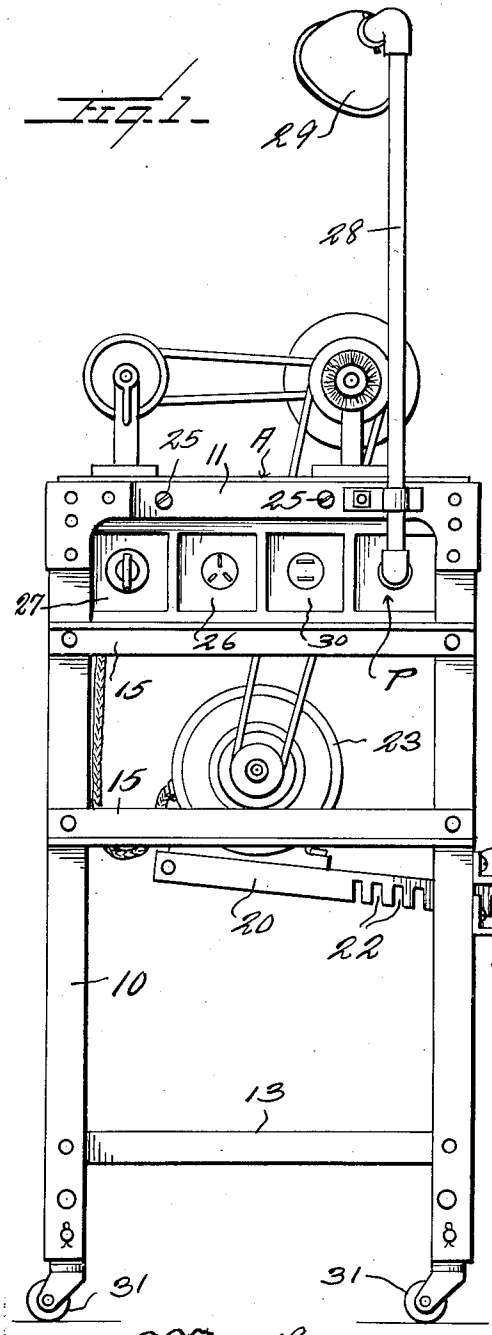



Fig. 2

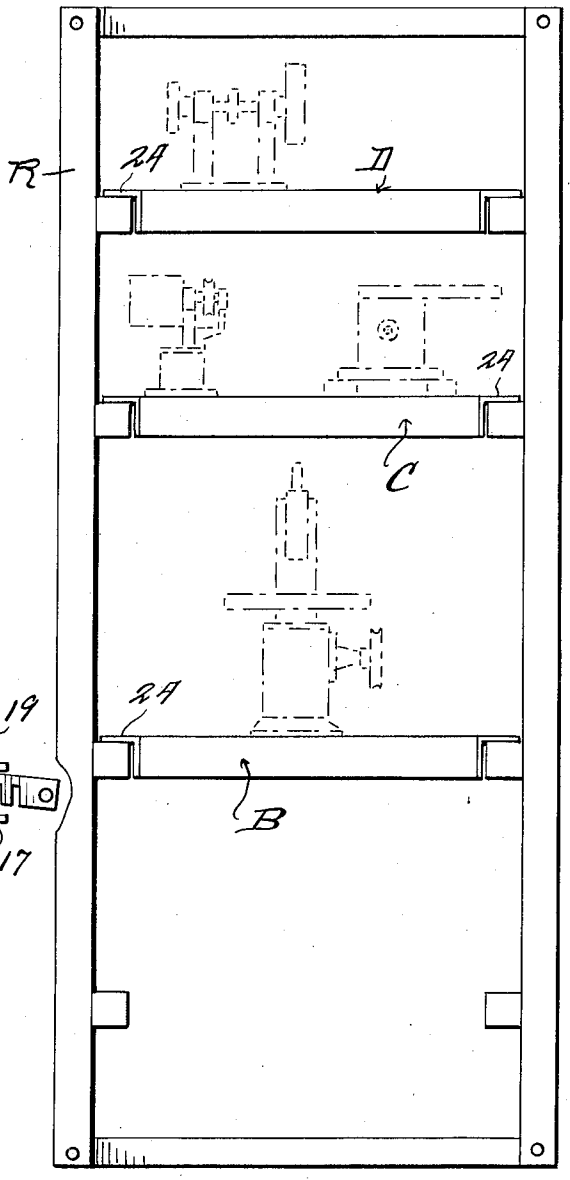
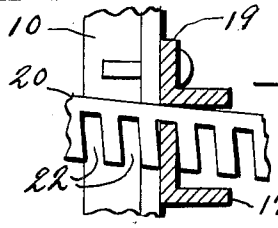



Fig. 6




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Filed Aug. 4, 1934 2 Sheets-Sheet 2

Fig. 3

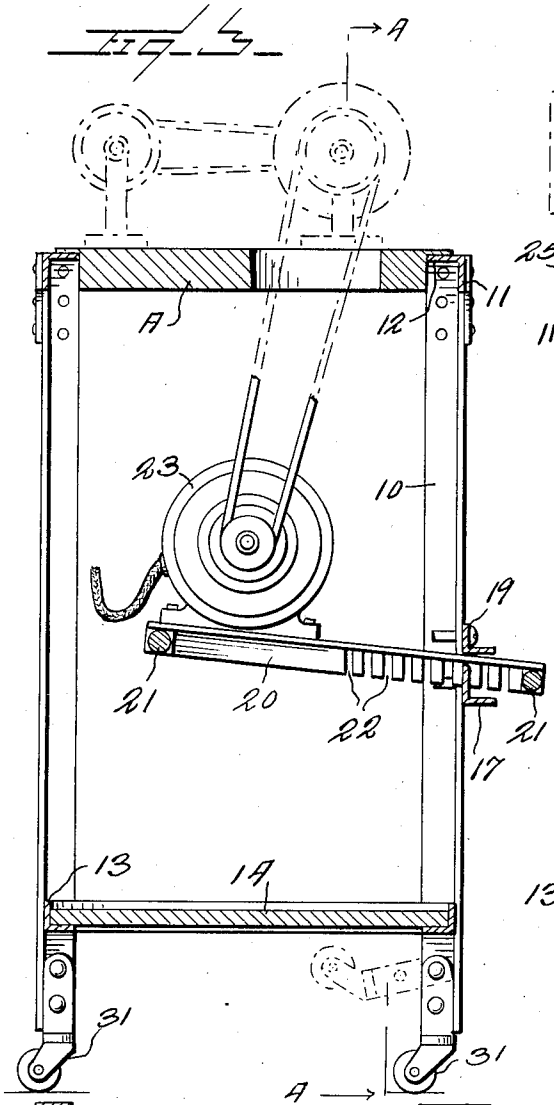
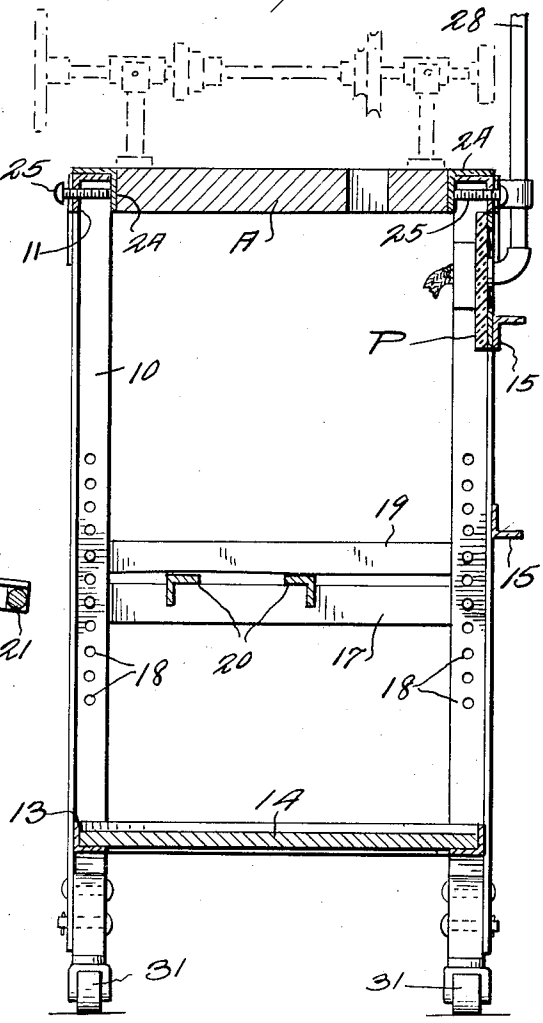



Fig. 4



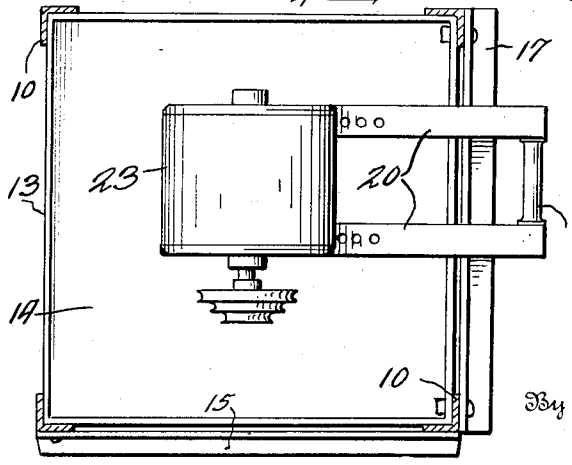




Fig. 5

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# UNITED STATES PATENT OFFICE

2,016,528

## COMBINATION MOTORIZED WORK AND MACHINE BENCH

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Application August 4, 1934, Serial No. 738,563

7 Claims. (Cl. 144—1)

This invention relates to benches upon which machines are mounted, and particularly to improvements in benches of this character provided with motors and upon which different machines may be mounted.

One of the objects of the present invention is to provide a bench of this character which is so constructed as to permit the mounting of any one of a plurality of different machines and the connection of such machines with a motor carried by the bench.

A further object of the invention is to provide a floating motor, that is, a motor which is on the bench and which is capable of being moved into a plurality of different situations on the bench so as to adapt it for conveying power to different machines which may be mounted on the bench.

A further object is to provide a motor support for the bench which will permit the wheel of the motor to keep the belt taut.

A further object is to provide movable tables for the bench whereby one machine or set of machines may be transposed and exchanged for another machine or set.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein

Figure 1 is an end elevation of a work bench constructed in accordance with my invention.

Fig. 2 is an elevation of a rack for supporting the several tables to be used with the work bench.

Fig. 3 is a vertical transverse section of the work bench.

Fig. 4 is a vertical section on the line 4—4 of Fig. 3.

Fig. 5 is a top view of the bench with the table removed.

Fig. 6 is a fragmentary elevation enlarged of the notched motor support, and the supporting bar therefor, the latter being in section.

The bench as illustrated in Fig. 1 has four legs 10 which are of angle iron. At the upper end of these legs the legs are connected by angle irons 11, the horizontal flanges of which extend inwardly as at 12. The lower end of the bench is connected by angle irons 13 which support a platform 14 which may be used for the storage of stock or to store a flexible shaft unit or for other purposes.

Intermediate the upper and lower ends of the legs, the legs are connected by two angle iron braces 15, and extending across one side of the bench is an angle iron support 17. This support 17 is vertically adjustable upon the legs, the legs being formed with a plurality of perforations 18 for this purpose, and bolts, screws, pins or other devices pass through these perforations and into the ends of the support 17 so that this support may be vertically adjusted.

Disposed upon the exterior of the legs which support the bar 17 is an angle iron hold-down bar 19 which is likewise adjustable up and down the legs by members passing through the perforations 18. Preferably this hold-down bar will be supported by means of pins, tho clamp screws or other means may be used for this purpose, one of these pins acting as a hinge so that the bar may be readily elevated and readily depressed.

Coacting with the supporting bar 17 and the hold-down bar 19 are two angle iron motor supporting bars 20 extending parallel to each other and connected at one or both ends by any suitable braces and provided with handles 21 at opposite ends. The vertical flanges of these angle irons 20 are upwardly notched as at 22, these notches being adapted to fit over the vertical flange of the angle iron supporting bar 17. The inner end of this support formed on the bars of the angle irons 20 carries an electric motor 23 of any suitable character. By lifting the hold-down bar 19 the motor support formed by the bars 20 may be shifted either transversely of the machine or longitudinally of the machine.

It will be noted that the motor support fulcrums slightly on the vertical flange of the bar 17 so that the weight of the motor may keep the motor belt tight, that is, the belt whereby power is transmitted to the various machines which may be supported upon the top of the bench.

Co-acting with the bench and adapted to be selectively positioned thereon are a plurality of movable tables. One of these tables is designated A. These tables are all slotted for the passage of the belt from the motor 23 to the machines mounted upon the tables and each table is adapted to fit within the horizontal flanges of the angle irons 11 and rest thereon. To this end each table is formed with downwardly extending flanges 24. These flanges may be on opposite sides of the table or on all four sides of the table, as desired. Clamp screws 25 or equivalent instrumentalities pass through the angle irons 11 and engage against these flanges 24 to thus hold the table rigidly in position upon the top of the bench.

I have illustrated a plurality of these tables, one of them being shown as mounted upon the bench itself and the others, B, C, and D, being

disposed within a rack R. The rack forms no part of my invention it merely being desired to illustrate that a number of different tables may be used each containing a different form of machine and each table being readily inserted in place in the top of the bench and clamped therein ready for use.

It will be seen that the motor or the motor support is shiftable so as to carry the transmission pulley of the motor into position beneath the driving shaft or other instrumentality of any particular machine, and that this motor is adjustable longitudinally with the bars 20 or transversely. It is also obvious that because of the space between the bars 20 that the motor itself may be mounted for adjustment upon these supporting bars 20. Each of these tables is so constructed as to accommodate a belt from the motor to the machine and also to accommodate from one to six individual machines.

The bench is wired for electric current to such power as desired to furnish power or current to the motor. To this end I provide a panel P, which carries a 220-volt supply plug 26, a 220-volt switch 27, and 110-volt utility plug permitting attachment of any other machine. In addition to this I provide a pivoted supporting rod 28 which carries at its upper end the lamp 29 so as to throw light down upon the bench. The switch may be used for starting and stopping the motor and the plug 30 for attaching any other electrical extension cord when needed. The light holder may be lowered entirely out of the way when large work is to be done.

It will be seen that a bench constructed in accordance with my invention is particularly well adapted for use by the home craftsman who may readily store the tables and use them as required and who has little space to set up an entire workshop. A contractor may readily transport the bench, together with the various tables, to the situation where the work is to be accomplished, set them up and then readily transport them to any new situation. On the tables any desired tool, as for instance, grinders, saws, lathes, band saws, joiners, or any other tool or set of tools may be placed and belted to the motor direct or through a jack shaft in order to secure various speeds.

The table A may accommodate between the power pulley and the light support a grinder, a buffer, or other tool and at the opposite end of the driving shaft a face plate may be used or a grinder, a buffer, a sanding disk, or other necessary combination tools. These tables may be so arranged as to give a plurality of speeds as may be needed by the operator. Furthermore, the lower ends of the legs will be provided with pivotally mounted casters, designated generally 31, these casters being so arranged that they may be turned down to permit the bench to be readily shifted about the workshop and then turned up to permit the legs to rest solidly upon the floor of the shop. When turned down, the casters may be held in place by pins, screws, or other clamping devices.

Attention is particularly called to the fact that the notches 22 are disposed at slightly less than a right angle to the plane of the motor supporting bars 20. This is for the purpose of holding the motor in such position as to secure the right belt tension. The motor supporting bars 20 are set with the angle iron 17 extending into the desired notch to give the desired belt tension and thus the belt tension does not depend entirely upon the weight of the motor. The slight upward and downward movement of the motor supporting bars 20 will hold the belt sufficiently taut, it being understood that the notches 22 are spaced a distance apart slightly greater than the thickness of the upwardly extending flange of the angle iron 17 so as to permit this slight play. If the motor hung entirely upon the driving belt and the weight of the motor be used to secure the belt tension, the motor would have a tendency to climb the belt and vibrate, which is very unsatisfactory. Furthermore, the belt would wear and stretch and this is avoided by my construction.

It will be understood that the very slight play or up and down movement of the motor supporting bars 20 is only enough to release the belt, if desired, when changing machines and to hold the required belt tension. In order to move the motor in or out, it is, of course, necessary to raise the holding down bar 19 and lift the motor supporting bars and shift them. By simply depressing on the handle at the rear of the bars 20, the motor may be lifted so that the belts may be readily shifted when it is desired to change tables.

It will be further seen that by setting the various tables or a jack shaft upon the tables in a required position with relation to the belt, one belt may be used to run any number of machines, therefore, one motor, one belt and one bench with the machine set upon movable tables can be used to form an entire work shop.

It will be obvious that the motor supporting bars may be slid so far to the right of the bench so as to extend the belt pulley to the outside of the bench and thus run an outside machine with the belt from the motor.

The angle iron 15 on the side of the bench may also be used in the manner of the angle iron 17 and be adjustable and the legs be apertured to permit the hold down bar 19 to be used on the side of the bench when in coaction with the angle iron 17 so that the motor may be set on three sides of the bench should necessity require.

While I have referred to a 220-volt supply plug, it is to be understood that the bench panel may be wired for 110-volts to accommodate the ordinary house wiring and run the motor thereby.

While I have referred to the use of angle irons for the formation of this bench and angle irons for the bars 17, 19, 20, and 15, I wish it distinctly understood that I do not wish to be limited to the use of angle irons as other material might be used and that the bench may be differently constructed and braced.

While I have illustrated a specific construction of this bench, which construction has been found to be very sturdy, and yet relatively cheap and light, I do not wish to be limited to the details of construction except as defined in the appended claims, as it is obvious that many minor changes might be made without departing from the spirit of the invention.

What is claimed, is:

1. In a work bench having legs, a supporting bar mounted on the legs of the bench, a hold-down bar also mounted upon the legs of the bench and parallel to the supporting bar, and a motor supporting member having one end disposed between and engageable by both the hold-down bar and the supporting bar, the motor supporting member being formed with a series of vertical notches into which one of said bars is adapted to be inserted being thus transversely and longitudinally adjustable between said bars.

2. A work bench including an open frame hav-

ing legs, interchangeable bench tops detachably engaged with the frame and adapted to carry different machines, a supporting bar mounted upon the legs for vertical adjustment and extending parallel to the table, a hold-down bar mounted on the legs for vertical adjustment and extending parallel to the supporting bar, a motor supporting member having one end disposed between and engaged by both the hold-down and supporting bars, the motor supporting member being transversely and longitudinally adjustable between said bars, and the motor supporting member having a series of notches on its lower face engageable over the supporting bar.

3. A work bench including a frame having legs, a bench top engaged with the frame, a supporting bar mounted upon the legs for vertical adjustment and extending parallel to the top, a hold-down bar mounted on the legs for vertical adjustment and extending parallel to the supporting bar, and a motor supporting member having one end disposed between and engaged by both the hold-down and supporting bars, the motor supporting member being transversely and longitudinally shiftable between the bars and the motor supporting member having a series of notches on its lower face, the notches being disposed at an angle less than a right angle with relation to the plane of the supporting member.

4. A work bench including a frame having legs, a bench top engaged with the frame, a supporting bar mounted upon the legs for vertical adjustment and extending parallel to the table, a hold-down bar mounted on the legs for vertical adjustment and extending parallel to the supporting bar and a motor supporting member having one end disposed between and engaged by both the hold-down and supporting bars, the motor supporting member being transversely and longitudinally shiftable between the bars, and the motor supporting member having a series of notches on its lower face, the notches being disposed at an angle less than a right angle with relation to the plane of the supporting member, the notches being slightly wider than the thickness of the supporting bar whereby to permit the supporting member to have a slight vertical play.

5. A work bench including an open rectangular frame having legs, a bench top on the frame and adapted to carry a machine, a supporting bar mounted upon the legs for vertical adjustment and extending parallel with the table, a hold-down bar mounted in the legs for vertical adjustment and normally extending parallel to the supporting bar, and a motor supporting member comprising two connected bars, the bars having downwardly extending flanges, the flanges being notches to receive and engage with the supporting bar, the notches being disposed at an obtuse angle to the plane of the supporting member and having a width greater than the thickness of the supporting bar.

6. A work bench including a frame defining an opening, the frame being disposed in a horizontal plane and having legs extending downwardly therefrom, interchangeable bench tops each having a portion extending downwardly and fitting into the frame and a portion extending outward over the top of the frame, the bench tops being adapted to carry different machines and each top being slotted for the passage of a driving belt, a motor support carried by the legs and disposed beneath the frame and means whereby the motor support may be adjusted to bring the motor beneath any point of a bench top, the motor support being adjustable vertically with relation to the bench top.

7. A work bench including a rectangular frame defining an opening, the frame being disposed in a horizontal plane and having legs extending downward therefrom, interchangeable rectangular bench tops insertible into the frame and supported thereby, each top being adapted to carry different machines and each top being slotted for the passage of a driving belt, a motor support carried by the legs beneath the frame and means whereby the motor support may be adjusted to bring the motor beneath any point of a bench top and whereby the motor support may be adjusted vertically with relation to the bench top.

CHARLES M. WILSON.