Feb. 21, 1933. P. J. FITZGERALD 1,898,946

STAND ADJUSTMENT FOR ELECTRICAL UTILITY DEVICES

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Fig. 2.

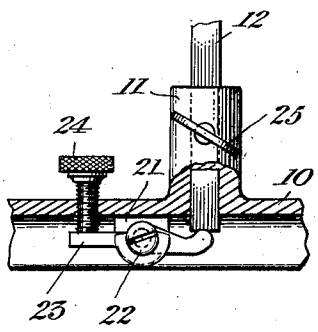


Fig. 1.

Inventor

Patrick J. Fitzgerald

By Shuttleworth Mason & Porter

Attorneys

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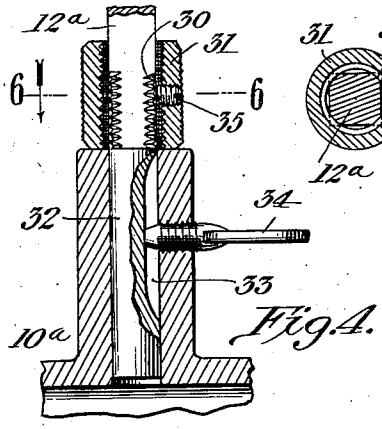


Fig. 4.

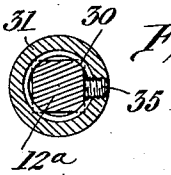


Fig. 6.

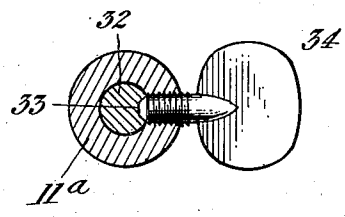


Fig. 5.

Fig. 3.

Inventor,

Patrick J. Fitzgerald.

By Sturtevant Mason & Porter

Attorneys

Patented Feb. 21, 1933 1,898,946

UNITED STATES PATENT OFFICE

PATRICK J. FITZGERALD, OF TORRINGTON, CONNECTICUT, ASSIGNOR TO THE FITZGERALD MANUFACTURING COMPANY, OF TORRINGTON, CONNECTICUT, A CORPORATION OF CONNECTICUT

STAND ADJUSTMENT FOR ELECTRICAL UTILITY DEVICES

Application filed June 9, 1931. Serial No. 543,218.

The present invention relates to improvements in electrical utility devices, and particularly concerns a stand having an adjustment for regulating the height of the tool with respect to the container for the material being operated upon.

Such electrical utility devices are employed, for example, as stirrers and beaters and comprise a supporting column to which is attached a motor having depending therefrom a tool holder and the tool such as a stirring or beating attachment. In employment it is desirable, if not essential, to provide an accurate adjustment of height of the tool with respect to the vessel containing the material undergoing treatment. It has, heretofore, been proposed to provide manual attachment means for regulating the height of the motor bracket on the column, but this has been found in practice not to give a sufficient degree of accuracy or attachment.

According to the present invention means are provided for securing the motor bracket to the column at approximately the correct position of height, together with means for adjusting the height of the column itself for determining the accurate positioning of the tool with respect to the vessel.

Two forms of construction of such devices are shown on the accompanying drawings, in which:

Figure 1 is a side elevation of a utility device assembly, showing parts of one form of adjusting device.

Figure 2 is a fragmentary sectional view substantially on line 2—2 of Figure 1.

Figure 3 is a side elevation of a modified form of the device.

Figures 4 and 5 are sectional views substantially on line 4—4 and 5—5, respectively, of Figure 3.

Figure 6 is a sectional view on the line 6—6 of Figure 4.

In the drawings, the utility device comprises a supporting plate 10 having an upstanding boss 11 thereon in which is slidably mounted a column 12. On this column is mounted a bracket 13 supporting the motor 14. Beneath the motor is usually provided a housing 15 containing the reducing gearing by which is driven the shaft 16 of a tool 17 here represented as a beater, preferably two of which are used in practice cooperating in the well known manner. On the bed plate 10 is illustrated a member 18 for holding a vessel 19 in which may be placed the material to be operated upon.

The bracket is provided with a thumb screw 20 by which it may be clamped at a desired position of height on the column 12. Owing to the weight of the motor and its parts, it is usually found difficult to establish the bracket 13 at the desired point of height at which the bottom of the beater tool 17 will be close to the bottom wall of the vessel 19.

A recess 21 is provided in the bed plate 10, into which extends a horizontal swivel screw or pivot 22 for supporting the adjusting lever 23 which has one end engaged by the nose of an adjusting screw 24 which is threadedly mounted in the bed plate for easy access, while the other end of the lever 23 has a rounded nose constituting an adjusting finger for engagement with the bottom of the supporting column 12. By rotating the adjusting screw 24, the adjusting lever 23 may be rocked on its pivot 22 and therewith the column 12 raised and lowered. A locking screw 25 is preferably provided in the boss 11 for holding the column 12 in its adjusted position. When this locking screw is clamped tight, the entire device including a vessel mounted on the bushing 18 may be lifted by the handle 26 forming a part of the bracket 13.

In the modified form of construction shown in Figures 3, 4 and 5 the bed plate 10*a* and boss 11*a* receive a supporting column 12*a* which in turn has a bracket 13*a* with the

motor 14*a* mounted thereon. As before, a gear casing 15*a*, shaft 16*a* and tool 17*a* are illustrated in conjunction with the vessel 19*a*. The upper end of the supporting column 12*a* in this form of construction is shown to have a plurality of notches 12*b* into which is selectively received a spring detent 13*b* whereby the bracket 13*a* is held at a predetermined distance along the height of the column 12*a*.

The column 12*a* is preferably square and fitted in square openings of the bracket 13*a* whereby the motor 14*a* is held in an invariable position against movement about the axis of the column. The lower portion of the column 12*a*, preferably at the vertical edges of the squared portion thereof, is provided with screw threads 30 for engagement by a collar 31 which rests at its lower end upon the upper surface of the boss 11*a*. Beneath the threaded portions 30, the column 12*a* is reduced in cross section and given a general circular peripheral form comprising the cylindrical portion 32 (Figure 4), having a longitudinal groove 33 therein for engagement by the clamping screw 34 which is threadedly mounted in the boss 11*a*. A set screw 35 is provided in the collar 31 for engaging a flat portion of the supporting column 12*a*.

This modified form is adjusted by bringing the motor 14*a* to approximately the desired position by releasing the spring detent 13*b*, and then permitting it to snap into the notch 12*b* nearest the desired point, usually being just above the desired location, so that the tool 17*a* is yet a slight distance above the bottom wall of the vessel 19*a*. The set screw 35 is then released so that the sleeve 31 may be rotated. Set screw 34 may, if the sleeve 31 is to be raised, remain tightly locked. The sleeve 31 is then rotated and by release of the set screw 34, the supporting column 12*a* is moved downward, in such event, until the tool 17*a* is at the desired height. The set screw 35 is then engaged. Set screw 34 is likewise engaged with the reduced portion 32 while entering the groove 33 thereof, whereby to prevent rotation of the supporting column 12*a* and the parts carried thereby about the axis of the column, and also to make it possible, as before, to carry the device by the handle 26*a*.

When it is desired to raise the beater 17*a* from its prevailing adjustment, the set screws 34 and 35 are released as before, and after raising the column 12*a*, the sleeve 31 is rotated until the proper adjustment is attained, whereupon the set screws 34 and 35 are again tightened.

In each instance, it is preferred that the supporting column 12 or 12*a* shall have a non-circular cross section, so that the motor 14 or 14*a* is held in a definite position and prevented from movement toward and from the side walls 19 or 19*a*. Likewise, a clamping member 25 or 34 is provided to hold the column against rotation and to prevent it from being withdrawn from the base 10.

In the first form of construction, the adjustment may be lost each time the motor and tool is raised, following release of the clamping screw 20, but an easy adjustment is provided by the screw 24 so that resetting to a desired position is easily and quickly accomplished. In the second form of construction, the engagement of the spring detent 13*b* in the same notch 12*b* permits a return to exactly the same position, and if the same vessel 19*a*, or a vessel of corresponding vertical bottom dimension be employed in conjunction with a suitable support, it is unnecessary to move the sleeve 31 even though the bracket 13*a* be entirely separated from the column 12*a* during the operation of withdrawing the vessel 19.

It is obvious that the invention is not limited solely to the form of construction shown, but that it may be employed within many ways of the scope of the appended claims.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent, is:—

1. An electrical utility device including a stand, a supporting column, and a bracket securable to said column for supporting a motor and a tool, said column being vertically movable in said stand, in combination with an internally threaded sleeve engaged with screw threads on said column, said sleeve resting on top of said stand, whereby the threaded adjustment of said sleeve on said column will determine the vertical position of said column with respect to said stand, and means for securing said sleeve in adjusted position on said column.

2. An electrical utility device including a stand, a supporting column, and a bracket securable to said column for supporting a motor and a tool, said column being vertically movable in said stand, in combination with an internally threaded sleeve engaged with screw threads on said column whereby the threaded adjustment of said sleeve on said column will determine the vertical position of said column with respect to said stand, means for securing said sleeve in adjusted position on said column, and means for preventing the withdrawal of said column from said stand.

3. An electrical utility device including a stand, a supporting column, and a bracket securable to said column for supporting a motor and a tool, said column being vertically movable in said stand, in combination with an internally threaded sleeve engaged with screw threads on said column, said sleeve resting on top of said stand whereby the threaded adjustment of said sleeve on said column will determine the vertical position of said column with respect to said stand,

and means for securing said sleeve in adjusted position on said column, said column having a non-circular section within said stand, and clamping means on said stand and engageable with said section for holding said column and stand together whereby to prevent separation thereof and also to prevent rotational movement of said column about its axis.

In testimony whereof, I affix my signature.

PATRICK J. FITZGERALD.