Sept. 20, 1971 H. DIETERLE ET AL 3,606,558

SUPPORT FOR PORTABLE DRILLING MACHINES OR THE LIKE

Filed July 17, 1969 5 Sheets-Sheet 1

FIG. 1

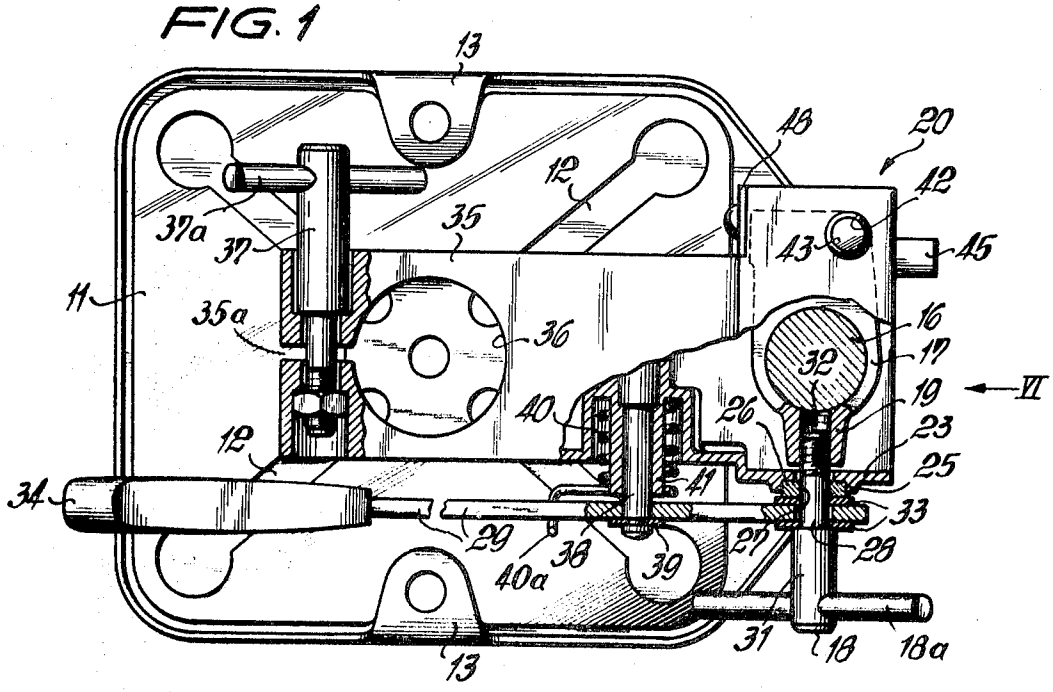


FIG. 3

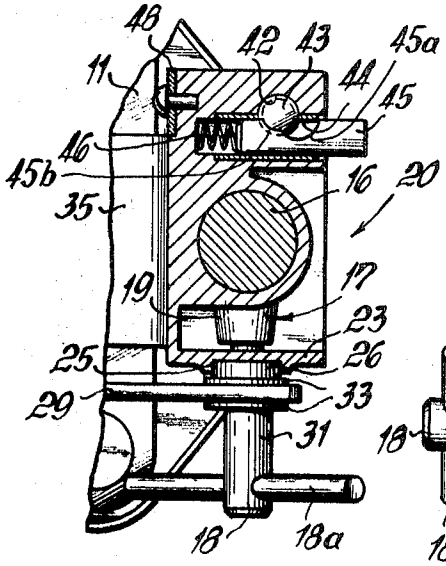
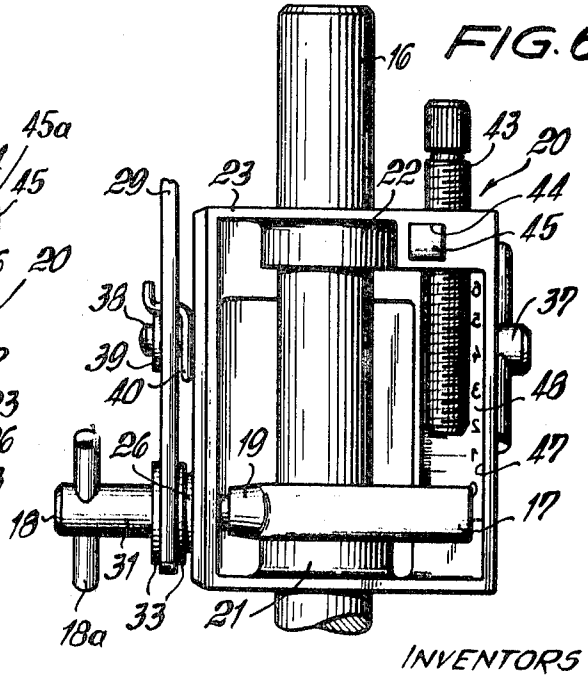


FIG. 6



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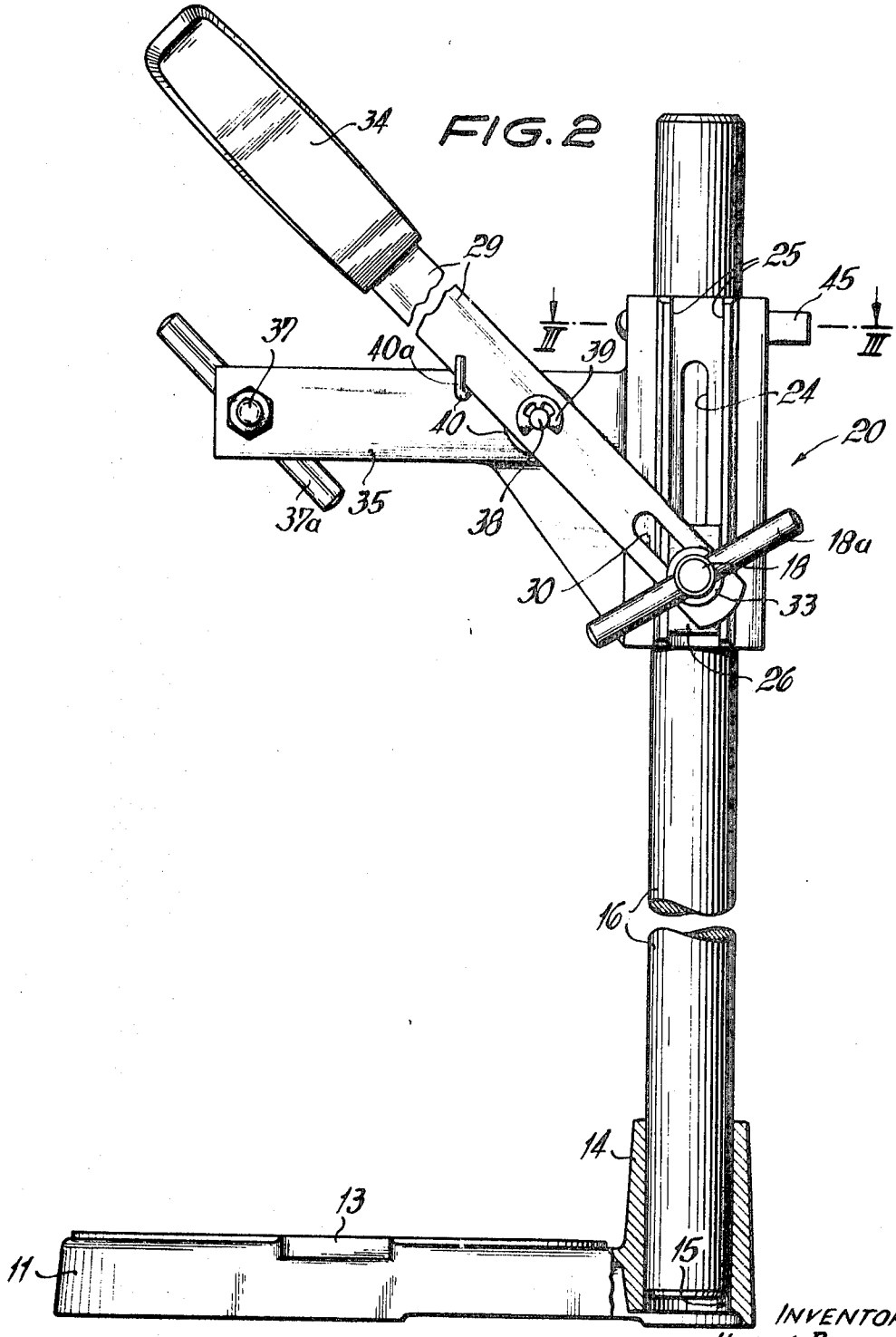
Filed July 17, 1969 5 Sheets-Sheet 2

FIG. 2



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Filed July 17, 1969 5 Sheets-Sheet 3

FIG. 4

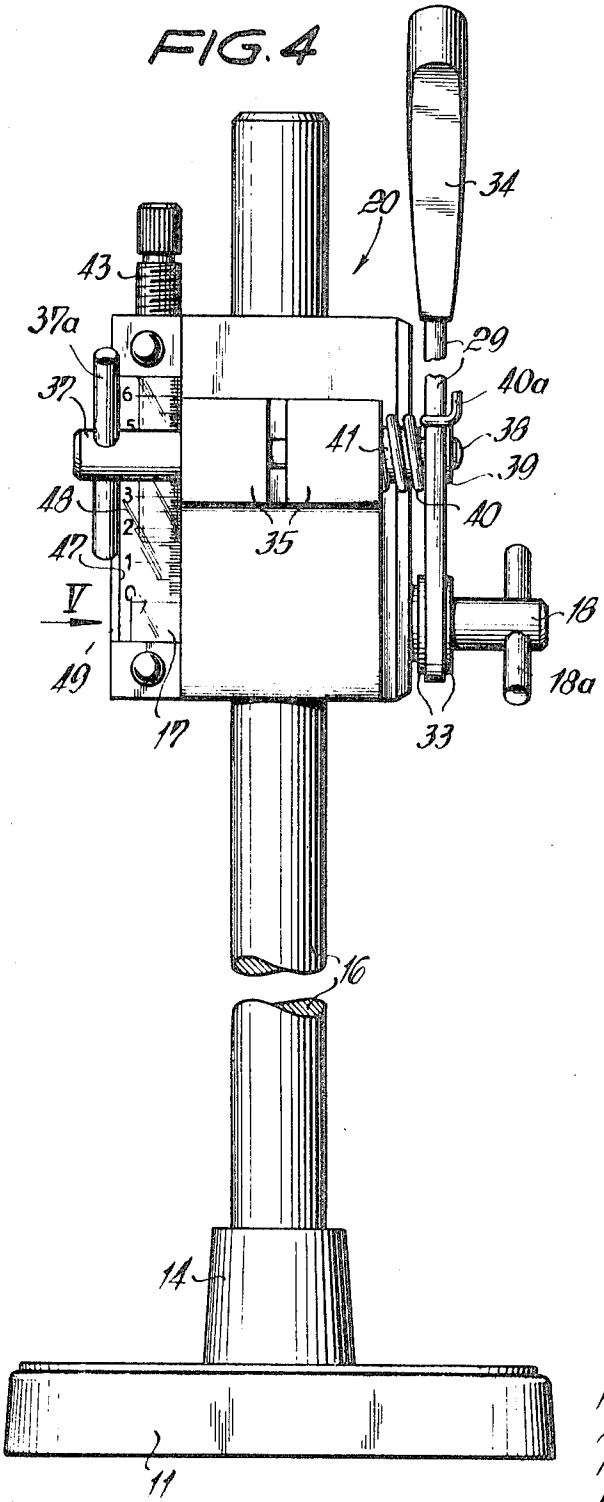
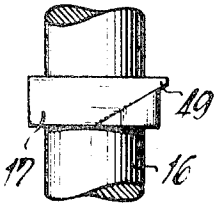


FIG. 5



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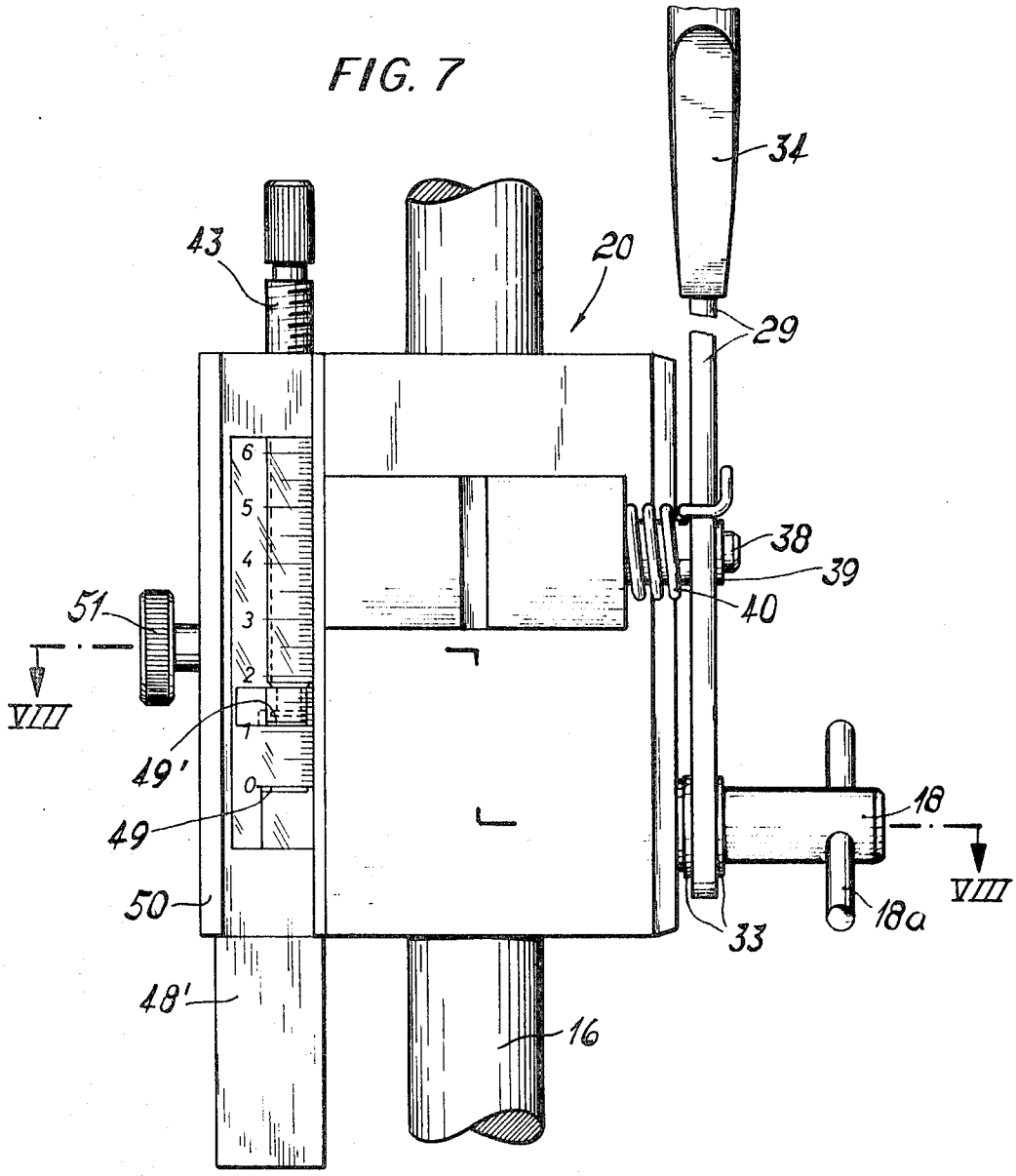
Filed July 17, 1969 5 Sheets-Sheet 4

FIG. 7



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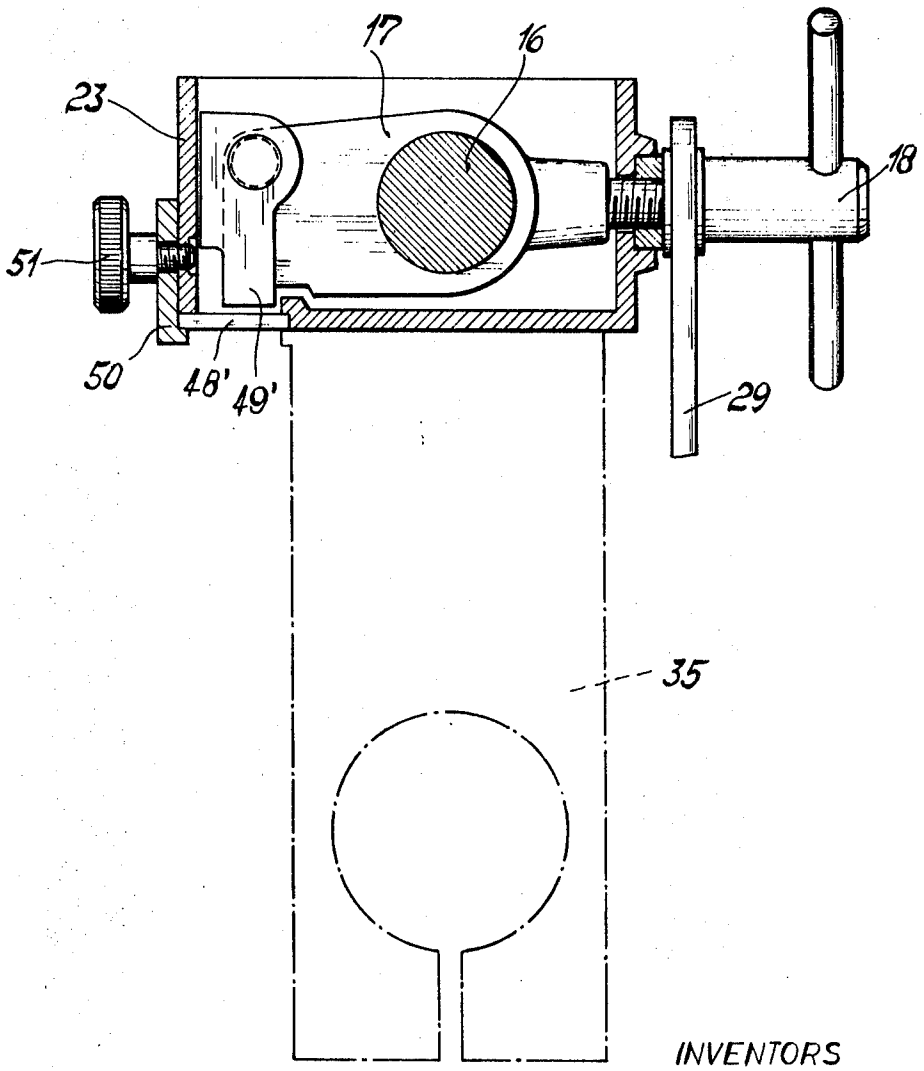
SUPPORT FOR PORTABLE DRILLING MACHINES OR THE LIKE

Filed July 17, 1969 5 Sheets-Sheet 5

FIG 8



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3,606,558

SUPPORT FOR PORTABLE DRILLING MACHINES OR THE LIKE

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Int. Cl. B23b 45/14, 49/00
U.S. Cl. 408—16 9 Claims

ABSTRACT OF THE DISCLOSURE

A support for portable drilling machines comprises a column extending upwardly from a work supporting base, a clamp movable along the column, an arm movable along the column with reference to the clamp and having means for holding a drilling machine so that the tip of the drilling tool extends toward the base, and a feed depth selecting device including an externally threaded gage in a vertical bore of the arm and a locking bolt having threads which normally mate with the threads of the gage. The bolt can be disengaged from the gage in response to application of finger pressure and the gage abuts against the clamp when the arm moves the machine to the lowermost position in which a workpiece mounted on the base is formed with a hole of desired depth. A scale on the arm cooperates with an index on the clamp to indicate the position of the arm with reference to the clamp.

BACKGROUND OF THE INVENTION

The present invention relates to supports or stands for portable power tools, particularly to improvements in supports for portable drilling machines. Still more particularly, the invention relates to improvements in feed depth selecting devices which are provided on such supports to determine the depth of holes which are to be drilled into workpieces.

It is known to mount a portable drilling machine on an arm which is movable up and down along a column and to place a workpiece onto a base which supports the column and is located below the material removing tool of the machine. The utilization of a support or stand is particularly desirable when the workpieces must be formed with holes of accurately determined depth and when drilling tool must be moved into the workpiece by exertion of a substantial pressure. It is also known to provide such supports or stands with feed depth gages which serve as a means for selecting in advance the extent to which the tool can penetrate into the workpiece which is mounted on the base of the support. As a rule, the arm which supports the portable drilling machine is reciprocable along the column by means of a lever or a like manually operated part. The feed depth gage of a conventional support normally comprises a smooth-surfaced pin which is mounted in a bore of the arm and is movable to an infinite number of positions in each of which it can be fixed by means of a locking screw or the like. When the arm reaches the lower end of its feed movement, the tip of the smooth-surfaced pin engages a clamp which is adjustably mounted on and is movable lengthwise of the column. It is also known to employ an externally threaded gage which meshes with an internally threaded portion of the arm so that it can move to a selected position in response to rotation relative to the arm.

A drawback of the just described feed depth gages is that they cannot be properly adjusted without resorting to a trial and error procedure. Therefore, such gages are not practical for use in connection with drilling machines which are employed to drill holes of different depth into each of a series of successive workpieces. This is due to the fact that too much time is lost for adjustment of the gage prior to each drilling operation. Moreover, such gages are not suited for manipulation by tinkers in do-it-yourself workships because an unskilled person is unlikely to properly adjust the gage prior to starting of a drilling operation. Another drawback of many presently known feed depth gages is that they are free to fall out of their bore by gravity as soon as the clamping screw is loosened. This often leads to losses and lengthy interruptions in use of the drilling machine. As a rule, such conventional gages have found acceptance mainly in repair shaps and in smaller plants where a large number of workpieces must be provided with holes of identical depth so that the gage need not be adjusted at frequent intervals. Externally threaded gages are less likely to become lost or misplaced; however, substantial adjustments consume much time because the gage must be rotated for an extended period of time if its axial position is to be changed to a considerable extent.

SUMMARY OF THE INVENTION

An object of our invention is to provide a novel and improved support for portable power tools, particularly for portable drilling machines, wherein the device which carries the portable tool can be rapidly, accurately and conveniently moved to any one of a large number of positions to thus select the depth of holes which are to be drilled in a workpiece.

Another object of the invention is to provide a support for portable power tools with a novel and improved feed depth selecting device which can be readily manipulated not only by skilled workmen but also by persons having little technical skill.

A further object of the invention is to provide a feed depth selecting device which can be rapidly adjusted to effect substantial changes in depth of successively drilled holes but which is also capable of permitting precise setting of the drilling tool for drilling of bores having an accurately determined depth.

An additional object of the invention is to provide a support for portable power tools with novel tool carrying and clamping devices.

Still another object of the invention is to provide the support with a novel system of scales and pointers which facilitate visual observation of the position of the tool carrying device to thus enable an operator to rapidly and accurately set the feed depth selecting device prior to drilling of a hole.

An ancillary object of the invention is to provide the support with novel means for moving the tool carrying device with reference to the column.

The improved support comprises a base, a column extending upwardly from and preferably anchored in the base, a locating device (e.g., a clamping member) movable along the column, a capstan screw or other suitable means for releasably securing the locating device to the column, an arm or another suitable carrier device movable along the column relative to the locating device and provided with suitable tool supporting means which is preferably designed to support a power tool in such position that the tip of the material removing tool extends downwardly toward a workpiece which is mounted on the base, a lever or other suitable means for moving the carrier device with reference to the column, and feed depth selecting means including a preferably stud-shaped gage mounted on one of the devices for movement in

the axial direction of the column to one of a plurality of positions in each of which the gage permits the carrier device to move through a different distance with reference to the locating device, and locking means mounted on the one device and movable between first and second positions in which it respectively engages with and is disengaged from the gage. In accordance with a presently preferred embodiment of our invention, the gage and the locking means are provided with complementary threads which mate with each other in the first position of the locking means. Thus, the axial position of the gage can be rapidly changed by moving the locking means to second position so that the gage is free to move in the axial direction of the column (coarse adjustment). If a fine adjustment is desired, the gage is rotated with reference to the locking means while the latter dwells in the first position.

The novel features which are considered as characteristic of the invention are set forth in particular in the appended claims. The improved support itself, however, both as to its construction and the mode of manipulating the same, together with additional features and advantages thereof, will be best understood upon perusal of the following detailed description of certain specific embodiments with reference to the accompanying drawing.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a plan view of a support which embodies one form of the invention, with certain parts shown in section;

FIG. 2 is a side elevational view of the support, with a portion of the base shown in vertical section;

FIG. 3 is a horizontal sectional view as seen in the direction of arrows from the line III—III of FIG. 2;

FIG. 4 is an end elevational view of the support as seen from the left-hand side of FIG. 2;

FIG. 5 is a view of a detail as seen in the direction of arrow V in FIG. 4;

FIG. 6 is a view as seen in the direction of arrow VI in FIG. 1;

FIG. 7 is a fragmentary end elevational view of a second support; and

FIG. 8 is a horizontal sectional view as seen in the direction of arrows from the line VIII—VIII of FIG. 7.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawing in detail, there is shown a support or stand for a portable drilling machine, not shown. The support comprises a base **11** which preferably consists of cast aluminum or other light metal and is formed with grooves **12** for clamping devices which secure a workpiece, not shown. The base **11** is further provided with recessed eyes **13** for the passage of bolts which secure it to a bench, table or the like, not shown. The upper surface of the base **11** is flat and smooth and one of its narrower sides is formed with an upright sleeve or socket **14** having a bore **15** for a steel column **16** of cylindrical outline. The column **16** may be a rod or a tube. The axis of this column is normal to the upper surface of the base **11**.

The column **16** serves as a guide for a substantially rectangular clamping member **17** which is movable therealong and can be arrested and fixed in a selected position by a capstan screw **18** having a tommy bar **18***a*. The stem **28** of the screw **18** meshes with a nut **19** which is provided on the clamping member **17**. The column **16** further supports a vertically movable supporting arm or carrier device **20** which has a bore **36** for reception of a portion of a portable drilling machine. The clamping member **17** serves as a locating device for the arm **20**, i.e., it determines the maximum extent to which the arm is movable relative to the column **16**. The arm **20** comprises a box-shaped end portion **23** provided with two eyes **21**, **22** which flank the clamping member **17** and are slidably guided by the column **16**. The distance between the eyes **21**, **22** and the height of the clamping member **17** determine the maximum extent to which the arm **20** is movable with reference to the column **16** when the clamping member is fixed in position by the screw **18**. The eyes **21**, **22** respectively constitute the lower and upper parts of the box-shaped portion **23**. The aforementioned nut **19** of the clamping member **17** faces a vertically extending wall of the box-shaped portion **23**, and such wall is provided with an elongated slot **24** extending in parallelism with the column **16**. The portion **23** carries or is integral with vertical ways **25** which flank the slot **24** and have precision finished vertical surfaces serving to guide a rectangular follower **26** which is provided with a bore **27** for the stem **28** of the screw **18**. That portion of the stem **28** which is outwardly adjacent to the follower **26** is straddled by the prongs of the partially bifurcated end of a two-armed shifting lever **29**. As best shown in FIG. 2, the right-hand end portion of the lever **29** has an elongated slot **30** which receives the stem **28** of the screw **18**. When the screw **18** is driven home so that it holds the clamping member **17** against movement along the column **16**, the head **31** of the screw **18** limits the play of the lever **29** in axial direction of the stem **28**. A pressure transmitting stud **32** in the bore of the nut **19** serves to engage the peripheral surface of the column **16** when the screw **18** is applied to thereby hold the clamping member **17** against axial movement and to simultaneously locate the arm **20** at a desired level above the base **11** in such a way that the arm can move up and down in response to pivoting of the lever **29**. The axial length of the stud **32**, together with the axial length of two rigid steel washers **33**, determines the extent of clearance with which the end portion of the lever **29** is received between the washers **33** when the stud **32** engages the column **16**. The other end portion of the lever **29** is provided with a manually operated handle **34**.

That end portion **35** of the arm **20** which is remote from the box-shaped portion **23** serves as a power tool supporting means and is formed with a slot **35***a* which communicates with the bore **36** for the drilling machine. A second capstan screw **37**, having a tommy bar **37***a*, is provided on the end portion **35** to facilitate proper clamping and rapid disengagement of a drilling machine from the arm **20**. A median portion of the arm **20** is provided with a horizontal pivot pin **38** for the lever **29**. The pivot pin **38** carries an elastic washer **39** which is outwardly adjacent to the lever **29**. A helical torsion spring **40** surrounds a sleeve **41** which forms part of the arm **20** and accommodates the pivot pin **38**. One end portion **40***a* of the spring **40** is hooked and engages the left-hand arm of the lever **29** (as viewed in FIGS. 1 or 2) to bias the lever in a clockwise direction. The other end portion of the spring **40** is anchored in or otherwise secured to the arm **20**. When the spring **40** is free to pivot the lever **29**, the latter assumes the upper end position of FIG. 2 in which the lower eye **21** engages the underside of the clamping member **17**.

The upper part of the box-shaped portion **23** of the arm **20** is thicker than the eye **21** and is provided with a vertical cylindrical bore **42** for a feed depth gage **43**. The gage **43** is a cylindrical stud and its major part is formed with external threads. The upper end portion of the gage **43** is knurled or milled so that it can be readily engaged and rotated by fingers. The lower end portion of the gage **43** can move into abutment with an upper surface of the clamping member **17**. The means for locating the gage **43** in selected position of axial adjustment with reference to the arm **20** comprises a locking bolt **45** which extends through a blind rectangular horizontal passage or bore **44** of the portion **23** and is normally biased into locking engagement with the threaded portion of the gage **43**. As shown in FIG. 6, one of the vertical walls which surround the bore **44** is located in a plane which includes the axis of the gage **43**, and FIG. 3 shows that one side surface of

the locking bolt **45** has a notch **45***a* which can readily accommodate the adjoining threaded portion of the gage **43** so that the latter is then free to move up or down in parallelism with the column **16**. The locking bolt **45** is further provided with a smaller notch **45***b* which can receive the adjoining externally threaded portion of the gage **43** and is formed with internal threads which then mate with the threads of the gage so that the latter is held against uncontrolled axial movement in the bore **42**. The internal threads in the notch **45***b* of the locking bolt **45** preferably extend along an arc which does not exceed 90 degrees. This facilitates the machining of such internal threads. A helical detent spring **46** in the innermost portion of the bore **44** biases the locking bolt **45** outwardly so that the threads in the recess **45***b* then engage the complementary threads on the gage **43** to hold the latter in selected axial position. In order to disengage the gage **43**, the operator simply depresses the locking bolt **45** so that the notch **45***a* receives the adjoining portion of the gage with sufficient clearance to permit rapid axial displacement of the gage. The combined length of the notches **45***a*, **45***b* (as seen in the longitudinal direction of the locking bolt **45**) equals or approximates one-and-one-half times the diameter of the threaded portion of the gage **43**. That portion of the locking bolt **45** which is formed with the smaller notch **45***b* can be said to form part of a nut which can be brought into mesh with the gage **43** when the spring **46** is free to expand and which can be disengaged from the gage in response to depression of the bolt **45**. Once the bolt **45** is disengaged from the gage **43**, the latter can descend by gravity to engage the clamping member **17**, or the gage can be lifted by hand to move upwardly and away from the clamping member. The parts **43**, **45** together constitute a feed depth selecting means and the gage **43** constitutes an element which determines the extent to which the arm **20** can move relative to the clamping member **17**.

A part of the box-shaped portion **23** is formed with a rectangular window **47** which receives a transparent pane **48** preferably consisting of synthetic plastic material and permitting observation of an index **49** on the clamping member **17**. If desired, the pane **48** can be riveted onto the portion **23** so that it overlaps the window **47**. This pane is formed with a vertical scale whose graduations indicate the position of the lower end of the gage **43** and serve to facilitate proper setting of the arm **20** so as to insure that the material removing tool of the drilling machine which is affixed to the arm **20** can drill a hole of desired depth. The index **49** of the clamping member **17** registers with the zero graduation on the scale of the pane **48** when the arm **20** is moved to the uppermost position with reference to the clamping member. The lower end of the gage **43** registers with the zero graduation of such scale when the gage **43** is permitted to descend all the way so that it abuts against the upper surface of the clamping member **17**. Such upper surface is located at the level of the index **49**.

The operation:

A workpiece is placed onto the upper surface of the base **11** and is thereupon clamped to the base subsequent to proper orientation. The drilling machine is assumed to be mounted on and secured to the arm **20** so that a portion thereof extends into the bore **30** and that the tip at the lower end of the tool exends downwardly toward the base **11**. The screw **18** is thereupon loosened so that the clamping member **17** can be shifted in order to move the arm **20** to one of a range of satisfactory positions for the drilling of a hole. The tommy bar **18***a* is thereupon rotated to cause the stud **32** to move into requisite engagement with the column **16** and to thus hold the clamping member **17** against axial movement.

The operator then pivots the lever **29** by grasping the handle **34** until the tip of the tool engages the upper side of the workpiece on the base **11**. Once the tip engages the workpiece at the point where the bore is to be drilled therein, the operator reads the position of the index **49** with reference to the scale on the pane **48**. In the next step, the operator removes the workpiece from the base **11** and again pivots the lever **29** to move the arm **20** downwardly until the index **49** registers with that graduation of the scale on the pane **48** which is indicative of the desired depth of the hole. Thus, the operator must memorize the first reading and he must thereupon move the arm **20** downwardly to a second position beyond the memorized position through a distance which corresponds to the desired depth of the hole. The operator then holds the lever **29** to maintain the index **49** in registry with the selected graduation and depresses the locking bolt **45** so that the latter is disengaged from the gage **43** and the gage is free to descend by gravity in order to move into abutment with the clamping member **17**. The locking bolt **45** is then released so that the gage **43** is automatically locked in a position which is indicative of the desired depth of the hole to be drilled in the particular position of the clamping member **17**. Accurate adjustments can be effected by rotating the gage **43** with reference to the bolt **45** and arm **20**. The arm **20** is then permitted to return to its upper end position (in which its lower eye **21** abuts against the clamping member **17**) and the workpiece is again secured to the upper side of the base **11** in an optimum position for drilling of the hole. The drilling then proceeds by starting the motor of the drilling machine and by pivoting the lever **29** until the tip of the gage **43** engages the upper surface of the clamping member **17**. This prevents further penetration of the tool into the workpiece and the operator thereupon lifts the arm **20** and disengages the workpiece from the base **11**.

A skilled workman can properly set the gage **43** without removing the workpiece from the base **11**. Thus, once the tip of the tool engages the surface of a workpiece which is secured to the base **11**, the workman rotates the gage **43** to move it to a position in which the distance between its lower end and the index **49** of the clamping member **17** corresponds to the desired depth of the hole to be drilled in the workpiece. The lower end of the gage **43** can be observed through the pane **48**. In reading the position of the lower end of the gage **43**, the workman must take into consideration the parallax.

The structure of FIGS. 1–6 can be slightly modified for the purpose of insuring that even an unskilled or semi-skilled workman need not remove the workpiece in order to properly set the gage **43** prior to drilling a hole of desired depth. The gage **43** is then provided with an index **49'** (FIGS. 7 and 8) which can be observed behind the pane **48'** (without any consideration of the parallax) to indicate the position of the gage with reference to the scale on the pane **48'**. Once the workpiece is mounted on the base **11** and is properly clamped thereto, the arm **20** is moved to one of a range of satisfactory positions and the lever **29** is then pivoted to move the arm **20** downwardly until the tip of the tool engages the workpiece. The workman then reads the position of the index **49'** with reference to the scale on the pane **48'**. The gage **43** is then adjusted in such a way that its index **49'** registers with a graduation whose distance from the graduation pinpointed by the index **49** equals the desired depth of the hole to be drilled in the workpiece. Rapid setting of the gage **43** can be effected by depressing the locking bolt **45** and by thereupon moving the gage to desired position. If a precision adjustment is needed, the bolt **45** is released to move its nut (notch **45***b*) into mesh with the gage **43**, and the latter is thereupon rotated with reference to the bolt **45** and arm **20**. The drilling operation can begin as soon as the gage **43** assumes the desired position.

It is possible to further simplify the manipulation of the gage **43** so that the workman need not even perform any additions and/or subtractions. This can be achieved by mounting the pane **48'** for movement in longitudinal direction of the gage **43** and by providing means (rail **50** and screw **51** in FIGS. 7 and 8) for releasably fixing the pane **48'** in selected position of adjustment. The gage and

the clamping member **17** are provided with indices which are observable behind the pane. The workpiece is mounted on and secured to the base **11**, and the lever **29** is pivoted to move the arm **20** downwardly until the tip of the tool engages the workpiece. Instead of reading the position of the index **49** with reference to the scale on the pane **48'**, the latter is moved until the index **49** registers with zero graduation. The gage **43** is thereupon adjusted so that its index **49'** registers with that graduation which indicates the desired depth of the hole to be drilled in the workpiece (e.g., in millimeters). The numeral **50** denotes a guide rail or frame member for the pane **48'**.

It is clear that the improved support is susceptible of many modifications without departing from the spirit of our invention. For example, the pane **48** or **48'** can be mounted on the clamping member **17**. Also, the pane **48** or **48'** can be replaced by an opaque scale if the gage **43** and/or the clamping member **17** is provided with an index (e.g., a needle) which is movable in front of such opaque scale. Furthermore, the gage **43** and the locking bolt **45** can be mounted on the clamping member **17**.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features which fairly constitute essential characteristics of the generic and specific aspects of our contribution to the art.

What is claimed as new and desired to be protected by Letters Patent is set forth in the appended claims.

1. A support for portable drilling machines or like power tools, comprising a base; a column extending upwardly from said base; a locating device on said column; a carrier device movable along said column and having power tool supporting means; means for moving said carrier device with reference to said column; and feed depth selecting means including an externally threaded gage mounted on one of said devices for movement in the axial direction of said column to one of a plurality of positions in each of which the gage permits the carrier device to move through a different distance with reference to said locating device, and locking means having an internally threaded portion and confined in said one device for movement substantially tangentially of said gage between first and second positions in which said internally threaded portion thereof respectively engages with and is disengaged from the external threads of said gage, said gage being movable in the axial direction of said column in the first position of said locking means in response to rotation of the gage with reference to said one device and said gage being freely movable in the axial direction of said column in the second position of said locking means.

2. A support as defined in claim **1**, wherein said one device is provided with a cylindrical bore for said gage and with a passage which extends substantially at right angles to said bore and confines said locking means to said movement substantially tangentially of said gage, the axis of said passage crossing in space with the axis of said bore.

3. A support as defined in claim **1**, wherein said column is mounted on said base and wherein the means for moving said carrier device with reference to said column comprises a lever, said power tool supporting means comprising means for clampingly securing a power tool to said carrier device and said locating device being adjustable lengthwise of said column.

4. A support as defined in claim **1**, further comprising means for biasing said locking means to the first position thereof.

5. A support as defined in claim **1**, wherein the threads of said internally threaded portion extend along an arc which at most equals 90 degrees.

6. A support for portable drilling machines or like power tools, comprising a base; a column extending upwardly from said base; a locating device on said column; a carrier device movable along said column and having power tool supporting means; means for moving said carrier device with reference to said column; feed depth selecting means including a gage mounted on one of said devices for movement in the axial direction of said column to one of a plurality of positions in each of which the gage permits the carrier device to move through a different distance with reference to said locating device, and locking means mounted on said one device and movable between first and second positions in which said locking device respectively engages with and is disengaged from said gage, said gage being movable in the axial direction of said columin in the first position of said locking means in response to rotation of the gage with reference to said one device; scale means provided with graduations indicating different feed depths; first index means arranged to pinpoint graduations on said scale means, said scale means being provided on one of said devices and said index means being provided on the other device; and second index means provided on said gage and arranged to pinpoint on said scale the position of said gage with reference to that device which is provided with said scale means.

7. A support for portable drilling machines or like power tool, comprising a base; a column extending upwardly from said base; a locating device on said column; a carrier device movable along said column and having power tool supporting means; means for moving said carrier device with reference to said column; feed depth selecting means including a gage mounted on said carrier device for movement in the axial direction of said column to one of a plurality of positions in each of which the gage permits the carrier device to move through a different distance with reference to said locating device, and locking means mounted on said carrier device and movable between first and second positions in which said locking means respectively engages with and is disengaged from said gage, said gage being movable in the axial direction of said column in the first position of said locking means in response to rotation of the gage with reference to said carrier device; scale means provided on said carrier device; and index means provided on said locating device adjacent to said scale means to indicate the position of said devices with reference to each other, said locating device being provided with a stop surface located at the level of said index means and arranged to arrest said gage when the latter descends by gravity in response to movement of said locking means to the second position thereof.

8. A support for portable drilling machines or like power tools, comprising a base; a locating device on said column; a carrier device movable along said column and having power tool supporting means; means for moving said carrier device with reference to said column; feed depth selecting means including a gage mounted on one of said devices for movement in the axial direction of said column to one of a plurality of positions in each of which the gage permits the carrier device to move through a different distance with reference to said locating device, and locking means mounted on said one device and movable between first and second positions in which said locking means respectively engages with and is disengaged from said gage, said gage being movable in the axial direction of said column in the first position of said locking means in response to rotation of the gage with reference to said one device; scale means mounted on said carrier device for movement in the axial direction of said column; and index means provided on said locating device and cooperating with said scale means to pinpoint the position of said carrier device with reference to said locating device.

9. A support for portable drilling machines or like power tools, comprising a base; a column extending upwardly from said base; a locating device on said column; a carrier device movable along said column and having power tool supporting means; means for moving said carrier device with reference to said column; feed depth

selecting means including a gage mounted on one of said devices for movement in the axial direction of said column to one of a plurality of positions in each of which the gage permits said carrier device to move through a different distance with reference to said locating device, and locking means mounted on said one device and movable between first and second positions in which said locking means respectively engages with and is disengaged from said gage, said gage being movable in the axial direction of said column in the first position of said locking means in response to rotation of said gage with reference to said one device; light-transmitting scale means having a row of graduations extending in parallelism with said column; and index means located behind said scale means, said scale means being provided on one of said devices and said index means being provided on the other device.

References Cited

UNITED STATES PATENTS

3,202,190	8/1965	Gill	144—205
2,318,691	5/1943	Huthsing	77—34.5
661,206	11/1900	Carleton	143—174.2

FOREIGN PATENTS

466,898	11/1951	Italy	77—19

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82—34A; 408—124, 234