

Aug. 8, 1961

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2,994,956

PORTABLE CUTTING APPARATUS

Filed April 5, 1956

3 Sheets-Sheet 1

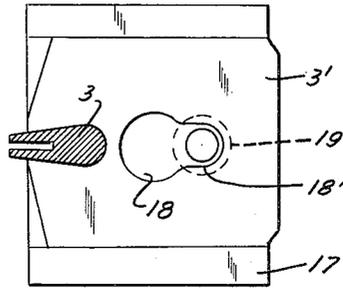
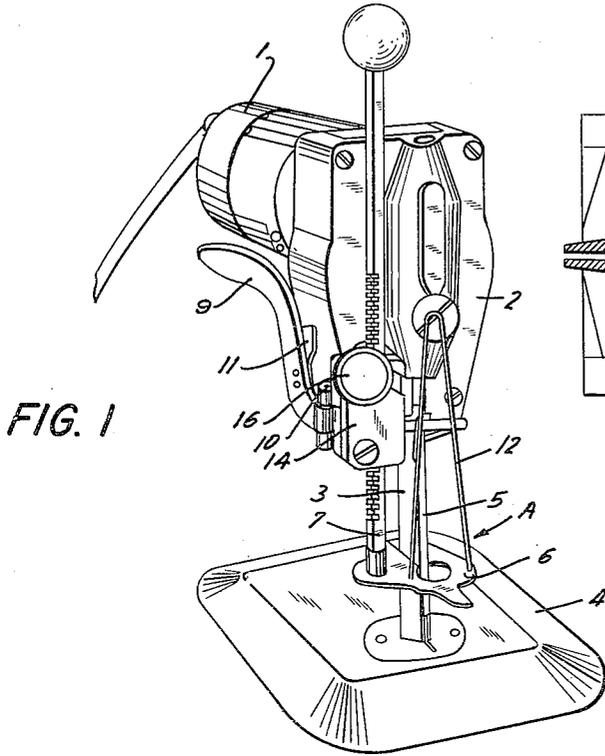
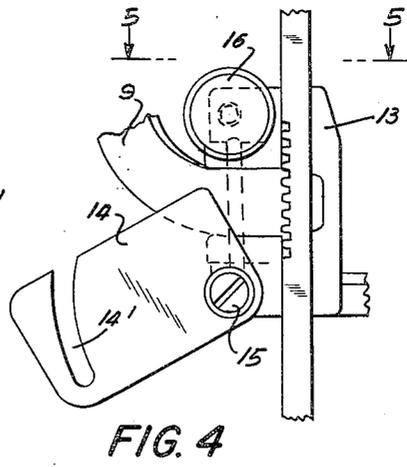
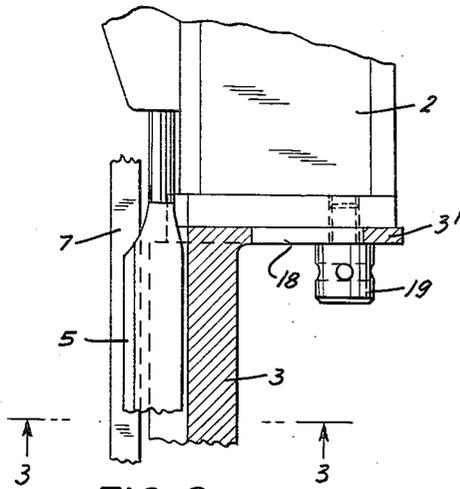
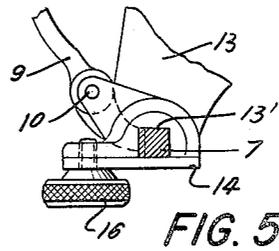


FIG. 3



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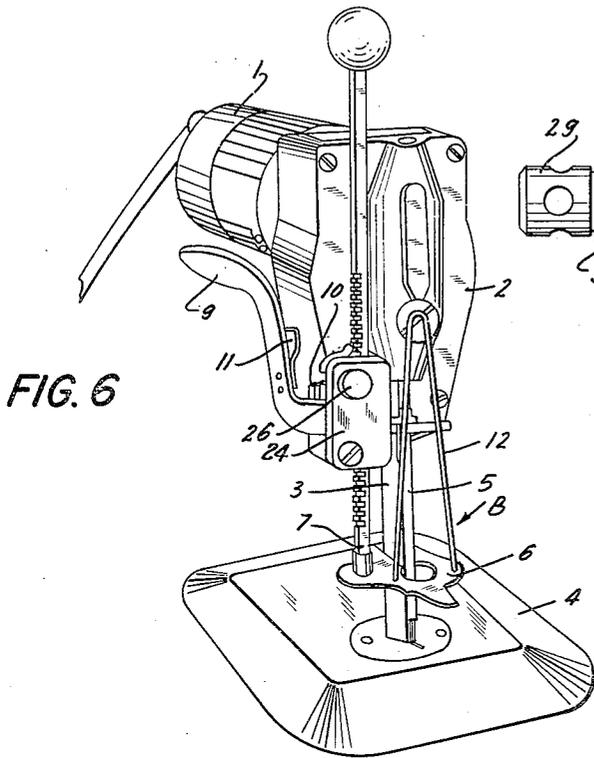


FIG. 6

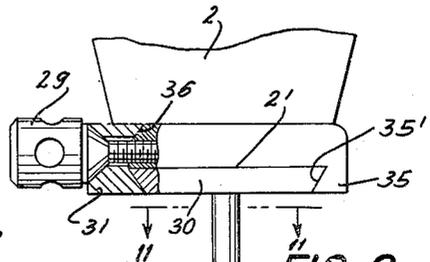


FIG. 8



FIG. 11

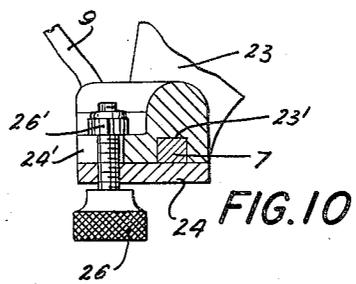


FIG. 10

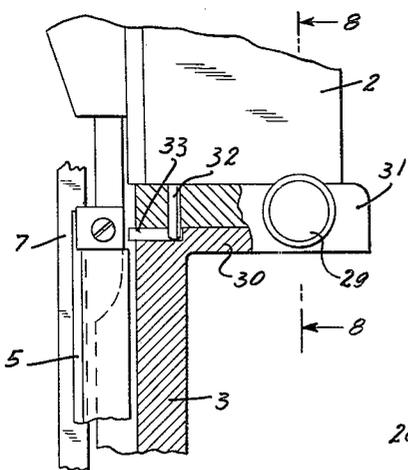


FIG. 7

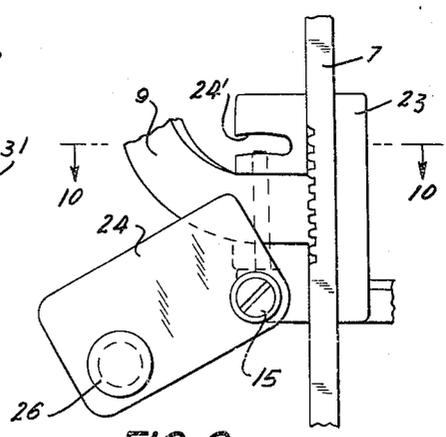


FIG. 9

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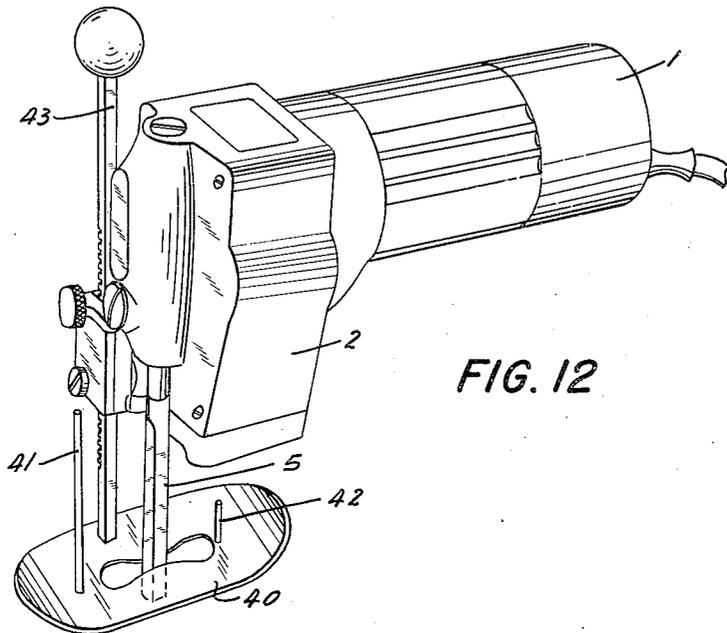


FIG. 12

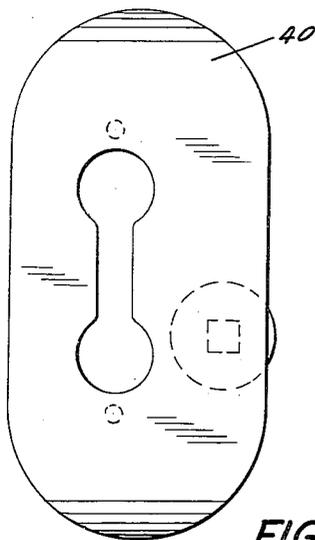


FIG. 13

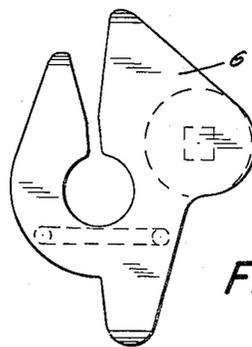


FIG. 14

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2,994,956

PORTABLE CUTTING APPARATUS

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Claims priority, application Switzerland Nov. 17, 1951

13 Claims. (Cl. 30—275)

The present invention relates to a portable cutting apparatus.

This application is a continuation-in-part of copending application Serial No. 318,900, filed November 5, 1952, and entitled "Portable Cutting Apparatus," and now abandoned.

The present invention relates to a portable cutting apparatus of the type which is used to cut through a stack of sheets of material portions such as, for example, pieces of cloth and the like.

With an apparatus of this type there is usually provided a presser foot which engages the top sheet material portion to prevent the latter from being pulled upwardly with the cutting blade. This presser foot must not bear too heavily against the stack of material to be cut so that the cutting blade may be easily moved through the material. The adjustment of the presser foot is generally very inconvenient and time consuming. Moreover, when it is desired to cut an aperture through the body of the material, it is necessary to remove a stand which carries the cutting apparatus from the latter, so that the cutting apparatus may be freely located over the place where the aperture is to be cut, and also it is necessary to provide a different presser foot capable of operating efficiently without the stand, and the known apparatus for removing the stand or for removing the presser foot are very inconvenient.

One of the objects of the present invention is to provide a cutting apparatus with a very simple means to enable the operator to very quickly and easily lock a presser foot of the cutting apparatus in a position where it bears with a convenient pressure against the top side of the material being cut.

Another object of the present invention is to provide a cutting apparatus with a presser foot setting means which is operable by a finger of that hand of the operator which carries the cutting apparatus.

A further object of the present invention is to provide a very simple means to enable a stand of the cutting apparatus to be very quickly and easily removed therefrom, as well as to enable a presser foot to be very quickly and easily removed from the apparatus.

An additional object of the present invention is to provide a simple guard apparatus to prevent the hands of the operator from coming into contact with the cutting blade.

A still further object of the present invention is to provide a cutting apparatus with an arrangement where the cutting blade is located with respect to the other parts of the device in such a position that it is clearly visible to the operator to enable the cutting apparatus to be easily and accurately moved by the operator.

Also, the objects of the present invention include the provision of a cutting apparatus which is capable of operating efficiently either when it is used to cut inwardly from an edge of a stack of sheets or when it is used to cut a hole in a stack of sheets located completely within the outer edges thereof.

Furthermore, the objects of the present invention include the provision of structure capable of accomplishing all of the above objects and at the same time composed of simple and ruggedly constructed elements which are very reliable in operation.

With the above objects in view the present invention

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mainly consists of a support adapted to carry a cutting means for movement with respect to the same. A base is located beneath the support and a presser foot is located between the base and the support. Means are provided for removably connecting both the base and the presser foot to the support, so that when the base is not used the presser foot may be exchanged for another presser foot which enables the apparatus to operate properly without the base. The presser foot is mounted on the support for adjustable movement with respect to the same, and a manually operable releasable lock means is mounted on the support to releasably hold the presser foot in an adjusted position, this lock means including an operating member located adjacent to the handle means so as to be accessible to a finger of the hand of the operator which engages the handle means. The base is removably connected to the support by a means which accurately positions the base with respect to the support and which at the same time accurately positions a guide for the cutting blade, this means being easily and quickly operable for removing or connecting the base and the parts associated therewith to or from the support.

The novel features which are considered as characteristic for the invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings, in which:

FIG. 1 is a perspective view of one embodiment of an apparatus according to the present invention as seen from the front thereof;

FIG. 2 is a fragmentary, partly sectional, side view of the apparatus of FIG. 1 as seen in the direction of arrow A of FIG. 1;

FIG. 3 is a partly sectional view of a part of the apparatus of FIGS. 1 and 2 and is taken along line 3—3 of FIG. 2 in the direction of the arrows;

FIG. 4 is a fragmentary front view of a part of the apparatus in which an element is in a different position with regard to the corresponding part thereof illustrated in FIG. 1;

FIG. 5 is a fragmentary partly sectional view of the structure of FIG. 4 taken along line 5—5 of FIG. 4 in the direction of the arrows;

FIG. 6 is a perspective view of an apparatus which differs in some respects from that of FIG. 1;

FIG. 7 is a fragmentary, partly sectional, elevational view of part of the structure of FIG. 6 as seen in the direction of arrow B;

FIG. 8 is a partly sectional view of the structure of FIG. 7 as seen from the right of FIG. 7, the sectional part of FIG. 8 being taken along line 8—8 of FIG. 7 in the direction of the arrows;

FIG. 9 shows part of the presser foot connecting structure of FIG. 6 in a different position from that illustrated in FIG. 6;

FIG. 10 is a sectional view taken along line 10—10 of FIG. 9 in the direction of the arrows and showing the structure of FIG. 9 in a different position;

FIG. 11 is a sectional view taken along line 11—11 of FIG. 8 in the direction of the arrows;

FIG. 12 is a perspective view of the apparatus of FIGS. 1 or 6 associated with a different presser foot and having the base disconnected therefrom;

FIG. 13 is a bottom plan view of the presser foot of FIG. 12; and

FIG. 14 is a bottom plan view of the presser foot of FIGS. 1 and 6, FIGS. 13 and 14 showing the difference between the comparative sizes of the two presser feet.

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Referring now to the drawings, it may be seen from FIG. 1 that the apparatus includes a support in the form of a casing 2 which houses any suitable gearing or the like for reciprocating the elongated cutting blade 5 which extends downwardly from the support 2. The particular structure for reciprocating the blade 5 forms no part of the present invention and may take any one of a number of forms so that it is believed to be unnecessary to describe and illustrate the structure for reciprocating the blade 5.

On the rear side of the support 2 there is fixed a handle means 1 by which the apparatus may be carried by the hand of the operator, and in the illustrated example the handle means is in the form of the outer housing of a motor for driving the structure within the housing 2, this motor having a switch connected thereto at any convenient position such as, for example, at the underside of the motor adjacent the support 2.

As is most clearly shown in FIG. 3, a pair of parallel guides 17 are fixed to the underside of support 2 and may be integral therewith. A plate 3' is slidably mounted next to the underside of the support 2 between the guides 17, and a post 3 is fixed at its top end to the plate 3', as by being formed integrally therewith, this post 3 being fixed at its bottom end to the top of the base 4 having the configuration shown in FIG. 1. The post 3 is formed along its front side with a long narrow groove in which the rear edge of blade 5 is located so as to be guided by the post 3, and the base 4 is provided with a slot extending forwardly from and communicating with the groove of post 3, as is clearly shown in FIG. 1, so that the bottom end of blade 5 may move through the slot of base 4 beneath the top surface of the latter.

A presser foot 6 is located about the cutting blade 5 and a part of the post 3 and is fixed to the lower end of a bar in the form of a rack 7 having teeth along its left side face, as viewed in FIG. 1. A lever 9 is pivotally mounted intermediate its ends on a pivot pin 10 for turning movement about an axis substantially parallel to the bar 7, and this lever 9 has a toothed front end extending into a suitable cutaway portion of a guide member 13 which is fixed to the support 2 into engagement with the teeth of rack 7, this rack 7 being of a substantially square cross section. The guide 13 is formed with an elongated groove 13' of a cross section mating with that of the rack 7, so that the latter is slidably mounted in the guide 13, and at different elevations the front tooth end of the lever 9 may engage the teeth of the rack to maintain the presser foot 6 at a desired elevation, as is evident from FIGS. 1, 5, and 4. The opposite, rear, free end portion of lever 9 is located adjacent to and laterally spaced from the handle means 1 so as to be accessible to a finger of the hand of the operator which engages the handle means 1. Between the support 2 and the lever 9, on the opposite side of pivot 10 from the toothed end of lever 9, there is located a leaf spring 11 which is fixed at its front end to the lever 9 and which bears at its rear end against the side of support 2 so as to urge the lever 9 in that direction about pivot 10 which causes the toothed front end of lever 9 to move through the cutaway portion of guide member 13 into engagement with the teeth of rack 7.

In order to assure the operator of clear visibility of the cutting blade 5 so that the latter may be moved easily and accurately along a predetermined path, the rack 7 is laterally spaced from the cutting blade 5, and the cutting edge of the latter and the rack 7 are both located in the plane which is normal to the axis of the motor forming the handle means 1.

A substantially U-shaped wire member 12 is fixed at its free ends to the top side of presser foot 6 and extends upwardly therefrom and on opposite sides of the cutting blade 5 so as to serve as a guard to prevent the hands of the operator from coming into contact with the cutting blade 5.

The front face of the guide 13 is flat, and a plate 14

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is turnably mounted, at its lower left corner, as viewed in FIG. 4, on the lower left corner of guide 13 by means of a bolt 15 or the like which passes through an opening in plate 14 and is fixed to the guide 13. At its top left portion, as viewed in FIG. 4, the guide 13 is formed with a threaded bore which threadedly receives a bolt 16 having a knurled head facing the front side of guide 13. As is clearly evident from FIG. 4, the plate 14 is formed with an arcuate cutout 14' having its center in the turning axis of bolt 16 between the head of the latter and the front face of guide 13 so that the plate 14 covers this front face, as shown in FIG. 5, at which time the bolt 16 may be tightened. When it is desired to change the presser foot 6 for another presser foot, the bolt 16 is loosened, the plate 14 is turned to the position shown in FIG. 4, and the rack 7 is simply moved forwardly out of the groove 13'. Then a different presser foot connected to a rack identical with the rack 7 is mounted on the apparatus by having the rack connected thereto mounted in the groove 13' in the manner illustrated in FIGS. 4 and 5, the plate 14 then being returned to the position shown in FIG. 5 and the bolt 16 then being tightened.

The above described apparatus operates as follows:

Assuming the stack of material to be cut is located on a table, the lever 9 is turned against the action spring 11 and the rack 7 is moved upwardly to locate the presser foot 6 at a distance from the top side of the base 4 which distance is greater than the thickness of the stack of material to be cut, the lever 9 then being released to engage the rack 7 and thereby hold the presser foot 6 in this latter position. Then the front end of the base 4 is slipped beneath the stack between the same and the top surface of the table or the like on which the stack is located, and the presser foot 6, of course, then moves into a position over the stack of material to be cut without contacting the same, the apparatus being at this time held by one hand of the operator which grasps the handle means 1. With the parts in this position, the operator need only extend the index finger of the hand grasping the handle means 1 to the rear free end of the operating lever 9 and turn the same against the force of the spring 11 so as to release the rack 7 which then falls by gravity together with the presser foot 6 onto the top of the stack of material to be cut, the operator then merely releasing the lever 9 which then engages the rack 7 to hold the presser foot 6 in its engaging position with the material being cut. The weight of the presser foot 6 and rack 7 is such that it bears against the material to be cut with a pressure light enough to permit easy movement of the apparatus through the material but sufficient to prevent the top sheet of the stack from being pulled upwardly with the knife blade. The operator turns on the switch to start the operation of the blade when the apparatus is set as described above, and it is believed to be apparent that this setting of the apparatus takes only a few seconds and can be carried out in a very simple and convenient manner.

Sometimes, instead of cutting into a stack of material from an edge thereof, it is desired to cut within the body of a stack to form an aperture therethrough. To perform this latter operation the stand 3', 3, 4 must be removed from the rest of the apparatus so that the latter may be freely held over the stack of material in a position where the knife blade can extend through the body thereof. Furthermore, it is essential at this time also to exchange the presser foot 6 for another presser foot. The reason for this is that, as was pointed out above, the presser foot 6 together with the rack 7 has a weight which is such that elements 6, 7 bear against the material to be cut with a pressure light enough to permit easy movement of the apparatus through the material and sufficient to prevent the top sheet of the stack from being pulled upwardly by the knife blade. If the base were removed and presser foot 6 still used, there would be a concentration

of the entire weight of the apparatus, which would no longer be carried by the base, on the presser foot 6, and this presser foot is of such a small area that the weight of the entire apparatus would be distributed over a small area and as a consequence there would be a much greater pressure applied to the stack through the presser foot 6 in this case than where the base 4 is used. It is therefore essential when eliminating the base 4 to also eliminate the presser foot 6 and replace the same with another presser foot of a larger area which is capable of providing a far smaller pressure per unit area on the stack when the base 4 is not used, so that even without the latter the larger presser foot does not present any difficulties in the operation, and the top sheet will be kept from moving upwardly with the cutting blade while at the same time not pressing against the presser foot with a force too great to prevent easy movement of the apparatus along the top of the stack.

In order to effect removal of the stand, the plate 3' which is integral with the top end of the post 3 is formed with a keyhole slot 18 (FIGS. 2 and 3) which has a rear end portion 18' that is narrower than its front end portion, as is clearly evident from FIG. 3, this slot 18 extending in a direction substantially parallel to the guides 17. Between the guides 17, the bottom wall of the support 2 is formed with a threaded opening into which the bolt 19 extends to threadedly engage the support 2, and the head of this bolt 19 has a diameter which is greater than the width of the narrow portion 18' of slot 18 but smaller than the width of the wider front end portion of slot 18, the shank of bolt 19 being slightly smaller than the width of portion 18' of slot 18. Thus, with the parts shown in the position of FIGS. 2 and 3, the tightening of the bolt 19, so that its head end engages the plate 3' on the opposite side thereof from the support 2, clamps the stand to the support 2. In order to remove the stand, it is only necessary to turn the bolt 19 through a small part of a revolution in order to loosen the connection between plate 3' and support 2 and to slip plate 3' and post 3 and base 4 connected thereto slightly to the rear so that the bolt head is located in the wider front end portion of slot 18, and then the stand may be moved downwardly away from the support 2 to be separated therefrom, the head of bolt 19 passing through the front end of the keyhole slot 18. This operation is very easy to perform and takes only a few seconds, and the stand may again be connected to the rest of the apparatus through the reverse of the above operations.

FIGS. 6-9 show a somewhat different construction for accomplishing the same results as the above described structure of FIGS. 1-5. Those elements of the embodiment of FIGS. 6-9 which are identical with the corresponding elements of FIGS. 1-5 are indicated with the same reference characters. Except for the different structure about to be described, the embodiment of FIGS. 6-9 is identical with that of FIGS. 1-5.

With the embodiment of FIGS. 6-9, instead of a pair of guides 17, the support 2 is provided with a rigid guide 35 formed integrally with the support 2 and with a separate guide 31. It will be noted from FIG. 8, that the guide 35 which is rigid with the support 2 has an inner side face 35' which is inclined at an acute angle to the underside 2' of the support 2 and which forms one side of a dovetail slot therewith. The support 2 is formed along its side distant from the guide 35 with an inclined face 36, and the guide 31 which is separate from the support 2 is formed in its right side face, as viewed in FIG. 8, with a grooved surface of substantially U-shaped cross section engaging the side face 36 and extending downwardly beyond the latter. The part of the side face of guide 31 which extends downwardly beyond the surface 36 of support 2 is inclined oppositely to the inner side face 35' of guide 35 and cooperates with this latter inner side face as well as with the underside 2' to form an elongated dovetail slot at the bottom of the support 2. A single

screw member 29 extends through an opening of the guide member 31 into threaded engagement with the support 2, as is evident from FIGS. 7 and 8.

Instead of being connected to a plate 3', in the embodiment of FIGS. 6-11, the top end of post 3 is fixed to a plate 30 having a dovetail cross section mating with that of the slot formed by elements 2, 31, and 35. As may be seen from FIG. 7, at its front end the plate 30 is formed with a slot 33 communicating with the groove of post 3 in which the blade 5 is guided, and extending rearwardly therefrom to receive a pin 32 fixed to and extending downwardly from the support 2, as is evident from FIG. 7. This pin 32 engages the plate 30, in the manner shown in FIG. 7, to determine the location of the post 3 together with the base 4 and plate 30, with the embodiment of FIGS. 6-11.

With this embodiment of the invention, when it is desired to remove the base 4, the single screw 29 is loosened, and then the plate 30 together with post 3 and base 4 may be slipped out toward the rear of the apparatus to be disconnected therefrom. The base 4 together with post 3 and plate 30 are again fixed to the apparatus with the reverse of the above operations, and it will be noted that when the screw 29 is tightened, the inclined face 36 at the side of the support 2 cooperates with the upper portion of the side face of the guide 31 to cause the latter to move upwardly and tightly into engagement with the plate 30 so as to lock the latter to the support 2.

The embodiment of FIGS. 6-11 also differs from that of FIGS. 1-5 in that the plate 24 which corresponds to the plate 14 is not provided with an arcuate slot similar to the arcuate slot 14'. Instead, an arcuate slot 24' is formed directly in the guide corresponding to the guide 13, this arcuate slot 24' having its center in the turning axis formed by the bolt 15, in the same manner as the arcuate slot 14'. The bolt 26 which corresponds to the bolt 16 is carried by the plate 24 and the shank of this bolt enters into and extends through the slot 24' when the plate 24 is moved from the position of FIG. 9 to that of FIG. 10. As is apparent from FIG. 10, when the plate 24 is in the position illustrated therein a nut 26' carried by the bolt 26 engages the rear face of the guide 23 which corresponds to the guide 13 and which is formed with the slot 23' corresponding to the slot 13'. With the nut 26' in frictional engagement with the guide 23, the bolt 26 is turned to tighten the plate 24 in the position shown in FIG. 10. Thus, the rack 7 is guided for sliding movement in the groove 23' in the same way that it is guided for movement in the slot 13' described above, and when it is desired to change the presser foot, it is only necessary to loosen the bolt 26, turn the plate 24 to the position of FIG. 9, and simply move the rack forwardly and outwardly of the slot 23' and then replace the same with another rack and presser foot connected thereto. Thus, with the embodiment of FIGS. 6-11, there is no arcuate slot visible at the front of the apparatus, the slot 24' being covered by the plate 24, and furthermore it is unnecessary to provide anything like the keyhole slot 18 of FIG. 3.

As was pointed out above, when it is desired to cut a hole through a stack of sheets located completely within the outer periphery of the sheets, the base 4 together with the post 3 and plate 3' or 30 must be removed, and furthermore it is essential to change the presser foot 6 for another presser foot in order to have an efficient operation. FIG. 12 shows the apparatus in this condition where it is adapted to cut through a stack with an aperture located completely within the outer periphery thereof, and it will be noted that in FIG. 12 there is no base and post. Also, it will be noted that the presser foot 40 of FIG. 12 is quite different from the presser foot 6. The rack 43 is a bar which may be identical with the bar 7, and the apparatus of FIG. 12 may be either that disclosed in FIGS. 1-5 or that disclosed in FIGS. 6-11. With either of these embodiments when the base 4 is moved, the presser foot 6 also is removed and replaced by the presser foot 40 in the manner described above. FIGS.

13 and 14 show the presser feet 40 and 6 as they appear from their undersides for the purpose of giving a comparison between the areas of these presser feet. It will be noted that the presser foot 40 is approximately twice as large as the presser foot 6, so that the weight distributed to the stack by the presser foot 40 is distributed over twice the area as compared with the presser foot 6, and thus if both of these presser feet carry the same weight, then there will be less weight per unit area with the presser foot 40 than with the presser foot 6. It is for this reason that the presser foot 40 is adapted for use without the base, because when the base is removed the weight of the support 2 and handle 1 are transferred to the presser foot, and thus if the same presser foot 6 were used without the base the force bearing on the stack would be too great for easy convenient efficient operation. It will be noted that with the presser foot of FIGS. 12 and 13 guards for the hand of the operator are provided in the form of pins 41 and 42 fixed to and extending upwardly from the top face of presser foot 40 and respectively located before and behind the blade 5. It will be noted that with the presser foot of FIGS. 12 and 13 there is still a good visibility so that the operator can easily follow any desired line, and furthermore it will be quite easy to operate the machine because of the larger area of the presser foot 40 as compared with the presser foot 6. Because of the smaller size of the presser foot 6, the visibility provided by the latter is even greater than that available with the presser foot 40, and this is an additional reason for using the presser foot 6 when the base 4 is again connected to the machine.

It is apparent from the above described structure that the structure of the invention is capable of cutting in an extremely convenient manner either into a stack from an outer surface thereof or into a stack only within the outer edges of the sheets thereof, and either of these different types of operations can be performed in a simple, efficient, quick manner and in a very reliable manner.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of cutting apparatus differing from the types described above.

While the invention has been illustrated and described as embodied in portable cutting apparatus, it is not intended to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of the present invention.

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 that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims.

What is claimed as new and desired to be secured by Letters Patent is:

1. Cutting apparatus comprising, in combination, support means adapted to carry a cutting means; base means located beneath said support means; a post fixed to and extending upwardly from said base means and having an upper end adjacent said support means; first connecting means removably connecting said upper end of said post to said support means; a first presser foot located between said base means and support means; a bar fixed to and extending upwardly from said first presser foot and located adjacent said support means; second connecting means removably connecting said bar to said support means; a second presser foot larger than said first presser foot; a second bar affixed to and extending upwardly from said second presser foot and being substantially identical with said bar connected to said first presser foot, whereby when the base means is removed to pre-

pare the cutting apparatus for use without a base means said first presser foot and bar connected thereto may be removed and replaced by said second presser foot and bar connected thereto, said second presser foot being suitable for use without a base means.

2. Cutting apparatus comprising, in combination, support means adapted to carry a cutting means; base means located beneath said support means; a post fixed to and extending upwardly from said base means and having an upper end adjacent said support means; first connecting means removably connecting said upper end of said post to said support means; a first presser foot located between said base means and support means; a bar fixed to and extending upwardly from said first presser foot and located adjacent said support means; second connecting means removably connecting said bar to said support means; a second presser foot larger than said first presser foot; a second bar affixed to and extending upwardly from said second presser foot and being substantially identical with said bar connected to said first presser foot, whereby when the base means is removed to prepare the cutting apparatus for use without a base means said first presser foot and bar connected thereto may be removed and replaced by said second presser foot and bar connected thereto, said second presser foot being suitable for use without a base means and having an area approximately twice as great as said first presser foot.

3. Cutting apparatus for cutting away portions of a stack of sheets and adapted to cut inwardly from an outer edge of the stack or to cut away a part of the stack which is located completely within the outer edges thereof, comprising, in combination, support means adapted to carry a cutting means for cutting the stack; a base means located beneath said support means when the cutting apparatus is used for cutting inwardly from an outer edge of the stack; a post fixed to and extending upwardly from said base means and having an upper end adjacent said support means; first connecting means removably connecting said upper end of said post to said support means; a presser foot for use with said base means located between the latter and said support means; a bar fixed to and extending upwardly from said presser foot and located adjacent said support means; second connecting means removably connecting said bar to said support means; a second presser foot larger than said first presser foot for use when the cutting apparatus cuts away a portion of the stack located completely within the outer edges thereof, said second presser foot being adapted to carry part of the weight of said support means during the cutting operations as well as to prevent upward movement of the upper sheets of the stack; a second bar affixed to and extending upwardly from the second presser foot and adapted to be connected to said support means by said second connecting means, so that when the apparatus is used for cutting inwardly from an edge of the stack said base means and first presser foot are connected to said support means while when the apparatus is used for cutting away a part of a stack located within its outer edges said first presser foot and base means are removed and only said second presser foot is used.

4. Cutting apparatus comprising, in combination, a support having an underside; cutting means mounted on said support and including an elongated blade extending downwardly from said support for reciprocation with respect to the same; handle means connected to said support to enable the same and said cutting means thereon to be carried by a hand of the operator; a pair of parallel guides connected to said support and extending downwardly beyond an underside thereof; a plate located between said guides next to said underside of said support for movement therealong; a post fixed to and extending downwardly from said plate and formed with an elongated groove into which said blade extends to be guided by said post; a base member fixed to the bottom end of

said post; and releasable lock means interconnecting said plate and support for removably connecting said plate, and said post and base member therewith to said support, said releasable lock means comprising a pair of inner side faces of said parallel guides which are directed toward each other and which are inclined toward each other and cooperate together with said underside of said support to form a dovetail slot, one of said parallel guides being separate from said support and the other being rigid therewith, means for releasably connecting said one guide to said support, and said plate having a dovetail cross section mating with that of said slot so that when said one guide is fixed to said support said plate is locked between said guides.

5. Cutting apparatus comprising, in combination, a support having an underside; cutting means mounted on said support and including an elongated blade extending downwardly from said support for reciprocation with respect to the same; handle means connected to said support to enable the same and said cutting means thereon to be carried by a hand of the operator; a first guide rigid with and extending downwardly beyond said underside of said support and having an inner side face forming an acute angle with said underside of said support; a second guide parallel with said first guide, located on the opposite side of said support from said first guide, being separate from said support, and having an inner side face inclined oppositely to said inner side face of said first guide and also making an acute angle with said underside of said support, so that said inner side faces of said parallel guides together with said underside of said support form a dovetail slot; screw means removably connecting said second guide to said support; a plate of dovetail cross section mating with that of said slot located in the latter and being fixed to said support when said second guide is fixed to said support; means carried by said support and engaging said plate for determining the position of the latter with respect to said cutting blade; a post fixed to and extending downwardly from said plate and formed with an elongated groove into which said blade extends to be guided by said post; and a base member fixed to the bottom end of said post.

6. Cutting apparatus comprising, in combination, a first elongated guide having a grooved side face of substantially V-shaped cross section; a support having an underside and having an inclined side face engaging a portion of said grooved side face of said first guide, the remainder of said grooved side face extending downwardly beyond said underside of said support and forming an acute angle with said underside; screw means removably connecting said first guide to said support; a second guide parallel to said first guide and being rigidly connected to said support, said second guide having an inner side face directed toward the portion of said grooved face of said first guide extending below said underside of said support and inclined oppositely to the same, so that said side faces of said guides and said underside of said support cooperate together to form a groove of dovetail cross section; a plate of dovetail cross section mating with that of said groove located in the latter; means determining the position of said plate in said groove; a post fixed to and extending downwardly from said plate; and a base fixed to the end of said post distant from said plate.

7. Cutting apparatus comprising, in combination, a support having an underside; cutting means mounted on said support and including an elongated blade extending downwardly from said support for reciprocation with respect to the same; handle means connected to said support to enable the same and said cutting means thereon to be carried by a hand of the operator; a pair of parallel guides fixed to and extending downwardly beyond said underside of said support; a plate located between said guides next to said underside of said support for movement therealong, said plate being formed with an elongated slot passing therethrough, extending in a direction

substantially parallel to said guides, and having one end portion which is narrower than an opposite end portion thereof; a post fixed to and extending downwardly from said plate and formed with an elongated groove into which said blade extends to be guided by said post; a base member fixed to said bottom end of said post; and a bolt threadedly engaging said support, extending through said slot of said plate, and having a head located on the opposite side of said plate from said support and being of a diameter which is larger than the width of said one end portion of said slot and smaller than the width of said opposite end portion of said slot.

8. In a cutting apparatus, in combination, a support; a base member; a post extending from said base member toward said support; a pair of parallel guides fixed to an underside of said support; a plate fixed to the end of said post distant from said base member and located between said guides next to said underside of said support for movement therealong, said plate being formed with an elongated slot passing therethrough and extending in a direction substantially parallel to said guides, said slot having one end portion which is narrower than an opposite end portion thereof; a bolt threadedly engaging said support, extending through said slot of said plate, and having a head located on the opposite side of said plate from said support and being of a diameter which is larger than the width of said one end portion of said slot and smaller than the width of said opposite end portion of said slot, whereby said base member and post may be quickly and easily removed from and attached to said support.

9. In a cutting apparatus, in combination, a support; a base member; a post extending from said base member toward said support; a pair of parallel guides fixed to an underside of said support; a plate fixed to the end of said post distant from said base member and located between said guides next to said underside of said support for movement therealong, said plate being formed with an elongated slot passing therethrough and extending in a direction substantially parallel to said guides, said slot having one end portion which is narrower than an opposite end portion thereof; a bolt threadedly engaging said support, extending through said slot of said plate, and having a head located on the opposite side of said plate from said support and being of a diameter which is larger than the width of said one end portion of said slot and smaller than the width of said opposite end portion of said slot; a first presser foot located between said base member and support; a first bar of rectangular cross section extending from said first presser foot toward and along said support; a second presser foot larger than said first presser foot; a second bar affixed to and extending upwardly from said second presser foot and being substantially identical with said bar connected to said first presser foot; a guide member mounted on said support and being formed with an elongated groove of rectangular cross section of substantially the same size as the cross section of said first bar and in which said first bar is slidably located; a cover plate turnably mounted on said guide member for movement to and from a position over said groove thereof to releasably hold said first bar in said grooves so that said first bar and presser foot may be exchanged for said second bar and presser foot; and a screw member engaging said guide member and said cover plate when the latter is in said position thereof to releasably fix said cover plate in said position, whereby said base member and post, on the one hand, and said first presser foot and bar, on the other hand, may be quickly and easily removed from and said second presser foot and bar attached to said support and vice versa.

10. In a cutting apparatus, in combination, a support; a base member; a post extending from said base member toward said support; a pair of parallel guides fixed to an underside of said support; a plate fixed to the end of said post distant from said base member and located between said guides next to said underside of said support for

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movement therealong, said plate being formed with a key-hole slot passing therethrough and extending in a direction substantially parallel to said guides; a bolt threadedly engaging said support, extending through said slot of said plate, and having a head located on the opposite side of said plate from said support; a first presser foot located between said base member and said support; a first bar of rectangular cross section extending from said first presser foot toward and along said support; a second presser foot larger than said first presser foot; a second bar affixed to and extending upwardly from said second presser foot and being substantially identical with said first bar connected to said first presser foot; a guide member mounted on said support and being formed with an elongated groove of rectangular cross section of substantially the same size as the cross section of said first bar and in which said first bar is slidably located; a cover plate turnably mounted on said guide member for movement to and from a position over said groove thereof to releasably hold said first bar in said groove so that said first bar and presser foot may be exchanged for said second bar and presser foot having a greater area of resting surface to be used without said base member and post; and a screw member engaging said guide member and said cover plate when the latter is in said position thereof to releasably fix said cover plate in said position, whereby said first presser foot and bar, on the one hand, may be quickly and easily changed against said second presser foot and bar whenever, on the other hand, said base member and post are removed from said support.

11. In a cutting apparatus, in combination, a support; a base member; a post extending from said base member toward said support; a plate fixed to the end of said post distant from said base member and located next to an underside of said support; means removably connecting said plate to said support; a first presser foot located between said base member and support; a first bar of rectangular cross section extending from said first presser foot toward and along said support; a second presser foot larger than said first presser foot; a second bar affixed to and extending upwardly from said second presser foot and being substantially identical with said first bar connected to said first presser foot; a guide member mounted on said support and being formed with an elongated groove of rectangular cross section of substantially the same size as the cross section of said first bar and in which said first bar is slidably located; a cover plate turnably mounted on said guide member for movement to and from a position over said groove to releasably hold said first bar in said groove so that said first bar and presser foot may be exchanged for said second bar and presser foot suitable for use without said base member when said plate is disconnected from said support; and screw means engaging said guide member and cover plate when the latter is in said position thereof to releasably fix said cover plate in said position.

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12. Cutting apparatus comprising, in combination, support means adapted to carry a cutting means; cooperating base and first presser foot means removably connected to said support means, said base and first presser foot means having substantially parallel faces directed toward each other and said cooperating base and first presser foot means being adapted to clamp a pile of fabric to be cut by said cutting apparatus between said opposite faces; and second presser foot means having a contact area larger than the contact area of said first presser foot means and being adapted to be connected to said support means upon removal of said cooperating base and first presser foot means, whereby upon removal of said cooperating base and first presser foot means from said support means and attachment of said second presser foot means to said support means said cutting apparatus may be transformed from one mode of operation in which the apparatus rests on said base means and the pile of fabric is clamped between said opposite faces of said base and first presser foot means to a second mode of operation in which said apparatus rests on said second presser foot means which has a contact area larger than said first presser foot means to avoid excessive pressure on the pile of fabric located under said second presser foot means.

13. Cutting apparatus comprising, in combination, a main cutting unit including cutting means, support means carrying said cutting means for reciprocating movement in a predetermined direction, and driving means mounted on said support means for reciprocating said cutting means in said predetermined direction; an interchangeable first accessory unit including a base means and a first presser foot means; an interchangeable second accessory unit including a second presser foot means having a contact area larger than the contact area of said first presser foot means; and means on said support means of said main cutting unit for interchangeably attaching said first accessory unit and said second accessory unit to said main cutting unit.

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