

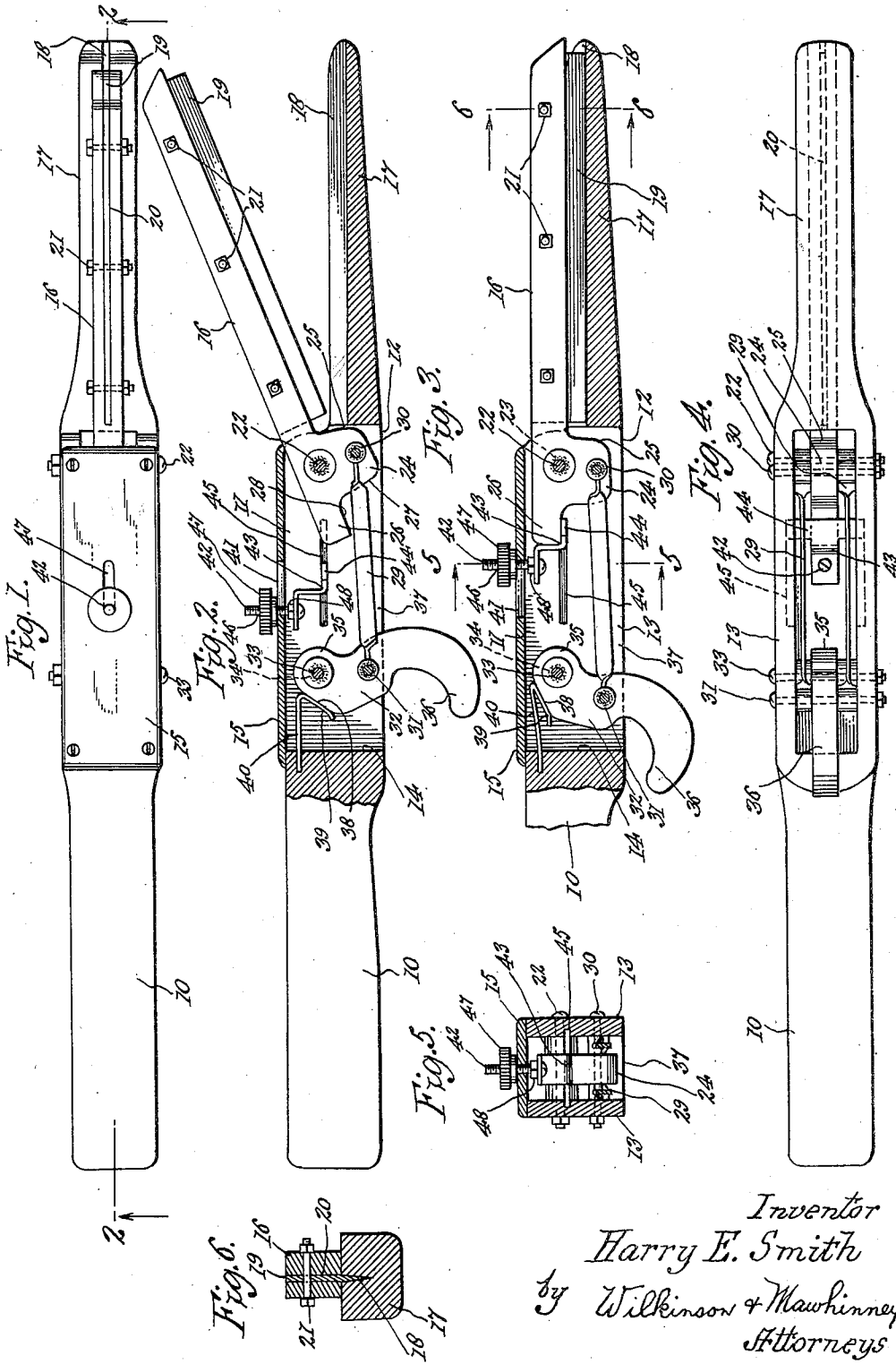
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CUT-EASY DEVICE

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## CUT-EASY DEVICE

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The present invention relates to improvements in a cut-easy device and has for an object to provide a cutting device constructed and arranged to be used in place of shears, more particularly for slide cutting in connection with blueprints, black-line prints, reproduced tracings on cloth, and Van-dyke prints on very thin paper.

The invention was suggested by the problem with the conventional shears which in such uses have to be sharpened so continuously that the metal is ground down to a point where it is impossible to maintain a smooth edge on the shears.

An object of the invention is to provide an improved cutting device embodying a razor-edge cutting blade detachably mounted in a holding jaw so as to be interchangeable when worn for a fresh sharp blade.

Another object of the invention is to provide an improved cut-easy device that will render sliding cutting easier and much faster than heretofore possible with the old style shears and in which economy is effected in that the relatively inexpensive blade need only be replaced when dull rather than the entire shears.

The invention has been proven to work successfully on such material as cotton, wool, silk, linen, rayon, nylon, oil-cloth, seat covers, curtain material, and various pattern designs.

The invention will also be found of great use in department stores, offices, shops, households, schools, art shops, printing shops, tailor shops, millinery shops, florist shops, and drafting, engineering, architects, and upholstery shops, and textile manufacturing plants.

A further object of the invention is to provide an improved mechanical movement between an operating trigger and a movable jaw holder of the device whereby ease and efficiency in operation of the cutting device is promoted to a high degree.

A still further object of the invention resides in embodying in the device a latch arrangement by which the holding jaw is locked in closed position against the base jaw against the automatic action of a spring which tends to maintain the jaws in the open position.

With the foregoing and other objects in view, the invention will be more fully described hereinafter and more particularly pointed out in the appended claims.

In the drawings, in which like parts are denoted by the same reference characters throughout the several views,

Figure 1 is a top plan view of an improved cut-easy device constructed in accordance with the present invention;

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Figure 2 is a longitudinal central section taken on the line 2—2 in Figure 1 with the device in the open position;

Figure 3 is a similar view with a part of the handle removed and with the jaws closed;

Figure 4 is a bottom plan view of the device;

Figure 5 is a transverse section taken on the line 5—5 in Figure 3; and

Figure 6 is a transverse section taken on the line 6—6 in Figure 3.

Referring more particularly to the drawings, 10 19 designates a handle having hollowed out in its outer portion a chamber 11. This chamber is closed at its bottom 12, side walls 13, and inner end wall 14 but is open at its top portion, being normally closed by a cover 15 which is detachably secured in place by screws or other fastenings.

The front wall is also open or substantially open to movably receive therethrough a holder jaw 16 20 which cooperates with a base or fixed jaw 17 projecting out from the lower portion of the front part of the chamber 11.

This fixed jaw 17 has preferably a tapered or inclined upper longitudinal edge in which is made 25 a groove 18 positioned to receive the thin knife or cutting blade 19 removably carried by the upper holder jaw 16. This holder jaw is formed with a longitudinal groove 20 in its lower edge to detachably receive the knife blade 19, and bolts or other fastenings 21 pass laterally through the holder jaw 16 and through the knife blade 19 to hold the same fixedly in place. The lower edge of the holder jaw 16 and the bottom of the groove 20 may be inclined or tapered whereby when the jaws 16 and 17 are brought together a shearing cut may be performed on the material.

The blade 19 may be relatively narrow and thin with an economy of material whereby the same may be discarded when worn or dull and replaced 30 by a substitute blade of like character. Such a blade is reinforced by the side walls of the movable upper jaw 16, and the same may be sharpened to razor keenness.

The rear or inner end of the upper holder jaw 16 is received through the open front end of the chamber 11 above the point of attachment of the lower fixed base jaw 17. Within the forward part of the chamber 11 such upper movable holder jaw 16 is pivotally mounted on a transverse pin 22 about which are preferably arranged 35 ball or roller bearings 23 on which the inner end of the upper jaw 16 is rotatably or pivotally mounted. Below the pivotal mounting 22 the movable jaw carries a dependent arm 24 which 40 extends generally at right angles downwardly

from the longitudinal axis of the upper movable jaw 16 and preferably has a curved front wall 25 struck on the arc of rotation of the arm 24 about the center 22 whereby the arm 24 may rock within the forward lower portion of the chamber 11 without interference from the attachment of the lower fixed jaw 17 with the forward part of the handle.

The upper movable jaw 16 also carries a tail-piece 26 projecting rearwardly into the chamber 11 extending rearwardly of the rear wall 27 of the depending arm 24. This tail-piece has a lower ledge or shoulder 28 for a purpose later described.

A pair of links 29 have their forward ends pivoted as at 30 to the rear lower portion of the dependent arm 24, roller or ball bearings being preferably associated with the pivots 30; it being understood that the links are overlapped with the side faces of the dependent arm 24.

The rear ends of the links 29 are in a similar manner, and preferably associated with ball or roller bearings, pivoted, as indicated at 31, to the rear lower portions of a trigger 32. This trigger is mounted in the rear portion of the chamber 11 upon a transverse pivot 33 surrounded by ball or roller bearings 34. The pivotal mounting 33 is preferably in an upper forwardly offset lug 35 of the trigger 32 so that the pivot 33 is in the upper forward corner of the trigger while the pivots 31 are in the lower rear corner of the same. In other words these pivots 31 and 33 are disposed in diagonally opposite corners of the generally rectangular trigger 32. The trigger oscillates forwardly and backwardly in the rear portion of the chamber 11 on the transverse pin 33. The rear motion of the trigger 32 is achieved by manipulation of the operator and for this purpose an extension trigger finger 36 projects downwardly through a slot 37 in the bottom wall 12 of the chamber 11. This trigger finger 36 is inclined downwardly and rearwardly from the trigger 32 and its lower edge is arranged diagonally with respect to the long axis of the handle 10 whereby as the tool is held in the hand of the operator the forward index finger may naturally rest beneath the trigger finger 36 and be in a convenient position to squeeze upwardly upon the same which will have the effect of rearwardly rotating the trigger 32 in the chamber 11.

The upper rear edge 38 of the trigger 32 is given a diagonal slope to receive the diagonal free downwardly-turned finger 39 of a leaf or flat spring 40 mounted within the chamber 11 in such relation to the trigger 32 as to tend to force the same downwardly and forwardly.

The top cover is longitudinally slotted at 41 to slidably receive therethrough the vertical shank 42 of a latch member. Such shank 42 carries a horizontally extending latch foot 43 having lateral extensions or wings 44 which are slidable in the horizontally elongated grooves 45 in the side walls 13. In other words the latch is substantially L-shaped.

The upper end of the latch shank 42 where it projects above the cover is screw threaded as indicated at 46 to receive the internally threaded nut 47. This nut is arranged to bind upon the upper surface of the cover 15 and to draw up against the lower part of such cover a flange 48 carried fixedly by the latch shank 42.

The latch foot 43 is so related to the tail-piece 26 as to slide thereunder in the closed position of the jaws 16 and 17.

Preferably the groove 18 is V-shaped in cross

section and extends completely through the outer free tip end of the base jaw 17 to facilitate the evacuation from this groove of all substances and waste material.

In operation with the latch normally in the rear retired position the spring 39, 40 will react on the trigger 32 to rotate such trigger counter-clockwise thereby pushing forwardly upon the links 29 and upon the dependent arm 24 which results in rotating the upper holder jaw 16 around its pivot 22 in a counter-clockwise direction to open the jaws and to withdraw the knife blade 19 from the groove 18 of the fixed base jaw 17. This is the normal initial position of the device in which it is advanced into the material by the movement of the operator's hand grasping the handle 10 with the index finger engaged beneath the trigger finger 36. When an incision is to be made the finger 36 is simply squeezed which causes the trigger 32 to rotate rearwardly or clockwise compressing the spring 39, 40 and pulling back upon the links 29 and the dependent arm 24, which acts to bring the upper pivoted holder jaw 16 down upon the lower fixed base jaw 17. The knife or cutting blade 19 thus enters the V-shaped groove 18 in a progressive manner from inner to outer ends of the jaws thus performing a shearing cut upon the included material. Subsequent to the cutting action the squeezing operation is released from trigger finger 36, whereupon the spring 39, 40 restores the parts to initial origin position with the jaws open.

In this way the material is cut through by repeated squeezings and releasings of the trigger 36, the squeeze action closing and the spring 39, 40 opening the jaws.

When the device is not in use and when it is being carried about, for instance on the person of the operator, it is desired to maintain the jaws closed with the sharp edge of the cutting blade 19 sheathed in the V-shaped groove 18 of the lower cutting jaw 17 and to this end the jaws are first closed by the squeezing action aforesaid which brings the tail-piece 26 to a correct elevated position with reference to the grooves 45 whereby the latch may be slid forwardly to cause the latch foot 43 to engage beneath the ledge or shoulder portion 28 of the tail-piece 26. Thus the latch which is locked in place against downward movement by the lower walls of the grooves 45 prevents the tail-piece 26 and therefore the arm 24 and the upper jaw 26 from rotating to an open position.

By rotating the nut 47 in a correct direction, for instance clockwise as viewed from above, the nut will cause binding of the parts 47 and 48 upon the cover and thus avoid shifting of the locking device back and forth in the slot 41. In this way the latch may be secured either in the locked or unlocked positions at the opposite end portions of the slot 41.

While I have disclosed herein the best form of the invention known to me at the present time, I desire it to be understood that I reserve the right to make changes and modifications in the herein described embodiment of the invention provided such changes fall within the scope of the following claims.

What I claim is:

1. A cutting device comprising a handle having chamber therein, a fixed jaw extending forwardly from the handle and chamber, a movable jaw pivoted in said chamber and arranged to cooperate with said fixed jaw, said movable jaw having a dependent arm extending below its pivot

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point and a tail-piece extending rearwardly towards said handle off the pivot point, a trigger having an upper portion pivoted in the chamber adjacent the handle and in spaced relation to the pivot point of the movable jaw, said trigger having a finger projecting below the chamber, a link connection pivoted to said dependent arm and to an intermediate portion of said trigger, said trigger having a sloping upper edge between its pivot point and the handle and inclining from an upper high point downwardly and rearwardly towards said handle, a spring having one end fixed in said handle and the other end downturned to lie in engagement with the sloping upper edge of said trigger whereby when the trigger is pulled rearwardly to close the jaws the spring will be compressed to later automatically open the jaws when pressure is released from the trigger, and means movably carried within said chamber and having an operating part externally of said chamber for engaging beneath said tail-piece to hold the jaws closed against the action of said spring when pressure is released from the trigger.

2. A cutting device according to claim 1 char-

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acterized by the fact that the last named means comprises a latch foot having flanges, said chamber having side walls provided with grooves for slidably receiving said flanges and a latch shank carrying said foot and connected to the operating part on the exterior of the chamber.

3. A cutting device according to claim 1 characterized by the fact that said last named means comprises a device carried by the external operating part for binding the latch foot in adjusted position either in engagement with or disengagement from said tail-piece.

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