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3,276,355

CUTTING AND PRINTING DEVICE

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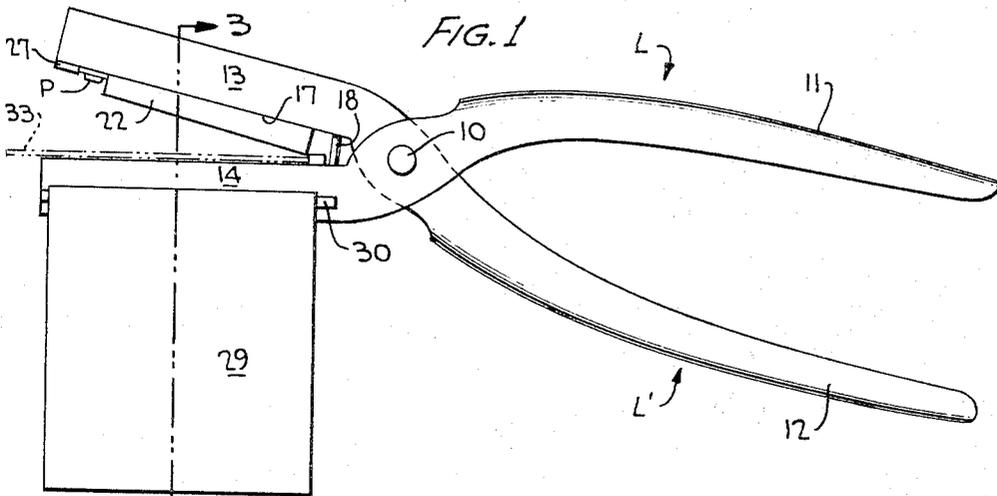


FIG. 1

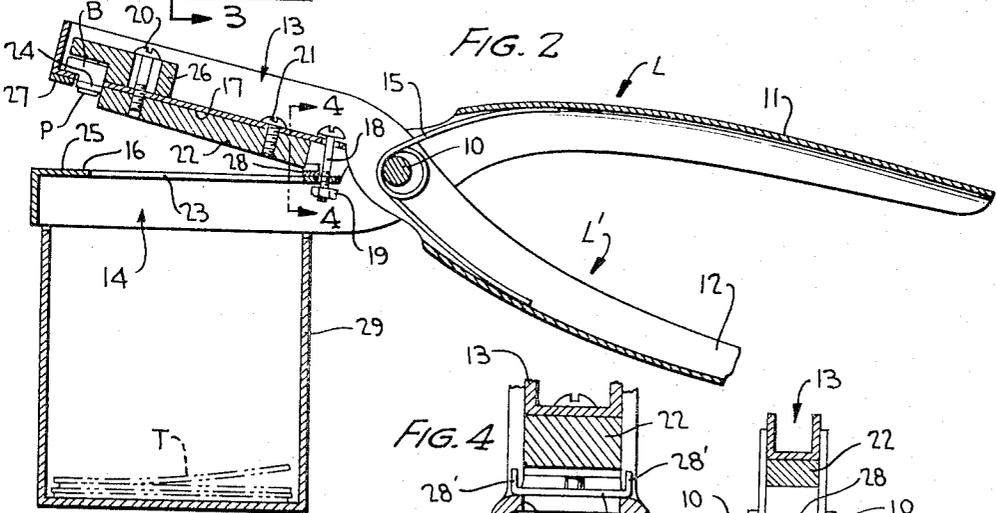


FIG. 2

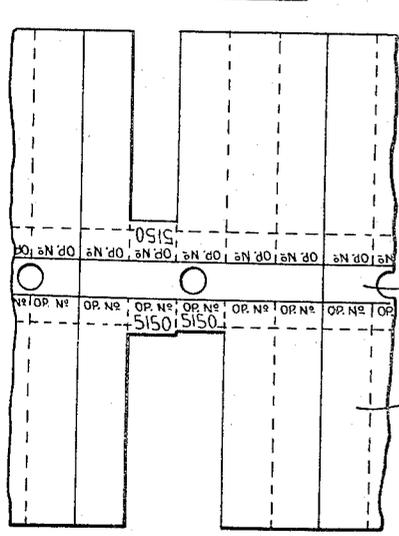


FIG. 5

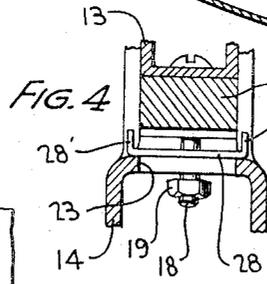


FIG. 4

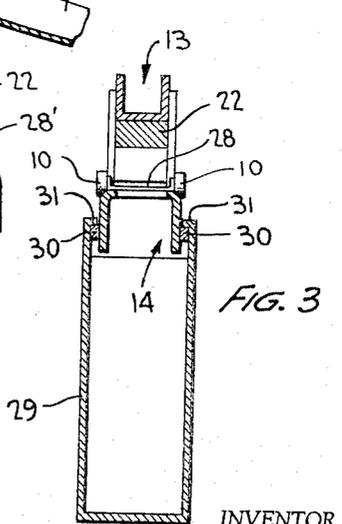


FIG. 3

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3,276,355

CUTTING AND PRINTING DEVICE

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This invention relates to improvements in a cutting and printing device adapted for use in cutting successive similarly shaped portions or tabs from sheet material and simultaneously imprinting on the sheet material immediately adjacent the location from which each such tab is removed a symbol or identifying data.

While by no means limited thereto, the device of the invention finds particular utility in keeping accurate account of the work output of each operator in a garment assembly line in which a bundle tag accompanies a bundle of garment components down the assembly line. The bundle tag includes a main portion to which are integrally attached tabs or tokens to be removed and retained by the respective operators upon completion by each operator of a specific operation on certain of the components comprised in the bundle. On the main body of the bundle tag adjacent each such tab is provided a space on which the operator applies her identifying data to indicate that the given operation was performed by her, while removing and retaining the tab. The tabs thus accumulated by each operator over a given period may be utilized as a basis for determining the operator's compensation, while the identifying data on the main portion of the bundle tag affords a basis for checking the work output of the respective operators against the tabs accumulated by them.

It has been customary in the past for each operator to cut out each tab with a pair of scissors, and in a separate operation to apply her designating number or symbol to the main tag portion adjacent the location from which the tab was removed. This process, when repeated numerous times throughout each work day, manifestly involves a cumulative loss of a substantial amount of time which might otherwise be devoted to productive work, and at the same time affords undesired leeway for errors such as inadvertent failure of the operator to apply her designating number or symbol; to apply it in the proper location, or to remove and retain the tab.

With this in mind, it is a prime object of the invention to provide a combination mechanical tab-removing, storing and printing device for simultaneously removing the tabs, storing them and printing the operator's identification at the proper location on the main body of the bundle tag.

In accordance with the invention, such a device comprises a pair of crossed levers medially pivoted to each other and formed to provide operating handles on one side of the pivot and relatively opposed work engaging jaws on the other side thereof, whereby the jaws may be urged toward each other by squeezing the handles together as with a conventional pair of pliers.

One of the jaws bears a cutting die of appropriate shape in plan for snug reception in and withdrawal from a mating opening through the opposed jaw whereby to cut out and remove from the tag tabs of predetermined shape and size. A receptacle carried by the opposing jaw in alignment with the said opening receives and accumulates the tabs normally in stacked formation. At the free end of one of the jaws is carried a printing device for co-

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operation with an opposing platen at the free end of the other jaw for impressing the operator's identifying number or symbol on the main body of the tag in predetermined position relative to the tab being removed.

In addition to the foregoing novel arrangement of features, the invention incorporates further specific improvements including a simplified means for removably mounting the cutting die and the printing device in operative position; a novel manner of removably securing the tab receptacle to its associated jaw whereby to utilize the jaw as a removable closure for the receptacle; and the provision of a work position stop for facilitating registry of the cutting die with the tab to be removed.

To promote an understanding of the invention, reference is now made to the preferred embodiment thereof illustrated in the accompanying drawings, and specific language will be used to describe same. It will nevertheless be appreciated that no limitation of the scope of the invention is thereby intended, but that such modifications and alterations are contemplated as would normally occur to one skilled in the art to which the invention relates.

In the accompanying drawings:

FIGURE 1 is a side elevation of a device embodying the invention in its preferred form and as it appears when operatively positioned for use with a bundle tag, a portion of the tag being illustrated in phantom as operatively positioned in the open jaws of the device.

FIGURE 2 is a vertical longitudinal section through the device of FIGURE 1, a portion of one of the operating handles being broken away.

FIGURE 3 is a section taken on the line 3-3 of FIGURE 1.

FIGURE 4 is an enlarged detail section in the same plane as FIGURE 3 showing in more detail certain of the structure illustrated in FIGURE 3.

FIGURE 5 is a plan view of part of a conventional bundle tag of the class with which the illustrated embodiment of the invention is particularly adapted for use.

Referring now in detail to the accompanying drawings, it will be seen from FIGURES 1 and 2 that the device is of the pliar type, comprising a pair of rigid levers L and L' which cross each other at their mid-points where they are pivotally interconnected at 10. As is customary in pliar construction, the levers in this instance are formed to provide relatively opposed operating handles 11 and 12 on one side of the pivot 10 and relatively opposed flat jaws 13 and 14 on the opposite side of pivot 10.

As is best illustrated in FIGURE 2, a spring 15 is looped around the pivot 10 with its extremities engaging the respective handles 11 and 12 to bias them and the jaws away from each other. The opposed jaws 13 and 14 are provided with relatively opposed flat faces 16 and 17. Loosely disposed through the inner ends of the flat jaw faces 16 and 17 is a bolt 18 having a nut 19 threaded thereon for cooperation with the bolt head in limiting the relative spreading of the jaws.

Affixed to the face 17 of jaw 13 by fastening devices such as screws 20 and 21 is a cutting die 22 of block-like configuration adapted for snug reception in and through a conformingly shaped opening 23 through the flat face 16 of jaw 14.

Both the cutting die or die block 22 and the opening 23 are spaced rearwardly from the free ends of the respective jaws to provide space for the printing means carried at said free ends. Thus at the free end of jaw 13 is affixed a printing device 24, the printing face of which is

directed toward and adapted for cooperation with a platen 25 defined by a portion of the opposing flat jaw surface area 16 at the free end of jaw 14.

The printing device 24 may be of any suitable conventional type, being here illustrated as a commercially available type of self-inking, rubber stamp, the indicia bearing or printing portion P of which projects through an opening in the flat face 17 of jaw 13 for cooperation with platen 25, being supported by a rigid backing member B which is securely clamped between the rear flat surface of jaw face 17 and the clamping block 26. Preferably the clamping block 26 is drawn toward and retained in operative clamping position by one of the screws 20 which also functions to secure the cutting die 22 on the jaw 13. To this end, the clamp or clamping block is provided with an elongated opening therethrough for passage of the screw 20, and to permit longitudinal adjustment of the position of clamp 26. It will be understood that both of the screws 20 and 21 are slidably disposed through the jaw 13 in threaded engagement with the cutting die or die block 22, and that tightening of the screw 20 will simultaneously draw both the clamp 26 and the cutting die 22 against opposite sides of the flat jaw face portion 17.

Advantageously, both jaws are of channel shape in cross section, and clamp 26 is proportioned for reception between the opposing side walls of the channeled jaw 13 to be restrained thereby against angular displacement about the axis of its single actuating screw 20.

A spacer or a stop plate 27 of suitable thickness may be affixed to the extreme forward end of the jaw 13 for abutment against platen 25 to limit the movement of the jaws toward each other so as to avoid the exertion of excessive or harmful compression on the printing device 24.

It will be apparent that when a piece of flat sheet material, as for instance the bundle tag of FIGURE 5, is placed between the open jaws 13, 14 as shown in FIGURE 1, and the jaws thereafter are moved toward each other, the cutting die 22 will be forced through the intervening sheet material and into opening 23 in such a manner that the cooperating marginal edges of the cutting die will coact with the contiguously disposed marginal edges of the opening 23 to exert a shearing action for severing from the sheet material a portion or tab corresponding in size and shape to the opening 23.

In order to limit the extent to which the sheet material is inserted between the jaws, there is provided a stop 28 which is affixed to and extends across the flat face of jaw 14 with its upturned ends 28' disposed laterally on opposite sides of the path of movement of jaw 13. The forward edges of these upturned ends, which are adapted for abutment with the inserted edge of the bundle tag, are in a plane which is displaced forwardly from the pivot 10 at least as far as the adjacent rear ends of the cutting die 22 and the opening 23. Thus the stop 28 positions the sheet material between the jaws so that the resulting shearing action forms in the material a slot which opens outwardly through one edge of the material to facilitate easy removal of the material from the device even before the jaws are fully reopened. With this arrangement also the device will be adapted for easy removal of tabs of uniform length and also the device will be caused to apply the printed data at a predetermined distance inwardly from the edge of the bundle tag.

The removed or severed portions or tabs, designated by the reference character T, in FIGURE 2, are received and stored in the receptacle 29 which is removably supported from the jaw 14 by means of laterally projecting tracks 30 affixed to opposite sides of this jaw, and overhanging ledges 31—31 affixed to and projecting inwardly from the opposite side walls of the receptacle 29 for longitudinal sliding movement on the tracks 30. The end walls of the receptacle, as is apparent from FIGURES 2 and 3, are of lesser height than the sides thereof for reception of the lower portion of the jaw 14. Preferably

the fit between the receptacle and the jaw is sufficiently snug to provide for frictional retention of the receptacle on the jaw 14. The jaw 14 thus serves as a cover or lid for the receptacle 29 and the cross sectional shape and proportions of the receptacle sufficiently approach the shape and proportions of the tabs as to encourage the reception and storage of the tabs in stacked relation in the order of their reception.

Thus in the operation of the device in its preferred field of use in a garment assembly line, as each operator completes a given operation on components of a particular bundle of garment components, she employs the device to remove from the bundle tag which accompanies the bundle a tab, and to apply her identifying number or symbol on the main body of the bundle tag opposite the location from which the tab or token is removed. By way of more specific illustration, a portion of a conventional bundle tag, designated 33 in its entirety, is illustrated in FIGURE 5. This tag comprises a main body portion 34 which accompanies the bundle of garment components throughout its travel down the assembly line, and is divided by printed lines or score lines into a plurality of tags 35 to be detached and retained by the respective operators. The cutting die 22 and its associated opening 23 are proportioned to remove or sever a single such tag 35, the stop 28 being positioned so that when one edge of the tab 33 is inserted between the open jaws 13 and 14 into abutting engagement with the stop 28, the printing device 24 will be positioned to imprint the operator's identifying number, exemplified in FIGURE 5 as the number 5150, on the main body 34 of the bundle tag opposite the tag which is removed and simultaneously with the removal thereof. The removed tags will be received and stored within the receptacle 29, normally being stacked therein in the order of their removal. Periodically the accumulated tags T may be removed from the receptacle 29, the latter being uncovered for this purpose by removal thereof from the jaw 14 in obvious manner.

In this application, there is shown and described only the preferred embodiment of the invention, but as aforementioned, it is to be understood that the invention is capable of various changes or modifications within the scope of the inventive concept as expressed by the accompanying claims.

Having thus described my invention, I claim:

1. A sheet material severing and printing device comprising a pair of medially-crossed and pivotally-interconnected levers formed to provide a pair of relatively-opposed jaws and a pair of relatively-opposed operating handles respectively on opposite sides of their pivotal interconnection, a cutting die affixed to one of said jaws for cooperating reception in and shearing relation with the edges of a conformingly-shaped mating opening through the opposing said jaw, in combination with a printing device fixedly carried by said one jaw adjacent the free end thereof and a platen carried by the said opposing jaw in position for cooperation with said printing device, said one jaw being formed with an opening therethrough adjacent its free end, said printing device comprising a rigid backing member overlying said opening on the remote side of said one jaw from the opposing said jaw, said printing member including a printing portion carried by said backing and projecting through said last-mentioned opening toward the opposing jaw, and clamping means on said remote side of said one jaw for releasably engaging said backing plate to removably secure said printing member in operative position.

2. A sheet material severing and printing device as defined in claim 1 wherein said jaws are formed of relatively opposed flat surfaces and including threaded means removably securing said cutting die to said one jaw, said threaded means slidably extending through said one jaw and threadedly interconnecting said cutting die and said clamping block and drawing them toward each other into engagement with opposite sides of the said one jaw.

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3. The combination defined in claim 2 further including a stop member affixed to said opposing jaw presenting a stop surface in a plane generally coincident with one edge of the opening through said opposing jaw.

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