Feb. 17, 1953

B. K. SLONNEGER

2,628,557

PRINTING MECHANISM

Filed July 14, 1950

FIG. 1

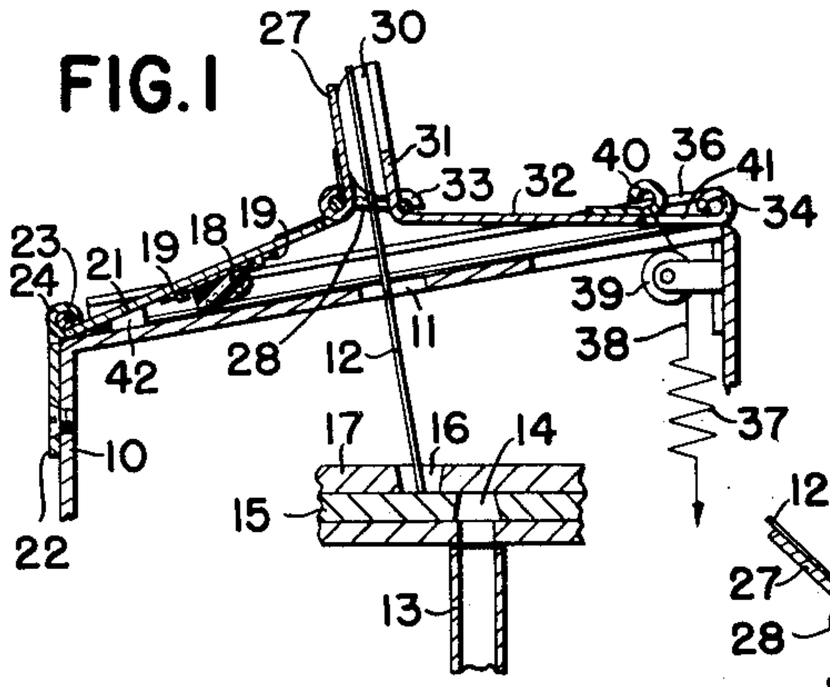

FIG. 2

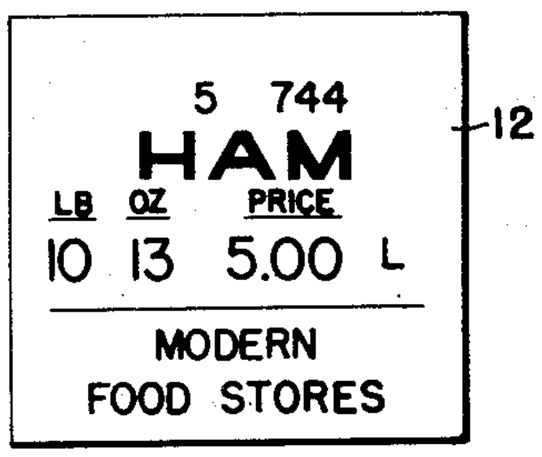

FIG. 3

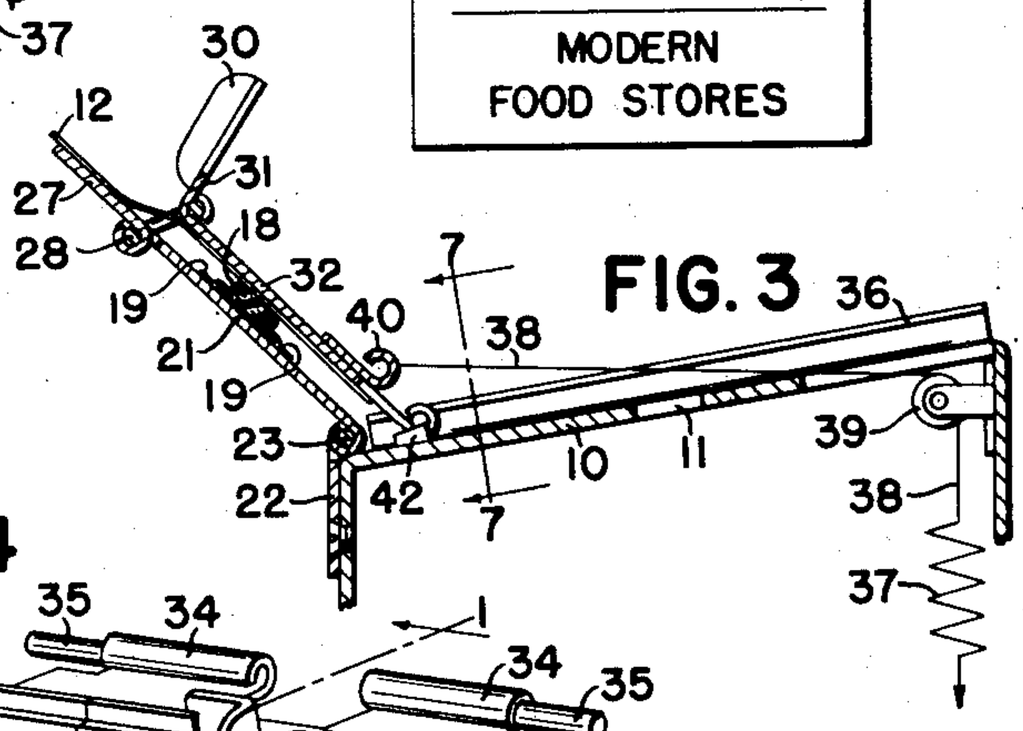

FIG. 4

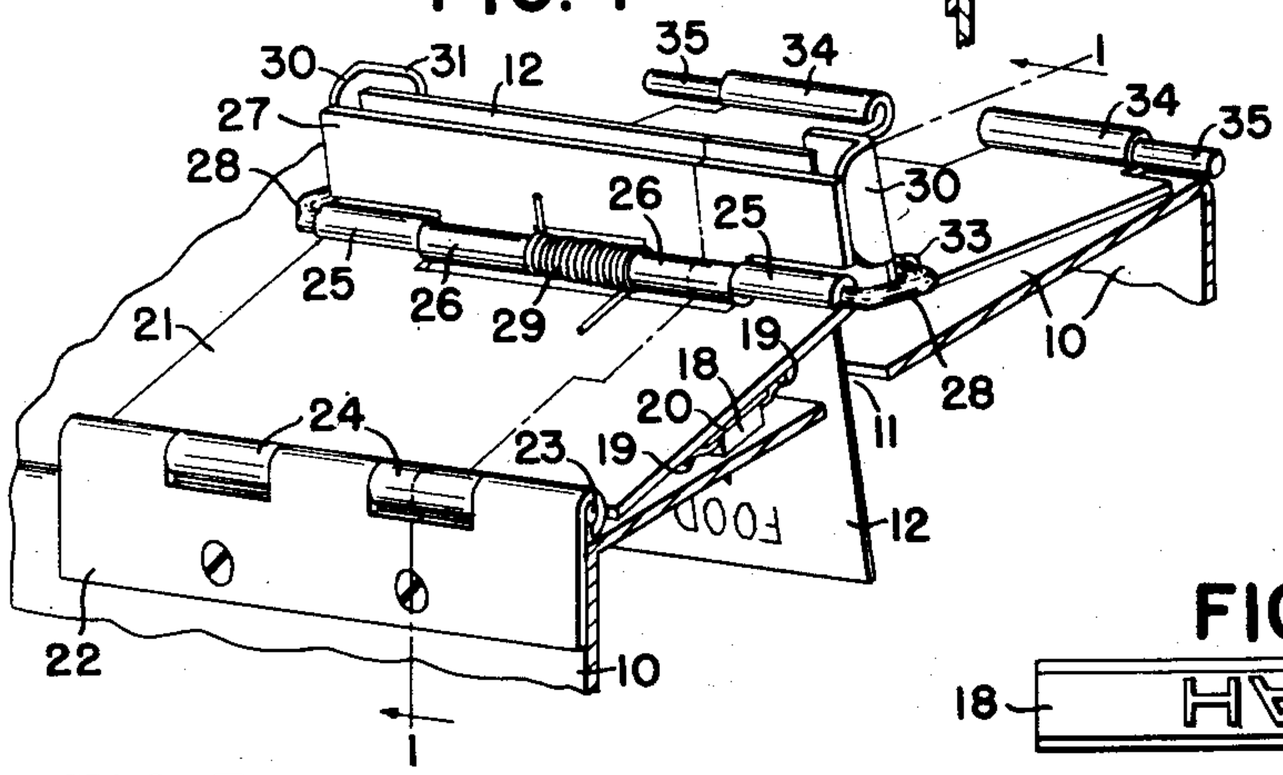

FIG. 6

FIG. 5

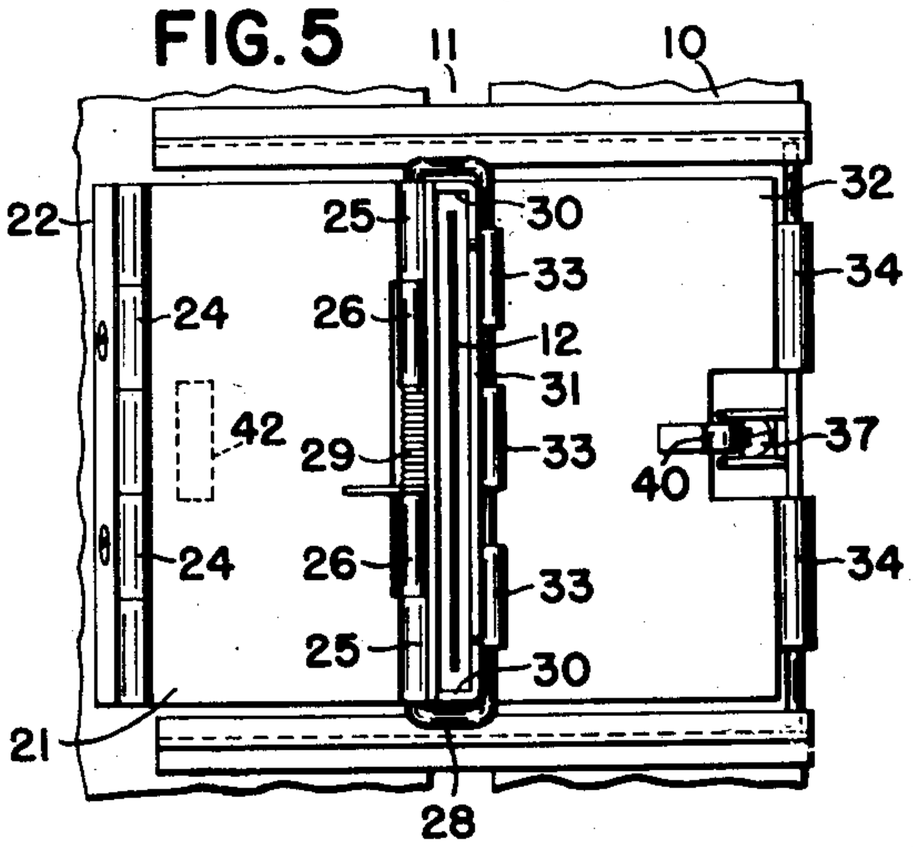

FIG. 7

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Patented Feb. 17, 1953

2,628,557

UNITED STATES PATENT OFFICE

2,628,557

PRINTING MECHANISM

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Application July 14, 1950, Serial No. 173,760

6 Claims. (Cl. 101—298)

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This invention relates to printing mechanism for printing data on a preprinted label.

The principal object of the invention is to provide a printing device for printing supplemental data on a label issued by a printing machine, such as a cash register.

A specific object of the invention is to print supplemental data on a preprinted label, the printing mechanism being actuated as the label is removed from the machine in which the label is preprinted.

With these and incidental objects in view, the invention includes certain novel features of construction and combinations of parts, a preferred form or embodiment of which is hereinafter described with reference to the drawing which accompanies and forms a part of this specification.

In said drawing:

Fig. 1 is a cross sectional view, taken on line 1—1 of Fig. 4, showing the printing mechanism in unoperated position, and shows the delivery chute from which the preprinted label is issued, together with the knife for cutting the preprinted label from a strip of record material.

Fig. 2 is a facsimile showing the preprinted label and the supplemental data printed thereon.

Fig. 3 is a sectional view of the supplemental data printing mechanism of Fig. 1 in the printing position.

Fig. 4 is a perspective view of the supplemental data printing mechanism.

Fig. 5 is a top plan view of the supplemental data printing mechanism.

Fig. 6 is a detail view of an insertable printing member.

Fig. 7 is a detail cross sectional view taken on line 7—7 of Fig. 3.

General description

In self-service groceries and meat markets, meat and produce are prepackaged, weighed, priced, and labeled, so that the customer selecting a package of food can select the amount, kind, and price of food desired. One of the problems in this method of marketing was to provide a legible label without the necessity of hand-written entries, which method of producing labels was slow and time-consuming, thus adding to the cost of merchandising the goods. Hand-written labels have the undesirable feature of being produced without any correlated records, so that errors are easily made, with resulting loss to both the merchant and the customer.

Some merchants purchase labels which are preprinted with the name of the commodity to be

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wrapped. This is unsatisfactory because of the large number of different labels required. For example, for meat alone, the merchant must have between 250 and 300 labels of different kinds in stock, and these labels must have the weight and price hand-written thereon.

Certain classes of cash registers print, record, and accumulate data necessary for an accurate control in merchandising, but, while such machines ordinarily provide for issuing a ticket showing the amount of sale and the quantities of goods, they do not provide a means for printing a sufficient number of names of the kind of goods sold to meet the present requirements. A machine of this class is illustrated in United States Patent No. 1,816,263, issued to William H. Robertson on July 28, 1931. The present invention is illustrated as adapted to the machine disclosed in that patent, but it is not restricted to use with such a machine. The machine illustrated in the Robertson patent has a keyboard having ledger number keys in addition to the usual amount keys. For use in the present system, the keyboard is modified by utilizing the ledger number keys for setting up the weight of the goods and printing this data on the ticket, which forms a label. The totalizer construction is further modified by the provision of what is known in the art as a "split" totalizer, so that separate totals can be accumulated for determining the total volume of goods for which labels are produced.

In use, for example, when ham is being packaged, the butcher cuts the ham and weighs the cut on a computing scale, then sets up the amount and the price on the keyboard of the cash register, and thereafter releases the machine for an operation during which a label is printed and issued, on which label the data set up on the keyboard is printed. Also this data is entered in the totalizers of the machine, so that a complete record thereof is made, to give the proprietor an accurate control over the mechandise packaged.

The label issued by the machine gives the customer a legible and accurate statement of the amount and price of goods purchased. However, the label produced by the cash register does not print the name of the goods. The present invention includes a novel method of printing the name of the goods on the label issued by the machine. The novel printing mechanism is located, at the point where the label is issued from the machine, in such a manner that the label is fed into printing position by the cash register feeding mechanism and into a position where the operator need only grasp the ticket and one ele-

ment of the printing mechanism and pull the ticket upwardly and forwardly in a natural movement. At this time, an imprint is made on the label from an insertable printing element.

To provide for the vast number of items to be packaged, a separate insertable printing element is provided for each kind of goods to be packaged. In packaging goods, a varying amount of goods of a selected class is packaged at one time before another kind of goods is packaged. Therefore it is only necessary to change a printing element when a different kind of goods is to be packaged.

To provide a simple mechanism, having a minimum number of parts, a porous rubber printing element is used, which printing element is charged with ink sufficient to produce hundreds of impressions without being reinked. This type of printing element may be made by the process described in United States Patent No. 2,353,877, issued to Robert G. Chollar on July 18, 1944. The use of a printing member made by the above-mentioned process makes an ink ribbon or other inking mechanism unnecessary in the machine, resulting in a simplified mechanism. The printing members are recharged with ink, when not in use, by being stored in the proximity of a reservoir, as is well known. Also a porous rubber printing element of this type effects a legible impression by very light pressure, so that no printing blow or hard squeeze operation is necessary.

Detailed description

The invention consists of a unitary structure mounted on a cabinet **10** of a label-issuing machine, such as, for example, that shown in the above-mentioned Robertson patent. The cabinet **10** of such a machine is provided with a slot **11**, through which a label **12** is fed. As disclosed in said patent, the web of paper is fed through a chute **13**, through an opening **14** in a stationary knife blade **15**, and thence through an opening **16** of a movable knife blade **17**. The opening **16** registers with the opening **14** when the web is fed by the machine, and, after the web is fed the proper distance, the movable knife **17** is shifted to the left (Fig. 1) to sever the label **12** from the web and leave the lower end of the label resting on the stationary blade **15**. The upper end of the label is at this time within a receptacle of the novel printing mechanism, whence it can be removed by the operator in a manner described later, At this time, the label has printed thereon all the data illustrated in Fig. 2, except the word "Ham," or any other name designating the commodity being packaged.

To effect the printing of the name of the commodity on the issued label, a printing member **18** is removably mounted in a channel formed by a pair of Z-bars **19**, and the printing member **18** is secured to a plate **20**, the two sides of which plate are slidably engaged with the Z-bars **19** in such a manner that the plate **20** can be easily inserted or removed. The Z-bars **19** are secured to the under side of a pivoted member **21**, hinged on the cabinet **10** by a hinge plate **22** and a hinge pin **23**. The pivoted member **21** has two hinge knuckles **24** formed on its forward end, coacting with the hinge pin **23**, by means of which the member **21** can pivot. The rearward end of the member **21** also has two hinge knuckles **25** formed thereon. A pair of hinge knuckles **26** are formed on a pivoted finger piece **27**, and one section of a rod **28**, bent in the

form of a rectangle, passes through the knuckles **25** and **26**, forming a hinge pin on which the member **21** and the finger piece **27** can pivot. A spring **29**, coiled around the rod **28**, having one end bearing against the member **21** and its other end bearing against the finger piece **27**, normally holds the ends of the finger piece **27** in contact with flanges **30** on a vertically-disposed flange **31** (Figs. 1 and 4) of a printing platen **32**. The center section of the flange is cut away to provide an opening for the operator's fingers when he operates the printing means, and to provide access to the label **12** when it is being removed, in the manner hereinafter described.

The member **21** and the printing plate **32** are connected together by the rod **28**, one section of which passes through three knuckles **33**, formed on the platen **32**, as clearly shown in Fig. 5. As before mentioned, the rod is bent in the form of a rectangle and acts as hinge pins coacting with the knuckles **25** and **33**, thus connecting the member **21** and the platen **32** together, as shown in Fig. 5. The rear end of the platen **32** is provided with two loops **34**, in each of which is secured a rod **35**, and each rod **35** extends beyond the respective side of the platen to enter a guideway formed by plates **36** flanged inwardly over the ends of the rods **35**. The plates **36** are suitably spaced and are secured to the top of the cabinet **10** and are located in parallel relation to each other to provide a guideway for the rods **35** and the platen **32**.

To normally provide a means for maintaining the printing means in the normal position, illustrated in Fig. 1, a spring **37**, or any other resilient means, can be provided. As illustrated, the spring **37** is secured to one end of a cable **38**, which cable passes over a pulley **39**, and the other end of the cable is attached to a clip **40** on the platen **32**. The platen **32** is suitably notched as at **41** (Fig. 7) to provide clearance for the cable. The end of the spring **37**, opposite the end to which the cable **38** is attached, is secured to the framework of the label-printing machine.

To arrest the movement of the parts in home position, a block **42** is secured to the top of the cabinet **10**, on which the plate **19** rests when in home position.

Operation

Upon completion of the operation of the label-issuing machine, the label **12**, having all the data printed thereon except the name of the commodity, shown in Fig. 2, is resting on the knife blade **15** and extends upwardly between the finger piece **27** and the flange **32**, as shown in Fig. 1. To print the name of the commodity, the operator first selects a desired printing member **18** and inserts it into the channel formed by the two Z-bars **19**. This selection is made from a group of from 250 to 300 names, which are used in the average super-market for prepackaged meat alone.

After the selected printing member **18** has been properly positioned and a label has been issued by the cash register, the operator grasps the upper end of the label **12** and impinges it against the finger piece **27**. This is usually done by use of the forefinger and the thumb, the thumb resting on the outer face of the plate **27** and the forefinger resting on the rear face of the label. Thereafter, the operator pulls the finger piece **27** and the label **12** forwardly and upwardly, which pivots the member **21** around the hinge pin **23**

and carries the rectangularly-formed connecting rod 28 therewith, and the latter, being connected to the platen 32, carries the platen 32 therewith. The path of movement of the platen 32 is governed by the rods 35 sliding in a straight path and controlled by the plates 36. As the member 21 and the platen 32 approach the limit of their movements, the label will be impinged between thhe printing member 18 and the platen 32 by a slight pressure, as illustrated in Fig. 3, which causes an impression to be made on the label. During this operation, the spring 37 is tensioned, and, upon release of the member 21, the parts are returned to home positions by the spring 37. At this time, the member 21 again comes to rest on the block 42, and the spring 29 holds the finger piece against the flanges 30, in which position the printing label is removed and the printing means is again in position to receive the next label.

In the normal use, the printing member 18 will remain on the member 21 for a plurality of operations, since meat of one kind is packaged until the desired number of sizes and packages of a particular kind have been processed. Therefore it becomes necessary to change a printing member only when a different kind of meat is to be processed.

The invention is illustrated for use in connection with a cash register of the type shown in the aforementioned Robertson patent. However, it is apparent that any other ticket-printing machine can be adapted for use therewith, or the novel mechanism can be constructed as a printing unit entirely independent of any ticket-printing machine, in which case the label can be inserted into printing position by the operator.

While the form of mechanism shown and described herein is admirably adapted to fulfill the objects primarily stated, it is to be understood that it is not intended to confine the invention to the one form or embodiment disclosed herein, for it is susceptible of embodiment in various other forms.

What is claimed is:

1. In a device of the class described for printing on record material, the combination of a pivoted member, a printing element on the pivoted member, a printing platen, means to support record material between the printing element and the printing platen, a set of hinge knuckles on the free end of the pivoted member, a set of hinge knuckles located on one end of the printing platen, a device engaging both sets of hinge knuckles to connect the pivoted member to the printing platen whereby the printing platen is moved by the pivoted member when the pivoted member is operated, a stationary guideway disposed on a straight line, projections on the printing platen located on the end opposite the end on which the hinge knuckles are located on the printing platen and extending into the guideway to provide a sliding and pivoting connection with the guideway, said projections movable in the guideway when the printing platen is operated by the pivoted member, to guide one end of the printing platen in a straight line while the said device causes the printing platen to pivot on the projections within the guideway to cause the printing platen to impinge the record material against the printing element to effect a printed impression on the record material, a finger piece on the pivoted member adjacent to which the record material is normally positioned, a stop on the printing platen, and means to normally maintain the finger piece in engagement with the stop to locate the finger piece adjacent the record material, whereby the finger piece and the record material can be simultaneously grasped to manually operate the pivoted member and the printing platen and to carry the record material therewith.

2. In a device of the class described for printing on record material, the combination of a pivoted member, a printing element on the pivoted member, a printing platen, means to support record material between the printing element and the printing platen, a set of hinge knuckles on the free end of the pivoted member, a set of hinge knuckles located on one end of the printing platen, a device engaging both sets of hinge knuckles to connect the pivoted member to the printing platen whereby the printing platen is moved by the pivoted member when the pivoted member is operated, a stationary guideway disposed on a straight line, projections on the printing platen located on the end opposite the end on which the hinge knuckles are located on the printing platen and extending into the guideway to provide a sliding and pivoting connection with the guideway, said projections movable in the guideway when the printing platen is operated by the pivoted member, to guide one end of the printing platen in a straight line while the said device causes the printing platen to pivot on the projections within the guideway to cause the printing platen to impinge the record material against the printing element to effect a printed impression on the record material, a finger piece on the pivoted member adjacent to which the record material is normally positioned, a stop on the printing platen, means to normally maintain the finger piece in engagement with the stop to located the finger piece adjacent the record material, whereby the finger piece and the record material can be simultaneously grasped to manually operate the pivoted member and the printing platen and to carry the record material therewith, and resilient means to restore the pivoted member and the printing platen to their unoperated positions after the impression has been made and the record material removed.

3. In a device of the class described for printing on record material, the combination of a pivoted member, a printing element on the pivoted member, a printing platen, means to support record material between the printing element and the printing platen, a set of hinge knuckles on the free end of the pivoted member, a set of hinge knuckles located on one end of the printing platen, a device engaging both sets of hinge knuckles to connect the pivoted member to the printing platen whereby the printing platen is moved by the pivoted member when the pivoted member is operated, a stationary guideway disposed on a straight line, projections on the printing platen located on the end opposite the end on which the hinge knuckles are located on the printing platen and extending into the guideway to provide a sliding and pivoting connection with the guideway, said projections movable in the guideway when the printing platen is operated by the pivoted member, to guide one end of the printing platen in a straight line while the said device causes the printing platen to pivot on the projections within the guideway to cause the printing platen to impinge the record material against the printing element to effect a printed impression on the record material, a finger piece

on the pivoted member adjacent to which the record material is normally positioned, a stop on the printing platen, means to normally maintain the finger piece in engagement with the stop to locate the finger piece adjacent the record material, whereby the finger piece and the record material can be simultaneously grasped to manually operate the pivoted member and the printing platen and to carry the record material therewith, resilient means to restore the pivoted member and the printing platen to their unoperated positions after the impression has been made and the record material removed, and a stationary stop to arrest the pivoted member in said normal position.

4. In a device of the class described for printing on record material, the combination of a pivoted member, a printing element on the pivoted member, a printing platen, means to support record material between the pivoted member and the printing platen, means to connect the pivoted member to the printing platen whereby the printing platen is moved by the pivoted member, a stationary guideway, projections on the printing platen extending into the guideway to guide the printing platen when moved by the pivoted member to cause the printing platen to impinge the record material against the printing element to thereby make an impression on the record material, a finger piece on the pivoted member adjacent to the record material when the latter is between the pivoted member and the printing platen, a stop on the printing platen, and means to normally maintain the finger piece in engagement with the stop to locate the finger piece adjacent the record material, whereby the pivoted member and the record material can be grasped to be manually moved together.

5. In a device of the class described for printing on record material, the combination of a pivoted member, a printing element on the pivoted member, a printing platen, means to support record material between the pivoted member and the printing platen, a rectangularly-formed device connected to the pivoted member and the printing platen whereby the printing platen is moved by the pivoted member when the pivoted member is operated, a stationary guideway, projections on the printing platen extending into the guideway to guide the printing platen when

moved by the pivoted member to cause the printing platen to impinge the record material against the printing element to thereby make an impression on the record material, a finger piece pivoted on the rectangularly-formed device, a stop on the printing platen, and resilient means to normally maintain the finger piece in engagement with the stop to arrest the finger piece adjacent the record material, whereby the finger piece and the record material can be simultaneously grasped to operate the pivoted member, said finger piece following the path of movement of the stop as the pivoted member is operated around its pivot.

6. In a device of the class described for printing on record material, a pivoted member, a printing member on the pivoted member, a printing platen normally disposed at an obtuse angle in respect to the pivoted member, a flange on said platen formed at an obtuse angle with respect to the operating face of the printing platen, a stop on the flange, a finger piece pivotally mounted on the pivoted member, a resilient means to normally maintain the finger piece in contact with the stop, said stop being of a length to space the finger piece from the flange a distance sufficient to provide a slot through which record material is fed, means to support the record material in said slot, means to connect the pivoted member to the printing member, and a stationary guide to guide one end of the platen when the platen is operated, said platen being operated manually by grasping the finger piece and the record material and rocking the pivoted member around its pivot and through the means to connect the pivoted member to the printing platen operating the latter, said guide causing the printing platen to move into parallel relationship with the printing element to effect an impression on the record material.

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The following references are of record in the file of this patent:

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