Oct. 6, 1959 J. K. MAKI ET AL 2,907,275

TAG PRINTING APPARATUS

Filed Dec. 30, 1954 2 Sheets-Sheet 1

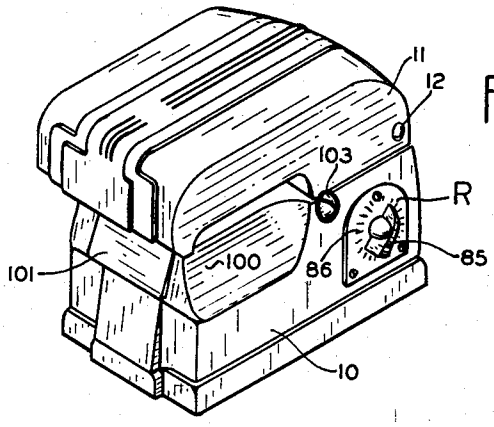


Fig. 1

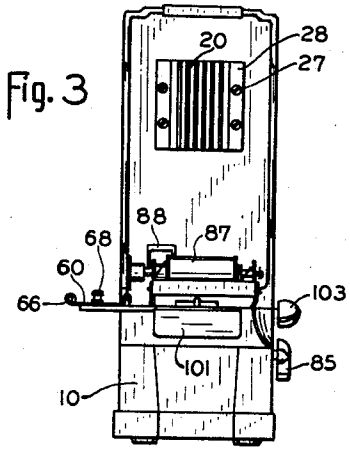


Fig. 3

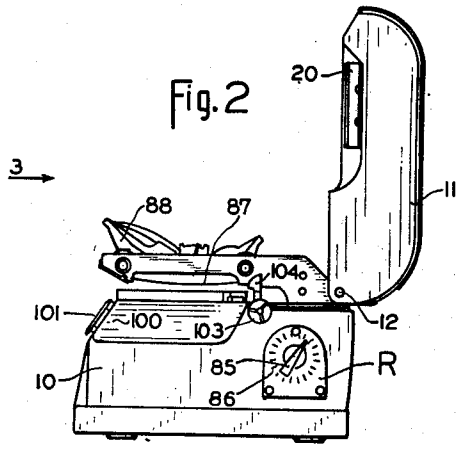


Fig. 2

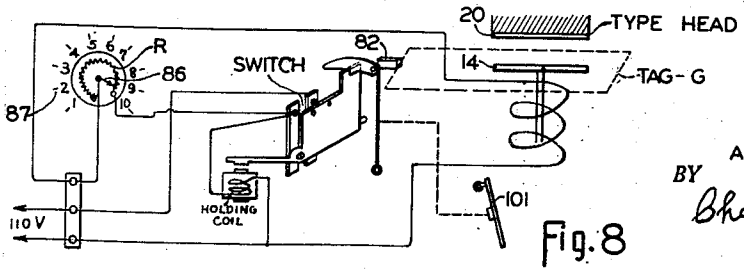


Fig. 8

INVENTOR.
JACOB K. MAKI &
ALBERT E. ROCKWOOD.
BY
Chas. T. Hawley
ATT'Y.

Oct. 6, 1959 J. K. MAKI ET AL 2,907,275

TAG PRINTING APPARATUS

Filed Dec. 30, 1954 2 Sheets-Sheet 2

Fig. 4

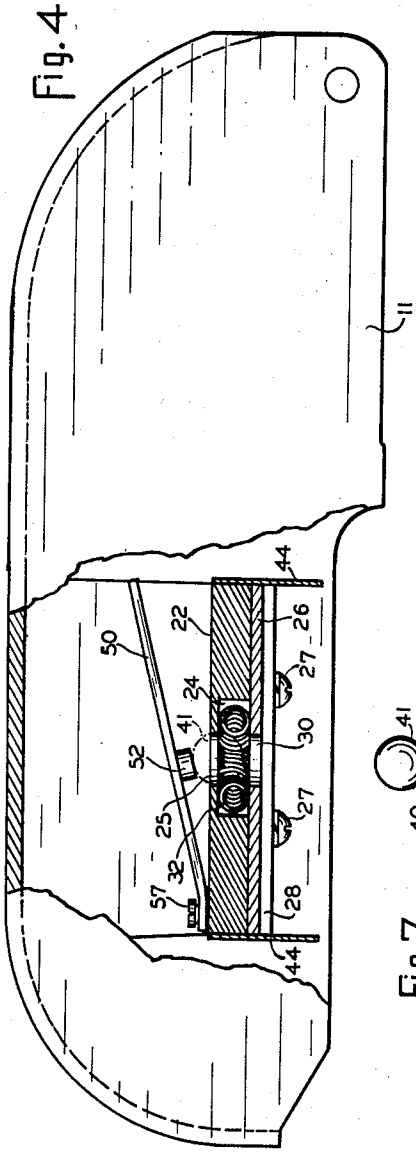
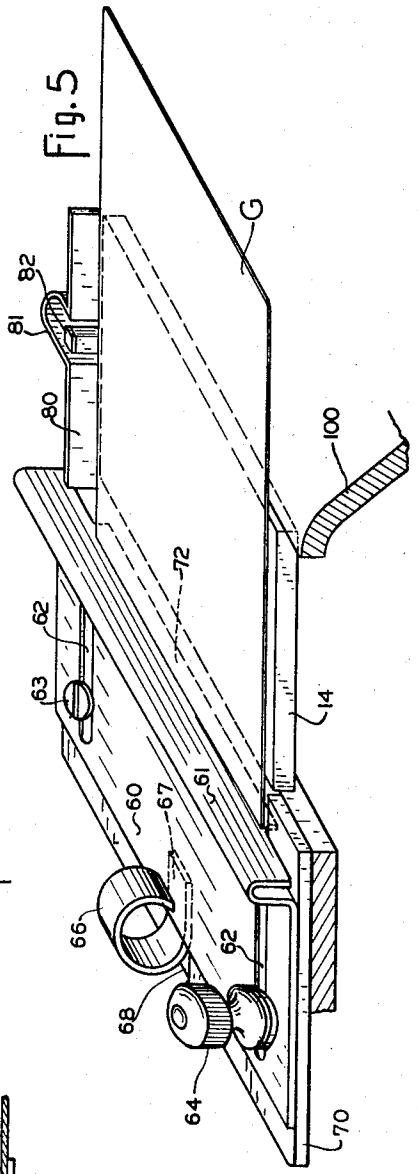


Fig. 5



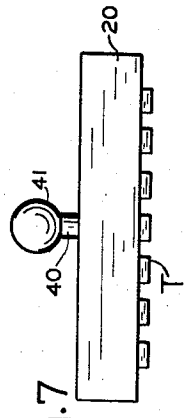


Fig. 7

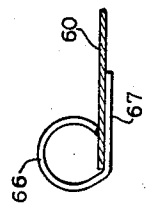


Fig. 6

INVENTOR.
JACOB K. MAKI &
ALBERT E. ROCKWOOD.

BY Chas. T. Hawley

ATT'Y.

United States Patent Office

2,907,275

Patented Oct. 6, 1959

2,907,275

TAG PRINTING APPARATUS

Jacob K. Maki, Westminster, and Albert E. Rockwood, Gardner, Mass., assignors to Simplex Time Recorder Co., Gardner, Mass., a corporation of Massachusetts

Application December 30, 1954, Serial No. 478,564

1 Claim. (Cl. 101—413)

This invention relates to apparatus for printing desired data on tags, labels, or other similar items.

It is the general object of our invention to provide a tag printing mechanism in which such tags may be easily and quickly printed, and in which apparatus changes in the data to be printed may be readily made.

To the attainment of this general object, we provide a printing mechanism which is in general of usual time-stamp type but which is provided with interchangeable type heads. Each type head is preferably provided with removable and replaceable type, so that any desired data may be set up. We also provide a special construction for detachably securing the type head in printing position, and we make provision for varying the printing blow in accordance with the amount of data to be printed.

We also provide means for closing the printing circuit either manually or by tag insertion.

Our invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claim.

A preferred form of the invention is shown in the drawings, in which

Fig. 1 is a perspective view of our improved printing apparatus and with the cover closed;

Fig. 2 is a side elevation of the printing apparatus, with the cover open;

Fig. 3 is a front elevation, looking in the direction of the arrow 3 in Fig. 2;

Fig. 4 is a side elevation of the cover on an enlarged scale and partly in section, and with the type head omitted;

Fig. 5 is a perspective view of a paper guide mechanism shown in front elevation in Fig. 3;

Fig. 6 is a side elevation, partly in section, of a handle and a portion of an associated guide-plate appearing in Fig. 5;

Fig. 7 is a side view of a type holder or head; and

Fig. 8 is a circuit diagram.

Our improved printing apparatus comprises a base **10** having a cover **11** hinged thereto at the point **12**. The base **10** contains a stamping platen **14** operated by a solenoid and the general construction is similar to that shown in the prior patent to Ruttiman, No. 2,126,347 issued August 9, 1938.

Removable type (Fig. 7) is used, which type is selectively and manually inserted in a type head **20** which is detachably mounted in the cover **11**. The details of the type and type head form no part of the present invention.

A cross-bar **22** is fixed in the cover **11**, as by welding or otherwise securing the cross-bar to opposite sides of the cover. The bar **22** has a circular recess **24** formed therein, together with an associated axial opening **25**. A face plate **26** is secured to the cross-bar **22** by screws **27**, which screws also pass through guide-strips **28**. The plate **26** has an opening **30** aligned with the recess **24** when the parts are assembled. A ring-shaped coil spring **32** is held snugly but with lateral clearance in the recess **24** by the plate **26**.

The type head **20** (Fig. 7) has a stud **40** secured to its back face, and the stud **40** terminates in a ball **41**. The hole **30** in the plate face **26** is large enough to freely admit the ball **41**, but the inner diameter of the spring ring **32** is substantially less than the diameter of the ball **41**.

When the type head **20** is to be inserted, the plates **44** (Fig. 4) on the cross-bar **22** act as end guides for the head **20**, and the ball **41** is pushed through the spring ring **32**. It is thereafter held in the position shown dotted in Fig. 4 by contraction of the spring ring **32**. The type head is thus firmly held in printing position during the continued operation of the machine and the guide strips **28** accurately orient the type head.

For convenient removal of the type head **20**, we provide a release lever **50** (Fig. 4) loosely pivoted on a screw **57** and having a stud **52** positioned to engage the ball **41**. By pressing the lever **50** downward, the ball **41** is forced outward through the spring ring **32** and the type head **20** is released.

We have thus provided a convenient construction which permits the type head to be very readily mounted in the printing apparatus and to be as easily and quickly removed for replacement or substitution. Any number of interchangeable type heads may be provided.

In Figs. 5 and 6 we have shown an adjustable guiding device by which the tags or labels G may be conveniently and accurately located for printing. This guiding device comprises a guide-plate **60** having a U-shaped guide flange **61** formed on one edge thereof and having a guide-slot **62** provided along each side edge thereof.

A shouldered screw **63** in one slot **62** prevents upward displacement of one edge of the guide-plate **60**, and a clamping nut **64** in the other slot **62** secures the plate **60** in adjusted position. A handle portion **66** has a lower extension **67** welded or otherwise secured to the under surface of the place **60**. The extension **67** may coact with a groove or recess **68** in the upper surface of the base member **70** on which the plate **60** is slidably mounted.

The free edge of the guide flange **61** is downwardly extended as indicated at **72**, so that it is definitely below the supporting surface of the platen **14**.

An edge plate **80** is provided to accurately locate one edge of the tag or label G, and this edge plate **80** has a U-shaped portion **81** to clear a trigger member **82** which may be connected to close the printing circuit when a tag G is pushed against it.

It is found desirable to adjust the force of the printing or stamping blow of the platen **14** in accordance with the amount of type mounted in the type head **20**. For this purpose, a rheostat R is mounted in the base **10** and is provided with a handle **85** by which the rheostat may be conveniently adjusted with reference to indications **86**.

A printing ribbon **87** is provided below the type head and any suitable ribbon-reversing mechanism **88** may also be provided. The printing ribbon and reversing mechanism forms no part of the present invention.

The base **10** is of the usual type but has a recessed portion **100** in one side to permit short or narrow tags to be conveniently inserted.

A push-plate **101** is provided at the front of the machine, and the printing platen **14** may be energized by closing a circuit by means of the push-plate **101**, or by similarly closing the same circuit by the use of the trigger **82** (Fig. 5).

A handle **103** is associated with a latch **104** (Fig. 2) by which the cover **11** is held in closed position.

Our improved tag printing machine has been found particularly well adapted to its intended purposes and specifically to the printing of relatively small lots of tags or labels requiring frequent changes in data set up.

Having thus described our invention and the advantages thereof, we do not wish to be limited to the details

herein disclosed, otherwise than as set forth in the claim, but what we claim is:

In a tag printing apparatus having a grooved supporting structure, a guide-plate slidable in said grooved structure and comprising a unitary sheet steel member having a flat body portion provided with a work-engaging front edge portion which is bent upwardly from said body portion and which is thereafter bent downwardly to provide a return bend, said edge portion being of U-shaped cross section and having the work-engaging portion of its return-bent lower front edge extending substantially below the lower surface of said flat body portion of said guide-plate and thereby interposing a complete and effective barrier for a tag abutting said U-shaped front edge portion and resting on said supporting structure.

References Cited in the file of this patent

UNITED STATES PATENTS

343,825	Marden	June 15, 1886
757,758	Maidhof	Apr. 19, 1904
876,733	Schultz	Jan. 14, 1908
893,587	Howard	July 14, 1908
1,127,045	Lockwood	Feb. 2, 1915
1,370,169	Turner	Mar. 1, 1921
1,411,011	Gebhardt	Mar. 28, 1922
1,665,099	Kiesling et al.	Apr. 3, 1928
1,997,137	Florance	Apr. 9, 1935
2,003,787	Lake	June 4, 1935
2,077,724	Svenson	Apr. 20, 1937
2,482,726	Clements	Sept. 20, 1949