July 14, 1936. L. E. DAYMENT ET AL 2,047,359

PRINTING APPARATUS

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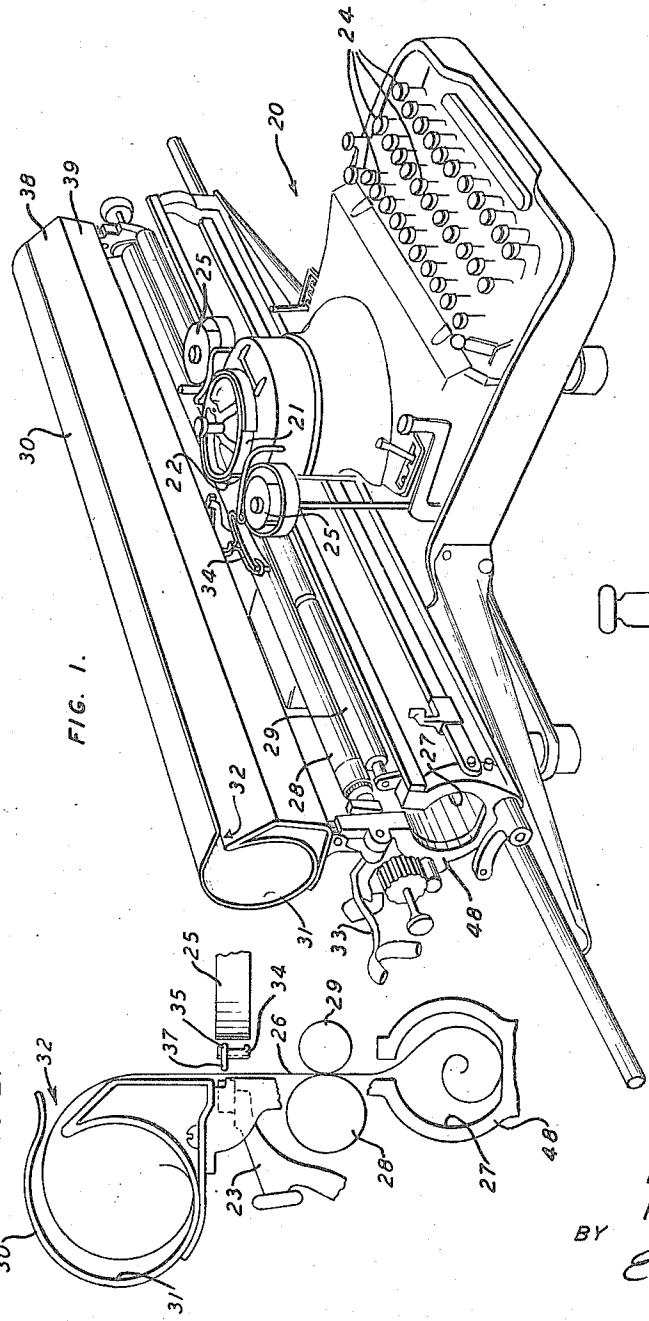


FIG. 1.

FIG. 2.

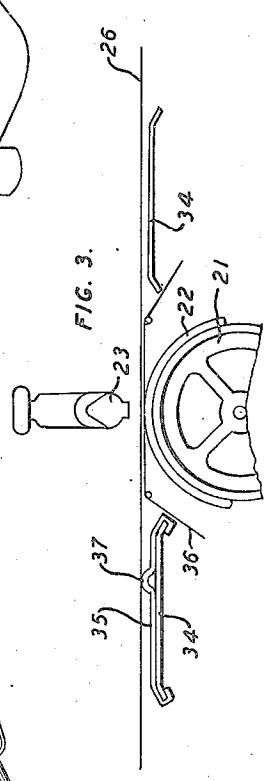


FIG. 3.

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PRINTING APPARATUS

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2 Claims. (Cl. 197—127)

This invention relates to a printing apparatus, and more particularly to a typewriting machine for printing with interchangeable type means on tracings, drawings and other analogous sheets of unusual size.

In the preparation of drawings, tracings and the like for many engineering purposes it is often desirable or necessary to place thereon notes, descriptions, directions and the like in considerable volume of words; and if these are lettered by hand this work consumes a disproportionate amount of time and labor.

An object of the present invention is to provide a machine by means of which such lettering may be conveniently and rapidly printed on any part and over any extent of sheet of paper, tracing cloth or the like which is too large to be handled by the customary typewriting machines.

One embodiment of the invention may be in a conventional typewriter of the type shuttle kind in which the carriage of the typewriter is provided with means adapted to receive an unusually large sheet of tracing cloth and to coil the same up both above and below a relatively small area thereof whereon characters are to be printed, the receiving means being such that the sheet may be unlimited in width and limited in length only far beyond any probable ordinary need. Means are further provided to prevent any tendency to curve from being transmitted along the sheet from the upper and/or lower coiled or rolled portions thereof to the flat limited portion presented for printing.

Other objects and characteristic features of the invention will appear from the following detailed description of one embodiment thereof taken in connection with the accompanying drawing in which the same reference numerals are applied to identical parts in the several figures and in which

Fig. 1 is a perspective view of a type shuttle typewriter constructed in accordance with the invention;

Fig. 2 is an enlarged broken view thereof in end elevation, and

Fig. 3 is a similar view in plan.

In the embodiment of the invention herein disclosed, the numeral **20** indicates generally a type shuttle typewriting machine of a kind well known in the art and in commerce, such for example as the machine commercially known as the "Hammond" typewriter. Since the machine generally speaking is well known, its general construction and modes of operation will not be described here beyond what is needed to make the present invention clear.

The machine has an anvil wheel **21** which carries an interchangeable type shuttle **22** removably mounted thereon. A hammer **23** is pivotally mounted to coact with the shuttle **22**. Conventional keys **24** are provided to operate the machine for printing. Means are provided whereby when any one of the keys **24** is depressed, the type wheel is rotated and also raised or lowered until a particular character on the shuttle is presented opposite the striking face of the hammer which is then driven forward against the shuttle. A pair of spools **25, 25** holds an inked ribbon **36** (omitted in Figs. 1 and 2) between and normally below the hammer and the wheel. Paper **26** or the like to be printed on (not shown in Fig. 1) has its lower unprinted portion rolled up or coiled in a cylindrical space **27** provided for that purpose in the carriage **48**, and passes up in front of the hammer and behind the shuttle being raised or lowered by rollers **28** and **29** between which it also passes.

On the top of the carriage and extending substantially the entire length thereof, is a receptacle **30** comprising a piece of sheet metal or the like having a cylindrical storage space **31** and an entrance slot **32** through which latter the paper **26** enters the storage space and is coiled therein after being printed. The receptacle is further formed with a sloping guide portion **38** and a vertical erasure surface **39**.

The customary carriage control lever **33** which usually stands up substantially vertically is bent down to lie at all times below the level of the bottom of the storage space.

Guards **34, 34** are customarily mounted on the machine between the paper and the ribbon, so that the paper may not come into contact with the ribbon accidentally or otherwise, except at the printing point. To achieve closer control of the large sheets with which the present invention is intended to be used, these flat plate like guards may be provided with an auxiliary guide member **35** comprising a piece of wire clipped over the ends of the guard plate and having between its ends a portion struck out in a hump **37** giving one point contact between the paper and the wire guide, this guide being so located as to touch the paper just below the last line of printing at any time.

In some typewriting machines of the prior art it has been customary to allow the printed part of the sheet to stand up under its own stiffness or to lop over backwards as the case might be, this

causing no difficulty when using letter size or legal cap size sheets such as commonly in question, which are too small to obscure the operator's view of a copy holder placed back of or at the side of the machine, and which are also not long enough to lop down over the rear of the machine and drag on the machine or on its support as the carriage moves to and fro. In the present case, however, where drawings, tracings, blueprints and the like are in question whose dimensions may be of the order of five or ten times those of a letter size sheet, the blue print or other large sheet must be definitely controlled in general and must also be more closely controlled at the printing point, and at the same time must not be limited as to size within wide but reasonable limits.

In the machine herein disclosed, the spaces **27** and **31** are not closed at their respective ends and hence there is no limit, within reason, to the width horizontally of the sheet **26**. The length of the sheet, vertically, is limited to what can be practicably stored by coiling in the spaces **21** and **31**, and these can evidently be made large enough to take a sheet many times as long as a letter size paper. In virtue of the fact that the printed or upper part of the sheet is coiled into the receptacle **30**, not only is it under continuous control and not left free to drag over the machine and its support or be crumpled or torn by drafts, but also it will not interfere with a copy holder or the like set up behind the machine.

Although the invention as herein disclosed is preferably embodied in a type shuttle machine for reasons of convenience such as the ready interchangeability of the type and the open ends of the carriage storage space **27**, it may also be applied to type bar machines such as the commercially familiar "Underwood" and "Remington" machines, by providing the carriage of such a machine with two receptacles like the receptacle **30** herein disclosed, one to store the sheet **26** prior to printing and the other to store and control the printed portion of the sheet.

The embodiment herein disclosed is illustrative merely and may be modified and departed from in many ways without departing from the spirit and scope of the invention as pointed out in and limited only by the appended claims.

What is claimed is:

1. In a typewriting machine, means to control sheet material being printed comprising a sheet guide having one point contact with the sheet substantially at the printing point and a substantially cylindrical receptacle to receive and coil and store the printed portion of the sheet.

2. In a typewriting machine having a carriage, a receptacle for sheet material being printed comprising a unitary sheet metal wall enclosing a substantially cylindrical sheet storage space and formed with an entrance slot communicating with the storage space and also formed with an integral sloping guide portion at one end of the slot and with an integral erasing portion having a flat surface, the receptacle being mounted on and movable with the carriage of the typewriter.

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