May 2, 1939. J. Q. SHERMAN ET AL 2,156,315

SHEET ALIGNING AND LOCATING MEANS FOR WRITING MACHINES

Filed March 11, 1936

Fig. 4

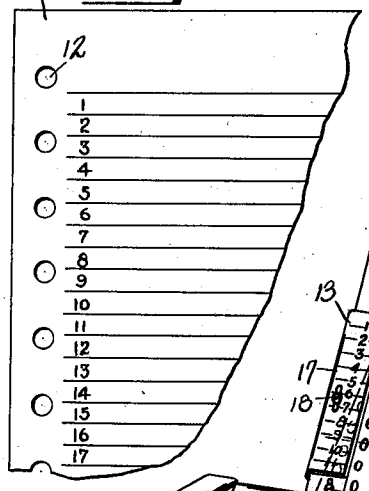


Fig. 1

Fig. 3

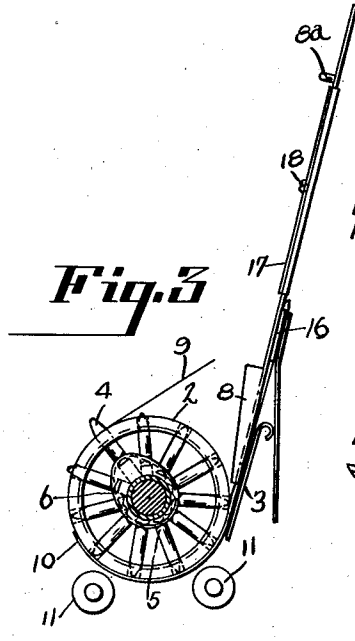
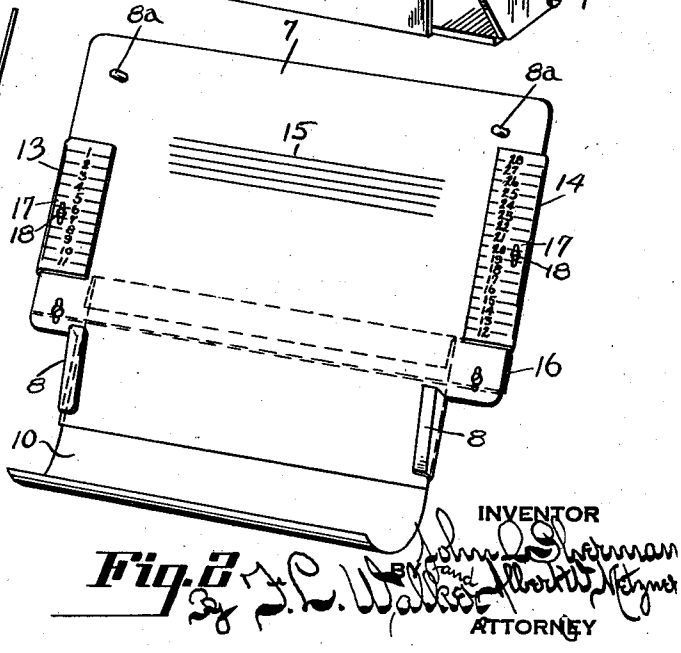


Fig. 2



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SHEET ALIGNING AND LOCATING MEANS FOR WRITING MACHINES

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12 Claims. (Cl. 197—143)

This invention relates to writing machines such as typewriters, tabulating and computing machines, and posting apparatus, and particularly to sheet aligning and line indicating means by which the presentation of a particular portion of the sheet in writing position may be visually indicated.

In commercial office and accounting practice it is necessary to post entries from time to time in particular locations upon ledger sheets, data cards, or other records. Ordinarily the writing area in which such entry is to be made is not easily within the vision of the operator when the sheet is inserted in the machine. The insertion and adjustment of the sheets in the machine to insure accuracy in the location of the inscription upon the prescribed line requires considerable time and necessitates close attention and more or less intricate or complicated manipulation of the sheet. The purpose of the present invention is to enable the sheets to be quickly and easily aligned with the writing apparatus and readily adjusted by suitable feeding means to present a selected line to be inscribed in writing position of the machine without loss of time and with minimum motion and effort.

To this end retractable aligning means is provided with which the forward portion of the sheets is engaged when initially inserted in the machine before being advanced by the feeding mechanism. After being aligned and engaged by the feeding means the forward portion of the sheet is advanced beyond the writing position and the rear margin of the sheet brought into registering relation with one of a series of gauge indications which correspond to different writing lines upon the sheets. The relation of any particular writing line of the sheet to the writing position of the apparatus is thus automatically indicated at a point in easy observation of the operator. During advancement of the sheet as the rear end of the sheet advances into the machine and the forward end is extended beyond the rear margin of the sheet, the forward margin will cooperate with the corresponding line calibrations to continue the line indication of the sheet.

In conjunction with the aligning means optionally selective dual feeding devices are provided together with guard means positionable to exclude the feeding device not in use while the other feeding device is operatively connected with the sheet for feeding purposes. Such guard means serves to mask the excluded feeding device and also to provide a guide means for the sheet as it is fed around the platen.

The object of the invention is to improve the construction as well as the means and mode of operation of sheet posting and aligning apparatus whereby they may not only be economically manufactured, but will be more efficient in use, positive in operation, uniform in action, of increased accuracy, and unlikely to get out of repair.

A further object is to provide visual indicating means which as the sheet progresses through the writing or imprinting machine will indicate with accuracy the position of a selected line or writing space in relation to the writing position and enable instantaneous selection of a desired line.

A primary object of the invention is to minimize the time and movements of the operator necessary for presenting a sheet in the writing or imprinting machine in position to receive an inscription upon a predetermined area thereof.

A further and important object of the invention is to provide a unitary device applicable as an attachment to existing writing or imprinting machines with minimum disturbance or readjustment of the machine parts.

A further object of the invention is to provide guide means for preventing interference of the inserted sheets with existing machine parts.

With the above primary and other incidental objects in view as will more fully appear in the specification, the invention consists of the features of construction, the parts and combinations thereof, and the mode of operation or their equivalents, as hereinafter described and set forth in the claims.

Referring to the accompanying drawing wherein is shown the preferred but obviously not necessarily the only form of embodiment of the invention, Fig. 1 is a perspective view of a portion of a conventional writing machine to which the present invention has been applied and showing a ledger or data sheet positioned therein.

Fig. 2 is a perspective view of the attachment forming the subject matter hereof removed from the writing machine.

Fig. 3 is a detail side elevation.

Fig. 4 is a fragmentary portion of the ledger or data sheet.

Like parts are indicated by similar characters of reference throughout the several views.

Referring to the drawing, 1 is the platen carriage or frame of a conventional writing machine in which is mounted the rotary platen 2 and

associated therewith is the usual inclined guide plate 3 extending upwardly and rearwardly from the platen roll 2. In the present instance the platen roll 2 is shown provided with retractable feeding pins engageable progressively in marginal feed holes in the ledger or data sheet. Such feeding pins per se form no part of the present invention but are fully described in Letters Patent of the United States, Numbers 2,000,649 and 2,000,651. Briefly stated the feeding pins are mounted in the platen roll 2 for reciprocatory movement in radial direction and at their inner ends are provided with notches 5 engaging the margin of an elliptical cam 6 about which the feed pins 4 travel as the platen 2 is rotated. The cam 6 is of such shape and is stationarily mounted within the roll in such relation that as the pins are carried about the cam they are retracted wholly within the periphery of the roll and again progressively projected therefrom in a position to engage the marginal feed holes of the sheet.

The present sheet positioning and line indicating attachment comprises a plate 7 to either replace or be mounted over the conventional paper guide plate 3 extending in parallel relation upwardly and rearwardly therebeyond. The lower portion of the plate 7 is flanged forwardly and inwardly at 8 to afford a guide chute which serves to allocate the ledger sheets 9 laterally in predetermined relation with the platen roll and writing position. Extending beyond the flanged lower portion of the gauge plate 8 is a flexible apron 10 which may be of thin metal, fabric, fiber or other suitable material, which when the device is mounted upon the writing machine extends intermediate the retracted friction feed rolls 11 and the platen roll 2 to guide the inserted sheet past the friction rolls and other adjacent parts of the writing machine mechanism to the positive pin type feeding device. In event the machine is not equipped with pin wheel feeding devices, and the sheet must be fed by the friction rolls, the latter are not retracted and the sheet is abutted at its forward margin between the friction rolls and platen in the usual manner. In such case the flexible guide apron 10 is not needed and therefore is omitted. This flexible apron 10 extends about the lower portion of the platen roll 2 to a point adjacent to the writing position. The ledger or data sheet 9 being inserted in the usual way at the rear of the platen roll is positioned laterally by the flanges 8 and locating and aligning pins 8a projecting from the upper portion of the plate 7 and passes thence between the flexible apron 10 and the lower surface of the platen roll where it is protected from and guided smoothly past adjacent writing machine parts until its forward edge is advanced contiguous to the projected feeding pins 4. The marginal holes 12 in the record sheet 9 then engage over the projecting pins 4 which serve as locating studs for initially positioning the sheet relative to writing position.

The record sheet 9 is provided with a succession of writing lines or other designated spaces which bear identifying indicia. The preferable identification of the writing spaces is by numbering the lines as is shown in Fig. 4, although obviously the lines may be omitted and spaces may be otherwise designated as by letter or symbol. The gauge plate 7 extending upwardly and rearwardly from the platen carriage or frame is similarly calibrated and carries a series of indicia, figures, letters or symbols, corresponding to those indicating successive writing spaces or areas of the record sheet. Such indicia upon the gauge plate are so correlated with the writing position that when any selected writing area of the record sheet 9 is accurately positioned at the impression receiving point of the writing machine a margin of the record sheet will coincide with the corresponding indication upon the gauge plate 7.

As illustrated in Figs. 1 and 2 the gauge plate graduation and indicia are divided into groups. At the left of the gauge plate is a group 13 of primary numerals corresponding to the initial writing spaces of the sheet with which the rear or bottom margin of the record sheet will register when the corresponding spaces are at writing position. However as the sheet is advanced in order to inscribe writing areas close to the bottom of the sheet which necessitates the projection of the forward margin of the sheets a greater distance beyond the platen roll such forward margin will coincide with some one or another of the graduations of the group 14 at the right of the gauge plate to indicate that the corresponding area is in writing position. Thus during the initial writing operations on those spaces adjacent to the top of the record sheet the relative position of the desired writing space to the writing position will be ascertained by observing the relation of the rear or bottom edge of the record sheet with the indicia at the left of the gauge plate while if the writing area is close to the bottom of the edge of the sheet then the reading will be taken by observing the relation of the forward or top edge of the record sheet with the indicia at the right of the gauge plate. Due to the fact that the top of the record sheet is usually occupied by a heading of greater or lesser extent the calibration indicia is not usually evenly divided between the respective groups.

Although the horizontal alignment of the sheet is effected by the engagement of its margins with the guide flanges 8 and pins 8a and further insured by engagement of the feeding pins 4 in the terminal feed holes of the sheet a group of horizontal lines 15 is provided in mid-position upon the gauge plate to additionally facilitate the initial adjustment of the sheet squarely with the machine during its insertion in order that the feed holes may be readily positioned in conformity with the feed pins 4.

The present device is especially adapted for posting ledger sheets or the like where a single entry or line is usually to be entered at a given time and wherein successive entries are to be accurately positioned. The device enables the operator to quickly insert the record or data sheet and by merely observing the top or bottom margin of the sheet in relation to one or the other group of indicia 13 or 14 upon the gauge plate 7 according to whether the entry is to be placed in the upper or lower portion of the record sheet, the desired writing space may be accurately brought to writing position. While in the present instance the reciprocatory feeding pins are utilized as locating stops or aligning means for initially aligning the record sheets it is obvious that other retractable aligning stops may be employed in lieu of the particular pin type feeding device.

The apron 10 whether of thin flexible metal or of fiber or fabric may be permanently attached to the lower margin of the plate 7, but is pref-

erably detachably secured thereto to enable convenient replacement.

In practice a thin hard coated fabric such as tracing cloth has been found most suitable. Secured to the rear side of the plate 7 adjacent to its lower edge is a transverse bar or strip 16. The upper portion of the apron 10 is reversely folded upon itself about the bar 16 with one portion of the fold interposed between the bar and the plate. It is removably engaged and may be detached by merely sliding the interposed portion of the folded apron from between the plate and bar.

While the present device is illustrated in association with a writing or imprinting apparatus having pin type positive feeding means, as before indicated the present attachment is usable with either a friction feed or positive feed writing or imprinting machine. It is only in the event that it is employed in conjunction with a dual feed apparatus having both a friction and positive feed means that the flexible guide apron becomes necessary. If the pin type feeding devices are employed, the friction rolls 11 are permitted to remain in retracted position and the apron 10 is interposed between the retracted friction rollers and the platen. If the ledger or data sheet is to be advanced by the frictional feeding means the apron 10 is detached from the plate 7 by slidingly removing its upper portion from beneath the retaining bar 16 on the rear of the plate 7.

Inasmuch as ledger sheets and record cards have headings of varying extent, and also spaces of greater or lesser extent between the last writing line of sheets and its bottom margin, it is found desirable to employ slidingly adjustable calibrated plates 17, upon which appear the indicia 13 and 14, which may be secured in different positions of adjustment by screws 18, to agree with particular record sheets or cards to be inscribed. If desired the plates 17 bearing the gauge indicia may be located side by side adjacent to the same margin of the guide plate 7. Since this change of location is easily understood and involves no difference of purpose, function, or operation, it has not been illustrated.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute, the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise the preferred form of several modes of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described our invention, we claim:

1. A writing machine having a platen and optionally selective dual feeding means for advancing writing material around the platen into writing position including pressure rollers cooperating with the platen and a pin type feeding mechanism engageable with feed holes in the writing material, to advance the record material beneath the platen roll from the rear thereof and thence upwardly past a writing position at the front of the platen roll and having means for rendering the pressure roller ineffective, characterized by an apron positionable between the pressure rollers and the platen when the pressure rollers are rendered ineffective as a feeding means to provide a guide means for the writing material thereover into engagement with the pin type feeding mechanism when the latter is effective as a writing material feeding means.

2. A writing machine having a platen and optionally selective dual feeding means for advancing writing material around the platen into writing position including pressure rollers cooperating with the platen and a pin type feeding mechanism engageable with feed holes in the writing material to advance the material beneath the roll from the rear thereof and thence upwardly past a writing position at the front of the platen roll and having means for rendering the pressure rollers ineffective, characterized by a writing material supporting plate extending upwardly and rearwardly behind the platen roll, and an apron positionable between the pressure rollers and the platen to mask the feed rollers and provide a guide means for the writing material thereover into engagement with the pin type feeding mechanism when the latter is effective as a feeding means.

3. A writing machine have a rotatable platen and optionally selective dual feeding means for advancing writing material around the platen into writing position, one of the feeding means including pressure rollers cooperating with the platen, characterized by an apron positionable between the pressure rollers and the platen to exclude the pressure rollers from operative engagement with the writing material and provide a guide means for the writing material fed around the platen by operation of the other feeding means, said last named feeding means being rendered effective by rotation of the platen.

4. In a writing machine having a platen, the combination of optionally selective dual feeding means for feeding writing material around the platen into writing position, and a member positionable to mask one of the feeding means and provide a guide for the writing material fed therepast and around the platen by the other feeding means.

5. In a writing machine having a platen, the combination of optionally selective dual feeding means, one of which is a pin type feeding mechanism, for feeding the writing material around the platen into writing position, and a member positionable to mask one of the feeding means and thereby render it ineffective as a feeding means and to provide a guide for the writing material fed around the platen by the other feeding means.

6. The combination with a writing machine having dual optionally selective feeding devices for feeding record material at the will of the operator positively or impositively past a writing position, of a guard positionable between one of the feeding devices and the path of the record material during feeding thereof by the other feeding device.

7. The combination with a writing machine having dual optionally selective feeding devices for feeding record material at the will of the operator positively or impositively past a writing position, and one of which is a pin type feeding device, of a combined record material guide

and feeding device guard positionable between one of the feeding devices and the path of the record material during feeding thereof by the other feeding device.

8. A writing machine having optionally selective dual feeding devices including frictional pressure rollers for impositively advancing record material past a writing position and a pin type feeding device engageable in spaced holes in the record material for positively advancing the record material past the writing position during non-feeding periods of the frictional pressure rollers characterized by a guard member disposed between one of said feeding devices and the path of travel of the material while being advanced by the other of said feeding devices.

9. An imprinting apparatus wherein record material is advanced past an imprinting position by either of two optionally selective feeding devices, characterized by a guard member effective to maintain the record material out of contact with one such feeding device while being advanced by the other of the optionally selective feeding devices.

10. An imprinting apparatus wherein both a pin type feeding device and a frictional feeding device are provided for advancing impression receiving material past an imprinting position, and having means for rendering one such feeding device operable therefor to the exclusion of the other, characterized by a guard member overlying the excluded feeding device for preventing engagement of the material therewith while the other said feeding device is being utilized for advancing such material.

11. An imprinting apparatus wherein record material is advanced past an imprinting position by either of two optionally selective feeding devices characterized by a member overlying one of the feeding devices and rendering such member ineffective to advance the material during its advancement by the other feeding device.

12. An imprinting apparatus wherein record material is advanced past an imprinting position by either of two optionally selective feeding devices characterized by a member overlying one of the feeding devices and temporarily excluding such device from operative engagement with the material.

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