March 6, 1934. P. BAUM 1,950,216

RECORD FEEDING AND ATTACHING DEVICE

Filed Aug. 12, 1931 2 Sheets-Sheet 1

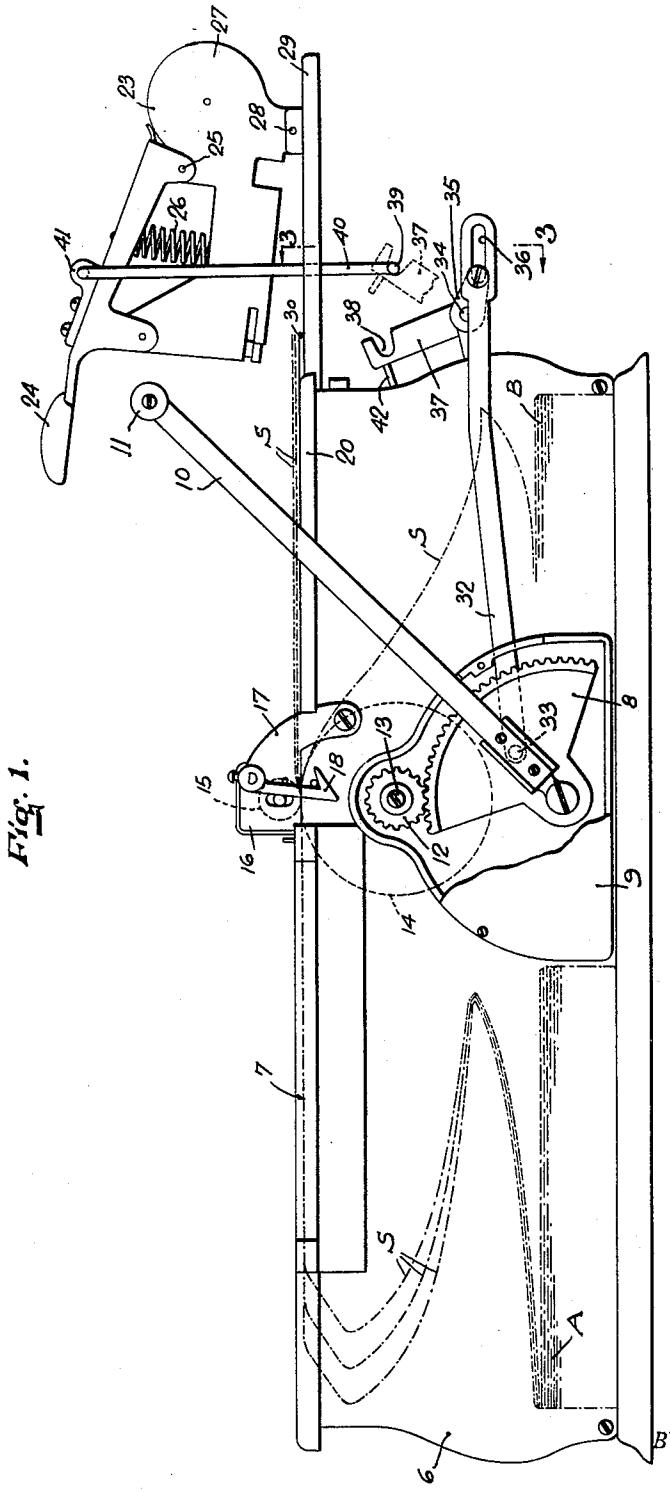


Fig. 1.

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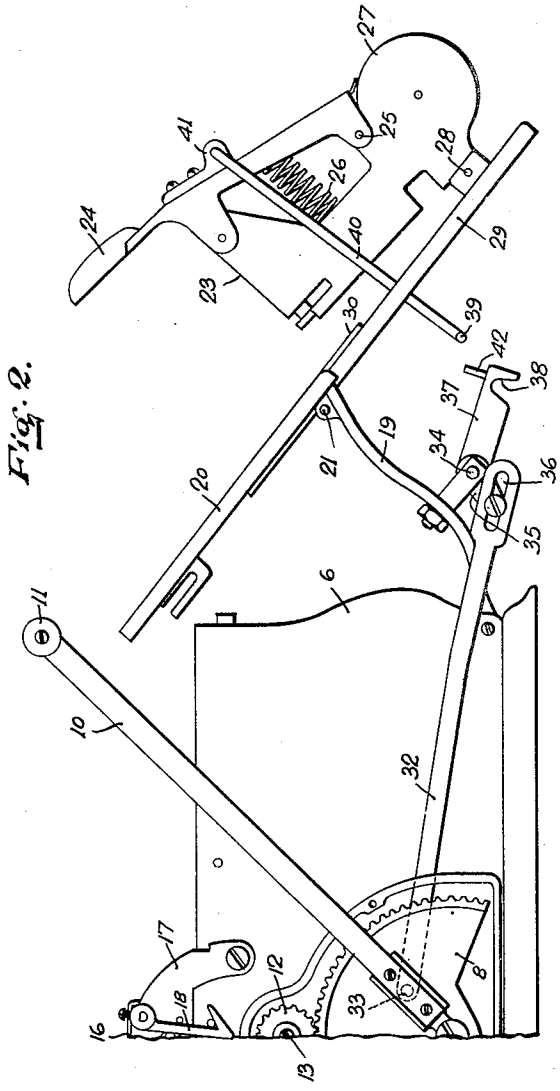


Fig. 2.

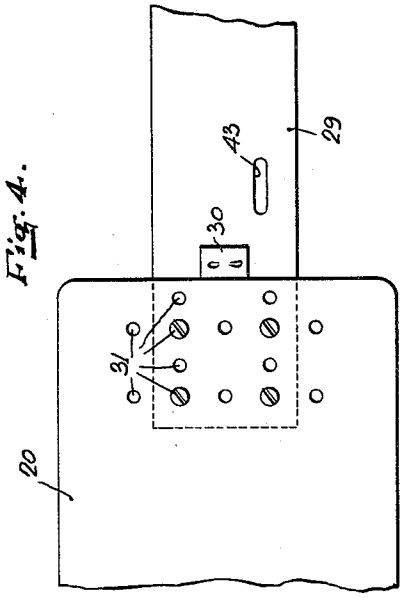


Fig. 4.

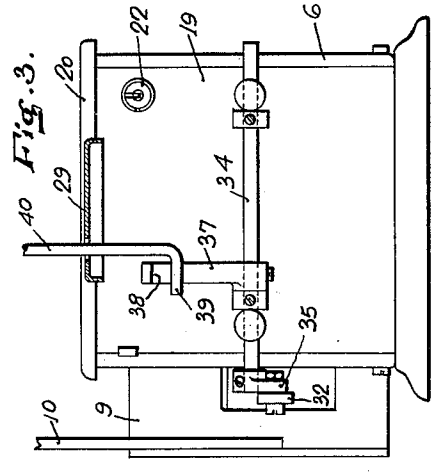


Fig. 3.

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UNITED STATES PATENT OFFICE

1,950,216

RECORD FEEDING AND ATTACHING DEVICE

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Application August 12, 1931, Serial No. 556,557

14 Claims. (Cl. 282—1)

This invention relates to improvements in apparatus for making records, and with reference to particular features it relates to record feeding and attaching devices applicable to typewriting machines, billing machines, autographic registers and the like.

It is a general object of the invention to provide for machines in the class mentioned, an improved record handling mechanism adapted not only to feed the records but to attach them together in a unit thus facilitating handling of the inscribed record and preparing them for more convenient entry of supplementary data upon the attached strips of the record, in case it is desirable to do this.

According to another improved feature of the invention the records are issued from the feeding mechanism and are attached together after so issuing, an automatic mechanism being provided for this purpose in the illustrative embodiment of the invention herein disclosed.

Another object of the invention is to provide for machines of the class mentioned, an improved record attaching device having means for actuation thereof controlled by the record feeding mechanism.

Still another object of the invention is to provide an improved attaching device for records which is controlled for effecting the attaching operation upon the records upon issuance thereof from the feeding mechanism, and after the advancement of the record has been checked by the feeding mechanism.

A further object is to provide an improved mounting for a record attaching device, simple and practical in structure for attachment to the record machines and so arranged that it may be readily adjusted into nonobstructing position for permitting access to parts of the machine.

A further object is to provide an improved mounting for a record attaching device whereby the latter may be supported in position for attaching the records issuing from the record machine, and for automatic operation by the record controlling or feeding mechanism of said machine.

Still another object is to provide an improved record stapling or attaching mechanism whereby the superposed record strips of the record may readily be attached together as they issue in inscribed condition from the machine, thus providing the benefits of such attachment while at the same time permitting latitude in the use of various carbon sheet arrangements which could not be employed if the records were attached together prior to feeding them into writing position.

According to another important feature of the invention the record attaching device is arranged in an improved manner either for automatic actuation thereof by the record feeding means or for independent actuation whereby record or other sheets may be attached independently of feed actuation.

Other objects of the invention will be in part pointed out in the following detailed description of an illustrative form of the invention and will be in part obvious in connection therewith.

The invention accordingly comprises the features of construction, combinations of elements, and arrangements of parts, which will be exemplified in the construction hereinafter set forth and the scope of the application of which will be indicated in the claims.

For a more complete understanding of the nature and objects of the invention reference is made to the following detailed description and to the accompanying drawings, in which:

Fig. 1 is a side elevation of a record machine equipped with the invention;

Fig. 2 is a fragmentary side elevation similar to Fig. 1 but showing the parts in a different position;

Fig. 3 is an end elevation, parts being in section on the line 3—3 of Fig. 1; and

Fig. 4 is a fragmentary plan view showing the mounting of the record attaching device.

Although the improved record feeding and attaching device may be employed in connection with various forms of record making machines, it is herein disclosed as being applied to an autographic register for which it is well adapted. The invention is disclosed as embodied in a register of the reciprocating lever feed type.

Feeding mechanism of the cyclical feed type is shown as embodied in the autographic register. This type of feeding mechanism is known in the art and a form thereof is disclosed in the Johnston Patent No. 1,658,127, dated Feb. 7, 1928, to which reference is made for a detailed disclosure of this type of feeding mechanism. The disclosure of the feeding mechanism herein is partially diagrammatic but will be sufficient for a full understanding by those skilled in the art.

The autographic register shown has a casing 6 of metal or similar material having an interior compartment at one end for receiving the record supply A which may, as shown, be in the form of zigzag folded record strips S

superposed with each other and transversely folded into the pack in a manner known in the art. Any desired number of such record strips may be thus arranged, three being herein shown and, if desired, also one or more carbon sheets of the long continuous traveler type may be interposed between adjacent record strips and transversely folded coincidentally with strip folding in the supply pack A, or, if desired, the carbon or transfer sheets may be supported in a different manner either by the machine so as to extend transversely of the record strip path over the platen, or in some other well known manner. The record strips are drawn forwardly from the supply A over the writing platen arranged at the top of the machine substantially in the position of the record strips designated by the horizontal dot-and-dash line 7.

As shown, there also may be a forwardly disposed storage or filing compartment in which one or more of the inscribed record strips S may be folded by any appropriate means into the file pack B. Filing mechanism such as disclosed in the Johnston patent mentioned may be employed for such purpose. As shown in the Johnston patent, the record strips will be provided with feed controlling apertures preferably arranged in two series therealong, one near each margin of the strips as fully disclosed in the patent. Also, if carbon strips of the long continuous traveler type are employed, these also will be provided with the feed controlling apertures respectively aligned with those of the record strips.

While various forms of feed operating mechanism may be provided, a mechanism of the reciprocating lever type is herein disclosed. This embodies a pivotally mounted toothed sector 8 preferably mounted in a housing 9 at one side of the casing and attached to which is an operating lever 10 having a handle 11. This sector meshes with a pinion 12 mounted on the main operating shaft 13 so that movement of the sector in one direction will cause movement of the feeding shaft in the appropriate direction to effect forward feeding of the record strips. A ratchet device is preferably provided permitting idle rotation of the pinion 12 in the opposite direction when the sector is returning to normal position in which it is shown in Fig. 1. A feeding mechanism of this general type is disclosed in the Hagemann Patent No. 1,776,899, dated Sept. 30, 1930, to which reference is made for a detailed disclosure.

Mounted upon the feed shaft 13 are feed disks 14 shown in dotted outline in Fig. 1, there being preferably two of these feed disks spaced to correspond with the lateral spacing of the feed control apertures. These disks are quite thin so that the apertures extend entirely thereacross, thus entering such apertures to release the feed grip and to effect longitudinal alignment of the strips. The upper feed roll 15 is mounted in suitable bearings in the roll housing 16 and is preferably yieldingly urged by a spring into contact with the disk peripheries thus gripping the strips to effect feed thereof during disk rotation all as fully set forth in the Johnston patent. The roll housing 16 may be mounted on supporting arm 17 pivoted to swing forwardly as shown and held in normal operative position by the latch 18.

As set forth in the Johnston patent, the record strips will be advanced by the feed disks in predetermined cycles determined by the longitudinal spacing of the feed controlling apertures of the record strips. The peripheral length of the feed disks 14 will ordinarily be slightly greater than the distance between adjacent feed control apertures as disclosed in the Hagemann patent so that one feeding cycle is completed by a single rotation of the disk. When a feed control aperture of any record strip comes into alignment with the feeding grip, the advancement of any strip will be checked even though the disk continues to rotate thereafter. In this manner, each record strip is advanced at each feeding cycle a predetermined distance whereupon each record strip is checked, the feed operating mechanism continuing for an interval subsequently to the strip aligning function. After the strips have been stopped by engagement of the feed disks in the strip apertures, they may be subsequently started either manually or by starting devices such, for example as disclosed in the Johnston or Hagemann patents mentioned.

For closing and opening the file compartment of the machine a closure member 19 is provided, being pivoted at its lower end to the casing 6 so as to be swung outwardly as shown in Fig. 2. The cover or top plate 20 is attached at its outer end to the end plate 19, being pivoted at 21 to the latter. The closure plates 19 and 20 may thus be swung outwardly from the normal closed position of Fig. 1 to the open position of Fig. 2, permitting free access to the storage compartment. The closure may be locked in closed position by a lock indicated diagrammatically at 22.

Mounted upon the machine is a record attaching device or stapler indicated generally at 23 and positioned for attaching the inscribed record strips S as they emerge forwardly from the feeding mechanism. This attaching device may be of any preferred construction preferably of the type which will insert a small wire staple or apply other securing means to attach the records together merely by depression of the operating handle 24 pivoted at 25 to the frame of the stapler and normally retracted to normal position after each operation by means of a compression spring 26. In the form of stapler shown which is of known type the main stapler frame 27 is pivoted at 28 for up and down swinging movement to a supporting bracket 29. Since this attaching device may be of known construction and may vary in detail a further detailed description thereof is deemed unnecessary for a full understanding. It will be understood, however, that by depression of the handle or operating lever 24 the frame 27 as well as the said lever 24 is swung downwardly into contact with the records and the attachment automatically applied to said records.

In the embodiment shown the supporting bracket 29 for the attaching device is connected to the closure for the storage compartment, being shown as directly connected to the cover plate 20 so as to extend forwardly from the latter in the path of the record strips as they emerge from the feeding mechanism. The stapler is thus positioned for direct cooperation with the emerging record strips. The anvil or attaching plate 30 for the stapler is positioned so as to underlie the extreme forward ends of the record strips at the end of a feeding cycle. Thus, it will be seen that operation of the stapler at the termination of the feeding cycle will result in inserting the attaching device in the proper position at the forward ends of the projecting record strips. In the form of attaching device shown, the anvil plate 30 functions to turn the ends of the wire staples after

insertion thereof in attaching position through the strips.

For the accommodation of different lengths of tickets or record forms emerging from the feeding mechanism the supporting bracket 29 is preferably attached to the cover plate 20 for different adjusted positions. As shown in Fig. 4, the cover plate 20 for this purpose may be provided with a plurality of apertures 31 for receiving the attaching screws and being arranged so that the bracket may be attached in different longitudinally adjusted positions and also in different laterally adjusted positions. The stapler may thus be installed for the accommodation of different lengths of record forms and it may also be applied so that the attaching device can be applied at different positions widthwise of the record strips. If desired, two or more attaching devices of this nature may be applied in position upon the record machine so as to apply the staples or securing means at laterally spaced parts of the record strips.

Although the attaching device may be installed as described on the record machine and operated manually for attaching the record strips, yet it is preferable as herein disclosed to operate the attaching device automatically by the record feeding mechanism. Thus in the embodiment shown, an operating link 32 is pivoted at 33 to the feed sector 8 and connected at its opposite end to an operating shaft 34 rotatably mounted by suitable brackets upon the end cover plate 19. This operating shaft 34 carries a crank arm 35 having a pin entering an elongated slot 36 formed in the end of the link 32. This provides for a loose or lost motion connection between the link 32 and the crank arm 35.

An operating arm 37 is fixed to the shaft 34 having a contact seat 38 in position for engagement with a pin or lug 39 at the lower end of a depending link 40, the upper end of which is pivotally connected to a bracket 41 mounted upon the handle 24 of the attaching device. The contact seat 38 is preferably open at one side so that the arm 37 may swing away from engagement with the operating pin 39 thus permitting the link 40 to move freely independently of the arm 37. A stop lug 42 carried by the arm 37 prevents retrograde movement of the crank arm 35 from the operative position shown in Fig. 1. The operating link 40 is guided to maintain it in its correct operative position relatively to the operating arm 37 as, for example, by extending through an elongated slot 43 in the supporting bracket 29. This permits sufficient movement of the link for normal operation, but prevents it from swinging normally out of the operative range of the seat 38.

It will now be seen that operation of the feeding mechanism not only results in advancing the record strips a definite distance, but also operates the attaching mechanism for attaching the record strips together at the termination of the feeding cycle. The lost motion connection provided by the slot 36 results in timing the operation of the staple so as to attach the strips together during an operative interval after the strip feeding is completed. In other words, the feeding cycle of the record strips having been fully completed and the emerging record strips having reached the position as indicated in Fig. 1, the strip attaching mechanism will then be actuated from the feeding sector 8 through the connections described to apply the attaching means to the outer ends of the record strips. The staples or other attaching means will thus be applied to the record strips during a period of rest thereof, thus assuring correct attachment of the strips and avoiding tearing or other injury thereof. During this operation the operating arm 37 is moved forwardly from the position of Fig. 1 bringing the seat 38 into engagement with the pin 39 thus to effect operation of the attaching device. In its normal retracted position of Fig. 1, the arm 37 is swung backwardly out of contact with the pin 39 thus leaving the attaching device free and unobstructed for independent manual operation whereby it can be used for attaching purposes as desired. This disconnection of the operating parts is effected automatically when the feeding mechanism returns to normal position, the operating connection being a one-way connection.

After the record strips are attached together, as described, they may be severed from the strip supply in any well known manner as by means of a tearing edge and the record strips will ordinarily be prepared with transverse weakened severance lines for this purpose. The severed attached sheets or tickets may then be retained in attached condition as desired for the entry of additional data or for other purposes. If the continuous traveler carbon strips are used, the additional data can be transferred by their use. The attached sheets may thereafter be detached as required by the transaction of the particular business.

By means of the improved mechanism described, it will be seen that the record or other strips issued from the feeding mechanism can be attached together by the attaching device while said strips are still in the feeding means and before they become disaligned with each other or otherwise disarranged. This assures that the issuing strips will be secured together in the condition and relation in which they are issued. It will be noted, furthermore, that the support 19, 20 for the attaching device is hinged to the body of the machine remote from the feeding means whereby, when it is swung upon its hinge away from its normal operative position, the strip attaching device will be moved away from the line of strip feed so that the strips may then be fed without coming into cooperative relation with the attaching device.

As shown in Fig. 2, it will be observed that the attaching device is so mounted and supported that it may readily be moved to non-obstructing position when it is desired to gain access to the filing compartment. Thus, moving the closure members 19 and 20 to open position automatically retracts the attaching device so as to avoid interference with free access to the filing compartment. Furthermore, it will be noticed that the operating connections provided by the one-way contact seat and the lost motion connection 36 are so arranged that this retraction of the attaching device is free and unobstructed.

Since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the description above or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. In a record machine, in combination, record feeding means, a record attaching device, and means controlled by said feeding means for operating said attaching device to attach the records together.

2. In a record machine, in combination, record feeding means, a record attaching device, means

controlled by said feeding means for operating said attaching device to attach the records together, and a connection embodied in said operating means providing for independent operation of said attaching device.

3. In a record machine, in combination, cyclical record feeding means adapted to check record feed after a predetermined record advancement, a record attaching device, and operating means controlled by said feeding means for operating said attaching device to attach the records together after checking thereof by said feeding means.

4. In a record machine, in combination, cyclical record feeding means adapted to check record feed after a predetermined record advancement, a record attaching device, operating means controlled by said feeding means for operating said attaching device to attach the records together after checking thereof by said feeding means, and a lost motion connection embodied in said operating means whereby said attaching device may be operated independently of said feeding means.

5. In a record machine, in combination, record feeding means, means whereby strip feed is checked during an operative interval of said feeding means, a record attaching device positioned for attaching the records issuing from said feeding means, and means controlled by said feeding means for operating said attaching device during said operative interval.

6. In a record machine, in combination, record feeding means, a record attaching device positioned beyond said feeding means, and means for operating said attaching device in timed sequence with the feeding means so as to attach together the records issuing from the feeding means.

7. In a record machine, in combination, record feeding means, a record attaching device positioned beyond said feeding means, operating connections between said feeding means and attaching device, and a lost motion connecting device in said operating connections whereby said attaching device is operated by said feeding means after a predetermined record feed.

8. In a record machine, in combination, record feeding means, a record attaching device positioned beyond said feeding means, operating connections between said feeding means and attaching device for operating the latter to connect together the records issuing from the feeding means, and means embodied in said operating connections to effect automatic disconnection of the latter whereby the attaching device may be independently operated.

9. In a record machine, in combination, record feeding means, a record attaching device positioned beyond said feeding means, a rotary shaft, an operating link connected to said shaft for rotating the latter, a crank arm on said shaft and an operating link between said attaching device and crank arm whereby the attaching device is actuated to attach together records issuing from the feeding means.

10. In a record machine, in combination, record feeding means, a record attaching device positioned beyond said feeding means, a rotary shaft, an operating link, and a one way operating connection between said shaft and attaching device to effect actuation of the latter by the feeding means while permitting independent actuation of said attaching device.

11. In a record machine, in combination, record feeding means, a movable compartment closure member positioned beyond said feeding means, a record attaching device mounted upon said closure member, and operating connections between said feeding means and said attaching device for operation of the latter.

12. In a record machine, in combination, record feeding means, a movable compartment closure member positioned beyond said feeding means, a record attaching device mounted upon said closure member, and operating connections between said feeding means and attaching device for operation of the latter and having a lost motion connection so as to permit opening movement of the closure member.

13. In a record machine, in combination, record feeding means, a compartment closure member positioned beyond said feeding means and having two sections hinged together, the outer or remote section from the feeding means being movably attached to the machine, a record attaching device positioned for cooperation with the record issuing from the feeding means and being attached to one of said closure sections adjacent its connection with the other closure section and operating connections between said feeding means and said attaching device for operation of the latter and including a rotatable operating member mounted on the other of said closure sections.

14. In a record machine, in combination, cyclical record feeding means adapted to check record feed after a predetermined record advancement, a record attaching device mounted upon the machine beyond said feeding means in alignment with records issuing therefrom for attaching the records together, a supporting bracket for said record attaching device and an attachment for said bracket having a longitudinally adjustable connection for varying the longitudinal position of said attaching device with relation to the feeding means for the accommodation of different lengths of record forms issuing from the feeding means.

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