July 10, 1934. E. K. BOTTLE 1,965,571

INSCRIBING MACHINE

Original Filed July 1, 1930 2 Sheets-Sheet 1

Fig. 1.

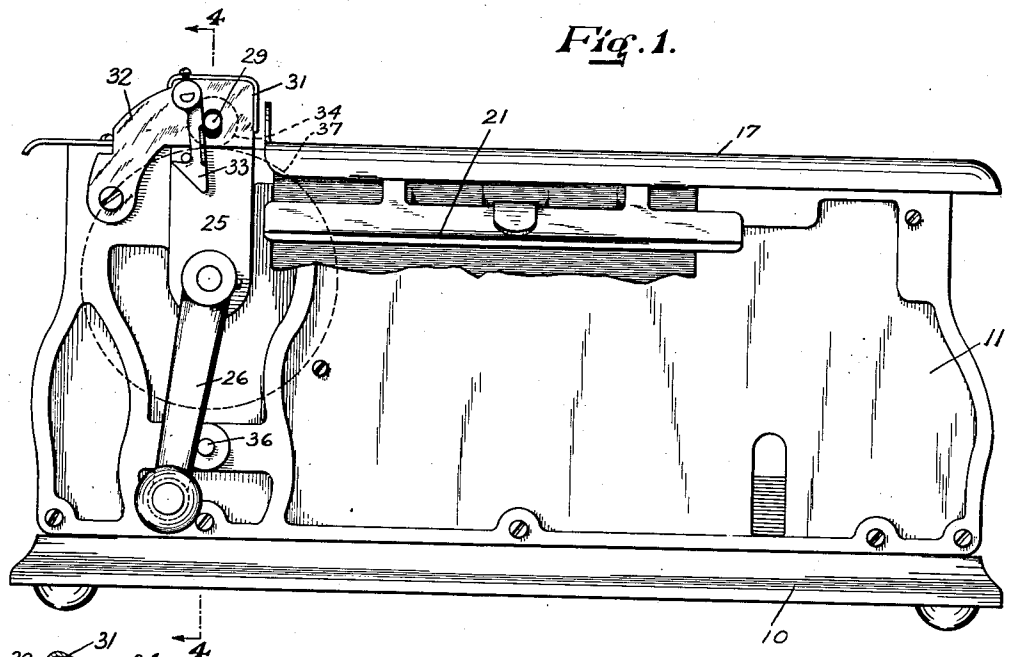
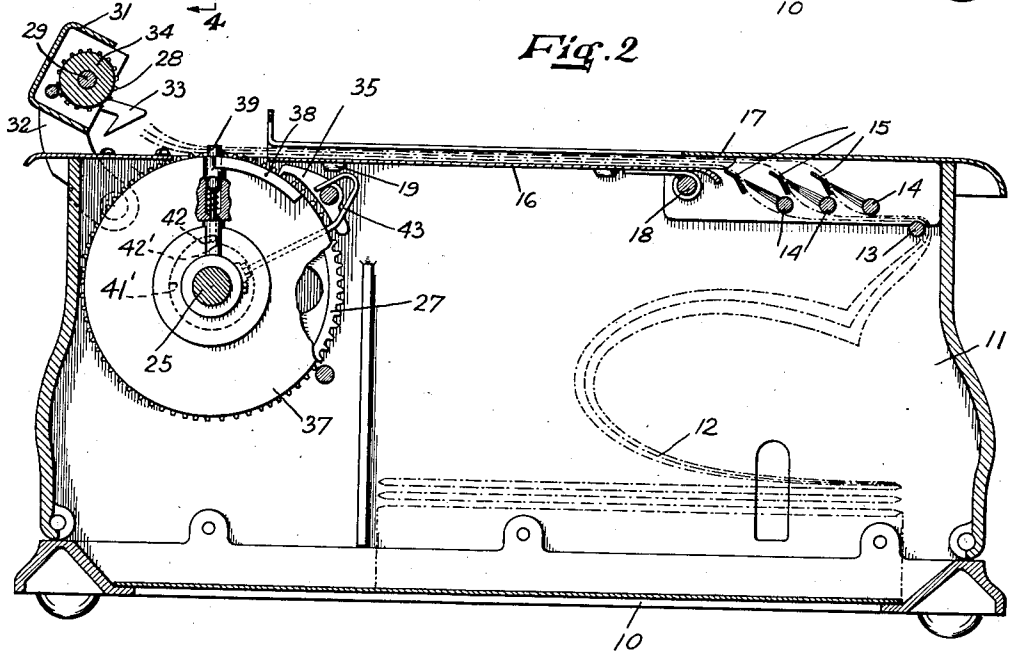


Fig. 2.



INVENTOR.
Edward Kirby Bottle,
BY Snell, Sumner & Anderson
ATTORNEYS.

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Fig. 3.

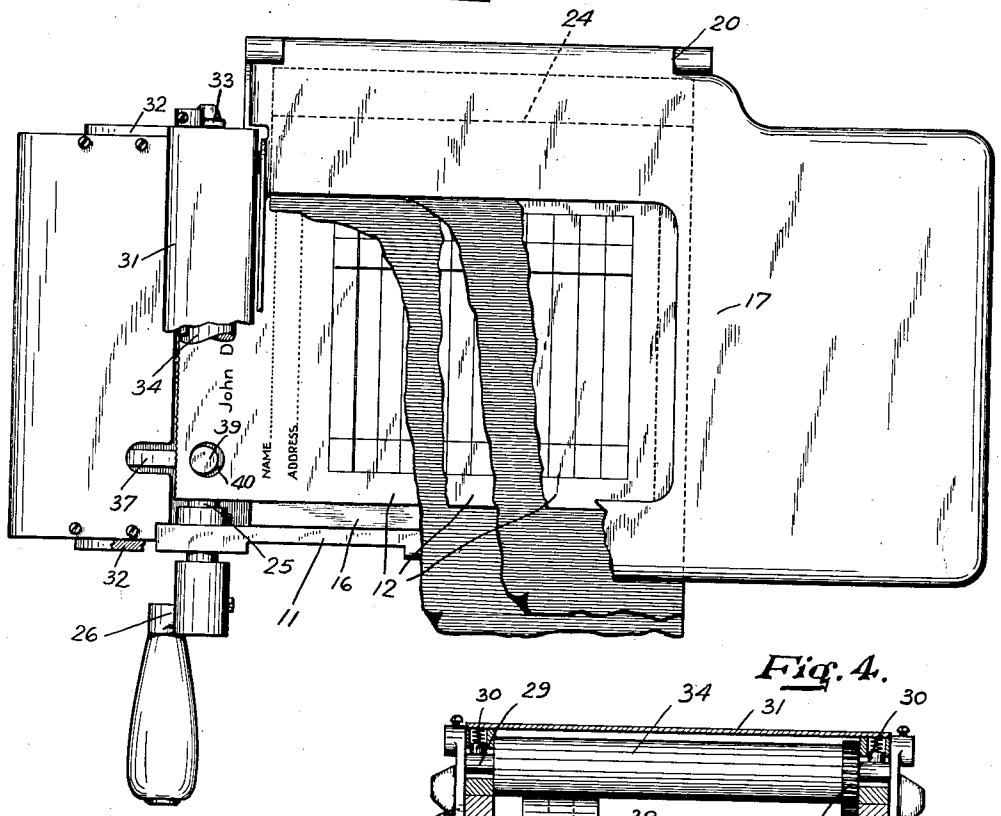


Fig. 4.

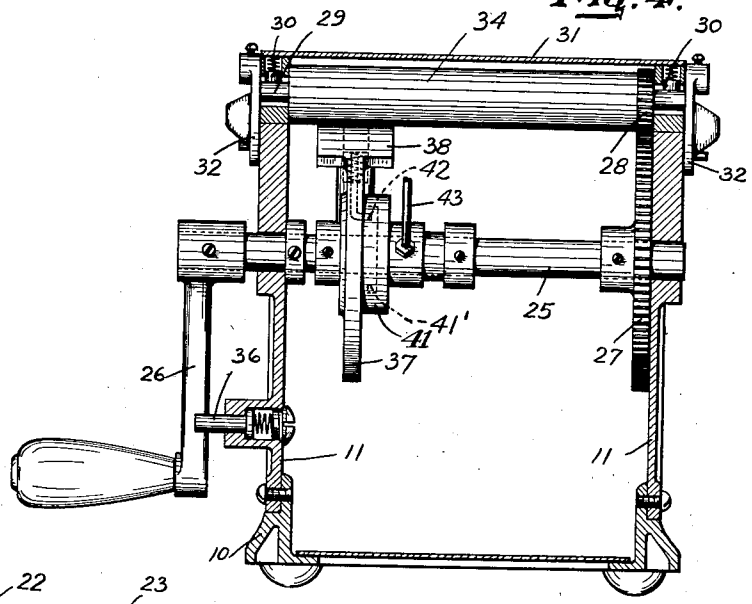
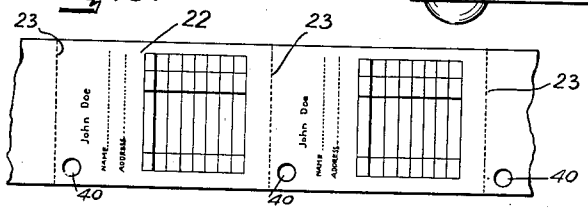


Fig. 5.



INVENTOR.
Edward Kirby Bottle,
BY
Duell, Dunn & Anderson
ATTORNEYS.

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UNITED STATES PATENT OFFICE

1,965,571

INSCRIBING MACHINE

Edward Kirby Bottle, Elmira, N. Y., assignor to American Sales Book Company, Limited, Toronto, Ontario, Canada, a corporation of Ontario, Canada

Application July 1, 1930, Serial No. 465,112
Renewed October 4, 1933

5 Claims. (Cl. 282—21)

This invention relates to a functionally and structurally improved inscribing machine as well as a method of feeding a record therethrough.

Specifically, it is an object of the invention to provide an inscribing machine in the nature of an autographic register which will embody relatively few parts each individually simple and rugged in construction, these parts operating over long periods of time with freedom from mechanical difficulties and with utmost efficiency even in the hands of relatively inexperienced operators.

A further object of the invention is that of furnishing an apparatus of this character in which several record strips will be fed towards and through the inscribing station in an improved manner and without any danger of the parts of the record moving out of alignment.

Another object is that of furnishing a register with which a record may readily be associated and in which the application of the record to the feeding mechanism may be accomplished with minimum skill, time and effort.

With these and further objects in mind, reference is had to the attached sheets of drawings illustrating one practical embodiment of the invention, and in which

Fig. 1 is a side elevation of the register;

Fig. 2 is a sectional side view thereof;

Fig. 3 is a plan view with certain of the parts broken away to disclose underlying construction;

Fig. 4 is a transverse sectional view taken along the lines 4—4 and in the direction of the arrows of Fig. 1; and

Fig. 5 is a fragmentary view of a record of the type which is employed in connection with the register.

In these views, the numeral 10 indicates a base from which walls 11 extend upwardly to provide a casing for the reception of a record 12 which is preferably fed over a guiding bar 13 and between separating bars 14 and baffles 15. A plate 16 provides a deck surface at the inscribing station of the machine, and the individual layers of the record after passing between the separating bars and baffles, move over the deck, the inscribable portion of the record being framed within an opening forming a part of a plate 17, the latter providing suitable rest and supporting surfaces or areas. The plate 16 may be pivotally supported upon a bar 18 and cooperate with the rest portions 19 extending from the inner faces of the side walls to prevent its movement beyond a predetermined point. The plate 17 is hinged as at 20 and in its position of rest bears against the upper edges of the side and/or end walls and may be retained against accidental displacement by virtue of a catch of any desired construction, but which, in the embodiment under consideration, includes a pivoted spring plate 21.

Moreover, in the embodiment illustrated, the record which includes superposed strips 22 formed with transversely extending lines of fold 23 along which it may be weakened, does not also embrace continuous copying surfaces such as interleaved carbons between the strips. While such a construction might be resorted to at the option of the manufacturer, it will be observed that as shown, the casing has an extended portion 24 within which there is housed a roll of carbon strips which latter are extended between the layers of the record so that inscriptions upon the upper surface of the uppermost record strip will at the time of their impression be duplicated upon, for example, the upper faces of the underlying inscription receiving strips. At this time, it will additionally be understood that any desired means for feeding the carbon strips might be resorted to, or in fact, that any form of record suitable for this purpose might be associated with the register.

Now with a view to providing a mechanism which will serve not alone to accurately feed the record through the register but will additionally serve to preserve proper registry between the several record layers, it will be noted that an operating shaft 25 extends between the side walls which rotatably support it. This shaft might be moved in any desired manner but is preferably turned by a crank 26. A gear 27 moves with the shaft and meshes with the teeth of the gear 28 carried by a shaft 29. The latter is supported in spring pressed bearings 30 and these are associated with a casing 31 pivotally mounted for swinging movement by arms 32 which latter have their inner ends pivotally secured to the side walls of the casing. Spring pressed catch members 33 normally retain the casing in such a position that the teeth of the gear 28 mesh with those of the gear 27 and thus as the shaft turns, the shaft 29 will rotate carrying with it a roll 34, the purpose of which will be hereinafter brought out.

The gear 27 serves the additional purpose of preventing movement in other than a forward direction by the shaft 25 in that a pawl 35 cooperating with the teeth of this gear prevents rearward movement. Additionally, it is preferred that a spring pressed pin 36 extends from the side wall of the casing and in the path of travel

of the crank arm so that after each rotation of the latter, it is necessary to retract the pin before a further rotation may be effected.

It is intended that a single rotation of the shaft shall cause the feeding of the record to move the distance of one form of sheet stack. To this end, the circumference of the gear 27 is such that it is in excess of the length of one form. Moreover, a feeding disk 37 is attached to the shaft 25 and rotates with the same, this disk also having a circumference which is greater than the length of one record form leaf which is the distance between two successive fold lines of the record. This disk is extended in the form of a record contact portion 38 which approaches its uppermost position as the crank moves into contact with the stop pin 36. At the forward end of this contact portion, a spring pressed pin 39 is carried by the disk, this pin being projectable beyond the periphery of the disk so as to be engageable with the side edges of the apertures 40 which form a part of each record set. Actuation of the pin occurs as for example by associating with the shaft 25 a cam member 41, a face elevation of which is shown in Fig. 2. The cam member is shown in the form of a disk, having formed in its face an internal eccentric cam surface or groove 41' having a stepped or shoulder part 42'. The inner end of the pin 39 is offset as at 42 to ride under the influence of the spring in contact with the cam surface. This cam is restrained against movement as for example by an arm 43 extending into contact with the bar which carries the pawl 35 and as a consequence, when the shaft 25 rotates, the cam remains stationary and the offset end portion of the pin 39 rides in contact with the cam surface. Accordingly, the operation of the pin 39 from the position as shown in Fig. 2 will be as follows: The pin will be in contact with the edges of the apertures 40 of the record, and in moving forward with the disk 37 under the rotation of the shaft 25 will gradually—due to its divergent travel with respect to the path of record travel—be withdrawn from the apertures of the record. Thereafter, the pin will be retracted by the eccentric cam surface to extend substantially flush with the outer surface of the extended portion 38 and will ride in this condition to a point underneath the record when just as the crank moves into contact with the pin 36, the shoulder portion 42' of the cam 41 will be traversed by the offset end 42 of the pin 39 and the latter under the influence of the spring will again be projected through the apertures of the next succeeding record set.

During the afore described movement of the parts, it will be understood that due to the contact between the roll 34 and the upper surface of the record as well as the engagement which will occur between the periphery of the disk 37 and the record, the latter will move forwardly and due to the circumference of the disk as well as that of the gear 27 (as afore brought out) a complete rotation will result in a feeding of the record of the record for one set of leaves or sheets. Obviously, the enlarged portion 38 will serve to assure the initiation of movement of the record as the shaft turns, this being further assured due to the positive engagement of the pin 39 with the record apertures, it being understood that the pin however serves the additional purpose in cooperation with the apertures of assuring a perfect registering of the successive record piles.

Reviewing briefly the operation of the parts, the operator after swinging the plates 17—16 upwardly, disposes a record packet within the compartment appearing in Fig. 2. The strips of this record are passed over the rod 13 and between the separating baffles 15. Thereupon, the plate 16 is swung downwardly and conceding that carbon is employed, the strips of the latter are interleaved between the record strips. The aperture of the first set of records is brought into engagement with the pin 39 and the plate 17 as well as the casing 31 are now swung downwardly and secured in position. Thereupon, the upper record surface is suitably inscribed and by simply rotating the shaft 25 after retracting the stop pin 36, the record is fed forwardly to a point beyond the inscribing station and at which the inscribed record pile may be severed from the record. Despite the fact that according to the present invention, only a single aperture is necessary in each record set and to this end only one feeding unit is provided as part of the register, it will be found that the record will feed forwardly without any danger of the record tending to move obliquely. This is the case despite the fact that the feeding mechanism and apertures are preferably, although not necessarily, to one side of the center line of the record. In this connection, it will be observed that the correct feeding of the record is promoted and assured by virtue of the positive driving connection between the shaft 25 and the feed roll 34 such as the intermeshing tooth gears 27, 28. By means of this driving connection, there is a very positive and effective feeding effort upon the record because both the feeding disk 37 and the feed roll 34 are positively driven in synchronism. It will be found in connection with such feeding that the several parts of the record will move forward as a unit and this movement will continue until such time as the record pile has been shifted entirely beyond the inscribing station. At that time, the feed arresting and strip registering aperture of the next succeeding pile will move to a point at which the periphery of the disk extends into the same. Of course, due to the fact that the lower strip of the record has a lesser distance to travel than the superposed strips, it is obvious that any tendency of the record parts to move out of alignment will be corrected for the reason that the disk edge will now contact through the aperture of the lower strip with the under face of the second strip and shift the same into perfect registry. Thereupon, the disk will, of course, perform no further useful function unless strips above these strips are also out of alignment. In this case, these strips will be successively brought into registration and the movement of the disk will continue until the crank engages the stop pin or the shaft is otherwise brought to a stop. Of course, this registration of the parts is further assured incident to the feeding occurring due to the contact between the roller and the upper face of the record. Thereupon, the entire operation may again be repeated.

Thus, among others, the several objects of the invention as afore brought out have been achieved. It will be understood that numerous changes in construction and rearrangements of the parts might be resorted to without departing from the spirit of the invention as defined by the claims.

Having described by invention, what I claim as new and desire to secure by Letters Patent is:

1. An inscribing machine including means providing a writing surface over which a record is to pass, a shaft disposed beyond said surface, a single record feeding unit mounted upon said shaft to engage the face of said record, a projectable

pin forming a part of said unit and to be extended through the feed arresting apertures of said record to initiate movement of the latter, and pin operating connections for automatically, periodically retracing the pin by operation of said unit.

2. An inscribing machine including, in combination, a writing table over which a record may pass, a feed shaft, a rotary record feeding unit mounted upon said shaft to engage the face of said record, a projectable pin forming a part of said unit and positioned to be extended through feed arresting apertures formed in said record, and pin operating means controlled by rotation of said unit for automatically extending said pin when positioned opposite the record and for subsequently retracting it.

3. An inscribing machine including, in combination, a writing table over which a record may pass, a feed shaft, a record feeding unit mounted upon said shaft to engage the face of said record, a projectable pin forming a part of said unit and positioned to be extended through feed arresting apertures formed in said record, a spring normally stressed to extend said pin, a stationary cam for automatically retracing said pin during feed rotation of said shaft and means including said cam whereby said spring effects extension of said pin.

4. An inscribing machine including, in combination, a writing table over which a record may pass, a feed shaft, a record feeding unit mounted upon said shaft to engage the face of said record, a projectable pin forming a part of said unit and positioned to be extended through feed arresting apertures formed in said record, a cam freely mounted upon said shaft, an anchor for anchoring said cam against rotation with the shaft, and a cam surface on said cam whereby said pin is retracted by engagement therewith during rotation of said shaft.

5. In an inscribing machine, in combination, an inscription receiving surface for supporting a record formed with a single series of feed arresting apertures, a rotary feed shaft, a solitary feed disk mounted upon said shaft and disposed in line with said apertures and to contact with the face of said record so as to extend through the apertures thereof, a projectable pin associated with said feed disk and positioned to extend through the record apertures to initiate record movements when said shaft is turned, automatic means controlled by rotation of said shaft for projecting and retracting said pin, and a feed roll cooperating with said disk to provide a record feeding grip.

EDWARD KIRBY BOTTLE.