Dec. 2, 1941. H. J. WAECHTER 2,265,013

AUTOGRAPHIC REGISTER

Filed Oct. 5, 1937 3 Sheets-Sheet 1

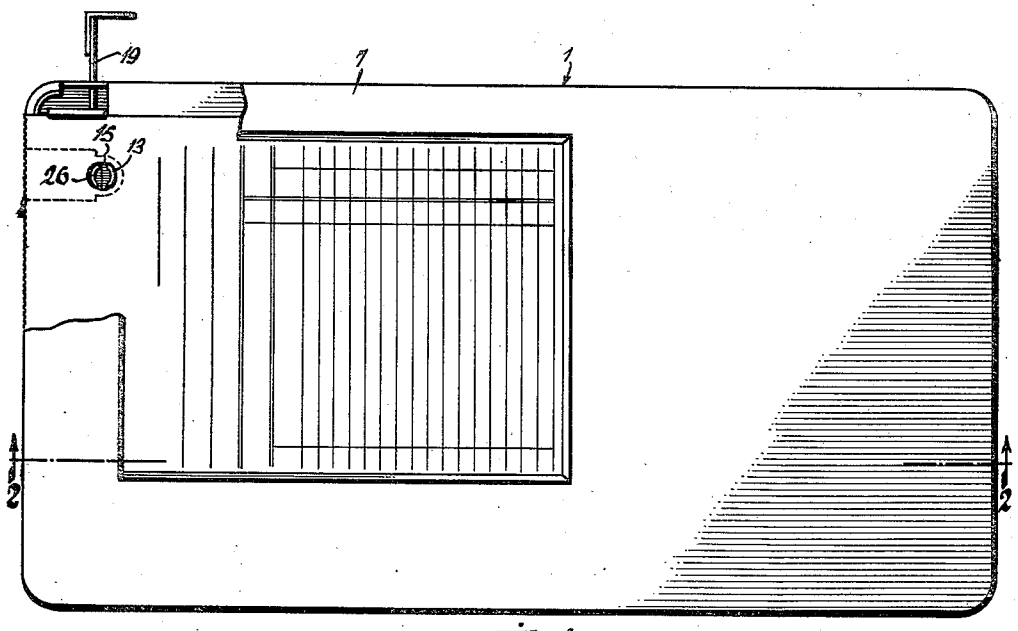


Fig. 1

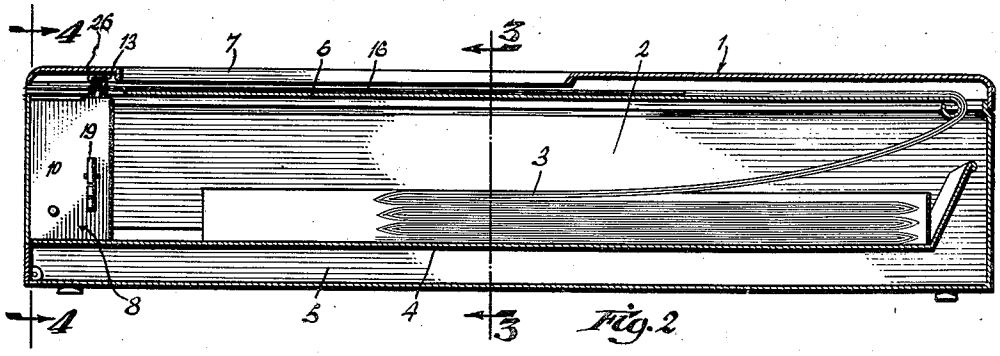


Fig. 2

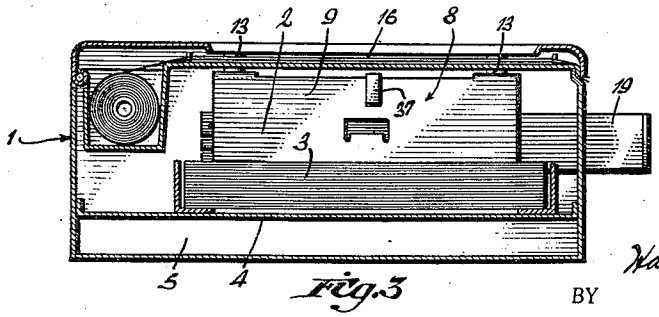


Fig. 3

INVENTOR.

Harry J. Waechter

BY

Wood & Wood ATTORNEYS.

Dec. 2, 1941. H. J. WAECHTER 2,265,013

AUTOGRAPHIC REGISTER

Filed Oct. 5, 1937 3 Sheets-Sheet 2

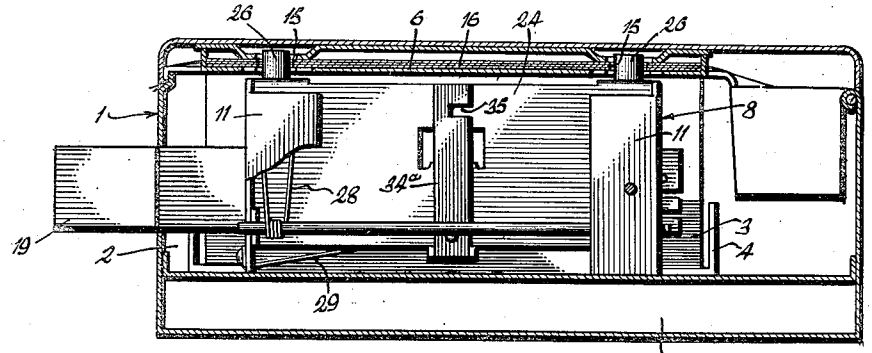


Fig. 4

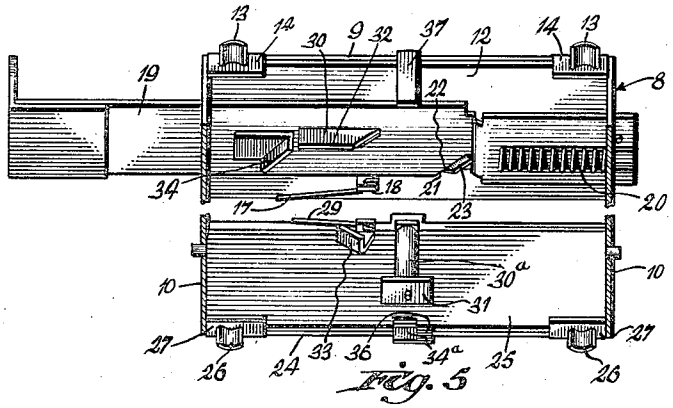


Fig. 5

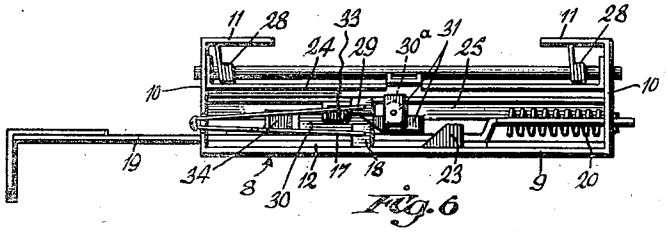


Fig. 6

INVENTOR.

Harry J. Waechter

BY

Wood & Wood ATTORNEYS.

Dec. 2, 1941. H. J. WAECHTER 2,265,013

AUTOGRAPHIC REGISTER

Filed Oct. 5, 1937 3 Sheets-Sheet 3

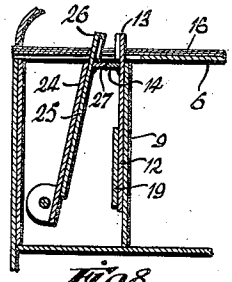


Fig. 8

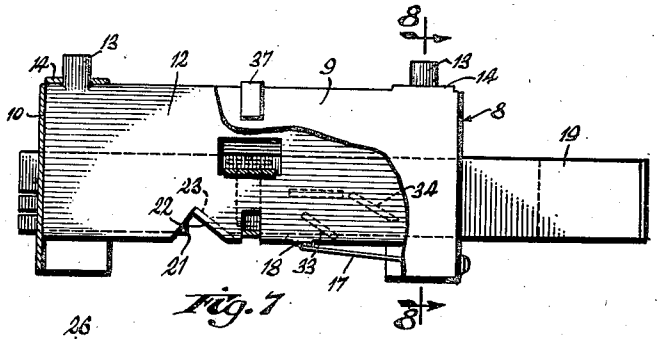


Fig. 7

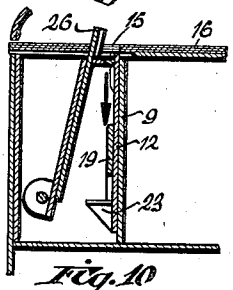


Fig. 10

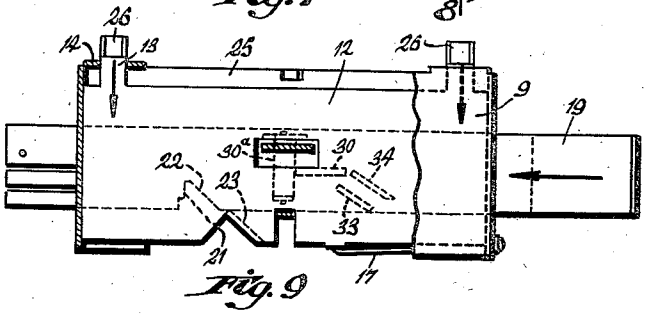


Fig. 9

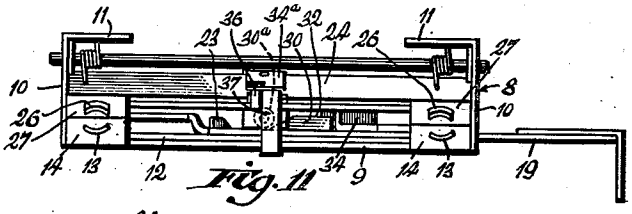


Fig. 11

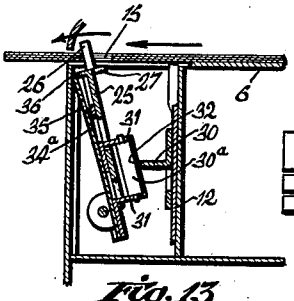


Fig. 13

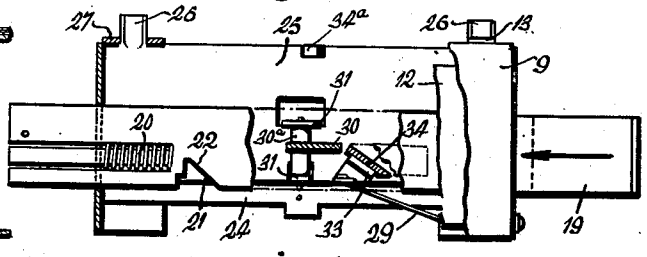


Fig. 12

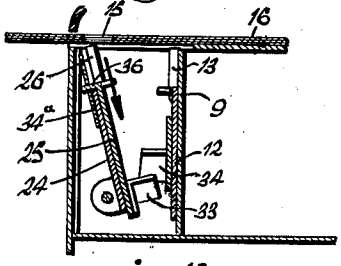


Fig. 15

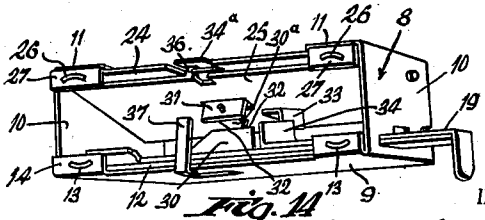


Fig. 14

INVENTOR.

Harry J. Waechter

BY

Wood & Wood ATTORNEYS.

Patented Dec. 2, 1941

2,265,013

UNITED STATES PATENT OFFICE

2,265,013

AUTOGRAPHIC REGISTER

Harry J. Waechter, Mount Healthy, Ohio, assignor to Paul Benninghofen and Fritz G. Diesbach, both of Hamilton, Ohio, as trustees

Application October 5, 1937, Serial No. 167,423

9 Claims. (Cl. 282—21)

This invention relates to autographic registers, manifolding machines or the like employing continuous form stationery usually as a composite web, composed of a plurality of strips in superposed registering relation with a transfer material interleaved therebetween, or between a set of form or sections of the web or strips when disposed upon the writing platen.

This type of stationery is generally punched with apertures, a pair for each form length usually at the head end thereof, which are utilized for governing and controlling the withdrawal of the web sequentially in form or measured lengths.

The present invention deals with mechanisms cooperating with apertures in the web for arresting the web advance and to initiate the advance of the web to project its leading end from the machine to enable the operator to obtain a finger hold thereon for continuing the web withdrawal manually for a delivery or abstraction of a set of forms which have been filled in and to be appropriately positioned in a successive set in position upon a writing platen.

An object of the invention is to provide an autographic register or the like machine with web feed or arresting means in the form of a pin or detent for entry through an aperture in the web when brought into registration therewith, composed of a plurality of segments independently operable for aperture entry to permit the aperture thereof to enter in the event it has been partially clogged through disturbance in the relative registration of the strips of which the web is composed.

Another object of the invention relates to the provision of a duplex pin with its elements or segments independently operable for entry into a web aperture to arrest its advance, with one of the elements translatable in a direction to initiate the advance of the web when in cooperation with the web aperture.

Other features and advantages of the invention relate to details of construction and relative arrangement of parts to attain the objects herein enumerated, of a simple form of construction, and compactly arranged all of which will be more fully set forth in the description of the accompanying drawings, in which:

Figure 1 is a top plan view of an autographic register or manifolding machine containing the present invention.

Figure 2 is a section on line 2—2, Figure 1.

Figure 3 is a section on line 3—3, Figure 2.

Figure 4 is a section on line 4—4, Figure 2.

Figure 5 is a detailed perspective view showing relatively opposing portions of the web feed arresting mechanism as spread apart.

Figure 6 is a bottom plan view of the web feed arresting and form registration mechanism as a unit for installation in an autographic register or the like machine.

Figure 7 is a rear view of the unit shown in Figure 6 with portions thereof in section and portions broken away to illustrate parts that would otherwise be hidden and with the parts in a normal position.

Figure 8 is a section on line 8—8, Figure 7.

Figures 9 and 12 are views similar to Figure 7 for illustrating relatively different stages of operation.

Figures 10 and 13 are sectional views similar to Figure 8 with the parts in an operative stage as illustrated in Figures 9 and 12 respectively.

Figure 11 is a top plan view of the unit.

Figure 14 is a perspective view of the unit with the parts in an operative stage at the end of a web extracting interval.

Figure 15 is a view similar to Figure 8 with the parts in a state of operation shown in Figure 14.

The present invention in a preferred embodiment comprises web feed arresting or controlled device as a self-contained unit or assembly for convenient installation within the forward or delivery end of a writing case, its unit organization facilitating manufacture and installation into the machine; it, however, being obvious that the operative parts of the unit could be built directly within the casing particularly when compactness and size are not factors. The present organization being compact and of a minmum dimension for installation within a portable size of writing case dimensioned for holding a single packet of continuous web stationery, as illustrated in Figures 1 to 4 inclusive.

Referring to the drawings and to said Figures 1 to 4 inclusive, 1 indicates a writing case constituting a casing formed of sheet metal, providing a chamber or storage compartment 2 for housing a packet of continuous web form stationery 3, resting or supported upon a tray 4 fixed within the casing, in a superimposed relation or elevated plane above the bottom of the casing. The space between the tray and casing bottom provides a compartment 5 having an entrance either at the end or side of the casing for depositing the record sheets as sequentially dispensed from the machine and separated from the web. The leading end of the web, as un-

folded from the packet, is engaged over the rear end of a writing platen 6 within the casing and then disposed over the platen for supporting a section or set of forms of the web for writing thereon or filling in the forms. After a set of forms has been filled in, the strip or web is advanced initially by the web feed controlling unit and subsequently, manually, for extracting the filled in set of forms and separating or tearing the same from the web and disposing a successive set of forms in writing position upon the platen. A margin frame 7 is hingedly or removably connected to the casing as a top therefor and overlies the writing platen.

The stationery employed in the machine, following the general practice, constitutes a plurality of strips of paper each containing a sequence of printed forms, with the strips allocated for form registration and to produce a composite web. The composite web is zig-zag folded into a packet, the strips being provided with relatively registered weakened transverse tear lines coinciding with the lines of fold for a separation of the forms, one from another and from the web. The composite web is apertured to provide a set of apertures for each form which are utilized in cooperation with pins or detents for governing or regulating the advance or withdrawal of the web, to extract or dispense a filled in form, limiting an operation to the length measurement of the form, for effecting or maintaining the registration of a set of forms stationed upon the writing platen for manifolding and to initiate the advance of the web to project the leading end of the web from the delivery end of the platen or casing to obtain a fingerhold thereon for continued extraction.

The machine may be equipped with means by which carbon coated sheets or webs are sustained and interleaved between the several strips of the composite web or the manifolding may be produced through the employment of strips of carbon coated material interleaved between the work strips as a lamination of the composite web for one-time service, which method is steadily gaining in favor. The method of manifolding, forming no part of the present invention, may be variously modified and conform to the various ways now in practice or otherwise, and as the device of the present invention may be employed in connection with a single strip, further detailed elaboration thereof need not be made herein.

The web feed arresting and withdrawal initiating mechanism or device, as a unit, comprises a rectangular frame 8 having a side wall 9, opposite end walls 10—10, and side wall sections 11—11, upon and within which the various working parts of the unit are mounted. The frame, however, could be substituted by walls forming a part of the casing 1 when built into the casing.

A slide plate 12 co-extensive with the side wall 9 is slidably mounted upon the inner side thereof for vertical reciprocation thereon, has at its upper edge and toward its relative opposite ends, vertically extruding lugs or pin segments 13—13, slightly curved in cross section. Each lug or pin segment traverses a correspondingly configurated aperture in a laterally or inwardly extending flange 14 of the side wall section 9 for guidingly sustaining the plate 12.

The pin segments 13—13, provide stops for the web by their engagement respectively through an aperture 15 in the web 16 disposed upon the writing table. The slide plate 12 is yieldingly sustained by a bar spring 17 fixed to the frame 8 and connecting with a laterally projecting ear 18 on the bottom edge of the slide plate (see Figures 6 and 12). The spring urges the slide plate upwardly, which as the web is withdrawn, bears against the underside of the web in a position to snap through a set of apertures when brought into registry therewith and remain in such web arresting position until manually depressed for withdrawing the filled in form of the web to dispense the same from the machine.

The slide plate 12 is depressed by a push or slide bar 19 to express the pin segments from the web apertures. The slide bar 19 extends longitudinally through the frame, traversing the end walls 10—10 thereof, with one end bent laterally to form a thumb button. The opposite end of the bar is slitted to form a tongue over which a spring 20 is slipped for retracting the bar.

The lower edge of the bar has a key notch 21 cut therein, with an edge 22 thereof inclined for cooperating with an inclined lug 23 laterally protruding from a side of the slide plate 12 for depressing the slide plate when the slide or push bar 19 is forced or pushed inwardly.

The lug 23 normally is in registry with the notch to permit the plate to be urged upwardly for pin engagement through the web apertures. Upon pushing the slide bar 19 inwardly, as shown in Figure 9, the slide will be depressed, expressing the pins from the web, and as the lug 23 leaves the notch 21, it rides on the lower edge of the slide bar (see Figure 9) holding the slide plate in a depressed position until the slide bar moves to its normal position.

A hinge plate 24 is pivotally mounted within the frame adjacent the slide plate 12 and carries a slide plate 25 companioned to the slide plate 12, which likewise at its upper edge has a pair of fingers or pin segments 26 protruding upwardly therefrom respectively in twin relation to the pin segments 13 of the slide plate 12 for jointly engaging through a web aperture.

The pin segments 26 are of curved form in cross section and each traverses a correspondingly configurated slot in a laterally projecting flange 27 of the hinge plate 24. The plate 25 is urged upwardly by a spring 29 companioned to the spring 17 for the slide plate 12. The springs 17 and 29 may be representative as limbs of a U-shaped spring mounted upon the frame, with the limbs respectively connected with the slide plates 12 and 25.

The hinge plate 24 is urged toward the slide plate 12 by a pair of springs 28, 28 engaged over the pivot pin connecting the hinge plate to the frame, with one end of each spring fastened to the frame and its opposite end either connected to or bearing against the hinge plate as shown in Figure 11. The hinge plate 24 and the slide plate 25, as a unit, is moved in an arc forward by the slide or push bar 19 to initiate the web advance for extending its leading end from the machine to a degree sufficient for the operator to obtain a finger hold thereon to manually continue its advance. When the plates are moved to their forward limit for web advance, the slide plate 25 is sequentially depressed to extract its pin segments 26 from the web aperture for releasing the web.

The push bar 19 is provided with a cam 30 fixed to and projecting laterally therefrom, for engagement with a roller 30a, journalled within lugs 31, integral with the hinge plate. The lugs project through apertures in the slide plate. The cam lug has an inner edge 32 to permit con-

tinued movement of the slide bar 19 while holding the plates at the limit of their forward movement, and while depressing the slide plate 25 which at its lower edge is provided with an inclined lug 33, engaged by an inclined lug 34, laterally projecting from the slide bar 19. The slide plate 25 as shown in Figure 15 is locked in its depressed position by a spring blade 34a fixed upon the front side of the hinge plate 24 and has an aperture 35 toward its upper end into which a bit 36 laterally projecting from the slide plate 25 engages, thereby locking the slide plate against movement. The slide plate 25 is thus held in a retreat and depressed position until released at the end of the return stroke, by a laterally projecting finger 37 fixed to the wall of the frame which flexes the spring plate outwardly to clear the bit and allow the slide plate to move upwardly automatically under spring pressure, bringing the pin segments against the under-side of the web ready to snap through an aperture in the web when brought into registration therewith.

In operation, the duplex or twin pin segments normally function as a unit and both are permitted to bear against the under-side of the web for engaging through an aperture when brought into registration therewith.

The pin segments however, operating independently, and each being divisional of the aperture dimension makes it possible for one of them to enter a partially closed aperture resulting from dis-registration of the several strips comprised in the web and therefore functions to arrest web advance and restore registration, which could not be accomplished if the pin was of full cylindrical contour. The strips generally are guided longitudinally preventing relative lateral displacement, disturbing to the alignment.

As shown in the drawings, each pin segment provides an outer surface of an arc divisional of a circumference of the aperture and the pair arranged in fore and aft positions so that both may engage through an aperture and hold the strip of web against longitudinal displacement, and readjust the strips relatively to bring the same into registration if the registration has been disturbed. Thus, if one of the pin segments is extended through an aperture which is partially closed, its entry will correct strip displacement, sufficiently to permit the second pin to enter.

After the form has been filled in, the push bar 19 is manually pushed inward, whereupon, the slide plate 12 is depressed for retracting its pin segments 13—13 from the web aperture. The continued inward movement of the push bar, after the slide plate 12 has been depressed, sequentially swings the hinge plate 24 and slide plate 25, as a unit, forwardly and having a hold on the web advances the web to project its leading end beyond the stationery tearing edge at the front edge of the marginal frame to enable the operator to obtain a finger hold upon the web, for manually continuing its advance, or extraction. After the hinge and slide plate, as a unit, reach the end of their forward stroke the slide plate 25 is depressed to retract the pin segments from the aperture and locked in its depressed position for a return stroke and upon reaching its normal position the slide plate is again released so that it can serve with the slide plate 12 for engaging through a successive set of apertures.

The device is very compact and can be conveniently installed within a very low depth of casing. The duplex or plural segment character of the pin, with each segment independently operable for pin cooperation with a common aperture in the web, for arresting advancement thereof, reduces to a minimum the possibility of failure of performance due to the aperture becoming clogged through relative disarrangement of the aperture or lamination of the web.

One of the segments can enter a minimum size opening compared to a maximum size required for the entry of all and as the stationery now generally employed, is what is known as flat packed, produced by zig-zag folding the composite web, which materially retards any extended disarrangement of the strips, it is unusual for the registration of the strips to be disturbed to an extent which would completely clog the web aperture or to an extent that would not permit the entry of a single pin segment. In practice it has been found that a twin pair of pin segments formed, as disclosed in the drawings are ample, avoiding any undue multiplication of parts which would materially increase the cost and complicated assembly.

Having described my invention, I claim:

1. A machine of the class described utilizing continuous form stationery, as a composite web having apertures therein for governing and controlling the web advance, comprising a casing, a writing tablet within the casing for supporting the web for writing thereon, duplex pin segments movably mounted for entry individually or as a unit through an aperture in the web to arrest its advance, and a slide bar mounted within the casing movable transversely to the segments, and cooperating therewith for depressing the segments to extract the same from a web aperture.

2. A machine of the class described utilizing continuous form stationery, as a composite web having apertures therein for governing and controlling the web advance, comprising a casing, a writing tablet within the casing for supporting the web for writing thereon, pin segments movably mounted below the forward end of the tablet for entry individually or unitarily through an aperture in the web to arrest its advance, a hinged member for supporting one of the segments, and a slide bar movable transversely to the segments, and cooperating therewith in a sequence for depressing one of the segments to extract the same from a web aperture, swinging the second forward for initiating advance of the web, and then extracting the same from the web aperture.

3. A machine of the class described utilizing continuous form stationery, as a composite web having apertures therein for governing and controlling the web advance, comprising a casing, a writing tablet within the casing for supporting the web for writing thereon, a first slide plate reciprocable laterally of the tablet carrying pin segments for entry through apertures in the web to arrest its advance, a second slide plate, reciprocable and companion to the said first slide plate carrying pin segments for entry through apertures with said first named pin segments, a hinged support for said second slide plate, and a slide bar mounted on the casing and movable transversely to said slide plates and cooperating therewith sequentially for depressing the first slide plate to extract its pin segment from the web apertures, swinging the second forward to

initiate a web advance and then depress the second slide plate.

4. In an autographic register, a casing including a platen over which superposed strips of paper are adapted to be moved, said paper including aligning apertures, a sectional pin normally extended above the platen and adapted to engage each of the respective apertures, each sectional pin comprising a rear section and a forward section, means for lowering the rear section and moving the forward section forwardly for advancing the strips and for depressing the forward section and permitting its return to aligning association with the rear section.

5. In an autographic register, a casing, a platen over which superposed strips of paper including aligning apertures are adapted to be moved, vertically depressible pins normally extended above the platen and engageable with said apertures, said pins consisting of sections in inclined relationship to provide tapered pin ends for ease of insertion into said apertures, and means for depressing the rear section and advancing the forward section, said means effective for lowering the forward section when the strips have been advanced, therefore permitting return movement of said forward sections to positions associated with said rear sections for aligning insertion in the apertures.

6. In an autographic register having means for slidably supporting superposed strips of paper having aligning apertures, a pair of strip aligning pin elements, said pin elements disposed adjacent each other for concurrent entry into said aligning apertures, said pin elements engaging, respectively, the front and rear edge portions of the apertures and being spaced apart when disposed in the apertures, an actuating means for lowering the rear pin element, advancing the forward pin element for feeding the paper, and subsequently lowering the forward pin element for permitting its return to a position adjacent the rear pin element, and resilient means for causing said related pin elements to move upwardly when the next apertures are disposed immediately above said related pin elements.

7. In an autographic register having means for slidably supporting superposed strips of paper having aligning apertures, a pair of adjacently disposed pin elements normally disposed above said means for slidably supporting said strips of paper and adapted to enter said aligning apertures conjointly, means normally urging said pin elements upwardly, actuator means for depressing the rear pin element, advancing the forward pin element and lowering the forward pin element after its advance, and means for returning said forward pin element to a position adjacent the rear pin element for subsequent upward movement into the next set of aligning apertures as they register with said pin elements.

8. In an autographic register having means for slidably supporting superposed strips of paper with aligning apertures, a pair of strip aligning members, means for supporting said members laterally adjacent each other and for resiliently urging the same in the direction of said paper supporting means so that when said strips of paper are moved to a point at which an aperture thereof is adjacent said members, said members will enter said aperture in lateral relationship with each other, said members being so shaped that when placed in lateral relationship with each other, they engage the front and rear edge portions of the apertures respectively and are spaced apart.

9. In an autographic register having means for slidably supporting superposed strips of paper with aligning apertures, a pair of strip aligning members, means for supporting said members laterally adjacent each other and for resiliently urging the same in the direction of said paper supporting means so that when said strips of paper are moved to a point at which an aperture thereof is adjacent said members, said members will enter said aperture in lateral relationship with each other, said members being so shaped that when placed in lateral relationship with each other, they engage the front and rear edge portions of the apertures respectively and are spaced apart, and means for extracting one of said strip aligning members from said apertures and then advancing the other aligning member for feeding the strips of paper, said means effective for accomplishing said extracting and feeding operations independently of pin movement.

HARRY J. WAECHTER.