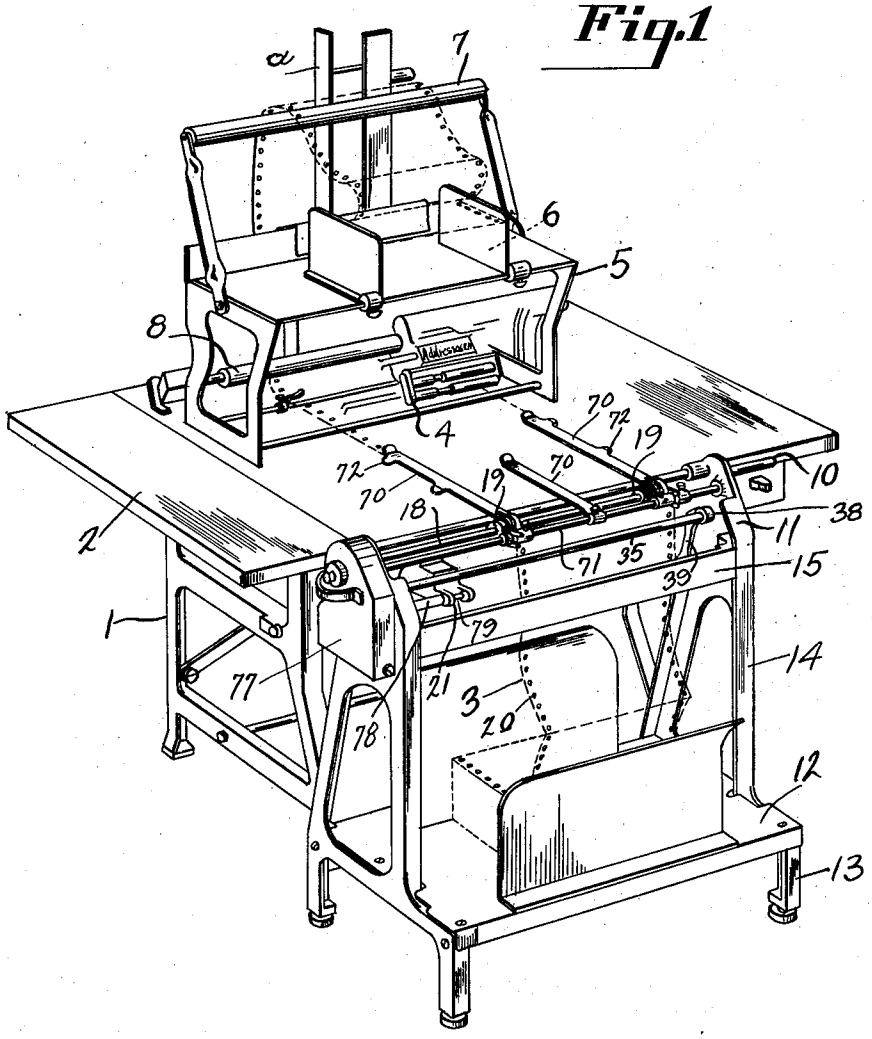
May 14, 1940. J. Q. SHERMAN ET AL 2,200,308

PAPER FEEDING MECHANISM

Filed Oct. 17, 1936 8 Sheets-Sheet 1

Fig. 1



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By Albert W. Metzner

H. C. Walker ATTORNEY

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PAPER FEEDING MECHANISM

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Fig. 1

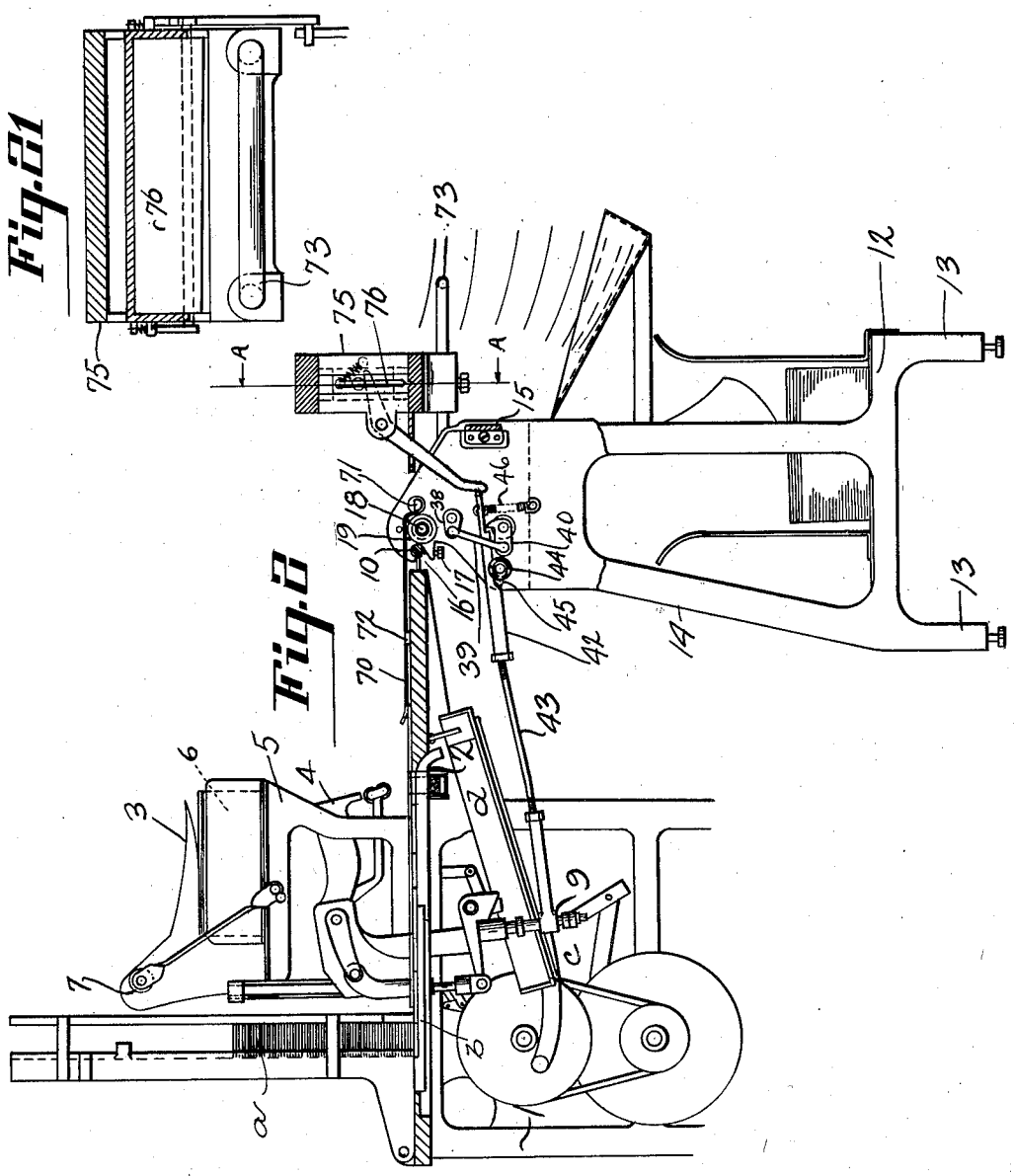

Fig. 2

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Fig. 3

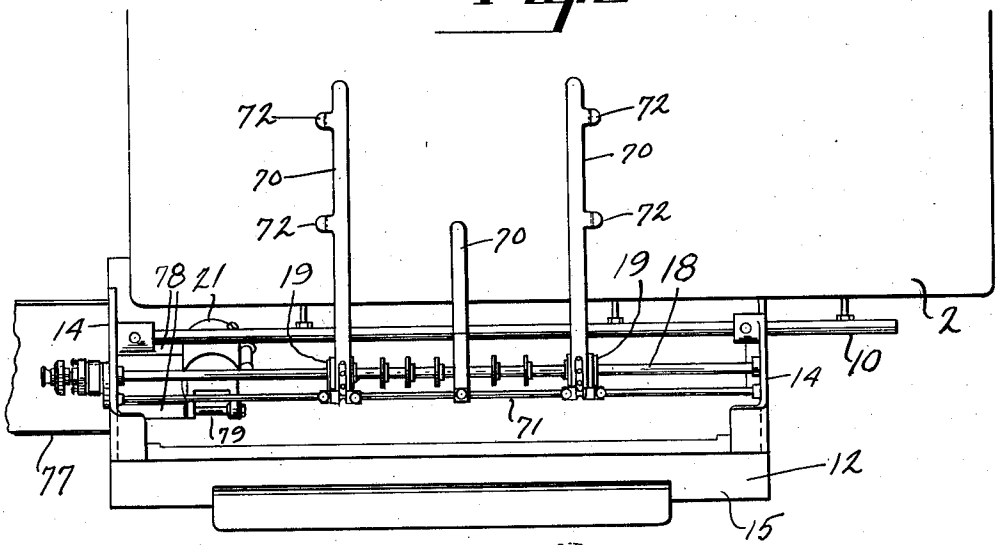


Fig. 4

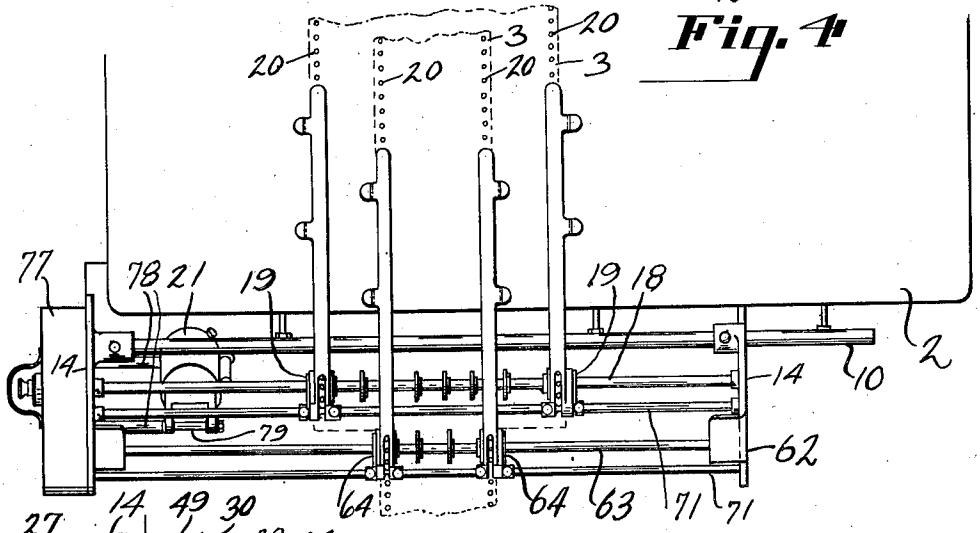
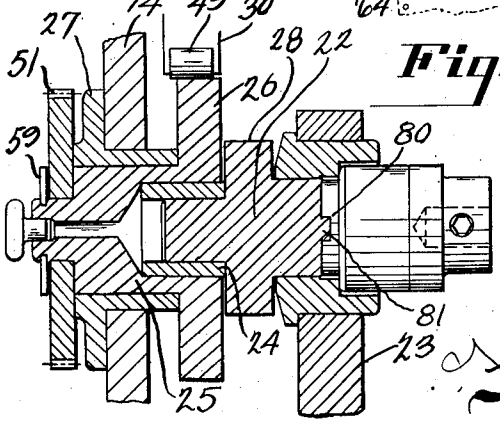


Fig. 13



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PAPER FEEDING MECHANISM

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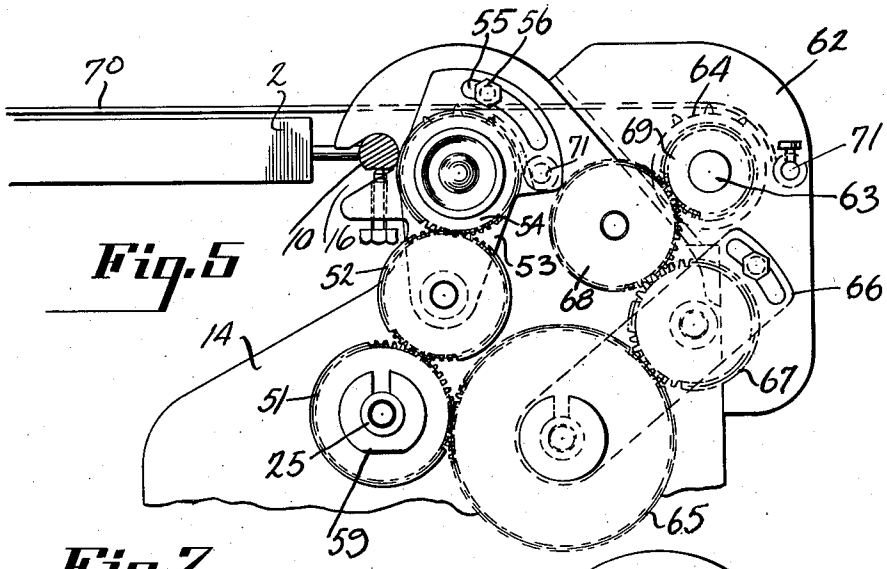

Fig. 5

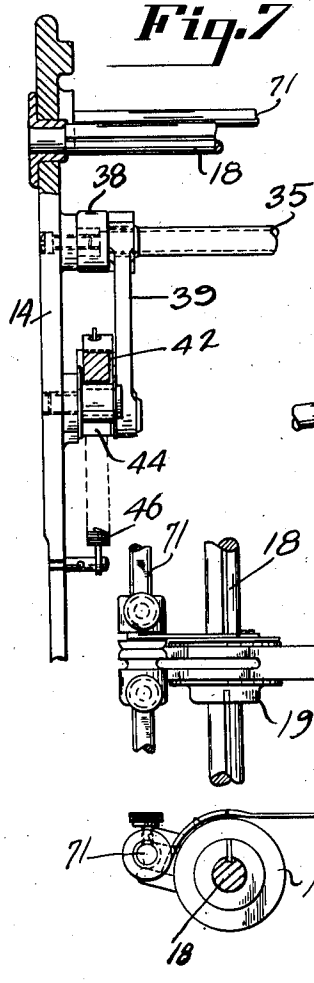

Fig. 7

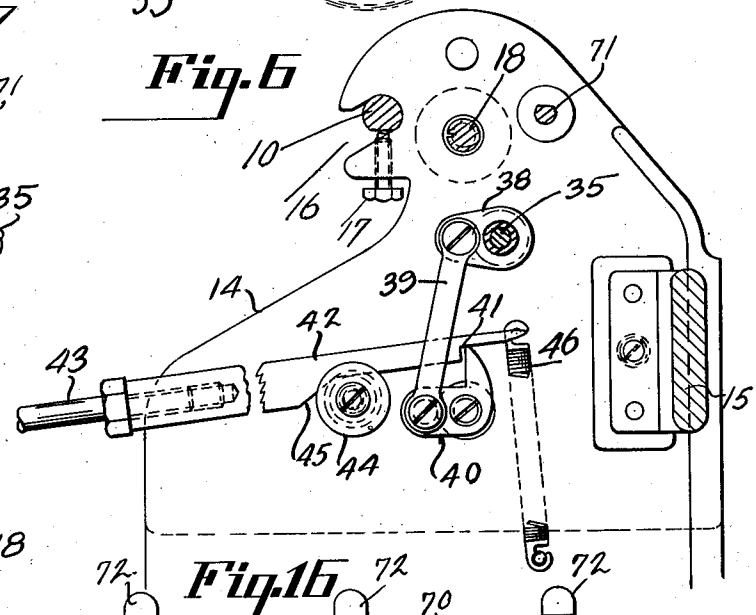

Fig. 6

Fig. 16

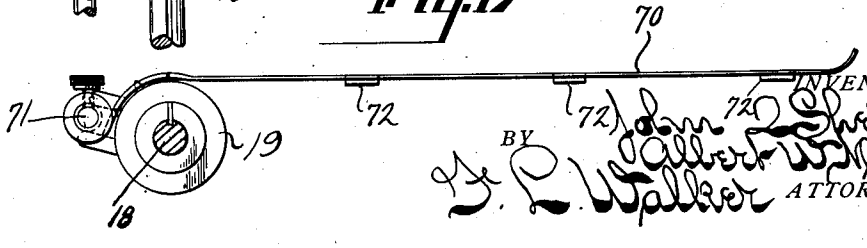

Fig. 17

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Fig. 9

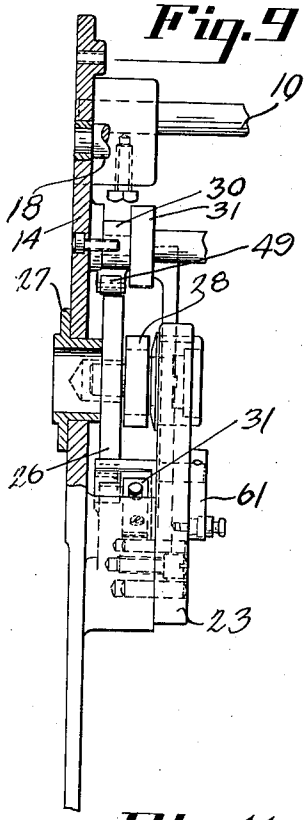

Fig. 8

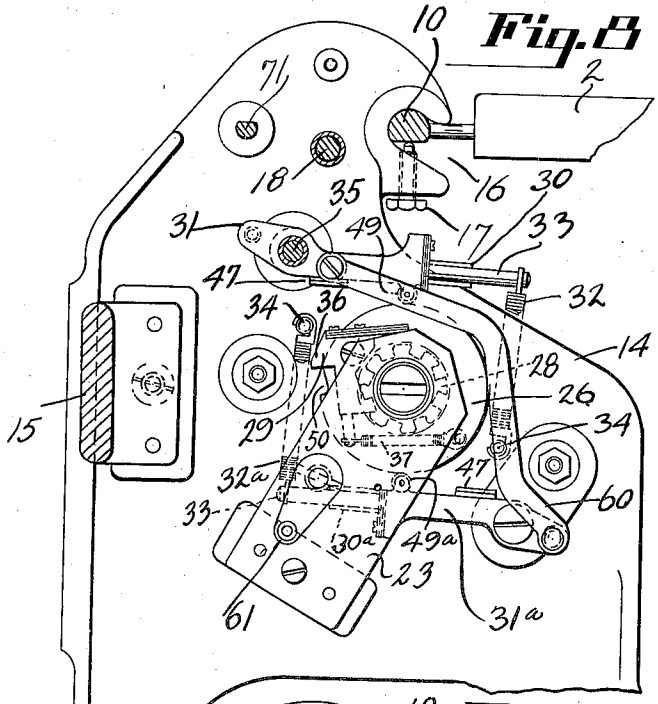

Fig. 10

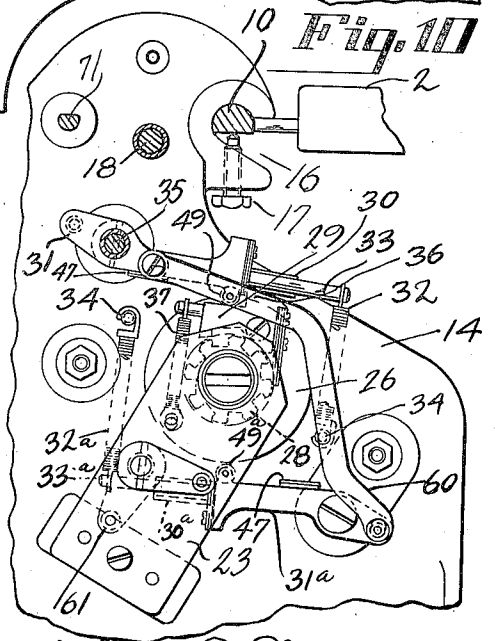

Fig. 11

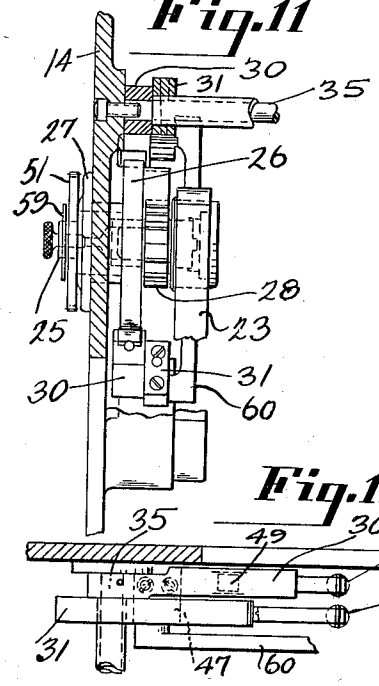

Fig. 12

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Fig. 14

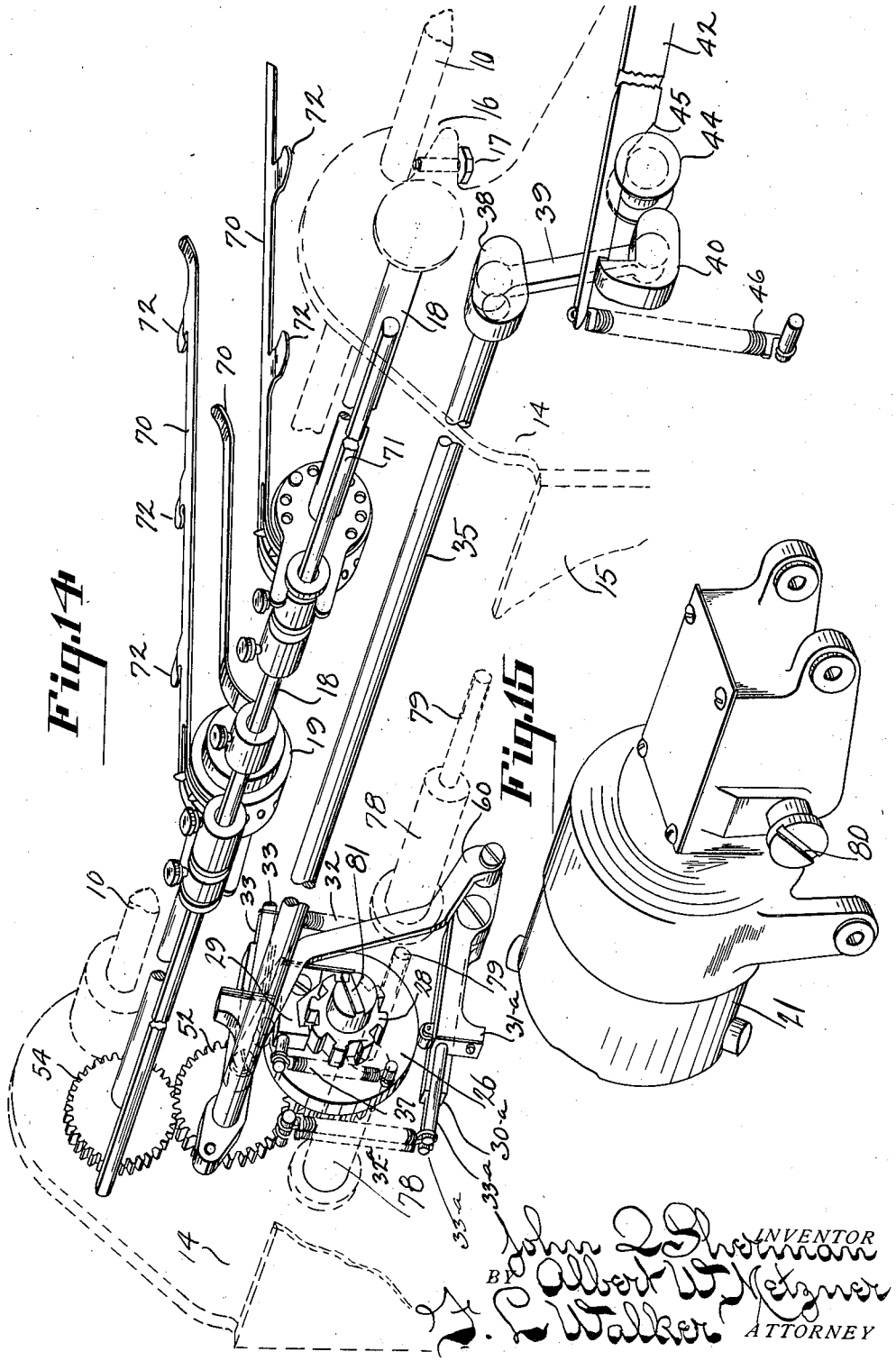

Fig. 15

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PAPER FEEDING MECHANISM

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Fig. 18

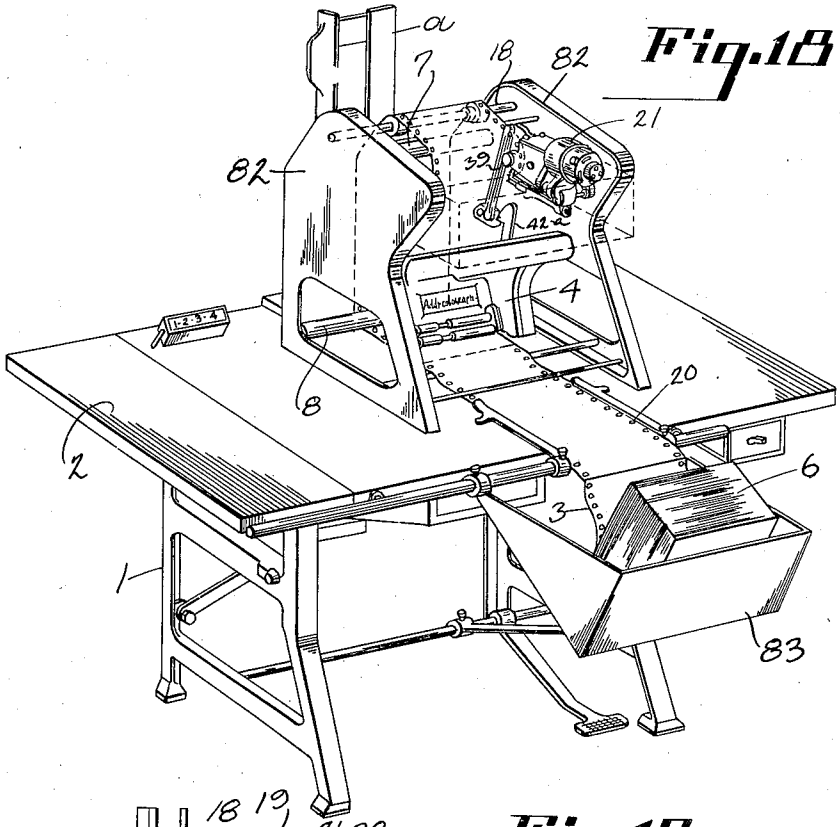
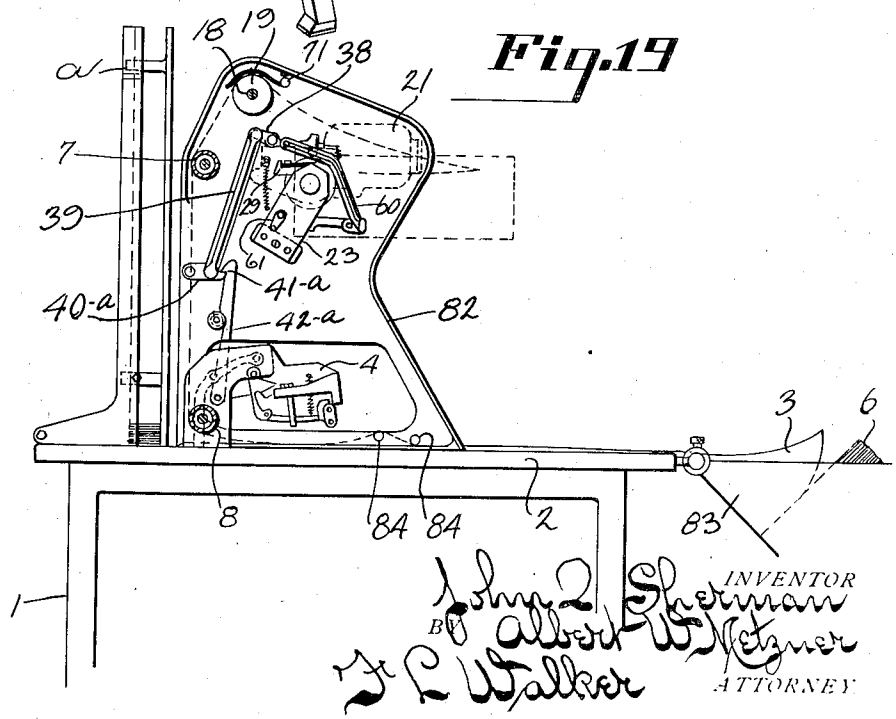


Fig. 19



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PAPER FEEDING MECHANISM

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Fig. 88

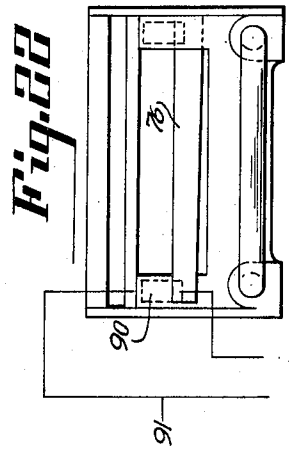

Fig. 80

Fig. 83

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Patented May 14, 1940

2,200,308

UNITED STATES PATENT OFFICE

2,200,308

PAPER FEEDING MECHANISM

John Q. Sherman and Albert W. Metzner, Dayton, Ohio, said Metzner assignor to said Sherman; Katherine M. Sherman, William C. Sherman, and Wellmore B. Turner, executors of said John Q. Sherman, deceased

Application October 17, 1936, Serial No. 106,158

36 Claims. (Cl. 101—57)

This invention relates to strip feeding means, and more particularly to a self contained unit for association with imprinting, punching, recording or writing apparatus and embodying feeding mechanism which is synchronized therewith to intermittently advance continuous series connected forms alternately with the operation of the imprinting or other mechanism by which such forms are operated upon.

While various forms of friction feed devices have heretofore been employed with stamping and imprinting mechanism and the like such as addressing machines, checkwriters, utility statement imprinters, and analogous mechanisms, such feeding devices are not suitable for modern high speed operation. It is necessary for rapid operation that the material being operated upon shall be positively advanced an exact distance at each feeding movement and arrested in predetermined position after each such operation. There is always some slippage or creep occurring in the operation of friction feed devices which becomes greatly exaggerated as the speed of operation increases. Such feeding error is cumulative and soon results in appreciable offsetting of the impression and the imprinted matter will not be properly placed on the forms, checks, statements, or other records being produced. As herein disclosed the present invention includes a pin type feeding device having positive engagement with the material being operated, which may be incorporated in the imprinting apparatus as a component part thereof, but which for illustrative purposes, but with no intent to unduly limit the invention in this respect is herein illustrated as comprising a separate unit. Such feeding device is provided with a driving motor independently of the imprinting apparatus with which it is associated for intermittently operating the feeding device which is timed to complete a full cycle of feeding operation during a portion only of the cycle of operation of the imprinting mechanism and while the imprinting member is retracted. The imprinting mechanism functions to trip the feeding apparatus after the impression has been made upon the strips of series connected forms, whereupon the feeding mechanism will operate throughout a complete cycle before the next impression of the imprinting apparatus. By this means the two mechanisms are properly synchronized but each performs its particular function independently of the other, one operating through its full cycle in a shorter period of time than the other, or through alternating periods of operation.

The object of the invention is to improve the construction as well as the means and mode of operation of strip feeding mechanism whereby it may not only be economically manufactured, but will be more efficient in use, positive in action, uniform in operation, afford increased accuracy of registration of the advanced forms and be unlikely to get out of repair.

A further object of the invention is to provide a strip feeding unit which may be operated independently of the imprinting apparatus with which it is associated, but in synchronized relation therewith.

A further object of the invention is to provide a self contained unit which may be operatively connected with various forms of strip imprinting or treating apparatus with equal facility.

A further object of the invention is to provide a positive feeding device having a quick operating timed cycle of operation shorter than that of the mechanism with which it is associated.

A further object of the invention is to provide a continuous operating driving member for the strip feeding mechanism with means for automatically connecting and disconnecting the driving member and feeding mechanism at timed intervals whereby the mechanism will be intermittently actuated through definitely timed periods of operation and instantly arrested with the advanced forms in exact registry with the imprinting mechanism and so maintain an intermediate accurately timed period during which the imprinting apparatus is operated.

A further object of the invention is to provide means which is readily adaptable for feeding different lengths of forms and also to provide for simultaneously feeding different strips of material different distances.

A further object of the invention is to provide improved tripping mechanisms operable by the imprinting, punching, stamping or other apparatus with which the present feeding unit may be associated by which the operation of the feeding mechanism may be automatically initiated and the driving member automatically and instantly disconnected at the end of a predetermined feeding movement.

A further object of the invention is to provide in association with such unitary feeding mechanisms a strip cutting or breaking device by which succeeding imprinted forms may be severed from the supply strip.

A further object of the invention is to provide dual control means for adapting the mechanism to shorter length forms by effecting half cycle

operation of the feeding mechanism at the will of the operator.

A further object of the invention is to provide improved means for adjusting the aligning feed mechanism to insure presentation of the feeding forms in accurately registered relation with the imprinting mechanism.

A further object of the invention is to provide improved guide means for the form strips as to minimize resistance to their feeding movement.

A further object is to provide an independently actuated strip feeding mechanism which may be incorporated as a component part of an imprinting mechanism or operatively associated therewith as a separate unit under synchronized control by the imprinting mechanism.

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 drawings, 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 conventional type of addressing machine illustrating the association therewith of the feeding unit forming the subject matter of this invention.

Fig. 2 is a vertical sectional view of a portion of the imprinting apparatus showing the feeding unit in association therewith and the intermediate tripping connection by which the operation of the feeding unit is initiated in synchronized relation with the operation of the imprinting apparatus.

Fig. 3 is a top plan view of the feeding unit and a portion of the imprinting apparatus.

Fig. 4 is a similar view illustrating additional feeding means for simultaneously advancing an additional strip or strips at a different rate of speed.

Fig. 5 illustrates the driving gear trains between various operating parts of the feeding mechanism located on the outside left face of the unit as it appears in Figs. 1 and 3.

Fig. 6 is an elevation of the inside right end of the unit and is an enlargement of the tripping mechanism shown in Fig. 2.

Fig. 7 is a detail view partly in section of the mechanism illustrated in Fig. 6 viewed from the left thereof.

Fig. 8 is an elevation of the inside of the left end frame of the unit as it appears in Figs. 1 and 3 illustrating the timing mechanism by which the feeding means is automatically connected and disconnected at predetermined intervals. This view is the obverse of that shown in Fig. 5.

Fig. 9 is an elevation partly in section viewed from the left of Fig. 8.

Fig. 10 is a view similar to Fig. 8 showing the parts in different operative positions whereby the driving means is disconnected wherein in Fig. 8 the parts are shown interengaged as during the driving period.

Fig. 11 is a view similar to Fig. 9 wherein the section is taken in a slightly different plane.

Fig. 12 is a detail top plan view, partly in section, of the parts shown in Figs. 8, 9, 10 and 11.

Fig. 13 is an enlarged detail sectional view showing the relative relation of the driving and driven parts.

Fig. 14 is a skeletonized perspective view of the operating parts of the assembly in their cooperating relation.

Fig. 15 is a perspective view of the driving motor and mounting means disconnected from the structure.

Figs. 16 and 17 are respectively enlarged top plan view and side elevation of the pin type feeding devices and the strip guiding members and the pin type feeding devices associated therewith.

Fig. 18 is a perspective view of an addressing machine to which the present strip feeding means is applied by being mounted on top of the addressing machine table in which case the strip is advanced past the imprinting position in a direction the reverse of that illustrated in the preceding figures.

Fig. 19 is a vertical sectional view of the strip feeding and imprinting apparatus in the relation illustrated in Fig. 16.

Fig. 20 is a view quite similar to Fig. 2, but illustrating the advancement of the strip operated upon from a supply roll in lieu of from a zig-zag folded pack as shown in Fig. 2 and other figures, and also illustrating a modified form of cutoff device.

Fig. 21 is a detail front elevation partly in section of the mechanically operated cutoff device shown in Fig. 2.

Fig. 22 is a similar view of the electrically operated cutoff device illustrated in Fig. 20.

Fig. 23 is a detail view of the electric circuit closer and associated actuating means for the cutoff device illustrated in Figs. 20 and 22.

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

For illustrative purposes, but with no intent to unduly restrict or limit the scope or application of the invention it has been illustrated in association with an imprinting apparatus known commercially as an "Addressograph" which comprises a supporting stand 1 carrying a table 2 from which projects a vertical magazine *a* containing a stack of printing plates or stencils which are consecutively fed by a reciprocatory feeding slide *b* automatically actuated in properly timed sequence by motor actuated mechanism *c* located beneath the table 2 whereby the plates are singly presented beneath the depressible pressure head 4, in printing relation with successive portions of a continuous strip 3 of record material or series-connected forms intermittently advanced across the table 2 by the feeding mechanism forming the subject matter hereof, after which the plates are deposited through an opening in the table 2 into a receiving receptacle *d*. The printing head 4, is power operated and is timed to engage the strip 3 intermediate succeeding advance movements thereof by the strip feeding unit which forms the subject matter hereof. As shown in Fig. 1 of the drawings, there is mounted upon the table 2 of the addressing machine an elevated shelf or stand 5 to receive a packet 6 of record material or series connected detachable forms and with which are associated guide rollers 7 and 8 about which the material is directed from the supply packet 6 into imprinting position beneath the depressible head 4 and from which the strip is drawn over the table top 2 by the strip feeding unit.

Inasmuch as the addressing, imprinting, punching, or other strip treating apparatus with which the present feeding mechanism may be associated, per se, forms no part of the present

invention, the driving and timing mechanism pertaining to the imprinting head 4 has not been illustrated in detail other than to show a dependent arm 9, in Fig. 2, moving in unison with the imprinting head 4 which is utilized in the present instance to transmit tripping motion to the strip feeding mechanism.

The present strip feeding unit forming the subject matter hereof is an independent structure to be removably associated with the addressing machine 1 or any other analogous mechanism for operating successively upon a continuous strip of material to be advanced intermittently past the operating position. The conventional addressing machine illustrated in the drawings is provided with a rod 10 fixedly secured to the table 2 in parallel relation with the margin thereof. Such rod is utilized for locating the strip feeding unit in its operative relation with the addressing machine. However in the absence of such rod other locating and attaching means may be employed.

The strip feeding unit 11, in its preferred form as illustrated in the drawings, includes a base portion 12 supported upon relatively short legs 13 from each end of which arise frame standards 14 interconnected one to the other adjacent to their tops by a transverse frame bar 15 to thereby afford a substantially rigid frame structure. At the rear side the frame standards 14 are notched at 16 to receive the rod 10 connected in parallel relation with the margin of the table 2 of the addressing machine. Set screws 17 in the frame standards serve to removably secure the frame in its adjusted relation with said rod 10 engaged within the slots 16.

Journaled in the end frame or standards 14 and extending transversely of the strip feeding unit is a driven shaft 18 upon which are mounted for axial adjustment longitudinally of the shaft a pair of pin wheels 19 and the radial pins of which are progressively engageable in successions of spaced feed holes 20 in the margins of the strip 3. The pin wheel units 19 are mounted for unison rotation with the shaft 18 and are adjustable thereon relative to each other to accommodate such pin wheel feeding devices to strips 3 of different widths and to different paths of travel of such strip 3 across the table 2 whereby the imprinting may be impressed on any desired portion of the strip. The shaft 18 and pin wheel feed devices 19 carried thereby are intermittently rotated in alternation with the actuation of the imprinting head 4 through successive measured cycles of operation sufficient to advance the strip 3 exactly one form length or predetermined distance at each actuation.

For actuating the feed shaft 18 in synchronized relation with the operation of the imprinting head 4 there is mounted upon the unit a driving motor 21 which upon closing a switch in the motor control circuit is set in continuous operation. The motor 21 is coupled with a stud shaft 22 one end of which is provided with a bearing in a bracket 23 secured to the inner side of the frame standard 14 at the left hand end of the unit as viewed in Figs. 1 and 3. The other end of the driving stub shaft 22 has a journal bearing within a bushing 24 seated in the hub 25 of a disc 26 which in turn is journaled in a bearing member 27 mounted in the frame standard 14. The stub drive shaft 22 being coupled to the drive shaft of the motor 21 rotates continuously. It carries at mid-length a toothed wheel 28 rotating in a plane closely adjacent to the inner face of the disc 26. The toothed wheel 28 is preferably although not necessarily formed integral with the stub shaft 22 and is provided with a succession of square notches having parallel sides. Pivoted to the face of the disc 26 is a dog or pawl 29 having a square nose which corresponds to and is engageable in any one of the notches of the wheel 28 to operatively connect the disc 26 with the rotating wheel 28 upon the drive shaft 22 for unison rotation.

To accurately control and time the engagement and disengagement of the dog 29 with the toothed wheel 28 there are provided a pair of rock arms 30 and 31 disposed respectively in the planes of rotation of the disc 26 and toothed wheel 28. Each of these rock arms 30 and 31 is provided with a retractile spring 32 one end of which is connected to an extension 33 of the rock arm and the other end connected to a stud 34 upon the frame standard. The rock arm 30 is fixedly connected to a rock shaft 35 journaled in the frame standard 14 and extending across the unit while the companion rock arm 31 is loosely journaled on said rock shaft 35. The pawl or dog 29 is provided with a shoulder 36 into the path of which the loosely mounted rock arm 31 projects when in a depressed position. The engagement of the shoulder 36 with the rock arm 31 as the disc 26 rotates causes the dog 29 to be oscillated out of engagement with the toothed wheel 28 against the tension of a retracting spring 37 thereby releasing the driving engagement between the stub shaft 22 and the disc 26. At the same time the engagement of the shoulder 36 of the dog 29 with the rock arm 31 positively arrests the rotation of the disc 26 and holds it in a predetermined position. The engaged relation of the dog 29 with the toothed wheel 28 during the driving period is illustrated in Fig. 8 whereas in Fig. 10 the parts are shown in disengaged relation with the shoulder 36 of the dog 29 in engagement with the end of the rock arm 31 which forms a stop therefor. When the stop arm 31 is elevated to disengage the shoulder 36 of the dog 29 the spring 37 will draw the latter into engagement with the toothed wheel 28 and the disc 26 will be carried in unison with the wheel 28 until the shoulder 36 again engages the end of the stop arm 31 whereby the dog will be oscillated out of engagement and the disc arrested.

To effect such release of the driving dog 29 for engagement in the notched wheel 28 there is provided at the right hand end of the unit tripping mechanism for imparting a rocking motion to the shaft 35. At the right hand side of the unit interiorly of the upright standard 14 the rock shaft 35 carries a relatively short rock arm 38 connected by a link 39 with one arm of a pivoted bell crank lever 40 mounted in spaced relation beneath the rock shaft 35 upon the inner side of the frame standard 14. The other arm of the bell crank lever 40 is upturned into a path of a shoulder 41 upon a reciprocatory bar 42 connected by a link rod 43 with the dependent arm 9 of the imprinting apparatus which oscillates in unison with the imprinting head 4. The reciprocatory bar 42 rides upon a guide roller 44 pivoted to the inside of the frame upright 14 adjacent to which the bar is provided with an inclined cam surface 45. The reciprocatory bar 42 is yieldingly held in depressed position with its shoulder 41 aligned with the upturned arm of the bell crank lever 40 by a retractile spring 46.

As the imprinting head 4 is retracted after impressing the strip 3 such retractile movement

is transmitted through the dependent arm 9 to the link rod 43 thereby urging the bar 42 toward the right in Fig. 6 and causing engagement of the shoulder 41 with the upturned arm of bell crank lever 40 to effect an oscillatory movement of the bell crank lever which is transmitted through the link 39 to the rock arm 38 secured to the rock shaft 35. As the bar 42 continues to advance under influence of the imprinting machine arm 9 the cam 45 engaging with the roller 44 elevates the bar 42 against the tension of its retracting spring 46 and causing the shoulder 41 to pass over the top of the engaged arm of the bell crank lever 40 thereby releasing the bell crank lever and allowing the latter together with the link 39 and rock arm 38 and the rock shaft 35 on which the arm 38 is mounted to return to normal under influence of the retractile spring 32 connected to the rock arm 30 which as before stated is fixedly secured to the rock shaft 35. The rock arm 30 is provided with a laterally extending lip or extension 47 which projects beneath the loosely pivoted stop arm 31. Upon oscillation of the rock arm 30 incident to the rocking movement of the shaft 35 as before mentioned the stop arm 31 is lifted therewith out of engagement with the shoulder 36 of the dog 29 thereby permitting the latter to reengage the notched wheel 28. The rock arm 30 also carries a roller 49 which rides upon the periphery of the disc 26 until it encounters a notch or depression 50 therein as the disc completes one complete rotation or a half rotation as will be later referred to. So long as the roller 49 is riding upon the periphery of the disc 26 the stop arm 31 is held in elevated position out of the path of the shoulder 36 of the dog 29. However as the disc completes its rotation the roller 49 drops into the notch or depression 50 and thereby allows the stop arm 31 to descend under influence of its retractile spring 32 into the path of the shoulder 36, the engagement of which with the stop arm serves to oscillate the dog 29 out of driving engagement with the notched wheel 28 and the disc and associated parts will come to rest. The disc 26 is thus intermittently actuated through a complete rotation, or through a half rotation as hereinafter mentioned, and positively arrested at the end of such movement. This accurately measured movement of the disc 26 synchronized with the actuation of the imprinting apparatus is transmitted to the feed shaft 18 and pin wheels 19 through a suitable gear train. Such gear train as is illustrated in Fig. 5 includes a driving gear pinion 51 secured upon a reduced portion of the hub 25 of the disc 26 at the outer side of the frame standard 14. The gear pinion 51 intermeshes with an idler pinion 52 carried upon a swinging arm 53 mounted concentric with the feed shaft 18 and intermeshing with a driven gear pinion 54 upon such feed shaft. The pinion carrying arm 53 includes a slotted segment portion 55 within the slot of which engages a clamp bolt 56 to secure the swinging arm 53 in any position of oscillatory adjustment. The driving pinion 51 is removably secured upon the extremity of the disc hub 25 by a removable split collar 59 whereby other driving pinions of different diameters may be substituted therefor to effect differential speeds of the driving and driven elements. By interchanging driving gear pinions 51, of different size, with any of which the idler pinion 52 may be intermeshed by corresponding swinging adjustment of the carrier arm 53, the feed shaft 18 and pin wheels 19 may be actuated at different speeds to enable the advancement of the strip 3 different form lengths during a given time interval between succeeding impressions of the imprinting head 4. Whatever the lengths of the forms may be or whatever distance it is desired to advance the strip 3, such movement must be effected during the time interval determined by the operation of the imprinting apparatus. Therefore to advance the strips greater distances to accommodate increased lengths of forms the speed of the feed shaft and pin wheels must be correspondingly increased by substitution of a driving pinion 51 of proper size.

For feeding half length forms known as "split tickets" the rocker arm and stop arm construction by which the engagement and disengagement of the dog 29 is controlled may be duplicated at the opposite side of the disc as is shown in Figs. 8 and 10. The arms 30 and 31 and retractile spring 32 are duplicated in reverse relation as indicated at 30*a*, 31*a*, and 32*a*. The rocker arms 31 and 31*a* are interconnected for unison movement upon oscillation of the rock shaft 35 by an interconnecting link 60. The link 60 has a slotted connection with the rocker arm 30*a* enables the arm to be held in an inoperative position against the tension of its retractile spring 32*a* by a manually adjustable cam member 61 mounted in the bracket 23. By adjusting this cam member 61 from the position shown in Fig. 8 to the full line shown in Fig. 10 the auxiliary control devices are held depressed against the retractile tension of the spring 32*a* and are ineffective upon half rotation of the disc 26. However when released for operation as shown in Fig. 8 the roller 49*a* carried by the arm 30*a* enters the depression 50 in the margin of the disc 26 when said disc has made a half rotation thereby allowing the stop arm 31*a* to project into the path of the shoulder 36 of the dog 29 the engagement of which with the stop arm effects the disengagement of the dog from the notched wheel 28 and thereby arrests the disc at the end of a half rotation. The operation is otherwise as before described and the half rotation of the disc 26 is transmitted through the gear train to the feed shaft 18 and pin wheels 19 to advance the strip 3 a lesser distance than that effected by complete rotation of the disc 26.

The feeding mechanism as heretofore described may be utilized for feeding either a single strip 3 or for feeding multiple superposed strips upon which the impression is manifolded by the imprinting apparatus. The engagement of the pin wheel members 19 in the registering feed holes 20 of superposed strips will feed such strips in unison. A suitable receiving compartment is preferably provided upon the base 12 of the unit to receive the advanced portion of the strip or strips. To meet certain conditions of use it may be desirable to manifold the impression upon strips which are advanced differentially. For example the impressions may be widely spaced upon one of the strips a form length apart whereas the same impressions may be produced upon an accompanying strip in more closely spaced relation for tally or checking purposes. Such superposed strips may be of the same or different widths. In the event that a differentially travelling strip is desired brackets 62 may be provided for attachment to the frame upright 14. Suitable bearings are provided in the bracket 62 for a secondary feed shaft 63 which carries additional pin wheel feeding devices 64. This

auxiliary feeding shaft 63 and pin type feeding devices 64 are substantially duplicates of the feed shaft 18 and the feeding devices 19 but are arranged in offset parallel relation therewith. Such auxiliary feeding device is actuated through a suitable gear train from the driving pinion 51 as is shown in Fig. 5. In this instance an idler gear 65 carried upon an adjustable carrier arm 66 intermeshes with the driving pinion 51 and in turn drives a gear pinion 67 concentric with the carrier arm 66. The gear 67 meshes with a gear 68 which in turn intermeshes with a gear 69 upon the auxiliary feed shaft 63. The gear 65 is removably carried upon the swinging arm 66 and other gears of different size may be interchanged therewith to vary the speed ratio of the auxiliary feeding shaft 63 and pin wheels 64.

For the purpose of holding the strips 3 in a flat plane of travel and prevent buckling guide bars 70 are provided which extend in overlapping relation with the margins of the strips. The guide bars 70 are adjustably mounted upon rods 71 extending transversely of the frame and are curved at their forward ends substantially in conformity with the pin wheel feeding devices 19 and 64. These guide bars 70 are slotted coincident with the feeding devices to provide clearance for the feeding pins which project through the holes 20 in the strip 3 and thence into the slots of the guide bars 70. These guide bars therefore loosely retain the strips in engagement with the pins without, however, imposing thereon any friction or restrictive pressure which would tend to retard the advancement of the strips. Throughout their length the guide bars 70 are provided with laterally extending ears 72 which are depressed slightly out of the plane of the bars and rest upon the surface of the table 2 of the imprinting apparatus to hold the bars in slightly elevated relation above the plane of travel of the strip 3 to minimize frictional resistance thereto. As the pin type feeding devices are adjusted to and fro on the feed shafts 18 and 63 to accommodate material of different widths the guide bars 70 are correspondingly adjusted on their rods 71 in registry with the feeding devices and in overlapping relation with the margins of the strips.

In lieu of elevating the guide bars 70 to minimize friction and resistance to travel of the strips thereunder, such guide bars may be of aluminum fiber or other relatively light material which may be permitted to rest directly upon the traveling strips without exerting appreciable retarding influence thereon.

In the event that it is desired to sever the imprinted forms as they are advanced past the feeding devices a cutting or breaking device may be associated with the feeding unit as is shown in Fig. 2. To support such cutter, a pair of interconnected spaced parallel rods 73 project horizontally from the upright frame standards 14 upon which is adjustably mounted a cutter head 75. The cutter head 75 embodies a vertically movable knife 76 which may be operated either mechanically from a moving part of the feeding unit or may be operated by electromagnetic means controlled by the operation of the timed feeding mechanism to shear the imprinted forms upon predetermined division lines or in event the strip 3 is provided with transverse weakened lines this cutter may be adapted to break the strip upon perforated or otherwise weakened division lines thereof.

While various operating means may be employed for mechanically actuating the cutoff knife 76 in timed relation with the operation of the imprinting and feeding mechanisms there is shown in Fig. 2 a lever shaft 66 which carries at its opposite end a rock arm 85*a* corresponding to the upper arm of the lever 85. The upper end of the lever 85 and corresponding rock arm 85*a* extend beneath studs 87 carried by the vertically movable knife 76. Upon oscillation, the lever 85 elevates the knife against the resistance of a retracting spring 88 to permit the form strips to be advanced beneath the knife by the feeding devices.

The knife elevating lever 85 extends into the path of an extension 89 upon the reciprocatory trip bar 42. The advancement of the trip bar 42 by the actuation of the imprinting apparatus oscillates the lever 40 to trip the strip feeding mechanism and by the same advance movement it oscillates the lever 85, to elevate the knife and hold it in its elevated position until the trip bar 42 is again retracted. In the mean time the feeding mechanism will have been operated through its complete cycle which is of relatively short duration and the record material will have been advanced a form length beyond the plane of the knife 76 which upon its descent will sever the advanced portion of the strip.

In lieu of the mechanical actuation of the cutoff knife 76 electro-magnets or solenoids 90 may be employed to retract and hold the knife in its elevated position. The magnets or solenoids 90 are included in an electrical circuit 91 having therein a circuit breaker comprising contacts 92 controlled by the trip bar 42. Upon advancement of the trip bar 42 under influence of the imprinting apparatus, the contacts are permitted to separate, thereby opening the circuit and permitting the cutoff knife to descend. The circuit is again closed by the retraction of the trip bar thereby re-energizing the electro-magnets 90 to retract the knife 76 preparatory to the next operation.

Any form of motor drive may be employed. While the feeding device may be actuated from a motor common to the imprinting mechanism of the addressing machine or associated apparatus. While the stub drive shaft 22 of the strip feeding apparatus may be driven from a motor mounted on the imprinting or other associated mechanism and common to such associated apparatus and the strip feeding mechanism there is preferably provided a separate driving motor mounted on the strip feeding mechanism and driving such feeding devices wholly independently of the imprinting apparatus. The relative position of the motor is illustrated in Figs. 3 and 4. The motor shaft is preferably driven at a somewhat reduced rate of rotation by suitable reducing gear mechanism within the gear box 77 connected with the motor casing. The motor casing and gear box are provided with perforate mounting arms 78 for engagement of short supporting shafts 79 projecting inwardly from the frame upright. The head of the motor drive shaft is slotted at 80 for clutch engagement with a corresponding key or rib 81 upon the stub shaft 22 of the feeding apparatus.

In the relation of the feeding mechanism and the imprinting apparatus illustrated in Figs. 18 and 19 the strip feeding mechanism is the same as before described, but is mounted in a frame 82 of modified form which is adapted to rest upon the table of the addressing machine immediately over the imprinting apparatus in lieu of the

supply packet stand 5 shown in Figs. 1 and 2. In such arrangement the supply packet is located in a holder 83 at the front of the imprinting apparatus table in the position occupied by the strip feeding mechanism as shown in Figs. 1 to 4. The strip is drawn therefrom in a reverse feeding direction across the table and under guide rollers 84 and thence to the strip feeding mechanism forming the subject matter hereof, mounted over the imprinting means. That is to say the strip supply holder and feeding mechanism are transposed and the strip advanced in a direction reverse to that previously described.

In such position over the imprinting head, the motor driven feeding mechanism is tripped in synchronism with the imprinting apparatus in quite the same manner as before described. As is shown in Fig. 19 the link 39 connected with the rock arm 38 is somewhat elongated, and connected at its lower end to a trip arm 40*a* pivoted to the frame upright 14, having at its extremity a shoulder which projects into the path of a coacting shoulder 41*a* upon a reciprocatory trip bar 42*a* connected with a suitably moving part of the imprinting mechanism whereby the operation of the strip feeding mechanism is initiated in timed relation with the operation of the imprinting apparatus.

In lieu of zig-zag folded supply packets of material, the material to be fed may be supplied from a roll as shown at 85 in Fig. 20 mounted in the supply stand 5 and drawn therefrom about the associated guide rollers 7 and 8 and past the imprinting position by the feeding mechanism as before described.

Cross reference is made to copending application Serial No. 683,612, filed August 4, 1933, and also to Serial No. 116,553, filed December 18, 1936, both of which are for analogous subject matter.

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 strip feeding unit for use with a strip imprinting mechanism wherein a continuous series of interconnected record forms receive successive impressions, from an impression imparting mechanism including a feeding means for the record forms intermittently actuated through definitely timed periods in a continuous cycle with the imprinting mechanism for advancing the strip measured distances and arresting the advancement thereof with successive prescribed areas of the strip in impression receiving position, independent actuating means for said impression imparting mechanism and said feeding means, and means whereby the operation of the impression imparting mechanism is effective to initiate operation of the record form feeding means.

2. A strip feeding unit for use with a strip imprinting mechanism wherein a continuous series of interconnected record forms receive successive impressions, from an impression imparting mechanism including a feeding means for the record forms intermittently actuated through definitely timed periods in a continuous cycle, with the imprinting mechanism and driving means for the strip feeding means independently of the imprinting mechanism for advancing the strip measured distances and arresting the advancement thereof with successive prescribed areas of the strip in impression receiving position, and tripping means whereby the imprinting mechanism in its operation is effective to initiate operation of the feeding means after impression imparting movement thereof to feed successive record forms into impression receiving position.

3. A strip feeding unit for use with a strip imprinting mechanism wherein a continuous series of interconnected record forms receive successive impressions, from an impression imparting mechanism including a feeding means for the record forms intermittently actuated through definitely timed periods in a continuous cycle with the imprinting mechanism for advancing the strip measured distances and arresting the advancement thereof with prescribed areas of the strip in impression receiving position, a continuously operating driving member for actuating the feeding means independently of the operation of the imprinting mechanism, and means for automatically connecting and disconnecting the driving member and the feeding mechanism at timed intervals under control of the impression imparting mechanism whereby the feeding mechanism will be intermittently actuated through definite periods of operation and arrested with a record form in registry with the imprinting mechanism.

4. A strip feeding device for use with a strip imprinting mechanism wherein a continuous series of interconnected record forms receive successive impressions, from an impression imparting mechanism including a feeding means for the record forms intermittently actuated through definitely timed periods in a continuous cycle with the imprinting mechanism for advancing the strip measured distances and arresting the advancement thereof with prescribed areas of the strip in impression receiving position, a continuously operated driving member for the feeding means, and means responsive to operation of the imprinting mechanism for automatically connecting and disconnecting the driving member and the feeding mechanism at timed intervals whereby the feeding mechanism will be intermittently actuated through definite periods of operation and arrested with a record form in registry with the imprinting mechanism.

5. A strip feeding device for use with a strip imprinting mechanism wherein a plurality of superposed continuous series of interconnected record forms receive predetermined impressions, from an impression imparting mechanism, including registering and aligning feeding means for the record forms intermittently actuated through definitely timed periods in a continuous cycle with the imprinting mechanism for advancing the strip measured distances and arresting the advancement thereof with prescribed areas of the strip in impression receiving position, and means for feeding different strips of

the plurality of superposed strips different distances at the limit of which corresponding portions of the superposed strips are presented in registering aligned relation at the imprinting position.

6. A strip feeding device for use with a strip imprinting mechanism wherein a plurality of superposed continuous series of interconnected record forms receive successive impressions, from an impression imparting mechanism including a feeding means for the record forms intermittently actuated through definitely timed periods in a continuous cycle with the imprinting mechanism for advancing the strip measured distances and arresting the advancement thereof with prescribed areas of the strip in impression receiving position, means for feeding different strips of the plurality of superposed strips different distances, means for registering corresponding portions of the superposed strips with each other at the limit of their feeding movement and selective control means for adapting the feeding means to record forms of different lengths by effecting variations in the operating cycle of the feeding means.

7. A strip feeding device for use with a strip imprinting mechanism wherein a continuous series of interconnected record forms having marginal perforations receive successive impressions, from an impression imprinting mechanism including a pin-type feeding means for the record forms intermittently actuated through definitely timed periods in a continuous cycle with the imprinting mechanism, a feeding table over which the record forms are advanced, and an elongated guide arm mounted contiguous to the pin wheel feeding means and extending in overlapping relation with the table substantially coincident with the margin of the path of travel of the record forms thereover.

8. A strip feeding device for use with a strip imprinting mechanism wherein a continuous series of interconnected forms receive successive impressions, from an impression imparting mechanism, having actuating means therefor including means for feeding the forms measured distances into impression receiving position for arresting the advancement thereof with successive prescribed areas of the strip in impression receiving position, an additional actuating means for said feeding means, and means whereby the function of one of said actuating means is dependent upon the operation of the other actuating means.

9. A strip feeding device for use with a strip imprinting mechanism wherein a continuous series of interconnected record forms receive successive impressions, from an impression imparting mechanism, having actuating means therefor including means for feeding the forms measured distances into impression receiving position for arresting the advancement thereof with successive prescribed areas of the strip in impression receiving position, an additional actuating means for driving said feeding means independently of the imprinting mechanism, timing means for producing synchronized operation of the said two actuating means, and means whereby the imprinting mechanism in its operation functions to initiate operation of the feeding means after impression imparting movement thereof to feed successive record forms into impression receiving position.

10. A strip feeding means for an apparatus for acting intermittently upon a continuous strip of material intermittently advanced past an operation position, comprising a separate unit for association therewith, including a supporting frame supporting strip feeding mechanism and actuating means therefor, independently of the associated apparatus, strip feeding devices mounted therein, driving means for actuating the strip feeding devices independently of the associated apparatus for intermittently advancing the strip measured distances and arresting the advancement thereof with successive prescribed areas of the strip in operation position, means for intermittently operatively connecting the driving means and strip feeding devices, and control means therefor actuated by a moving part of the associated mechanism to initiate the operation of the strip feeding devices for operation through a predetermined range of strip feeding movement.

11. A strip feeding means for an apparatus for acting intermittently upon a continuous strip of material intermittently advanced past an operating position, including a feeding table over which the strip is advanced, a pin wheel feeding device mounted substantially in tangential relation with the surface plane of the table, an elongated guide arm mounted contiguous to the pin wheel feeding device and extending in overlapping relation with the table substantially coincident with the margin of the path of travel of the strip thereover, and means for supporting the elongated guide arm in slightly elevated relation above the table.

12. The combination with an imprinting mechanism including means for successively feeding a series of printing plates into imprinting position, presser device for producing an impression therefrom and an actuating motor for operating the printing plate feeding means and presser device in a timed cycle of operation, of strip feeding means for intermittently advancing a continuous strip of record material past the imprinting position measured distances in timed relation with the actuation of the presser device and plate feeding means and arresting advancement thereof with successive prescribed areas of the strip in impression receiving position, a separate actuating motor for the strip feeding means, and tripping means actuated by the imprinting mechanism for setting the feeding means in operation at a predetermined point in the cycle of operation.

13. The combination with an imprinting mechanism including means for successively feeding a series of printing plates into printing position, presser means for taking an impression therefrom, and actuating means for operating said mechanism through a timed cycle of operation, of a strip feeding apparatus for feeding a continuous impression receiving strip past an imprinting position, actuating means for advancing the strip through a step by step movement alternately with the operation of the imprinting mechanism measured distances to present successive prescribed areas of the strip in impression receiving position and tripping means controlled by the imprinting means for initiating the operation of the feeding apparatus in timed relation with the operation of the imprinting mechanism.

14. A strip feeding means for use in association with an imprinting mechanism for successively imprinting a series of record forms, including form feeding means for advancing a series of forms successively into imprinting position of said mechanism with a step-by-step move-

ment and arresting advancement thereof with a form in imprinting position, of separate actuating means for the imprinting mechanism and form feeding means, and control means governed by the operation of the imprinting mechanism for initiating the operation of the form feeding means, in synchronized relation with the operation of the imprinting mechanism.

15. A strip feeding means for use in association with an imprinting mechanism for successively imprinting a series of record forms, including form feeding means for advancing a series of record forms successively into impression receiving position relative to said imprinting mechanism with a step-by-step movement and arresting advancement thereof with a form in imprinting position, normally ineffective motion transmitting means independent of the imprinting mechanism for actuating the form feeding means in timed relation with the operation of the imprinting mechanism and control means governed by the operation of the imprinting mechanism for initiating the operation of the independently actuated form feeding means at a predetermined time in the cycle of operation of the imprinting mechanism.

16. A strip feeding means for use in association with an imprinting mechanism including intermittently operated impression making means having actuating means for operating the imprinting mechanism through a predetermined cycle including operation of a strip feeding apparatus for intermittently advancing a strip of record material through a step by step movement past the impression receiving position of the imprinting mechanism to receive successive impressions thereon, and actuating means independent of the imprinting mechanism for the strip feeding apparatus for advancing the strip in timed relation with the operation of the imprinting mechanism during a predetermined portion only of the operative cycle thereof.

17. The combination with an imprinting apparatus including mechanism for successively advancing a series of printing plates into imprinting position, presser means cooperating with each advanced plate to produce an impression therefrom on suitably positioned record forms and actuating means for operating said imprinting apparatus through a predetermined cycle of operation, of record form feeding means for successively advancing a series of record forms into impression receiving position, actuating means independently of the actuating means of the imprinting apparatus for the form feeding means and intermediate control means governed by the operation of the imprinting apparatus for initiating the operation of the form feeding means.

18. A strip feeding unit for use with a strip imprinting mechanism wherein a continuous record strip receives successive impressions, from an impression imparting mechanism including a feeding means for advancing selected portions of the strip into registry with the imprinting mechanism, registering and aligning means therefor, actuating means for intermittently operating the imprinting means and the feeding means, and selective control means for adapting the feeding means to the advancement of different lengths of the continuous strip by effecting variations in the operating cycle of the strip feeding means.

19. A strip feeding unit for use with a strip imprinting mechanism wherein a continuous record strip receives successive impressions from an impression imparting mechanism comprising a feeding means for advancing selected portions of the strip into registry with the imprinting mechanism, registering and aligning means therefor, actuating means for intermittently operating the imprinting means and the feeding means, including a continuously operating driving member for the feeding means, and means responsive to operation of the imprinting mechanism, for automatically connecting and disconnecting the driving member and the feeding mechanism at timed intervals whereby the feeding mechanism will be intermittently actuated through definite periods of operation and arrested with a selected portion of the continuous strip in registry with the imprinting mechanism.

20. A strip feeding unit for use with a strip imprinting mechanism wherein a continuous series of interconnected record forms receive successive impressions, from an impression imparting mechanism including a feeding means for the record forms intermittently actuated through definitely timed periods in a continuous cycle with the imprinting mechanism for advancing the strip measured distances and arresting the advancement thereof with successive forms in impression receiving position, and means for severing succeeding imprinted record forms from the continuous series of interconnected forms, registering and aligning means for accurately arresting particular areas of the strip in predetermined relation with the impression mechanism at the end of each feeding movement, and actuating means for the strip feeding means controlled by operation of the impression imparting mechanism.

21. A strip feeding unit for use with a strip imprinting mechanism wherein a plurality of superposed continuous series of interconnected record forms receive successive impressions, from an impression imparting mechanism including a feeding means for the record forms intermittently actuated through definitely timed periods in a continuous cycle with the imprinting mechanism for advancing the strip measured distances and arresting the advancement thereof with successive forms in impression receiving position, means for feeding different strips of the plurality of superposed strips different distances, registering and aligning means for registering and aligning corresponding portions of the strips with the impression mechanism at the end of each feeding movement, means whereby the operation of the impression imparting means is effective to initiate operation of the record form feeding means, and selective control means for adapting the feeding means to record forms of different lengths by effecting variations in the operating cycle of the feeding means.

22. The combination with an imprinting apparatus wherein a continuous strip of impression receiving material is progressively advanced past an imprinting position where it receives at spaced intervals succeeding legends predetermined by a succession of legend determining members advanced seriatim from a source of supply into operative position, of a separate unitary feeding apparatus for aligning and advancing superposed strips of continuous form stationery past the imprinting position and separate driving means for independently actuating the imprinting apparatus and the feeding apparatus alternately, and intermediate control means for effecting intermittent operation of the respective apparatus in timed sequence with each other.

23. An apparatus as specified in claim 22 in which the feeding means comprises movably

mounted feeding pins adapted to engage perforations provided in succeeding form lengths of stationery.

24. An apparatus as specified in claim 22 in which the feeding means comprises a series of traveling feeding pins adapted to progressively engage feeding perforations provided in succeeding form lengths of stationery and a locking device for locking the feeding pins against travel movement while the presser mechanism is in engagement with the stationery.

25. An apparatus as specified in claim 22 in which the feeding means comprises a plurality of traveling feeding pins adapted to progressively engage longitudinally spaced perforations in the stationery strips, actuating means for advancing the feeding pins in but one direction and means for locking the feeding pins in their advanced position while the presser mechanism is in engagement with the stationery.

26. In an apparatus of the character described wherein a continuous series of interconnected record forms having longitudinally spaced perforations receive a succession of longitudinally spaced impressions, a feeding table over which the record forms are advanced, an impression imprinting mechanism and a pin wheel feeding device engageable in the perforations of the record forms mounted in substantially tangential relation with the surface plane of the table, means for intermittently actuating the pin wheel through definitely timed periods in a continuous cycle with the imprinting mechanism, and an elongated guide arm mounted contiguous to the pin wheel feeding device and extending in overlapping relation with the table substantially coincident with the margin of the path of travel of the record forms thereover.

27. In an apparatus of the character described wherein a continuous series of interconnected forms receive a succession of longitudinally spaced impressions, an impression imparting mechanism, driving means therefor, feeding means for advancing the forms measured distances to present predetermined spaced areas thereof in an impression receiving position, a separate driving means for independently actuating said feeding means, and timing means for producing synchronized operation of the said separate driving means.

28. The combination with an apparatus for successively acting upon a strip of material which is intermittently advanced past an operating position, of a separable unitary strip feeding mechanism including a pin type feeding device having positive engagement with the strip for advancing it predetermined measured distances past the operating position of said first mentioned apparatus and arresting the strip on a prescribed area thereof as in registry with the operating position, normally disconnected driving means therefor, intermittently engageable coupling means for interconnecting the pin type feeding device with the driving means for actuation through a measured cycle of operation, means for automatically disconnecting the driving means at the completion of a predetermined range of operation, and tripping means controlled by the associated apparatus for acting upon the strip for effecting the engagement of such coupling means in alternating timed relation with the action of said apparatus upon the strip.

29. A strip feeding unit for association with any one of several independently operable mechanisms for acting successively upon a strip intermittently advanced past an operating position of the associated mechanism by the strip feeding unit for intermittently advancing the strip measured distances and arresting the advancement thereof with successive prescribed areas of the strip in operation position, including a supporting frame wherein the strip feeding mechanism is mounted independently of the strip treating mechanism with which it may be associated, a pin type feeding device for positive engagement with the strip to advance the strip past the operating position of the associated mechanism, driving means therefor, an automatically engageable and disengageable coupling means for intermittently connecting the pin type feeding with the driving means, tripping mechanism by which the intercoupling of the driving means and pin type feeding device is initiated, an operative interconnection between the tripping means and the associated mechanism by which the tripping mechanism is actuated in timed relation with the operation of the associated mechanism, and means for effecting the disconnection of the coupling means upon the completion of a feeding action of predetermined extent.

30. A strip feeding unit for association with any one of several independent mechanisms for acting upon a strip of material intermittently advanced past an operating position of said mechanism by the operation of the strip feeding unit for intermittently advancing the strip measured distances and arresting the advancement thereof with successive prescribed areas of the strip in operation position, including a supporting frame independent of the associated mechanism, an intermittently operable feeding device carried thereby for engagement with the strip, driving and driven elements mounted in said frame with the driven element of which the feeding device is operatively connected, a non-repeat coupling means for operatively interconnecting the driving and driven elements for actuating the feeding device through a predetermined range of feeding movement, and for automatically arresting it at the completion thereof, and tripping means controlled by the associated mechanism for initiating the operation of the non-repeat coupling means in alternation with the operation of such associated mechanism.

31. A unitary strip feeding apparatus for association with any one of several mechanism for acting upon a strip of material intermittently advanced past an operating position by the strip feeding apparatus for intermittently advancing the strip measured distances and arresting the advancement thereof with successive prescribed areas of the strip in operation position, a supporting frame for strip feeding means wholly separate from the associated mechanism, a revoluble feed shaft therein, a pair of pin wheel devices axially adjustable upon the feed shaft but revoluble therewith and engageable in spaced holes in the strip as it passes from the associated mechanism for drawing the strip past the operating position thereof, driving and driven elements mounted in said frame, a gear train including at least one gear wheel which is interchangeable with other gear wheels of different size for transmitting motion from the driving element to the feed shaft at different rates of speed, intercoupling means for intermittently connecting the driving and driven members for unison rotation, means for effecting the disconnection of the driving and driven elements at the completion of a predetermined range of actuation of

the pin wheel feeding devices, and tripping means operated by the associated mechanism for initiating the interconnection of the driving and driven elements in synchronized relation with the operation of said associated mechanism.

32. In a strip feeding unit for association with any one of several independent mechanism which act upon continuous strips of material intermittently advanced past an operating position by the strip feeding unit, a main frame including a base, upright standards, pin wheel feeding devices mounted upon the feed shaft for unison rotation but axially adjustable thereon, driving and driven elements mounted in said frame, a gear train connecting the driven element and feed shaft for unison rotation at predetermined relative rates of speed, the driving elements including a notched wheel rotating in unison therewith, the driven element including a rotary disc contiguous to the notched wheel, a pawl carried by the disc and intermittently engageable with the notched wheel, a stop member movable into and out of the path of travel of the pawl and engageable therewith to withdraw the pawl from engagement with the notched wheel, a control member therefor riding upon the periphery of the rotary disc and by its fluctuations raising and lowering the stop into and out of the path of travel of the pawl, the disc having a peripheral notch therein into which the control member descends to enable the stop to project into the path of the pawl to effect its disengagement, said stop also arresting the disc by its engagement with the pawl carried thereby, and tripping means actuated by a moving part of the associate mechanism for lifting the control member out of the notch in the disc and thereby disengaging the stop from the pawl to permit reengagement thereof with the notched wheel.

33. In a unitary strip feeding device for association with any one of several mechanisms for acting upon a continuous strip of material intermittently advanced past an operating position by the strip feeding unit for intermittently advancing the strip measured distances and arresting the advancement thereof with successive prescribed areas of the strip in operation position a supporting frame wholly separate from and supporting strip feeding means mounted therein, intermittently operable actuating means for the strip feeding means including driving and driven elements mounted in said frame, intercoupling means for connecting the driving and driven elements, tripping mechanism operated by a moving part of the associated mechanism for initiating the interconnection of the driving and driven elements, and means for automatically disconnecting such elements after a predetermined period of operation.

34. A unitary strip feeding apparatus for association with any one of several mechanisms for acting upon a continuous strip of material intermittently advanced past an operating position by the strip feeding apparatus for intermittently advancing the strip measured distances and arresting the advancement thereof with successive prescribed areas of the strip in operation position, including a supporting frame separate from and supporting strip feeding means independently of the associated mechanism, pin type feeding devices mounted therein, actuating means mounted in said frame for intermittently driving the pin type feeding devices through predetermined ranges of feeding motion, tripping means for initiating the feeding operation of said pin wheel devices, and an operative connection between the tripping means and the associated mechanism by which the operation of the strip feeding unit is synchronously controlled by the operation of the associated mechanism.

35. In a strip feeding apparatus of the character described, strip feeding means for intermittently advancing a strip of material past an operating position, driving and driven elements therefor, a notched wheel rotating with one of said driving elements, a disc rotating with the other element in closely adjacent plane of rotation to that of the notched wheel, a pawl carried by the disc and having driving engagement with the notched wheel, a pair of rock arms disposed in the planes of rotation of the disc and notched wheel, one of said rock arms riding upon the periphery of the disc and engageable in a notch therein to permit change of position of the rock arm, the second rock arm being engageable with the pawl when in a depressed position to dislodge the pawl from the notched wheel and arrest the rotation of the disc, said rock arms having interengagement one with the other whereby the disc engaging arm will hold the pawl engaging arm in inoperative position during the rotation of the disc and permit its engagement with the pawl only when the former engages in a notch in the disc, and means operated by a moving part of the associated mechanism for lifting the disc engaging arm out of the notch in the disc.

36. A unitary strip feeding apparatus for intermittently advancing a continuous strip past an operating position of an independent associate mechanism through measured distances and arresting its advancement when a prescribed area thereof is in registry with said operation position, comprising a frame supporting strip feeding mechanism wholly independently of the mechanism with which the unit may be associated, pin type feeding devices mounted in the frame, driving means for the pin type feeding devices also mounted in said frame and intermittently operably engageable with and disengageable from the pin type feeding devices, intercoupling means connecting the driving means with the pin type feeding devices for operation through predetermined range of feeding movement, and means actuated by a moving part of the associated mechanism for initiating the operation of the pin type feeding devices in timed relation with the operation of such associated mechanism.

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