April 5, 1938. J. R. JONES ET AL 2,112,849

REPRODUCTION APPARATUS

Filed Feb. 24, 1936 5 Sheets-Sheet 1

Fig. 1.

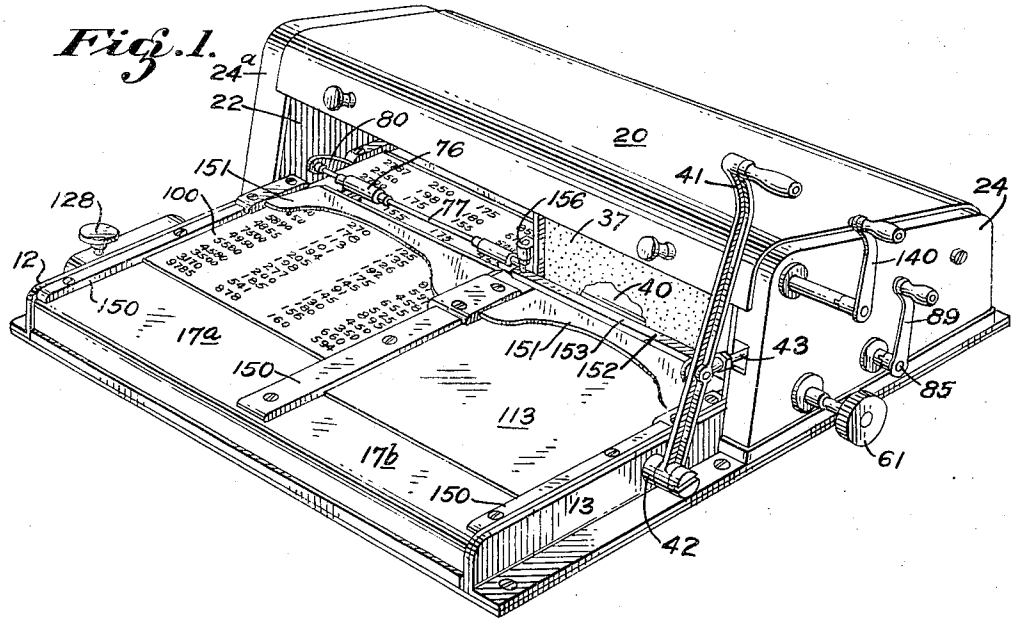
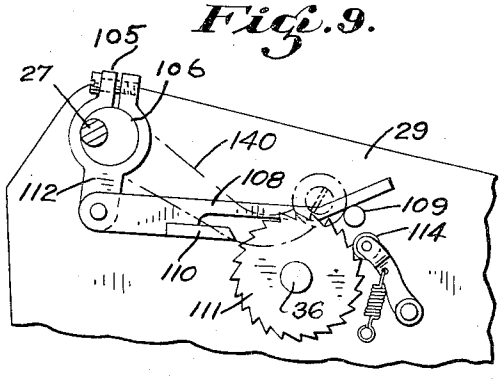


Fig. 9.



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REPRODUCTION APPARATUS

Filed Feb. 24, 1936 5 Sheets-Sheet 2

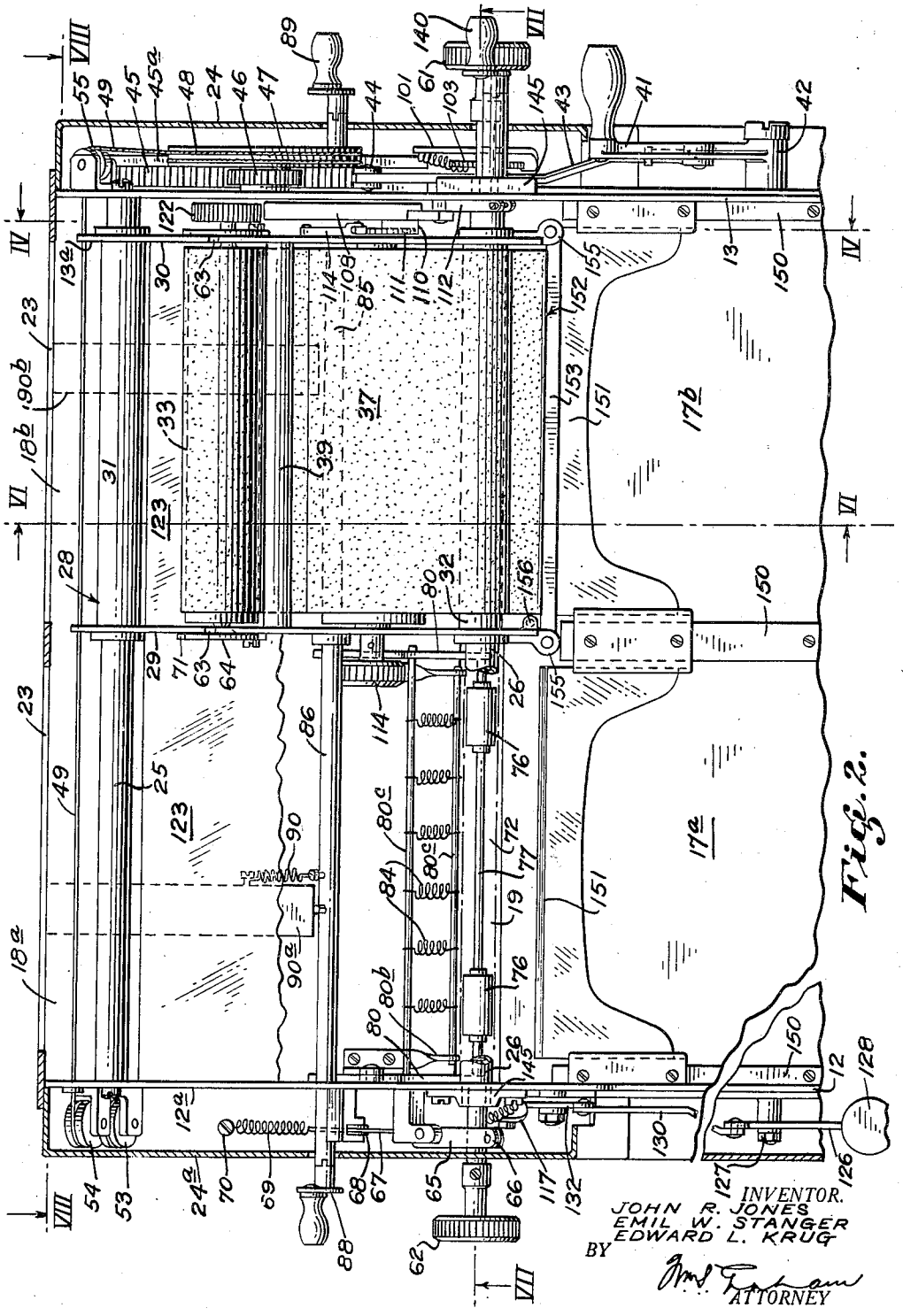


Fig. 2.

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REPRODUCTION APPARATUS

Filed Feb. 24, 1936 5 Sheets-Sheet 3

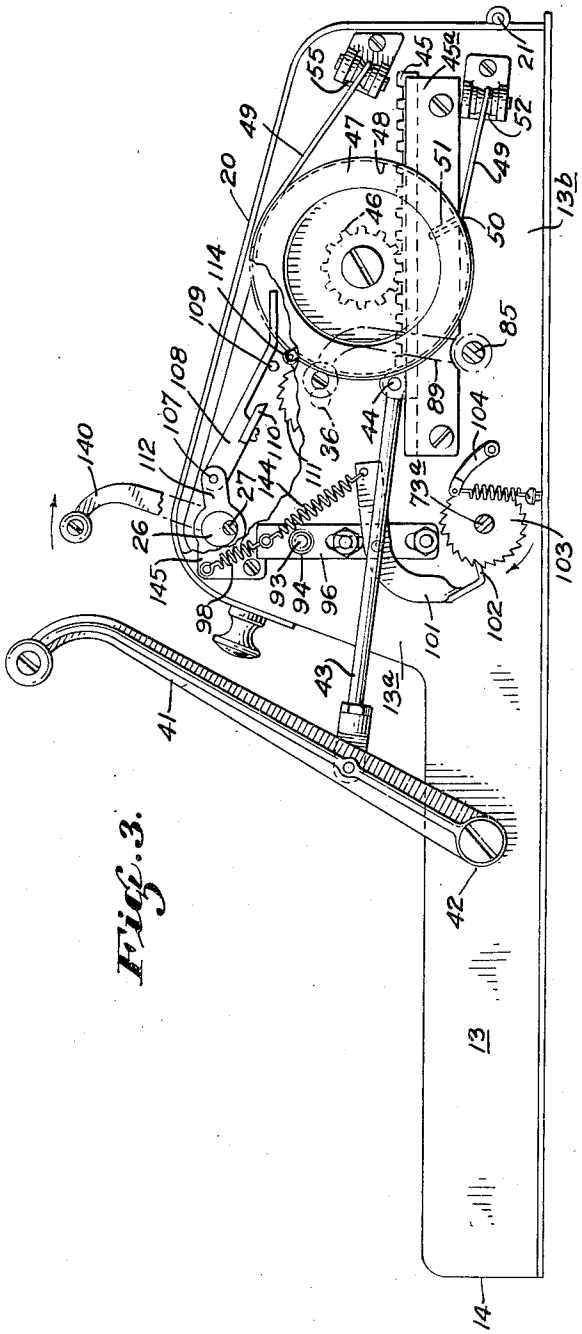


Fig. 3.

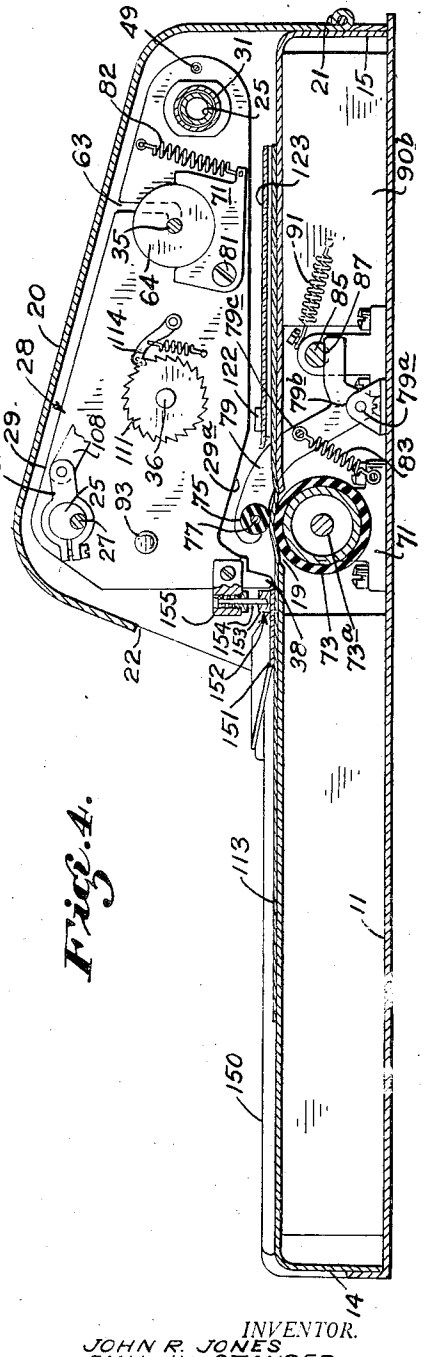


Fig. 4.

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REPRODUCTION APPARATUS

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Fig. 5.

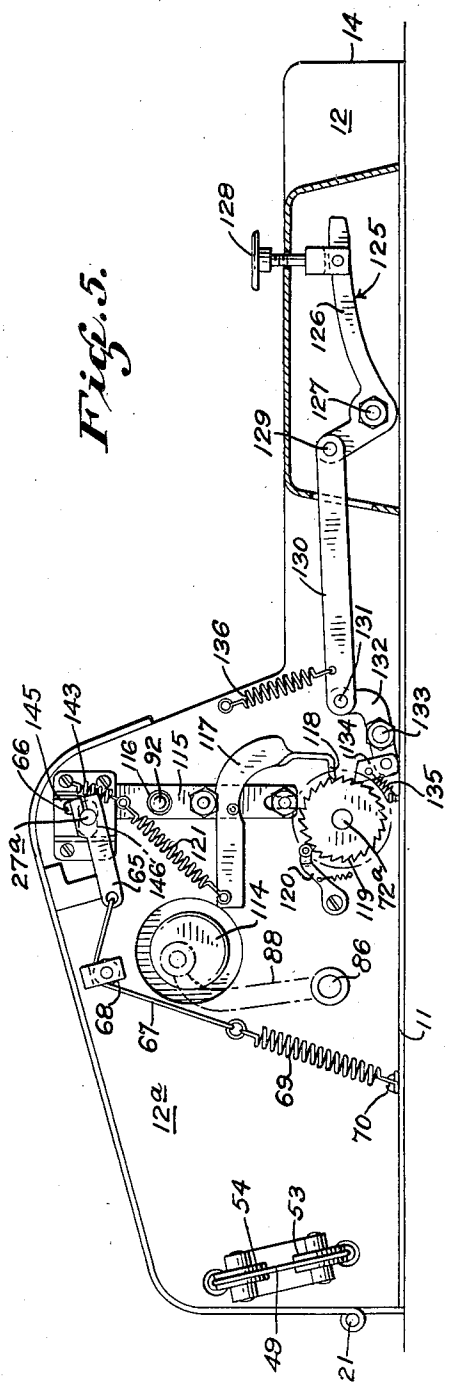
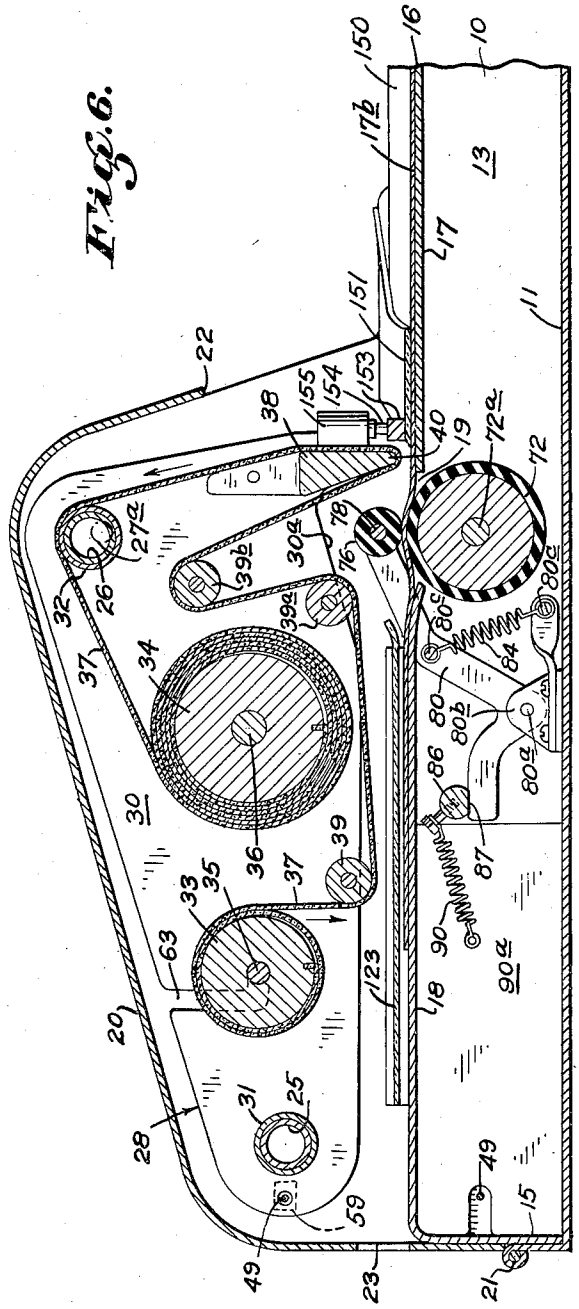


Fig. 6.



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REPRODUCTION APPARATUS

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Fig. 7.

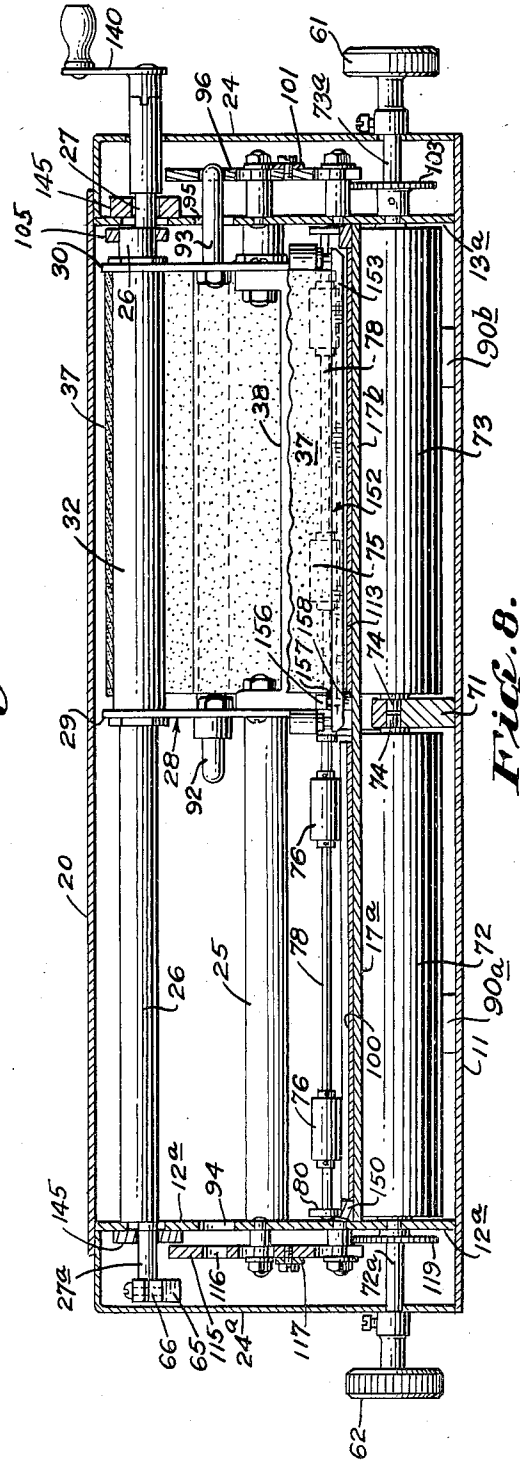
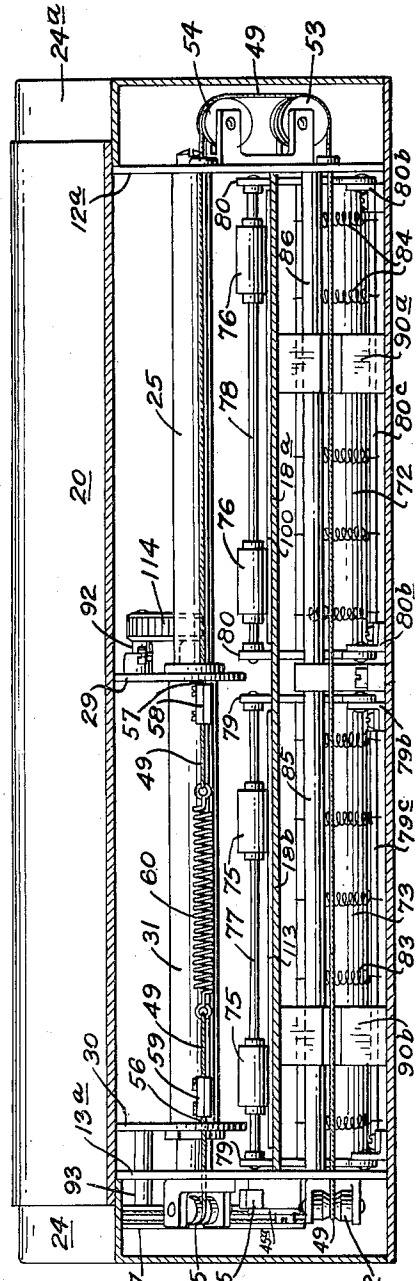


Fig. 8.



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Patented Apr. 5, 1938 2,112,849

UNITED STATES PATENT OFFICE

2,112,849

REPRODUCTION APPARATUS

John R. Jones, San Mateo, Emil W. Stanger, Oakland, and Edward L. Krug, San Francisco, Calif., assignors of three-eighths to John R. Jones, three-eighths to Emil W. Stanger, and two-eighths to Edward L. Krug

Application February 24, 1936, Serial No. 65,442

20 Claims. (Cl. 101—131)

This invention relates to reproduction apparatus and more particularly to an apparatus for reproducing an exact impression from one sheet to another sheet by means of a movable reproduction member which at one position receives from an original sheet an impression of the matter to be reproduced and is movable to another position for reproducing the impression on a copy sheet.

Such apparatus has many advantages and is highly useful in many situations where it is desirable to transfer entries in any type of record or in the segregation into groups of a certain class of entries from a miscellaneous list of items, or in reproducing by transfer of any type of document. It is necessary in the use of the apparatus that the original document to be reproduced or transferred shall have been written or printed in copying ink or pencil or the like so that an impression may be taken therefrom.

Among the objects of the invention are to provide an apparatus for reproducing data from an original document to a blank provided for receiving the impression; to provide an apparatus for transferring an exact reproduction of data from one sheet to another sheet; to provide in a reproduction apparatus means for absorbing the imprint of data on an original sheet and transferring the exact imprint to another sheet; to provide in a reproducing apparatus a reciprocal carriage having a progressively advancing reproduction member; to provide in a reproduction apparatus means for progressively advancing a reproduction member and respective sheets from which impressions are made and to which impressions are transferred; to provide a reproduction apparatus which eliminates stencils and mechanical or manual copying of data which is to be reproduced, and generally to improve upon devices of the character herein described.

With the foregoing and other objects in view, the invention, broadly stated, consists of the novel features and novel combination of features of the mechanism herein disclosed, the one form described herein and illustrated in the accompanying drawings being by way of example of a preferred form the invention may take, it being understood that changes in size, materials, proportion and details are contemplated as being within the invention and within the scope of the appended claims.

In the accompanying drawings,

Fig. 1 is a perspective view of the apparatus of the invention.

Fig. 2 is a fragmentary plan view partly in longitudinal section and partly broken away to show structure at various elevations.

Fig. 3 is a side elevation taken at the right-hand end of Fig. 2, with end cover plate removed and portions of side wall broken away.

Fig. 4 is a lateral transverse vertical section on line IV—IV of Fig. 2.

Fig. 5 is a side elevational view taken at left-hand end of Fig. 2 with end cover plate removed, the view being partly in section.

Fig. 6 is a laterally transverse vertical section on line VI—VI of Fig. 2.

Fig. 7 is a longitudinal vertical section of line VII—VII of Fig. 2, having portions broken away to show background structure.

Fig. 8 is a longitudinal vertical section on line VIII—VIII of Fig. 2.

Fig. 9 is a fragmentary enlarged detail of portion of the mechanism shown in Fig. 3.

Referring to the drawings wherein like reference characters indicate corresponding parts in the several views, 10 indicates generally a box-like frame having a bottom or base 11, side walls 12 and 13, front and rear walls 14 and 15 and top 16. The top 16 is divided by longitudinal slot 19 into a front table 17 and a rear table 18. The front table is sub-divided into two sections, 17^a and 17^b and the rear table is divided into two sections 18^a and 18^b. The side walls 12, 13 have an enlarged area at rearward portions 12^a and 13^a to support mechanism hereafter described. The rear wall 15 has connected thereto a cover member 20 which is hinged as at 21 to swing upward and backward. The cover 20 extends between the side walls 12^a and 13^a and terminates forwardly so as to leave an operating opening 22 between the edge of the cover and the forward tables 17^a and 17^b. At the rear of the cover there is a slot opening 23. Exteriorly of each of the end wall portions 12^a and 13^a there are provided cover plates 24 and 24^a. The wall portions 12^a and 13^a are connected and relatively reinforced by several roller shafts hereafter described and by a rearward longitudinal shaft 25 and a forward longitudinal shaft 26, the rearward shaft 25 being fixedly mounted and the forward shaft 26 having at each end an extending stub shaft 27, 27^a which are eccentric to the axis of the shaft 26 so that upon rotation of the stubs 27 and 27^a the shaft 26 is moved eccentrically relative to the axis of stub shafts 27, 27^a.

Slidably mounted upon the shafts 25 and 26 is a carriage generally indicated 28, said carriage comprising a pair of relatively spaced substantially triangular side walls 29 and 30 which are

rigidly connected in fixed spaced relation by tubular bearings 31, 32 which slidably support the carriage upon the shafts 25 and 26. At 29a and 30a the lower edge of the side walls have portions cut away to permit the carriage to pass over other mechanism. Between the walls 29 and 30 of the carriage are mounted a pair of relatively separated rollers 33 and 34, said respective rollers each having an axial bearing shaft 35, 36 rotatably mounted in the side walls of the carriage 29, 30. Upon these rollers and windable from one to the other is a reproduction member 37 having on one face a coating or layer of material which will absorb an impression from copying ink, pencil or the like. Any suitable type of absorbent material may be used, a preferred composition being an absorbent gelatinous substance, such reproduction members being readily obtainable in the commercial market. The carriage also carries at its forward end, and extending between the walls 29 and 30 thereof, an elongated pressure plate 38 having a nose 40 which is relatively thin or narrow at an apex about which the reproduction member 37 is adapted to move reproduction member 37, as it unwinds from the roll 33, passes firstly over tubular idler rollers 39, 39a and 39b, thence around the nose 40 of the pressure plate, thence over the tubular bearing 32, and thence being wound upon the roller 34. The axial shafts of the idler rollers 39, 39a and 39b serve also to connect and reinforce the side walls 29, 30 of the carriage.

Means are provided for reciprocating the carriage longitudinally of shafts 25, 26, said means comprising a lever 41 pivotally mounted on a bearing 42 upon side wall 13 of the frame, said lever having a connecting link 43 pivotally connected as at 44 to a reciprocable rack bar 45 which slides in a grooved support 45a. The rack bar 45 engages, and, upon reciprocation, rotates a gear 46 which is connected to a pulley wheel 47 having circumferential grooves 48 therein. Within the groove 48 rides a flexible cable or cord 49 which is fixedly attached to the pulley wheel 47, as at 50, any suitable means being employed for that purpose, such as pin 51. The cable 49 is an operatively continuous strand, the path of travel of which is from wheel 47 over roller 52, thence longitudinally of the rear portion of the frame 20 and over rollers 53 and 54, and returning substantially parallel to its first reach, and thence over roller 55, and thence returning to the grooves 48 of the pulley wheel 47. As best shown in Fig. 8, the cable 49 engages the side walls 29, 30 of the carriage as at 56, 57 by means of clamp members 58, 59. Adjacent said respective side walls intermediate these clamping members, the cable may be broken for the purpose of inserting within the strand a resilient member such as spring 60 to absorb the shock or throw of the carriage when it has reached either end of its path of travel.

The carriage is normally held in a lifted position with the nose 40 free of the table 17 by means of an arm 65 which is clamped as at 66 to eccentric stub extension 27a of the shaft 26, said arm 65 having its free end connected to a cable or cord 67 which passes over a roller 68 and is engaged to a spring member 69 fixedly connected to the frame, as at 70, said spring 69 being of sufficient resiliency to maintain the normal weight of the carriage on the bar 26, so that by maintaining the longer radius of stub shafts 27 and 27a in an upward position, as shown in the enlarged detail of Fig. 9, the bar 26 is also maintained in an upward position, due to the resiliency of the spring 69, and the carriage is normally maintained out of contact with the table 17. This permits the carriage to be reciprocated from one end of the apparatus to the other end entirely free of contact with the table.

Again referring to the base frame 10, it will be noted, particularly from Figs. 2, 7, and 8, that the box-like compartment which forms the base of the device is divided into two sections in line with a central bearing member 71 extending transversely of said base between front and rear. In each of the base sections underlying the slotted opening 19 between the forward table and the rearward table, are separate paper rollers 72, 73. These rollers 72, 73 are rotatably mounted at one end in the outer walls 12 and 13 of the base frame 10 and have the opposite ends of their respective axial shafts rotatably mounted in the bearing member 70 as at 74, said rollers being independently rotatable. The rollers 72, 73 may be of the type commonly used in typewriting machines, having a circumferential coating of paper gripping material such as vulcanized rubber composition. Cooperating with the rollers 72, 73 are smaller paper gripping rollers 75, 76 which are rotatably mounted upon separate bars, 77, 78, said bars being mounted upon supporting brackets 79, 80 which are pivoted at 79a and 80a on fixed brackets 79b and 80b, said brackets having respective bars 79c and 80c, therebetween, upon which are mounted a plurality of coil springs 83, 84 which connect with bars 79b and 80b to keep the rollers 75, 76 in normal contact with the circumferential face of rollers 72, 73. When it is desired to release the contact between the rollers 75, 76 and the larger rollers 72, 73, respectively, this may be accomplished by means of separate releasing bars 85, 86 which have one flatted side which rests upon the respective bracket 79, 80 as at 87, and upon turning thereof by means of crank handles 88, 89 throw the smaller rollers 75, 76 out of contact with the larger rollers 72, 73 so that a sheet of paper may be fed freely between said rollers. The releasing bars, 85, 86 may be automatically returnable to the normal position by spring members 90, 91, connected to table supporting blocks 90a and 90b, a pin 90c being mounted in each bar 85, 86, to stop the return movement.

It will be noted (see Fig. 7) that the carriage 28 at each of its ends has a pin 92, 93 and that upon reciprocation of the carriage these pins pass through openings 94, 95 in the respective side walls 12a and 13a of the frame so that the respective pins 92, 93 project beyond the respective walls 12a and 13a of the frame.

Referring to Fig. 3, there is mounted on the outer side of the right hand wall 13a a vertically reciprocable slide bar 96 having an opening 97 therein which normally registers with the opening 94 of the adjacent frame wall 13a, so that when the pin 93 passes through the opening 95 it engages in the opening 97 of the vertically slidable bar 96. The bar 96 is normally held upwardly by a spring member 98. Mounted on the vertically reciprocable bar 96 is a pivotal arm 101 which has a tooth 102 for resiliently engaging a ratchet wheel 103, responsive to spring 144, the ratchet wheel 103 being fixedly mounted upon the shaft 73a of the paper feed roller 73, the free movement of said ratchet wheel being prevented by a spring actuated pawl 104.

On the opposite or inner side of the wall 13a is a lever 105 which is mounted upon shaft 26, as

at 106. The lever 105 is provided with an extension arm 112 which is pivotally connected at 107 with a bar 108, the latter normally resting upon a pin 109 and having a tooth 110 for engagement with a ratchet wheel 111 which is carried on the right hand exterior wall 29 of the carriage and is fixedly mounted on the shaft 36 of the roller 34, free movement of the ratchet wheel 111 being prevented by a pawl 114.

Now, referring to Fig. 5 illustrating a left hand view of the frame, it will be observed that there is a vertically reciprocable slide bar 115 having an opening 116 normally registering with the opening 94 of the side wall 12a of the frame so that when the carriage is reciprocated to the left hand of the apparatus the pin 92 passes through the opening 94 and snugly engages in the opening 116 of the slide bar 115. The slide bar 115 likewise has pivotally mounted thereon an arm 117 having a tooth 118 which engages teeth of ratchet wheel 119, the free movement of which is prevented by pawl 120. The ratchet wheel 119 is fixedly mounted upon the shaft 72a so that upon turning of the ratchet wheel 119 the roller 72 is rotated thereby. The tooth 118 is maintained in contact with the ratchet wheel by spring member 121.

At the left hand end of the apparatus is a single spacer device generally indicated 125 which is manually operable. As shown herein the single spacer device comprises a bell crank lever 126 pivotally mounted at 127 and having a pressure key 128 at one of the arms thereof. The other arm is pivotally connected as at 129 to a link member 130, the latter having its other end pivotally connected as at 131 to a fulcrum arm 132 which is pivoted at 133 and has a pivotally connected tooth member 134 at its free end, said tooth member being maintained in contact with the teeth of ratchet wheel 119 by spring 135. Upon pressure of the key 128 the tooth member 134 engages the ratchet wheel 119 and moves it one space only by manual operation, the single spacer being returned to normal position by spring 136.

From the foregoing description, it will be observed that upon moving the handle member 140 in the direction indicated by the arrow in Fig. 3, the bar 26 is eccentrically rotated relative to the axis of the stub shafts 27, 27a. Since the bar 26 is concentric with the tubular bearing 32 of the carriage the carriage will be depressed so that the nose 40 of the pressure plate 38 will likewise be depressed, and the portion of the reproduction member or tape 37 which passes around said nose will be pressed into intimate contact with the table 17.

If the carriage is at the left hand end of the apparatus with the pin 92 engaging the opening 116 of the slide bar 115, then upon manual manipulation of handle 140, the slide bar 115 will likewise be depressed which will cause the tooth 118 to engage a serially subsequent tooth of the ratchet wheel 119, and that upon release of the handle member 140 the bar 26 will be returned to its normal position by the spring 69 and cable 67, thus raising the nose 40 and the absorbent strip from contact with table portion 17a. Since pin 92 raises with the carriage, it will likewise raise the slide bar 115 which will space the ratchet wheel 119 and thereby rotate roller 72 and thus space a sheet of paper 99 which is engaged between the rollers 72 and 76.

When the carriage is at the right hand end of the device so that pin 93 engages in the opening 97 of slide bar 96, then, upon manual manipulation of handle 140 the carriage will also be depressed and the pressure plate 38 will cause the reproduction member to contact with the right hand table portion, 17b.

By this depression of the carriage the pin 93 will depress the slide bar 96 which in turn will cause the tooth 102 to engage a successive tooth in ratchet wheel 103. When the handle 140 returns to normal position, and the tooth 102 is raised responsive to the bar 26 returning to its normal position, the ratchet wheel 103 will thereby rotate the roller 73 and thus space a sheet of paper which is engaged between rollers 73 and 75.

It will be observed that the shaft 26 is snugly concentric with the tubular bearing 32. Therefore, in order that shaft 26 may rotate in the bearing 32 by rotation of the eccentric stub shafts 27 and 27a, the bearings 145 of said stub shafts are slightly elongated as at 146. The rotation of the bar 26 by movement of handle 140 also depresses lever 105, arm 112 and the pivoted end of the bar 108. Since the arm 112 is drawn backward by the rotative movement of shaft 26 the tooth 110 does not engage the teeth of ratchet wheel 111 on the down stroke, but when the handle 140 is returned to normal, thus returning bar 26 and stub shaft 27 to normal and thereby raising the carriage, the tooth 110 is pushed forward and into engagement with the teeth of the ratchet wheel 111 thereby moving the ratchet wheel 111 forward one space, which in turn spaces the reproducing member 37 forwardly for one space because the ratchet wheel 111 is fixedly mounted upon the axial shaft 36 of roller 34, (see Fig. 9).

It will therefore be apparent that the lowering of the carriage when it is at the left hand end of the apparatus would press the reproduction member into contact with the table portion 17a and when the carriage is then raised it would space a sheet of paper one step forward between rollers 72, 76, but would not space the reproduction member 37. When the carriage is at the right hand end of the apparatus and is depressed, the reproduction member contacts the table portion 17b and, upon thereafter raising of the carriage, two steps are accomplished. Firstly, the paper between the right hand rollers 73, 75 is automatically spaced; and secondly, the reproduction member 37 is also moved one space forward.

It is believed that in view of the foregoing description the explanation of operation may be made very brief. As heretofore stated the table 17 is divided into, or at least may be considered as constituting two sections, 17a, corresponding with the paper roller 72, and 17b corresponding with the paper roller 73. The table section 17a receives the original sheet 100 having data thereon in copying ink, copying pencil, or the like, and said sheet is then fed between the rollers 72, 76, and is subsequently automatically spaced thereby. Likewise, a copy sheet 113 is placed upon the table section 17b and fed into engagement between rollers 73, 75, and is subsequently spaced thereby. If the carriage is at the right hand end of the apparatus, the operating lever 41 is manually manipulated so as to actuate the rack bar 45, gear 46, pulley wheel 47, and cable 49, by which the carriage is moved to the left hand end of the apparatus. Of course, if the carriage is already at the left hand end of the apparatus the next preceding operation is omitted. The original sheet 100 is fed between rollers 72, 76 until the line desired to be copied is

immediately under the nose 40 of the pressure plate. Thereupon, the handle or lever 140 is manipulated in the direction shown by the arrow in Fig. 3 which eccentrically rotates shaft 26 and thereby depresses the carriage so as to contact the face of the reproduction member with the line of data on the original sheet of which a copy is desired. The reproduction member, being absorbent as aforesaid, takes an exact impression of the line to be copied, and when the carriage is raised the paper automatically is spaced so that said line cannot be unintentionally recopied. The lever 41 is then manually reversed in its motion which reciprocates the carriage to the opposite or right hand end of the apparatus. Then lever 140 is again manipulated in the same direction, which presses the reproduction member into contact with the copy sheet, and the impression on the reproduction member is thereby transferred to the copy sheet in identically the same form as it appeared on the original sheet. The carriage is then raised by releasing the lever 140, and this raising of the carriage spaces both the copy sheet 113 and the reproduction member, so that a new reproducing surface is provided on the absorbent reproduction member for repeating the operation. If it is desired to freely slide the sheets 100 or 113, or either of them, with relation to the rollers 72, 73, this may be accomplished by manipulation of handle members 88, 89 which control shafts 85 and 86. The opening 23 at the rear of the cover permits long strips of paper to slide therethrough from rear tables 18a and 18b.

Under certain circumstances of operation it may be desirable to space the sheets 100 and 113 independently of the automatic spacing hereinbefore provided, and under such circumstances the said sheets 100 and 113 may be spaced by the independent spacer generally indicated 125, such independent spacer being shown only at the left hand of the device; but it is to be understood that a similar spacer could, if desired, be placed in similar relation at the right hand end of the device to operate roller 73 in like manner. The rollers 72, 73 may also be manually manipulated by the hand grip members 61, 62. Suitable paper guides for the sheets 100, 113 are provided as at 150 and a line guide 151, preferably of flexible transparent material such as celluloid, is provided at the operating end portion of each table 17a, 17b to indicate exactly which line of data will be impressed upon the reproduction member. A paper stabilizer 152 is carried by the lower forward part of the carriage closely adjacent the nose 40 of the pressure plate. This paper stabilizer, best shown in Fig. 4, comprises a bar 153 mounted on a plunger 154 which is resiliently reciprocable in a casing 155. This paper stabilizer 152 contacts the indicating edge of line guide 151 on the downstroke of the carriage just prior to the contact made by the reproduction member and by frictional holding prevents the paper from moving, either during the taking of an impression from the original sheet, or the making of the reproduced impression on the copy sheet. It also holds the paper against movement when the carriage is raised since there would be a tendency for the paper to adhere to the absorbent reproduction member.

In order that each item, as an impression is made of it, may be checked or marked off on the original copy so that it will not by any possibility be either inadvertently skipped or inadvertently repeated, a marker device generally indicated 156 is carried at the left end of the paper stabilizer. This marker member has a marking point 157 which extends through the bar 153 and is supplied with ink or other marking material from a supply pad 158. This marker is adjustable to any point along the carriage by means indicated at 159. Thus, when the carriage is depressed to contact original sheet 100, a mark is impressed at the line of which an impression is made.

To insure that the carriage is moved definitely to the respective ends of the frame before it is depressed, a lug 122 is provided on the rearward table portion 18, substantially overlying the central bearing support 70, the lug having inclined sidewalls to engage the bottom portion of the carriage walls 29, 30, so as to push the carriage definitely and firmly to the end of its path when the carriage is depressed. The reproduction member 37 is preferably of a type which absorbs into its body the impression ink thereon and gradualy dissipates the impression, so that when the used impression surface is wiped with a moist sponge after being initially used, it may be used repeatedly thereafter. The reproduction member is of sufficient length so that a large number of impressions may be taken thereon without its having to be washed.

The rollers on which the reproduction member is mounted may be removable. One means for removing is indicated in connection with the roller 33 which comprises the mounting of the roller shaft 35 in a slot 63 which is provided with an angle at the lower end thereof, the shaft 35 having a circular plate 64 at each end thereof on the exterior of the side walls 29, 30. The circular plate 64 is engaged by socket plates 71 which are pivotally mounted as at 81 and are resiliently held in contact with the plate 64 by spring means 82. The reproduction member may be advanced or retracted relative to the rollers 33, 34 by manual operation by means of the hand grips, 114 of roller 34, and 122 of roller 33.

A plate 123 of any suitable material may overlie tables 18a and 18b in slightly spaced relation thereto, so as to direct a sheet of paper toward opening 23 at the rear of the apparatus.

Where this description refers to right and left ends of the apparatus, those positions or locations refer to the apparatus as it is illustrated in Fig. 1.

Having thus described our invention, what we claim and desire to secure by Letters Patent of the United States is:—

1. A reproduction apparatus comprising a frame, a reproducing member mounted longitudinally reciprocably on the frame and adapted for receiving and reproducing a graphic impression, said reproducing member being progressively movable for presenting fresh reproducing surfaces, and means for reciprocating the reproduction member longitudinally, and means operable at varying reciprocated positions of the reproduction member for depressing the reproduction member into contact with sheets from which impressions are to be received, and on which they are to be reproduced, respectively.

2. A reproduction apparatus comprising a frame, a gelatinous absorbent reproducing member mounted longitudinally reciprocably on the frame and adapted for receiving and reproducing a graphic impression, said reproducing member being progressively movable for presenting fresh reproducing surfaces, and means for reciprocating the reproduction member.

3. A reproduction apparatus comprising a

frame, a gelatinous reproducing member mounted longitudinally reciprocably on the frame and adapted for receiving and reproducing a graphic impression, said reproduction member being progressively movable for presenting fresh reproducing surfaces, means for reciprocating the reproduction member, and means for progressively moving the reproduction member.

4. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, a reproducing member mounted on the frame and adapted for receiving and reproducing a graphic impression, means for reciprocating the reproduction member, means for selectively contacting and releasing contact of the reproducing member with the original sheet and the copy sheet, respectively.

5. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, a carriage reciprocally mounted on the frame, a reproducing member mounted on the carriage and adapted for receiving and reproducing a graphic impression, means for reciprocating the carriage and reproduction member, and means for selectively contacting and releasing contact of the reproducing member with the original sheet and the copy sheet, respectively.

6. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, a reproducing member mounted on the frame and adapted for receiving and reproducing a graphic impression, means for reciprocating the reproduction member, means for progressively moving the reproduction member for presenting fresh reproducing surfaces, and means for selectively contacting and releasing contact of the reproducing member with the original sheet and the copy sheet, respectively.

7. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, a carriage reciprocally mounted on the frame, a reproducing member mounted on the carriage and adapted for receiving and reproducing a graphic impression, means for reciprocating the carriage and reproduction member, means for progressively moving the reproduction member for presenting fresh reproducing surfaces, and means for selectively contacting and releasing contact of the reproducing member with the original sheet and the copy sheet, respectively.

8. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, a carriage reciprocally mounted on the frame, said carriage normally being in spaced relation to the platform, a reproducing member mounted on the frame and adapted for receiving and reproducing a graphic impression, means for reciprocating the reproduction member, means for progressively moving the reproduction member for presenting fresh reproducing surfaces, and means for selectively contacting and releasing contact of the reproducing member with the original sheet and the copy sheet, respectively.

9. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, a carriage reciprocally mounted on the frame, said carriage normally being in spaced relation to the platform, an absorbent reproducing member mounted on the carriage and adapted for receiving and reproducing a graphic impression, means for reciprocating the carriage and reproduction member, means for progressively moving the reproduction member for presenting fresh reproducing surfaces, and means for selectively contacting and releasing contact of the reproducing member with the original sheet and the copy sheet, respectively.

10. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, a reproducing member mounted on the frame and adapted for receiving and reproducing a graphic impression, means for reciprocating the reproduction member, means for progressively moving the reproduction member for presenting fresh reproducing surfaces, and advancement means for progressively advancing the original sheet and copy sheet upon said platform.

11. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, an absorbent reproducing member mounted on the frame and adapted for receiving and reproducing a graphic impression, means for reciprocating the reproduction member, means for progressively moving the reproduction member for presenting fresh reproducing surfaces, and advancement means for progressively advancing the original sheet and copy sheet upon said platform.

12. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, a reproducing member mounted on the frame and adapted for receiving and reproducing a graphic impression, said reproduction member being progressively movable for presenting fresh reproducing surfaces, means for reciprocating the reproduction member, means for progressively moving the reproduction member for presenting fresh reproducing surfaces, and advancement means for progressively advancing the original sheet and copy sheet upon said platform.

13. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, a reproducing member mounted on the frame and adapted for receiving and reproducing a graphic impression, means for reciprocating the reproduction member, means for progressively moving the reproduction member for presenting fresh reproducing surfaces, means for selectively contacting and releasing contact of the reproducing member with the original sheet and the copy sheet, respectively, and advancement means for progressively advancing the original sheet and copy sheet upon said platform.

14. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, a carriage reciprocally mounted on the frame, a reproducing member mounted on the carriage and adapted for receiving and reproducing a graphic impression, means for reciprocating the carriage and reproduction member, means for progressively moving the reproduction member for presenting fresh reproducing surfaces, means for selectively contacting and releasing contact of the reproducing member with the original sheet and the copy sheet, respectively, and advancement means for progressively advancing the original sheet and copy sheet upon said platform.

15. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, a reproducing member mounted on the frame and adapted for receiving and reproducing a graphic impression, means for reciprocating the reproduction member, means for progressively moving the reproduction member, means for selectively contacting and releas-

ing contact of the reproducing member with the original sheet and the copy sheet, respectively, and advancement means for progressively advancing the original sheet and copy sheet upon said platform.

16. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, a carriage reciprocally mounted on the frame, said carriage normally being in spaced relation to the platform, a reproducing member mounted on the frame and adapted for receiving and reproducing a graphic impression, means for reciprocating the reproduction member, means for progressively moving the reproduction member for presenting fresh reproducing surfaces, means for selectively contacting and releasing contact of the reproducing member with the original sheet and the copy sheet, respectively, and advancement means for progressively advancing the original sheet and copy sheet upon said platform.

17. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, a carriage reciprocally mounted on the frame, said carriage normally being in spaced relation to the platform, an absorbent reproducing member mounted on the carriage and adapted for receiving and reproducing a graphic impression, means for reciprocating the carriage and reproduction member, means for progressively moving the reproduction member for presenting fresh reproducing surfaces, means for selectively contacting and releasing contact of the reproducing member with the original sheet and the copy sheet, respectively, and advancement means for progressively advancing the original sheet and copy sheet upon said platform.

18. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, a reproducing member mounted on the frame and adapted for receiving and reproducing a graphic impression, means for reciprocating the reproduction member, and automatic advancement means for progressively advancing the original sheet for a predetermined space, and automatic advancement means for advancing both the copy sheet and the reproduction member for a predetermined space.

19. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, an absorbent reproducing member mounted on the frame and adapted for receiving and reproducing a graphic impression, means for reciprocating the reproduction member, automatic advancement means for progressively advancing the original sheet for a predetermined space, and automatic advancement means for advancing both the copy sheet and the reproduction member for a predetermined space.

20. A reproduction apparatus comprising a frame, a platform for receiving an original sheet and a copy sheet, a reproducing member mounted on the frame and adapted for receiving and reproducing a graphic impression, said reproduction member being progressively movable for presenting fresh reproducing surfaces, means for reciprocating the reproduction member, automatic advancement means for progressively advancing the original sheet for a predetermined space, and automatic advancement means for advancing both the copy sheet and the reproduction member for a predetermined space.

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