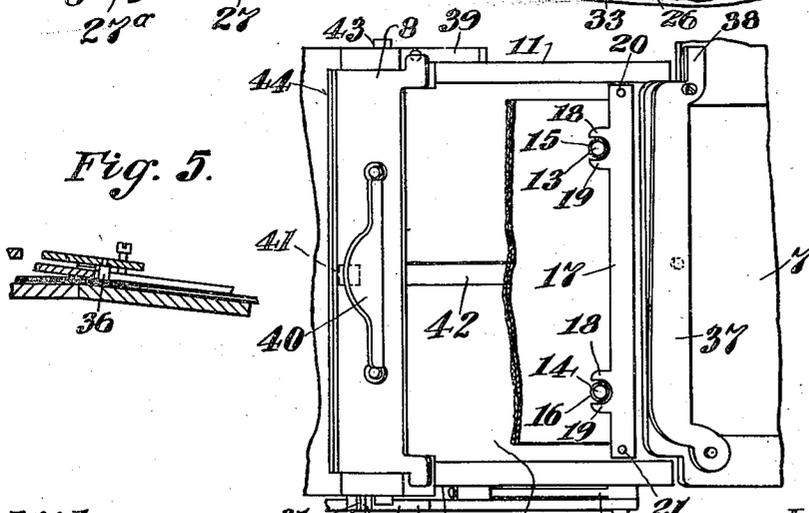
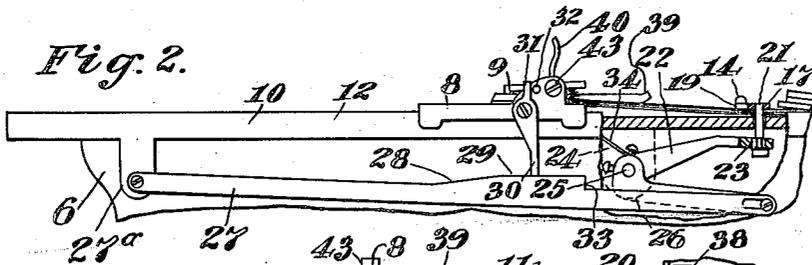
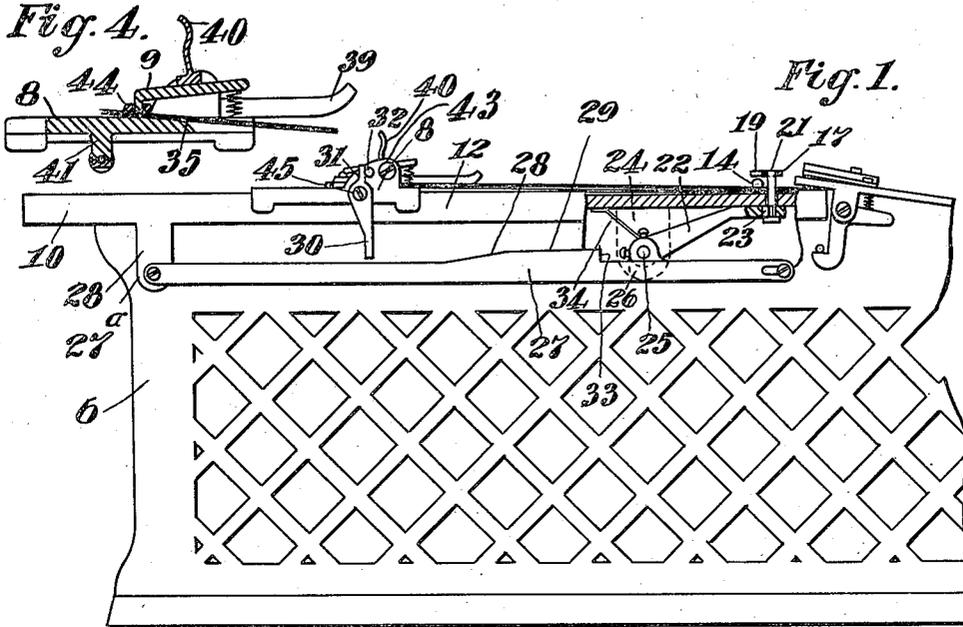


H. KONERMAN.
 MEASURED DELIVERY AUTOGRAPHIC REGISTER.
 APPLICATION FILED APR. 28, 1915.

1,166,996.

Patented Jan. 4, 1916.



Witnesses: 31 11 27 12 10 26 21
 G. Garland Brown 43 8 32 29

W. Thornton Regent

Inventor: Harry Konerman
 By *Walter Murray*
 Attorney

UNITED STATES PATENT OFFICE.

HARRY KONERMAN, OF NEWPORT, KENTUCKY, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO THE GLOBE AUTOGRAPHIC REGISTER COMPANY, OF CINCINNATI, OHIO, A COR-
PORATION OF OHIO.

MEASURED-DELIVERY AUTOGRAPHIC REGISTER.

1,166,996.

Specification of Letters Patent.

Patented Jan. 4, 1916.

Application filed April 28, 1915. Serial No. 24,583.

To all whom it may concern:

Be it known that I, HARRY KONERMAN, a citizen of the United States of America, and resident of Newport, county of Campbell, State of Kentucky, have invented certain new and useful Improvements in Measured-Delivery Autographic Registers, of which the following is a specification.

This invention relates to improvements in autographic registers and particularly to autographic registers of the measured delivery manifolding type. In registers of this type the sheets are drawn from between the interleaved carbon sheets by means of a sliding carriage, to the end of the travel of the carriage, which travel is adjustable to regulate the extent of movement thereof to correspond with the length of the printed record forms being used. A manually operated clamp is provided on the carriage for securing the sheets thereto during the forward sheet withdrawing motion of the carriage, and the clamp is adapted to be released from engagement with the sheets during the return motion of the carriage to its original position, so that the record sheets will be left in their withdrawn or extended position. With the carriage returned to its original position the extended sheets are torn off in uniform lengths against a knife edge provided on the carriage. Each sheet has printed upon it a tabulated form. Hence it is desirable that the form upon each sheet shall register with that upon adjacent sheets. Heretofore, in using autographic registers of this type the sheets have become disalined and out of adjustment to such an extent during the operation of the register, that the corresponding spaces of printed forms on the several superimposed sheets would not properly register, one with the other. This necessitated frequent manual adjustment to bring the sheets into perfect registration so that the corresponding spaces of the superimposed sheets would register to produce the same notations in the same space of the different sheets when the record was made in the proper space on the top original sheet. This difficulty is created by the variation in the lengths of the different superimposed sheets, due to the "stretch" of the material of which the sheets are manufactured. This stretch is much greater in some sheets than in others because of the variation in the

density of material of the sheets, and results in a slight unavoidable buckling which occurs during the process of manufacture. As a result of this, imperceptible distortions or ridges in the sheet or web of paper, occur at certain points, and during the printing operation and subsequent rewinding operation of the sheet under high tension, these convolutions will be smoothed out or stretched. This causes the printed part of the web at these points of buckling, to be of greater length than corresponding parts printed on the perfect parts of the web and for this reason when several sheets are employed and one or more happen to be imperfect, the objectionable and annoying disalinement of the printed forms of the superimposed sheets occurs.

An object of my invention is to automatically aline and adjust the superimposed sheets so that the forms printed thereon will be in perfect registration with one another and so that no matter how many record sheets are withdrawn from the register, each series to be withdrawn will be maintained in perfect alinement. This and other objects are attained in the device described in the following specification and illustrated in the accompanying drawings in which;

Figure 1 is a fragmental side elevation of a register embodying my invention with certain parts shown in section to more fully illustrate details thereof. Fig. 2 is a fragmental elevation similar to Fig. 1 but showing the parts embodying my invention, in different operative positions from that shown in Fig. 1. Fig. 3 is a fragmental plan view of a register embodying my invention. Fig. 4 is a sectional detail view of the sheet withdrawing carriage embodying certain details of my invention. Fig. 5 is a fragmental sectional view of a detail of the mechanism embodying my invention.

The register embodying my invention consists of a frame 6 having a writing table 7 over which the form sheets are drawn, and a reciprocating carriage 8 provided with a clamp 9 adapted to draw the record sheets from the writing table platen during the withdrawing operation. The carriage 8 is adapted to reciprocate on a table 10 provided with guides 11 and 12 for the carriage. Permanently mounted and extending upwardly from the surface of the table

10 over which the carriage is adapted to re-
 ciprocate, are stationary pins 13 and 14
 adapted to engage apertures 15 and 16
 formed in the superimposed sheets. These
 5 apertures are provided at regularly dis-
 posed intervals corresponding with the
 length of the ticket or slip to be withdrawn
 from the register, and each sheet is pro-
 vided with these apertures for the purpose
 10 of bringing the sheets into alinement as
 they are forced over the pins 13 and 14.
 In order to force the sheets over pins 13
 and 14 the following mechanism is provided.
 This mechanism consists of a plate 17 pro-
 15 vided with two sets of fingers 18 and 19
 adapted to extend on each side of the pins
 for the purpose of forcing the paper over
 them when the plate is moved downwardly
 into engagement therewith. The plate 17
 20 is permanently mounted on rods 20 and 21
 reciprocally mounted in the table 10 over
 which the carriage 8 reciprocates. At their
 lower ends, these rods 20 and 21 are pro-
 vided with annular grooves and a lever 22
 25 located on each side of the frame and having
 a slot 23 adapted to engage the groove in
 each pin, is pivotally mounted in bearing
 lugs 24 extending downwardly from the
 table 10, by means of a shaft 25 extending
 30 transversely from one bearing lug 24 to
 the opposite bearing lug 24. Secured to the
 outer end of this shaft is a lever 26 to the
 outer end of which a bar 27 is pivotally at-
 tached. This bar preferably extends the
 35 entire length of the table 10 and is pivotally
 mounted at its opposite end in a bearing
 lug 27^a formed adjacent to the end of the
 table 10. By moving the lever 27 down-
 wardly so as to swing the levers 26 and 22
 40 in their journal lugs 24, the pins 20 and 21
 and their connected plate 17 will move
 downwardly to force the apertures of the
 sheets over their respective registering pins
 13 and 14. For the purpose of automati-
 45 cally giving the bar 27 movement at a cer-
 tain period of the movement of the car-
 riage 8 I have provided an inclined edge
 28 and an elevated edge 29 adapted to be
 engaged by a pawl 30 secured to the car-
 50 riage 8. This pawl is provided with an
 upwardly extending projection 31 adapted
 to engage an abutment 32 during the return
 movement of the carriage 8, to hold the
 lower end of the pawl in engagement with
 55 the inclined surface 28 and elevated surface
 29 when the bar 27 is forced downwardly
 to bring the plate 17 into contact with the
 sheets while pressing them over their alin-
 ing pins 13 and 14. After the end of the
 60 pawl has engaged the inclined surface 28
 and the elevated surface 29 during the re-
 turn motion of the carriage, the pawl is
 permitted to leave the elevated surface at
 a step 33 provided in the bar 27. This re-
 65 leases the bar and permits the levers 26 and

22 to move the plate 17 upwardly under the
 influence of a leaf spring 34 secured to the
 lever 22 and pressing against the under face
 of the table 10. The carriage is provided
 with an inclined edge 35, see Fig. 4, over
 70 which the sheets pass during the return mo-
 tion of the carriage. As the carriage reaches
 the end of its travel adjacent to the pins
 13 and 14, the paper is lifted from the pins
 by the inclined edge 35, so that when the
 75 carriage is again operated to withdraw re-
 cord sheets, the paper will be disengaged
 from the pins and will not become again
 engaged until the next adjacent apertures
 are brought to register therewith. In or-
 80 der to avoid losing the alinement of the
 sheets after they have been brought over
 their alining pins and before the clamp 9
 has again engaged the sheets after having
 removed them from the alining pins, I have
 85 provided means consisting of a pressure
 pin 36 mounted in a spring plate 37 extend-
 ing transversely of the register and pro-
 vided with a projection 38 adapted to be
 engaged by a finger 39 extending from one
 90 side of the carriage 8. This pressure pin is
 adapted to be brought into engagement
 with the surface of the sheets of paper after
 they have been alined by the pins 13 and 14,
 previous to the removal of the sheets from
 95 the pins by the inclined surface 35. The
 finger 39 upon the return of the carriage
 is brought into engagement with the projec-
 tion 38 and causes the plate 37 and the pin
 36 to be pressed downwardly into gripping
 100 engagement with the sheets.

In operation: Assuming that the register
 is in condition for use, that is, with the car-
 riage returned to its normal position and
 with the paper lifted from the alining pins
 105 13 and 14, while the finger 39 is in engage-
 ment with the projection 38 of the plate 37,
 the operator makes the proper notation upon
 the alined sheets on the writing table 7. He
 then grasps the handle 40 of the clamp 9
 110 mounted on the carriage 8 and pushes the
 carriage by means of the handle, away from
 him to the end of its movement along the
 guides 11 and 12 of the register. This move-
 ment is limited by the downwardly extend-
 115 ing lug 41 formed on the carriage, being
 brought into engagement with the end of a
 slot 42 formed in the table 10. During this
 movement the sheets which are grasped be-
 120 tween the carriage 8 and the clamp 9, are
 withdrawn from the register until the car-
 riage has reached the end of its movement
 as above described, at which time the next
 adjacent apertures 15 and 16 of the sheets
 125 are brought to engage the pins 13 and 14.
 With the apertures of the sheets thus
 brought into alinement with the pins 13 and
 14, the clamp is released by tilting the han-
 130 dle 40 backward so that the clamp bar 9
 rocks about its pivot pins 43. The sheets

being free the carriage is drawn back toward the operator while the sheets are permitted to remain in their extended positions. As the carriage is drawn back the pawl 30 engages the inclined surface 28 of the bar 27 and forces the bar downwardly until the pawl engages the surface 29. This downward movement of the bar causes the plate 17 to press its fingers upon the sheets of paper and thereby force the sheets over the alining pins 13 and 14 thus bringing each of the superimposed record sheets into alignment so that the forms printed on the sheets and located on the table 7, will be accurately registered one above the other. This alignment is maintained after the pawl 30 has passed beyond the step 33, shown in Fig. 1, the sheets will remain over the pins until the inclined surface 35 of the carriage 8 has been brought under the sheets adjacent to the alining pins. In order, however, to avoid losing the alinement of the sheets, the finger 39 is brought into engagement with the projection 38 of the plate 37 by further movement of the carriage 8 toward the operator. This causes the pressure pin 36 to hold the sheets against accidental displacement from their alined positions, while the paper is withdrawn from the pins 13 and 14 by the inclined surface 35 of the carriage. This removal of the sheets from their alining pins by means of the inclined surface 35, occurs only at the time that the carriage has been completely returned to its normal position. With the carriage in its normal position the sheets which have been extended and upon which the record has been made, are torn off from the main portion of the sheet by severing them by a stationary knife plate 44 secured transversely of the carriage. Upon again operating the register the carriage is pushed away from the operator thus causing the sheets to be frictionally moved under the pressure of the pin 36 until the finger 39 has released the projection 38 of the plate 37 to release the pressure on the pin. Further movement away from the operator causes the pawl 30 to engage the step 33 and to swing about its pivot pin 45 causing separation of its projection 31 and abutment 32, until the surfaces 29 and 28 have been passed. At this point the previously described operation of releasing the clamp and returning the carriage to its normal position is again carried out.

Although I have described my improved register as having two alining pins it will be readily understood that one or a plurality of alining pins may be employed and that similar mechanism to that above described may be employed for bringing the apertures of the sheet into registration with the alining pins, while other suitable means for removing the sheets therefrom as well

as for holding the sheets against accidental displacement during the removing operation may be provided, without departing from the spirit and scope of my invention as set forth in the appended claims.

I claim—

1. A manifolding autographic register adapted for use with record sheets having a series of apertures and comprising a frame, a table mounted on the frame, a stationary pin mounted in the table, and means adapted to move the sheets to engage the apertures with the pin.

2. In a manifolding autographic register adapted for use with form printed record sheets having a series of apertures, a frame having a sheet supporting table mounted thereon, a stationary pin mounted on the table, and means adapted to move the sheets to engage the apertures with the pin where- by the forms on the sheets will be alined.

3. In combination in a manifolding autographic register adapted for use with record sheets having a series of apertures, a frame adapted to support the record sheets, a stationary pin mounted on the frame, a carriage movably mounted on the frame and adapted to move the record sheets across the pin to bring the apertures in alinement therewith, and a mechanism adapted to engage the apertures with the pin.

4. An autographic register adapted for use with record sheets having a series of apertures, comprising a frame adapted to support the record sheets, a stationary pin mounted on the frame, a carriage movably mounted on the frame and adapted to move the record sheets across the pin to bring the apertures in alinement therewith, mechanism adapted to engage the apertures with the pin, and means adapted to remove the sheets from the pin.

5. In an autographic register adapted for use with record sheets having apertures formed therein, the combination of a frame adapted to support the record sheets, a stationary pin mounted on the frame, a carriage movably mounted on the frame and adapted to move the record sheets across the pin to bring the apertures in alinement therewith, mechanism adapted to engage the apertures with the pin, means adapted to remove the sheets from the pin to permit subsequent movement of the sheets, and a device adapted to maintain the sheets in alinement after they have been removed by said means from the pin.

6. In combination in a manifolding autographic register adapted for use with record sheets having apertures formed therein, a frame adapted to support the record sheets, a stationary pin mounted on the frame, a carriage movably mounted on the frame and adapted to move the record sheets across the pin to bring the apertures in alinement

therewith, mechanism adapted to engage the apertures with the pin and operatively connected with the carriage whereby the apertures will be engaged with the pin after they have been moved into alinement therewith.

7. An autographic register adapted for use with record sheets having apertures formed therein, comprising a frame adapted to support the record sheets, a stationary pin mounted on the frame, a carriage movably mounted on the frame and adapted to move the record sheets across the pin to bring the apertures in alinement therewith, mechanism adapted to engage the apertures with the pin and operatively connected with the carriage to engage the sheets with the pin after the apertures have been brought into alinement therewith, means adapted to remove the sheets from the pin when the carriage is returned to its normal position, and a device adapted to maintain the sheets in their alined positions after removal thereof from the pin.

8. In an autographic register adapted for use with record sheets having apertures formed therein, the combination of a frame adapted to support the record sheets, a stationary pin mounted on the frame, a carriage movably mounted on the frame and adapted to move the record sheets across the pin to bring the apertures in alinement therewith, mechanism adapted to engage the apertures with the pin and operatively connected with the carriage, means adapted to remove the sheets from the pin during return of the carriage to its normal position, and a device for maintaining the sheets in their alined positions and adapted to be operated by the carriage previous to the removal of the sheets from the pin.

In testimony whereof, I have hereunto subscribed by name this 27th day of April, 1915.

HARRY KONERMAN.

Witnesses:

WALTER F. MURRAY,
W. THORNTON BOGERT.