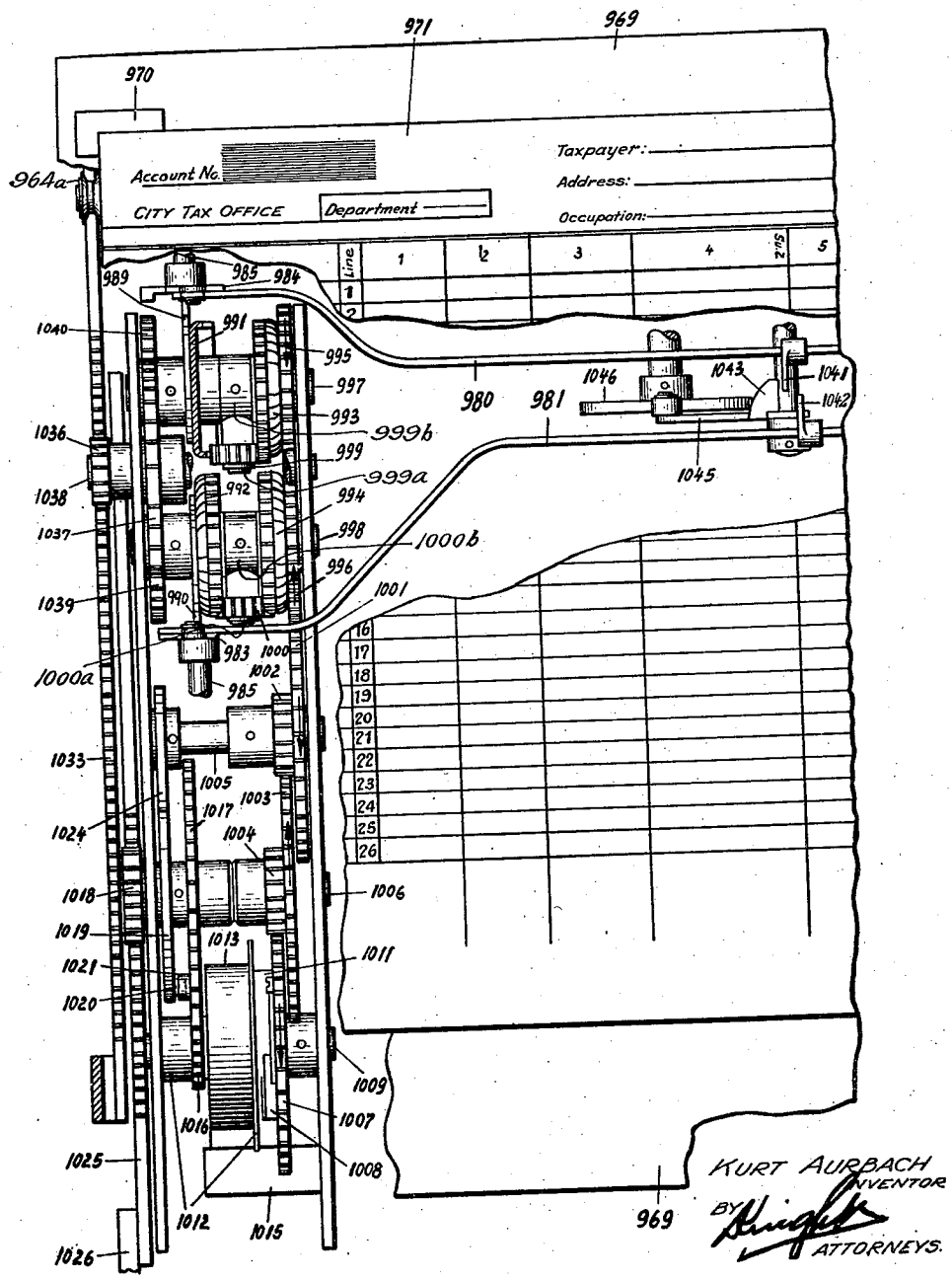
May 20, 1941. K. AURBACH 2,242,381

RECORD SHEET POSITIONING MEANS FOR BOOKKEEPING MACHINES AND THE LIKE

Filed April 25, 1939 8 Sheets-Sheet 1

Fig. 1



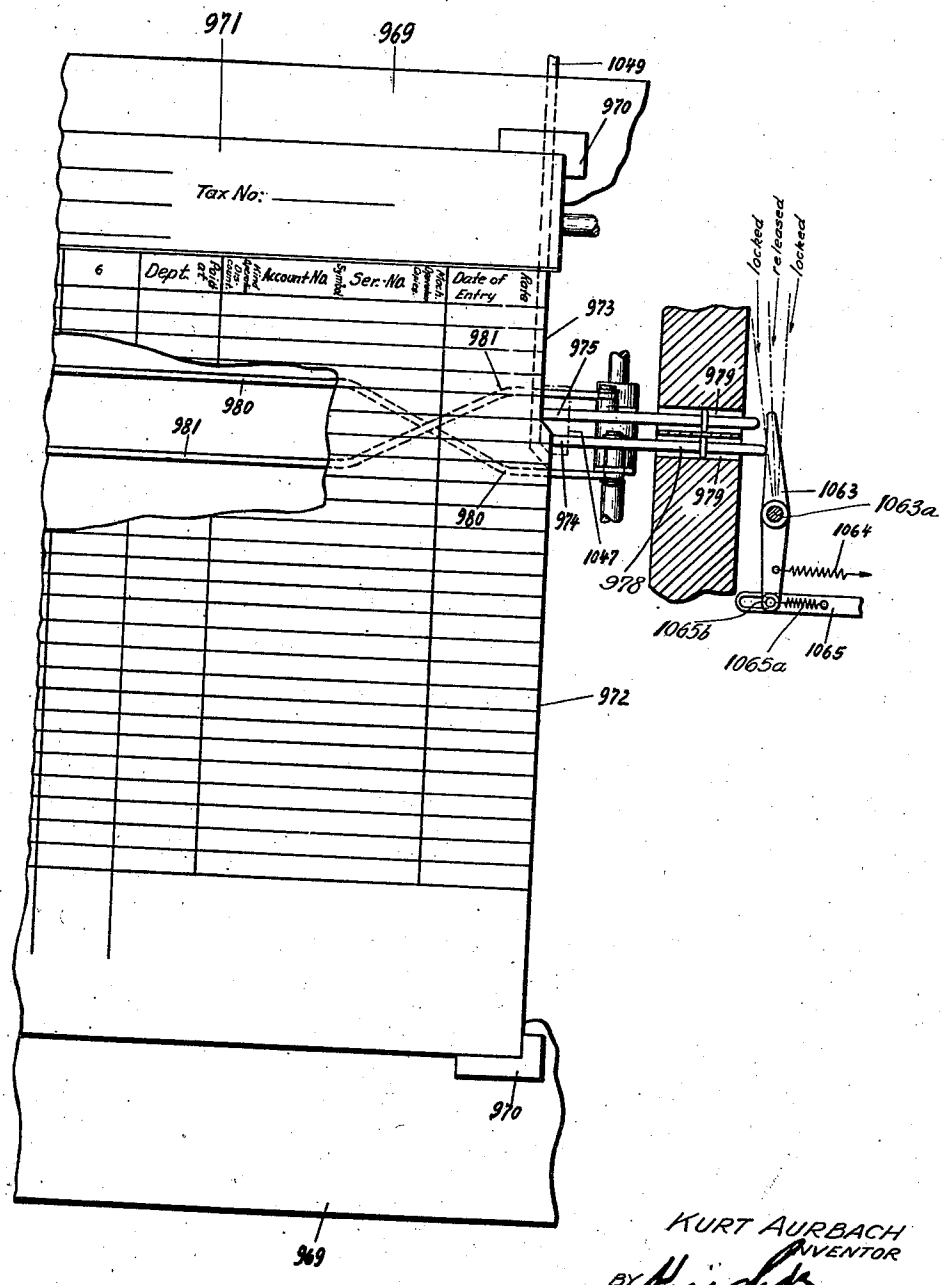
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Fig. 1a



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8 Sheets-Sheet 3

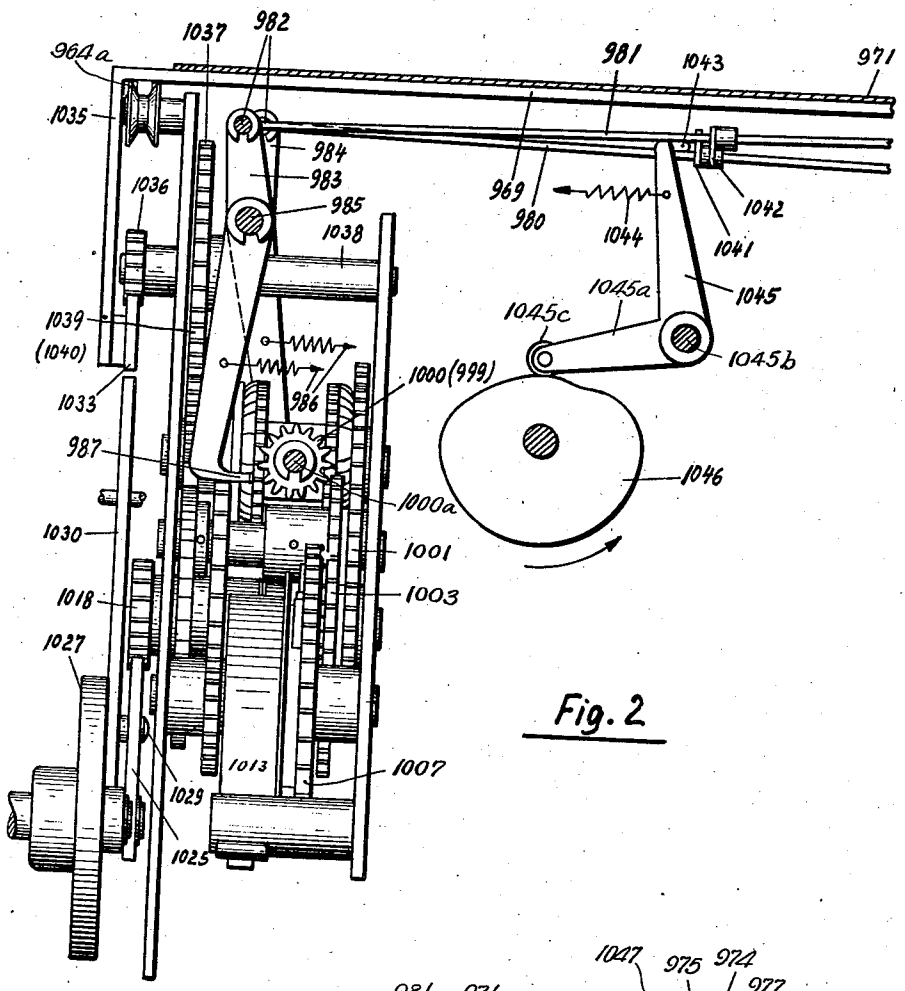


Fig. 2

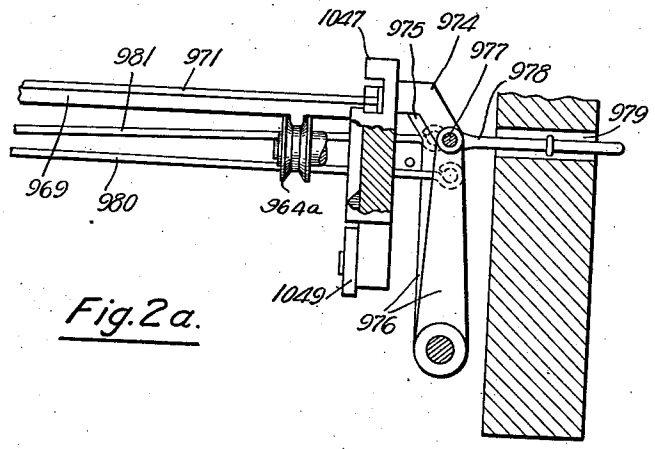


Fig. 2a.

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8 Sheets-Sheet 4

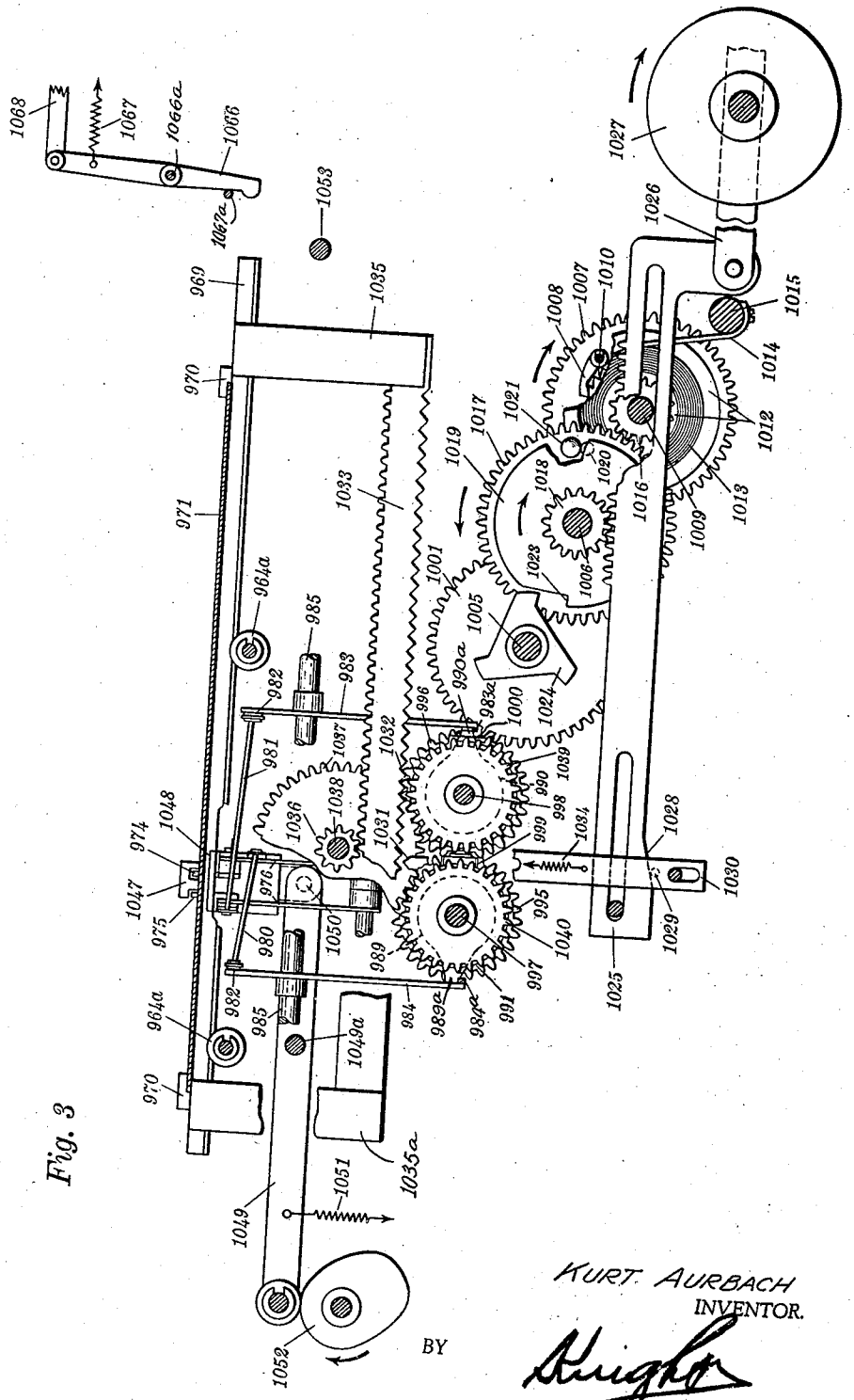


Fig. 3

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Fig. 4

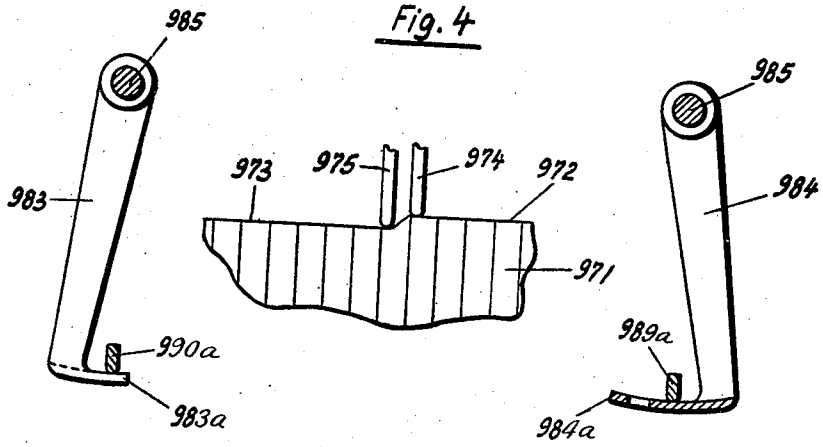


Fig. 5

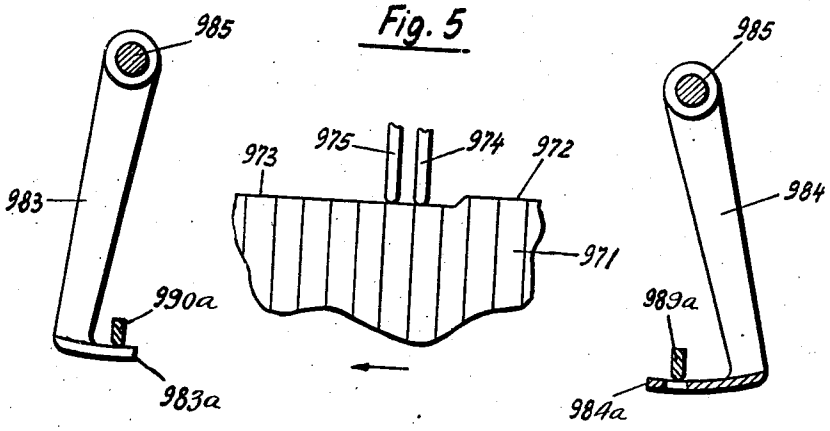
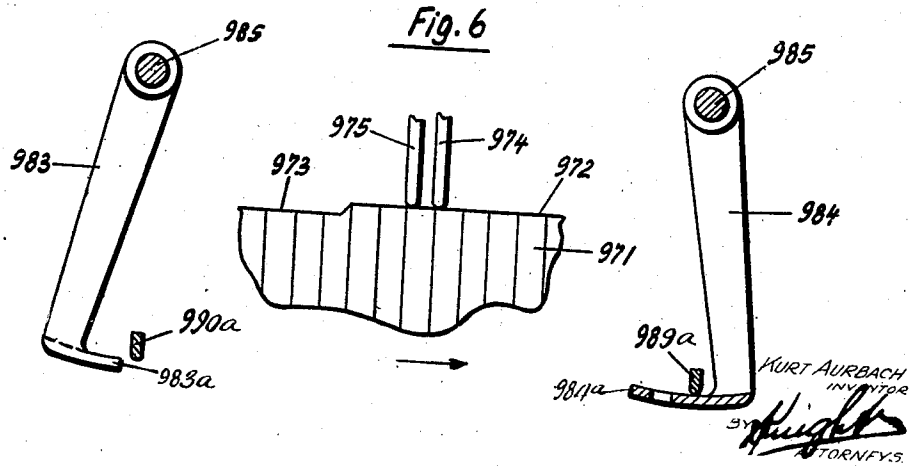


Fig. 6



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Fig. 7

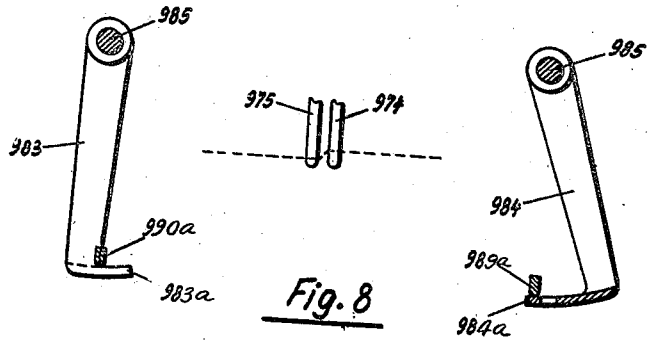
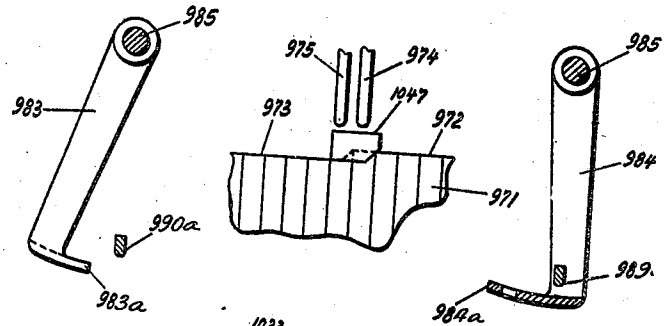


Fig. 8



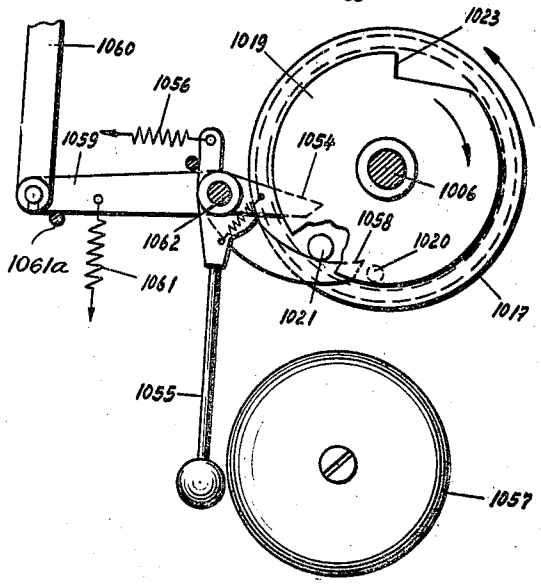


Fig. 9

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Fig. 11

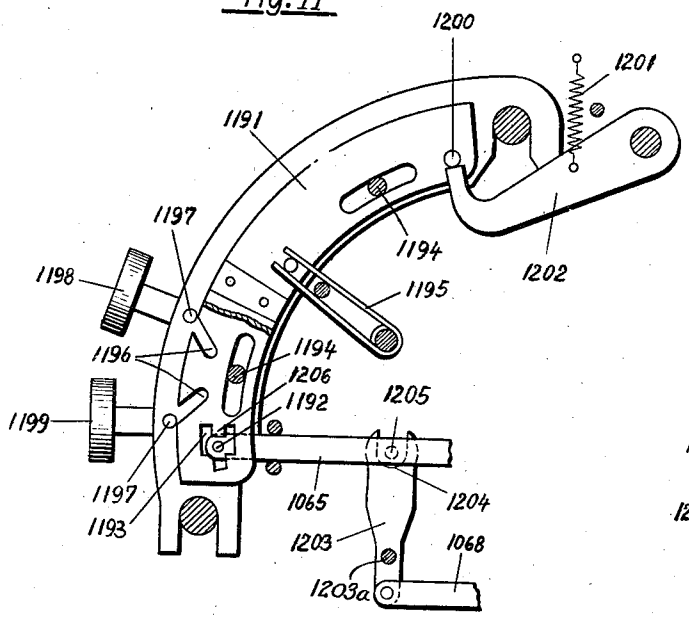
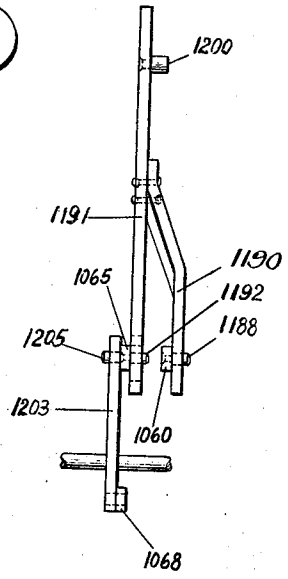


Fig. 12



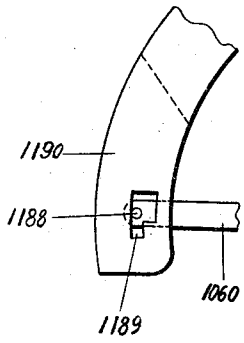
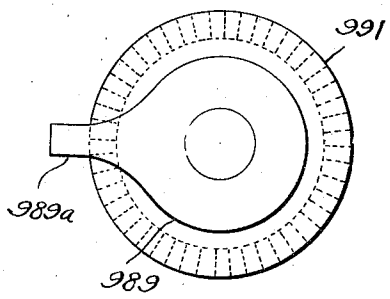


Fig. 10

Fig. 14



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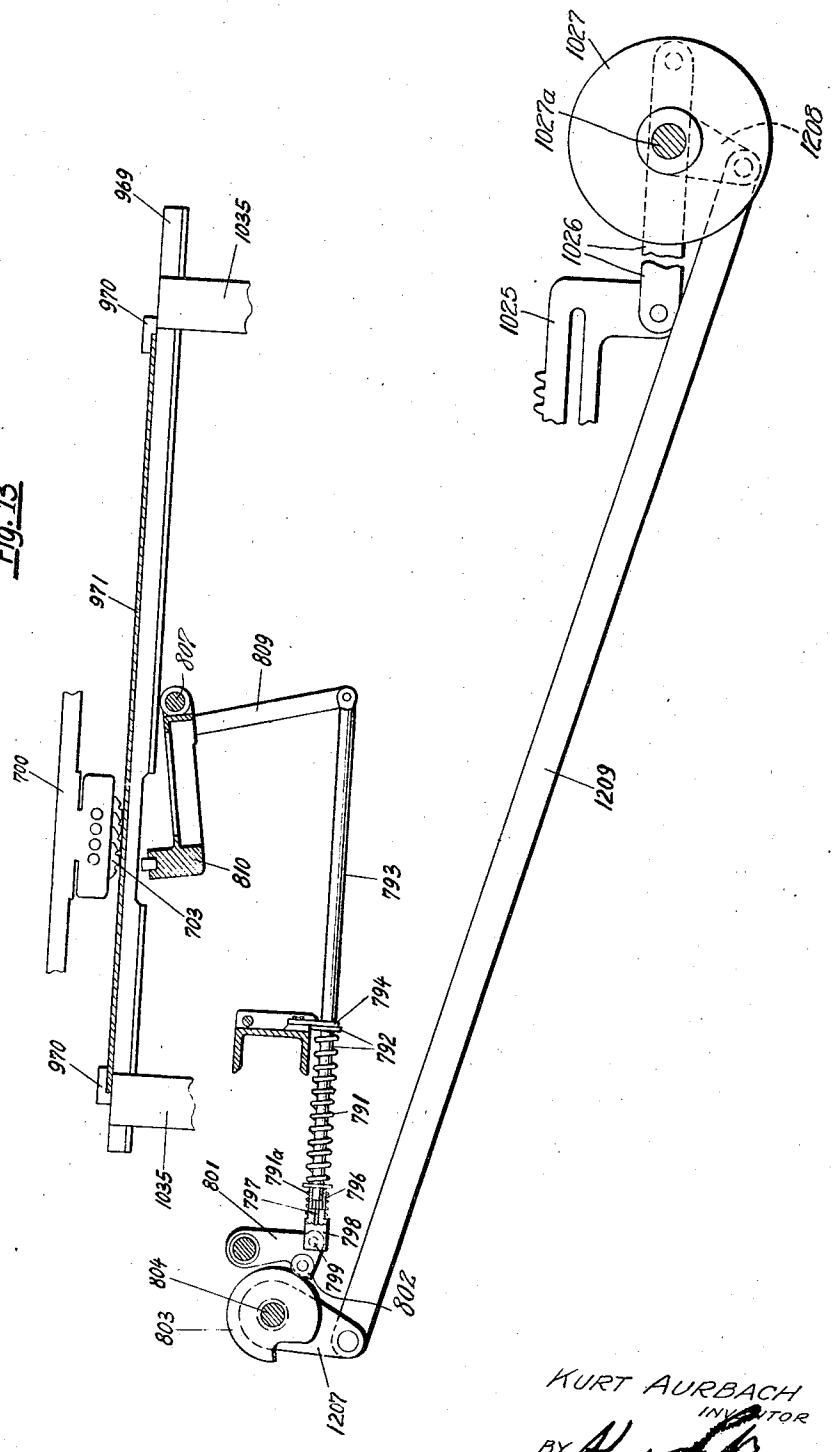
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RECORD-SHEET POSITIONING MEANS FOR BOOKKEEPING MACHINES AND THE LIKE

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Fig. 13



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Patented May 20, 1941

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UNITED STATES PATENT OFFICE

2,242,381

RECORD SHEET POSITIONING MEANS FOR BOOKKEEPING MACHINES AND THE LIKE

Kurt Aurbach, Bielefeld, Germany, assignor to Anker-Werke, A. G., Bielefeld, Germany, a corporation of Germany

Application April 25, 1939, Serial No. 269,885
In Germany April 27, 1938

19 Claims. (Cl. 101—93)

The invention relates to an improvement in cash registers, bookkeeping machines, or similar machines, of the type employing a record sheet, such as an account card, which is introduced sideways into the machine, that is, transversely to the direction of line shift. The object of the invention is to improve the mechanism for bringing a record sheet which has been introduced, to the right line for printing, and for shifting the record sheet to a new line after each printing operation.

French Patent No. 824,525 is an example of a machine of the class described, utilizing a record sheet which is introduced sideways into the machine. According to this patent the record sheets are set directly by hand to the corresponding line to be printed. The setting of the record sheets of other known machines is accomplished indirectly by the machine operation, after a suitable setting means has first been operated. According to the number of bookkeeping operations the record sheets are left in the machine for a shorter or longer time and after being printed upon by the machine are removed. Upon further use the record sheets must again be inserted in the machine and, either by hand, or by the machine operation after previous setting of a setting device, set to the proper line to be printed upon.

The present invention has for its object to eliminate the constant setting of the various record sheets to the line to be printed upon, either by hand, or by a machine operation following the setting of a setting mechanism. According to the invention the various record sheets which are inserted into the machine for carrying out one or more bookkeeping operations exert their own control upon a mechanism which sets them automatically to the right line.

The application of this idea to record sheets which are to receive a plurality of different lines of printing leads to the advantageous result, that the record sheet, which is always inserted at the same place, is not only automatically moved to the line to be printed upon, but is also advanced directly from the last line printed upon to the new line to be printed upon, when it is to remain in the machine for printing a plurality of lines.

The invention will be described with reference to one illustrative example shown in the accompanying drawings, wherein

Figs. 1 and 1*a* show two parts of a plan view of a printing mechanism in accordance with the invention, with portions broken away and other portions in section;

Figs. 2 and 2*a* are two parts of a vertical sectional view of the same mechanism, taken from the bottom of Fig. 1;

Fig. 3 is a vertical section taken from the left of Fig. 1;

Figs. 4–8 are detail diagrammatic views illustrating various positions of the feeler and locking devices of the record sheet adjusting mechanism, the feeler devices appearing in plan view and the locking devices in side elevation;

Fig. 9 is a detail vertical section showing a signal device and locking mechanism in side elevation;

Fig. 10 is a detail side elevation of a portion of key-locking mechanism;

Fig. 11 is a vertical section through the keyboard, showing a part of the key-locking mechanism in side elevation;

Fig. 12 is a front elevation of a part of the key-locking mechanism shown in Fig. 11;

Fig. 13 is a vertical section of a part of the printing mechanism, taken longitudinally of the printing table; and

Fig. 14 is a face view of a part of the table control mechanism.

A printing table **969** (Figs. 1, 1*a*, 2, 2*a*, and 3) guided upon rollers **964***a* is provided with corner pockets **970** for holding an account card **971** inserted into the machine from the left (Fig. 1). The inwardly presented edge **972**, **973**, (Fig. 1*a*) of the account card coacts with feelers **974**, **975**, which are rotatably mounted by pins **977** (Fig. 2*a*) upon levers **976**. These feelers serve, in a manner to be described, to control a mechanism which acts immediately upon insertion of a card to move the table in either direction to bring the proper line of the card to printing position, unless the table happens to be in the right position when the card is inserted. The ends **978** of feelers **974**, **975**, are guided in holes **979** of the machine frame. To the levers **976** are connected links **980**, **981**, (Figs. 1–3) whose other ends are connected at **982** to locking dogs **983**, **984**. The locking dogs **983**, **984**, are rockably mounted upon a shaft **985** and are drawn by tension springs **986**. The dogs **983**, **984**, have ledges **983***a* and **984***a*, respectively, which coact with stops **990***a* and **989***a*, respectively, of locking disks **990**, **989** (Fig. 14). The locking disks **989**, **990**, are fastened to crown gears **991**, **992**, revolubly mounted on shafts **997**, **998**, respectively. The gears **991**, **992**, form parts of two crown gear drives, whose crown gears **993**, **994**, revolubly mounted on shafts **997**, **998**, carry spur gears **995**, **996**, meshing with each other. The crown gear wheels **991**, **992**, are re-

spectively connected to crown gear wheels 993, 994, by spur wheels 999, 1000, rotatably mounted upon pins 999a and 1000a fixed by hubs 999b and 1000b respectively to shafts 997 and 998.

Two gear wheels 1040 and 1039 are fixed by pins to shafts 997 and 998 respectively and both mesh with a gear 1037 fixed to a shaft 1038. Also fixed to shaft 1038 is a pinion 1036 meshing with a rack bar 1033, which is attached by bars 1035 and 1035a to the printing table 969. This mechanism serves to drive the printing table in either direction required to place the card in correct printing position, as will be described presently. The gear ratio is such that the table will move from one line to the next as the locking disk 989 or 990 makes one complete revolution, or a whole number of revolutions.

The spur gear 996 is connected to a spur gear 1007 (Figs. 1 and 3) through a chain of gears consisting of the gear wheels 1001, 1002, which are fixed to a shaft 1005, and gear wheels 1003, 1004, which are rotatably mounted upon a shaft 1006. The spur gear 1007 has pivoted to it a pawl 1008 and is rotatably mounted upon a shaft 1009. The pawl 1008 cooperates with teeth 1010 of a ratchet wheel 1011, which is fixed to a spring barrel 1012. The spring barrel 1012 carries a spring 1013, one end of which is fastened to the barrel 1012, while the other end 1014 is clamped to a stationary post 1015. The spring barrel 1012 is rotatably mounted upon shaft 1009. The spring 1013 tends to rotate the locking disk 990 (Fig. 3) in clockwise direction, acting through the pawl coupling 1008, 1010, 1011, and the gear wheels 1007, 1004, 1003, 1002, 1001, 996, 994, 1000, 992; and tends to rotate the locking disk 989 counterclockwise, acting through the wheels 1007, 1004, 1003, 1002, 1001, 996, 995, 993, 999, 991. This rotation of the locking disks is normally prevented by the ledges 983a, 984a, of the dogs 983, 984, which release the locking disks alternatively, to allow the table to be moved in one direction or the other.

The spring 1013 is rewound each machine operation, by the following mechanism: Fixed to the spring barrel 1012 is a spur gear 1016 (Fig. 3). This spur gear meshes with a toothed wheel 1017, which is freely revoluble on shaft 1006. The shaft 1006 has fixed on it a toothed wheel 1018 and a disk 1019 bearing a pin 1020 which cooperates with a pin 1021 of the toothed wheel 1017. A rack bar 1025 meshing with toothed wheel 1018 is controlled by a link 1026 coupled to a crank disk 1027, which executes one revolution in each machine operation. The crank disk 1027 is secured by a pin to a shaft 1027a, which has fixed to it a crank 1208. A connecting rod 1209 couples crank 1208 to a crank 1207 fixed to main drive shaft 804. During the table-moving operation the gear 1017 revolves counterclockwise and the pin 1021 travels from the position shown in Fig. 3 away from the pin 1020, the disk 1019 remaining stationary during this operation. When the operation of the machine begins, the rack bar 1025 is moved by crank disk 1027 first to the left and then to the right. During the leftward movement of the rack bar the disk 1019 is rotated in clockwise direction and the pin 1020 engages pin 1021 and restores it to the position shown in Fig. 3, thus rewinding the spring 1013. The unwinding of the spring 1013 is limited by the path of movement of the pin 1021, slightly less than 360°, and since the opposite end of spring 1013 is anchored to stationary post 1015, the spring is always restored to the same initial tension when the pin 1021 has returned to the position shown in Fig. 3.

The rack bar 1025 is provided with an inclined surface 1028, which coacts with a pin 1029 riveted to a bar 1030. The bar 1030 is under the influence of a tension spring 1034 and has a bevelled end 1031 which cooperates with the teeth 1032 of rack bar 1033 to hold the printing table stationary during the machine operation.

It will be observed in Fig. 1a that the two parts 972 and 973 of the account card are relatively offset and are joined by an incline. This shape of the edge of the card is produced by cutting off a part of the margin at each printing operation. For this purpose the following mechanism is provided: A stamp 1047 and cooperating matrix 1048 are positioned at the margin of the card near the feelers 974, 975. The stamp 1047 is connected to a lever 1049 at 1050. The lever 1049 is pivotally mounted at 1049a and is pulled by a spring 1051 so as to coact with a cam disk 1052, driven from the main drive shaft 804, by connections not shown in the drawings. Before the cutting mechanism is operated, the feelers 974, 975, are removed from operative position to the position shown in Fig. 8. For this purpose there are mounted upon the links 980, 981, ears 1041, 1042, which cooperate with the nose 1043 of a bell crank lever 1045, 1045a, rockably mounted on a shaft 1045b. The arm 1045a of the bell crank lever carries a roller 1045c bearing against a cam 1046 driven, by connections not shown, from the main drive shaft 804.

The spring 1013 is normally acting to press the stops 989a and 990a against the ledges 984a and 983a, with a pressure which would interfere with a free movement of the feeler mechanism to the inoperative position shown in Fig. 8. For the purpose of retracting the stops 989a, 990a, there is fixed to shaft 1005 a star wheel 1024, provided with three teeth, each adapted to coact with a shoulder 1023, formed by a notch in disk 1019. The shaft 1005, it will be remembered, has fixed to it a gear 1001 which meshes with gear 996. The connections between the star wheel 1024 and the locking disks 989, 990, are such that whenever the stops 989a and 990a are in contact with ledges 984a and 983a, one or another of the teeth of star wheel 1024 stands in the path of shoulder 1023. Thus when the disk 1019 begins to rotate in clockwise direction, by the leftward movement of rack 1025, the star wheel 1024 is rocked through a small angle, sufficient to raise the stops 989a, 990a, from the ledges 984a, 983a, as shown in Fig. 8.

When two cards are inserted in succession without an intervening printing operation, for example when the wrong card is inserted by mistake, the spring 1013 may become exhausted and unable to move the table. In this case an idle operation is required to restore the tension of the spring. To warn the operator of approaching exhaustion of the spring there is provided a bell 1057 and a knocker 1055 rockably mounted on a shaft 1062 and provided with a pawl 1054 in position to be struck by the pin 1021 of gear 1017, when the latter is approaching the limit of its movement. There is also provided a device which locks the machine when the gear 1017 moves a little further. For this purpose a lever 1058, 1059, is rockably mounted upon shaft 1062, the arm 1058 being in position to be depressed by pin 1021 after the bell has been rung. The arm 1059 is articulated to a link 1060 and is normally held by a spring 1061 against a stop 1061a.

The machine is normally locked against operation by a releasing lever 1202 (Fig. 11), which is urged by a spring 1201 against a pin 1200 of a slide 1191. The slide is guided by two pins 1194 and is normally held in a central position by a spring 1195. It contains two slanting recesses 1196 which cooperate with pins 1197 on two keys 1198 and 1199. It will be noticed that the key 1198 will move the slide upward and key 1199 will move it downward. Several blocking devices control the movement of slide 1191. The first of these is operated by the feelers 974 and 975. The ends 978 (Fig. 1a) of the feelers extend through holes 979 in the frame of the machine to coact with one end of a lever 1063, which is pulled against the ends 978 by a spring 1064. The lever 1063 is pivoted on a shaft 1063a and its opposite end is connected to a link 1065 by a spring 1065a and by a pin and slot connection 1065b. The opposite end of link 1065 (Fig. 11) bears a pin 1192 engaging in a recess 1193 of the slide 1191. There are three possible positions of the pin 1192, corresponding to the three positions of the feelers 974 and 975 shown in Figs. 5, 4, and 6, respectively. Only in the intermediate position of pin 1192, which corresponds to the position of the feelers shown in Fig. 4, can the slide 1191 be moved upward by actuation of key 1198, for a normal operation of the machine. In the other two positions of the pin 1192 the slide 1191 is locked against upward movement, but can be moved downward by key 1199, which is the idle operation key. Thus the first blocking means is dependent upon the table being in the correct position, as determined by the feelers 974 and 975.

The second blocking means prevents a normal operation of the machine by key 1198 when the spring 1013 is exhausted and therefore incapable of moving the table to bring the right line of the card to printing position. This is the function of the link 1060 controlled by the lever 1058, 1059. This link bears a pin 1188 (Fig. 10) engaging in a slot 1189 of a bar 1190 fixed to slide 1191 (Fig. 12). In the normal position of bar 1060, when the spring 1013 is not exhausted, the pin 1088 stands over the deep part of recess 1189 and allows the bar 1191 to be moved upward by depression of key 1198. When the link 1060 is moved to the right (Fig. 10) by operation of lever 1058, 1059, the slide 1191 cannot be moved upward by key 1198, but only downward by key 1199, for an idle operation of the machine.

A third blocking means is controlled by the printing table in the limit position for printing on the first line of the account card, as when a new card is inserted. A new card has no edge 973 formed by cutting away the margin of the card and the staggered position of the feelers 974 and 975, shown in Fig. 1a, which is ordinarily necessary for the release of the machine, is excluded. For this reason an arrangement is provided whereby the machine is released directly by the printing table in its limit position for printing on the first line of the card. A lever 1066 (Fig. 3) pivoted on a shaft 1066a is urged by a spring 1067 against a stop pin 1067a. The lower extremity of the lever 1066 stands opposite the end of table 969. Movement of the table to its limit position, in which the bar 1035 comes against a pin 1053, rocks the lever 1066 in counterclockwise direction. A link 1068 articulated to the upper end of lever 1066 is pivotally connected at its opposite end to a fork lever 1203 (Fig. 11) pivoted on a shaft 1203a. The forked end 1204 of lever 1203 embraces a pin 1205 on link 1065. Thus a movement of lever 1066 by table 969 directly throws the pin 1192 to its intermediate position and allows the machine operation to be released by key 1198.

The printing mechanism may be of the construction shown in my copending application, Serial No. 226,467, filed August 24, 1938. Type wheels 703 mounted on a frame 700 are set by mechanism not shown. A printing hammer 810 pivoted on a shaft 807 has an arm 809 articulated to an operating rod 793. The rod 793 is guided in a bearing plate 794 and is connected by a coupling 798 to a rocker arm 801. The latter bears a roller 802 which rides upon a cam 803 fixed to the main shaft 804. The rod and the rocker arm are pressed toward the cam by a pair of compression springs 791 and 791a mounted, respectively, upon a bushing 792 and a tube 796 surrounding the rod 793. The two-spring arrangement is for a particular purpose described in my copending application, Serial No. 226,467, but it will suffice to say here that the combined effect of the springs is to press the rocker arm roller 802 against the cam 803 and thereby to operate the printing hammer when the stop of the cam passes the roller.

The operation of the described mechanism is as follows:

By means of the spring 1013 (Figs. 1, 2, and 3), which is normally under tension when the machine is at rest, the possibility is provided of utilizing the mere insertion of a record sheet, such as an account card, into the printing table in such a way that the latter is instantly set to the line which is to be printed upon. For this purpose upon introduction of the account card, the edge 972, 973, of the card coacts with the feelers 974, 975, to move the latter out of their position of rest shown in Fig. 7 into one of the positions shown in Figs. 1a and 4–6, depending upon whether the card has been previously printed upon by the machine, or whether it is a fresh card which has not been printed upon, and depending upon the position of the printing table when the card is introduced. The feelers 974, 975, are moved to the right (Figs. 1a and 2a) upon insertion of the card, being moved more or less to the right according to the form of the edge 972, 973, of the card at the place of contact with the feelers. The locking dogs 983, 984, which are connected to the feelers 974, 975, are consequently also moved more or less in clockwise direction (Figs. 4–6), in order to release one or the other of the stops 989a or 990a of the locking disks 989, 990. If the card inserted is one which has been previously printed upon, and if the printing table is already at the correct line for the next printing operation, the locking dogs 983 and 984 are moved to the positions shown in Fig. 4, when the card is inserted. In this position both of the stops 989a and 990a are blocked and no shifting of the printing table results. If the printing table is in such position that the card is too far down, with respect to the printing mechanism, the locking dogs 983 and 984 are moved by the feelers to the position shown in Fig. 5. In this position the stop 989a is freed by the aperture in the ledge 984a of locking dog 984 and the table-moving mechanism is released for operation to move the able to the left, as indicated by the arrow in Fig. 5. That is to say, the locking disk 989 is released to allow the crown gear 991 to turn idly while pinion 1000 revolves in counterclockwise direction (Fig. 3)

around stationary crown gear 992, thus turning gears 1037 and 1036 in clockwise direction and moving the rack bar 1033 and table 969 to the left. The movement terminates when the feeler 974 rides up on to the edge 972 of the card and swings the locking dog 984 to the position shown in Fig. 4, where its ledge 984a intercepts the stop 989a. At this time the table has reached the correct line for printing. If the printing table is in such position when the card is inserted that the card is too far up with respect to the printing mechanism, the locking dogs 983 and 984 are moved by the feelers 975 and 974 to the positions shown in Fig. 6. In these positions the stop 989a is blocked, while the stop 990a is released. Consequently the table-moving mechanism is set in operation to move the table to the right, as indicated by the arrow in Fig. 6, the movement being terminated when the feeler 975 rides down on to the edge 973 of the card 975, which shifts the locking dog 983 to the position shown in Fig. 4, where it intercepts the stop 990a.

At the same time the printing table is being moved by spring 1013, the wheel 1017, which is geared to the spring barrel, is rotated by an amount which moves the pin 1021 away from its starting position (Fig. 3), through an angular distance corresponding to the extent of movement of the table. The limit of movement of gear 1017 is slightly less than 360°, which brings it into contact with the opposite side of pin 1020. This movement is preferably at least sufficient to allow the printing table to travel from one end position to the other.

After the proper line to be printed upon has been automatically selected the machine is released to print upon the card. At the beginning of the machine operation the crank disk 1027 (Figs. 1 and 3) moves the rack bar 1025 to the left (Fig. 3), and pin 1029 moves up on incline 1028 as the locking bar 1030 moves under the pull of its spring 1034 to engage the corresponding tooth 1032 of the rack bar 1033 fixed to the printing table and thereby secures the printing table. At the same time, the disk 1019 begins to turn in clockwise direction under the action of toothed wheel 1018 and shoulder 1023 engages one of the teeth of the star wheel 1024 and turns the star wheel through a small angle, sufficient to retract the locking disks 989 and 990, against the force of spring 1013, so that their stops 989a and 990a assume the positions shown in Fig. 8. This relieves the locking dogs of the pressure of the stops 989 and 990, which is required in order to enable the feelers 974, 975, which are connected to the locking dogs to be brought into the inoperative position shown in Fig. 8 with the least possible friction. This position of the feelers 974, 975, is necessary in order to be able to cut the edge of the card after each line is printed upon, which is accomplished by the cutting devices 1047, 1048, in the further course of the machine operation. First the feelers 974, 975, are brought into the position shown in Fig. 8 through the action of parts 1041—1046, so that by means of the parts 1049—1052 (Figs. 1 and 3) the stamp 1047 can be made to operate to cut the edge 972 of the card. The cutting of the card not only guarantees the exact adjustment of the printing table when the card is next inserted, but also brings about the automatic line shift, for when the card remains in the machine for another printing operation, at the end of the machine operation, the printing table and the card therewith are set to the new line under the control of feelers 974, 975, by the action of spring 1013. The feelers are restored to contact with the edge of the card by the action of cam 1046 and thereafter, upon the return of rack bar 1025 to the right, the star wheel 1024 follows the shoulder 1023 of disk 1019, allowing the stop 990a to move into contact with the ledge 983a and the stop 989a to pass through the aperture in ledge 984a, which has assumed the position shown in Fig. 5, because the margin of the card has been cut off. The table-moving mechanism then operates immediately to bring the new line into printing position.

During the table moving operation the gear 1017 executes a partial revolution in clockwise direction, the extent of which depends upon the extent of movement of the table required to bring the right line of the account card to printing position. In the course of the following machine operation the movement of rack bar 1025 to the left rotates disk 1019 clockwise and pin 1020 engages pin 1021 and restores the gear 1017 to the position shown in Fig. 3, rewinding the spring 1013.

In the state of rest of the machine, when no card is inserted, the releasing lever 1202 is blocked by pin 1200 and the slide 1191 is blocked by pin 1192 against upward movement. At this time the pin 1192 is in its extreme left position, blocking key 1198, and the lever 1063 is in the left hand position marked "locked." When a card is inserted with the table in such position that the feelers engage the card as shown in Fig. 5, the lever 1063 remains in the left hand position and the slide 1191 still blocks the key 1198. When the table moves the card into the position shown in Fig. 1a, the end 978 of feeler 974 moves the lever 1063 to the middle position, marked "released." In this position the pin 1192 is above the downwardly extending notch of recess 1193 and the key 1198 is unblocked. If the card is inserted with the table in such position as to bring the feelers into engagement with the card in the position shown in Fig. 6, the end 978 of feeler 975 moves lever 1063 to the right hand position marked "locked," thereby blocking the key 1198. The key 1199 can be operated when the lever 1063 is in either of the positions marked "locked," but not when it is in a position marked "released." If the card inserted is a new one, the printing table is moved by the spring 1013 to its extreme right end position, thereby rocking lever 1066 and shifting the pin 1192 directly to is middle position, so that the key 1198 can be operated.

If the operator inserts by mistake a wrong card which causes a considerable movement of the printing table, and thereafter inserts the correct card, the combined movements of the printing table may exhaust the spring 1013. In this case the pin 1021 will rock lever 1058, 1059, and throw pin 1188 over the shoulder in recess 1189, blocking operation of key 1198. The operator, warned by the sounding of bell 1057, which occurs before the blocking of the key 1198, will then depress key 1199 to cause an idle operation of the machine for rewinding the spring 1013.

I claim:

1. In a machine of the class described, a printing mechanism including a line of type members, a record sheet holder into which a record sheet can be inserted from the outside of the machine, a unidirectional driving means, gearing connecting said driving means with said record sheet holder and adapted to move the latter transversely to said line of type, said gearing including two differential gear mechanisms adapted

to transmit the drive to said record sheet holder in the two opposite directions transverse to said line of type, and means including a feeler mechanism coacting with the record sheet on said holder for controlling the alternative operation of said differential gear mechanisms.

2. In a machine of the class described, a printing mechanism including a line of type members, a record sheet holder into which a record sheet can be inserted from the outside of the machine, a driving spring, gearing connecting said driving spring with said record sheet holder and adapted to move the latter transversely to said line of type, said gearing including two differential gear mechanisms adapted to transmit the drive to said record sheet holder in the two opposite directions transverse to said line of type, two locking elements respectively forming part of said two differential gear mechanisms, a feeler mechanism coacting with the record sheet on said holder, dogs controlled by said feeler mechanism so as to engage said locking devices alternatively, a motor, means operated by said motor for imparting backward motion to said locking elements to relieve said dogs of the pressure of said driving spring, and means operable by said motor to retract said feeler mechanism from the record sheet.

3. In a machine of the class described, a driving motor, a record sheet holder into which a record sheet can be inserted from the outside of the machine, a printing mechanism comprising a line of type members and means operated by said motor for causing said type members to make an impression on a record sheet in said holder, means for starting an operation of said printing mechanism, driving means to move the record sheet in either direction transverse to said line of type members, drive arresting means including a feeler mechanism coacting with the record sheet and movable by the latter to arrest said driving means when the record sheet reaches printing position, and blocking means controlled by said feeler mechanism for blocking said starting means during the adjustment of the record sheet, said blocking means being moved by said feeler mechanism to unblock said starting means, as said feeler mechanism moves to arrest said driving means.

4. In a machine of the class described, a driving motor, a record sheet holder into which a record sheet can be inserted from the outside of the machine, a printing mechanism comprising a line of type members and means operated by said motor for causing said type members to make an impression on a record sheet in said holder, means for starting an operation of said printing mechanism, driving means to move the record sheet in either direction transverse to said line of type members, drive arresting means including a feeler mechanism coacting with the record sheet and movable by the latter to arrest said driving means when the record sheet reaches printing position, and means controlled by said feeler mechanism for blocking said starting means while no record sheet is in said holder.

5. In a machine of the class described, a driving motor, a record sheet holder into which a record sheet can be inserted from the outside of the machine, a printing mechanism comprising a line of type members and means operated by said motor for causing said type members to make an impression on a record sheet in said holder, means for starting an operation of said printing mechanism, means including a feeler mechanism coacting with the record sheet, to adjust the latter in a direction transverse to said line of type members, and means controlled by said feeler mechanism for blocking said starting means during the adjustment of the record sheet, said blocking means being moved by said feeler mechanism to release said starting means when the record sheet reaches a position in which said type members will print upon a certain line thereof.

6. In a machine of the class described, a record sheet holder into which a record sheet can be inserted from the outside of the machine, a printing mechanism including a line of type members and means for causing said type members to make an impression on a record sheet in said holder; means for progressively modifying the structure of the record sheet as impressions are made on successive lines thereof by said type members, means for adjusting the record sheet in a direction transverse to said line of type members, including feeler mechanism coacting with said record sheet and having three positions depending upon whether it is entirely engaging an unmodified part of the record sheet, entirely engaging a modified part of the record sheet, or engaging both unmodified and modified parts of the record sheet, said record sheet adjusting means comprising reversible driving means controlled by said feeler mechanism to move the record sheet in the direction toward the position in which said feeler mechanism is engaging both unmodified and modified parts of the record sheet, means for starting an operation of said printing mechanism, and means controlled by said feeler mechanism for blocking said starting means, said blocking means being moved to unblocking position when said feeler mechanism is engaging both unmodified and modified parts of the record sheet.

7. A machine as described in claim 6, including means to start an operation of said printing mechanism, and means to block said starting means, said last means being held by said feeler mechanism in blocking position, except when said feeler mechanism is engaging both unmodified and modified parts of the record sheet.

8. A machine as described in claim 6, including means to start an operation of said printing mechanism, means to block said starting means, said last means being held by said feeler mechanism in blocking position, except when said feeler mechanism is engaging both unmodified and modified parts of the record sheet, and auxiliary means operable by said record sheet holder to release said starting means when the record sheet is in the position in which said type members will print upon the first line thereof.

9. In a machine of the class described, a driving motor, a record sheet holder into which a record sheet can be inserted from the outside of the machine, a printing mechanism comprising a line of type members and means operated by said motor for causing said type members to make an impression on a record sheet in said holder, means for starting an operation of said printing mechanism, spring actuated record sheet adjusting means, including feeler mechanism coacting with a record sheet in said holder, said record sheet adjusting means being adapted to be set in operation upon movement of said feeler mechanism by a record sheet inserted in said holder, to adjust the record sheet in a direction transverse to said line of type members, for determining the line of the record sheet on which said

type members are to print, and means controlled by said record sheet adjusting means when its driving spring becomes exhausted for blocking said starting means.

10. In a machine of the class described, a printing mechanism including a line of type members, a record sheet holder into which a record sheet can be inserted in a direction parallel to said line of type members from the outside of the machine, means to move said record sheet holder in a direction transverse to said line of type members, for determining the line of the record sheet on which said type members are to print, and drive blocking means for said moving means comprising feeler mechanism mounted in position to be engaged by the inwardly presented edge of the record sheet and movable thereby in a direction substantially parallel to said line of type members to control said record sheet holder moving means.

11. In a machine of the class described, a printing mechanism including a line of type members, a printing table adjacent said type members having means to receive a record sheet presented thereto from the outside of the machine in a direction parallel to said line of type members and to hold the record sheet in a definite position thereon, means mounting said printing table for bodily movement in a direction transverse to said line of type members, means for moving said printing table in said transverse direction for determining the line of the record sheet on which said type members are to print, and drive blocking means for said moving means comprising feeler mechanism mounted in position to be engaged by the inwardly presented edge of the record sheet and movable thereby in a direction substantially parallel to said line of type members to control said printing table-moving means.

12. In a machine of the class described, a printing mechanism including a line of type members, a printing table adjacent said type members having means to receive a record sheet presented thereto from the outside of the machine in a direction parallel to said line of type members and to hold the record sheet in a definite position thereon, means mounting said printing table for bodily movement in a direction transverse to said line of type members, means for moving said printing table in said transverse direction for determining the line of the record sheet on which said type members are to print, and drive blocking means for said moving means comprising feeler mechanism mounted in position to be engaged by the inwardly presented edge of the record sheet and movable thereby in a direction substantially parallel to said line of type members to control said printing table-moving means, said printing table-moving means being normally in condition to be set in operation upon movement of said feeler mechanism by a record sheet inserted into the machine.

13. In a machine of the class described, a printing mechanism including a line of type members, a printing table adjacent said type members having means to receive a record sheet presented thereto from the outside of the machine in a direction parallel to said line of type members and to hold the record sheet in a definite position thereon, means mounting said printing table for bodily movement transverse to said line of type members, means for moving said printing table in either of two opposite directions transverse to said line of type members for determining the line of the record sheet on which said type members are to print, and drive blocking means for said moving means comprising feeler mechanism mounted in position to be engaged by the inwardly presented edge of the record sheet and movable thereby in a direction substantially parallel to said line of type members to control said printing table-moving means.

14. A machine as described in claim 13, wherein said record sheet adjusting means comprises two reversely operating differential driving gears and means controlled by said feeler mechanism for alternatively locking said driving gears.

15. A machine as described in claim 13, wherein said record sheet adjusting means comprises two reversely operating differential driving gears each including a locking disk, and dogs controlled by said feeler mechanism so as to be alternatively engaged with said locking disks.

16. In a machine of the class described, a printing mechanism including a line of type members, a printing table adjacent said type members having means to receive a record sheet presented thereto from the outside of the machine in a direction parallel to said line of type members and to hold the record sheet in a definite position thereon, means mounting said printing table for bodily movement in a direction transverse to said line of type members, means for moving said printing table in said transverse direction for determining the line of the record sheet on which said type members are to print, drive blocking means for said moving means comprising feeler mechanism mounted in position to be engaged by the inwardly presented edge of the record sheet and movable thereby in a direction substantially parallel to said line of type members to control said printing table-moving means, means to retract said feeler mechanism from the edge of the record sheet, and cutting means operable in the space vacated by said feeler mechanism when retracted, for cutting off short pieces of the margin of the record sheet corresponding in length to the space between printing lines.

17. In a machine of the class described, a printing mechanism including a line of type members and means for causing said type members to make an impression on a record sheet, a printing table adjacent said type members having means to hold a record sheet in a definite position thereon, means for modifying the structure of the record sheet when each impression is made thereon by said type members, to differentiate the portion of the sheet which has been typed upon from the blank portion, means for moving said printing table in either direction transverse to said line of type members, drive blocking means for said moving means comprising feeler mechanism coacting with the record sheet and movable by the modified portion thereof as said table moves to arrest said printing table with its first clear line in printing position; means for starting an operation of said printing mechanism, means controlled by said feeler mechanism for blocking said starting means until said feeler mechanism is moved to arrest said printing table in printing position, and auxiliary means for releasing said blocking means, operable directly by said printing table upon movement into position for printing on the top line of the record sheet.

18. In a machine of the class described, a printing mechanism including a line of type members, a record sheet holder for supporting a

record sheet in position to be printed upon by said printing mechanism, driving means for moving the record sheet in either direction transverse to said line of printing members to determine the line thereof to be printed upon, locking means normally locking said driving means, and means operated by the record sheet upon placement in said record sheet holder for releasing said locking means.

19. In a machine of the class described, a printing mechanism including a line of type members, a record sheet holder for supporting a record sheet in position to be printed upon by said printing mechanism, means for cutting pieces from the margin of the record sheet in successive printing operations, driving means for moving the record sheet in either direction transverse to said line of printing members to determine the line thereof to be printed upon, locking means normally locking said driving means, releasing means operated by the record sheet upon placement in said record sheet holder for releasing said locking means, said releasing means comprising feeler means coacting with the edge of the record sheet cut off by said cutting means to determine the movement of the record sheet by said driving means.

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