

(No Model.)

4 Sheets—Sheet 1.

W. ASSHETON.
AUTOGRAPHIC REGISTER.

No. 422,872.

Patented Mar. 4, 1890.

Fig. 1.

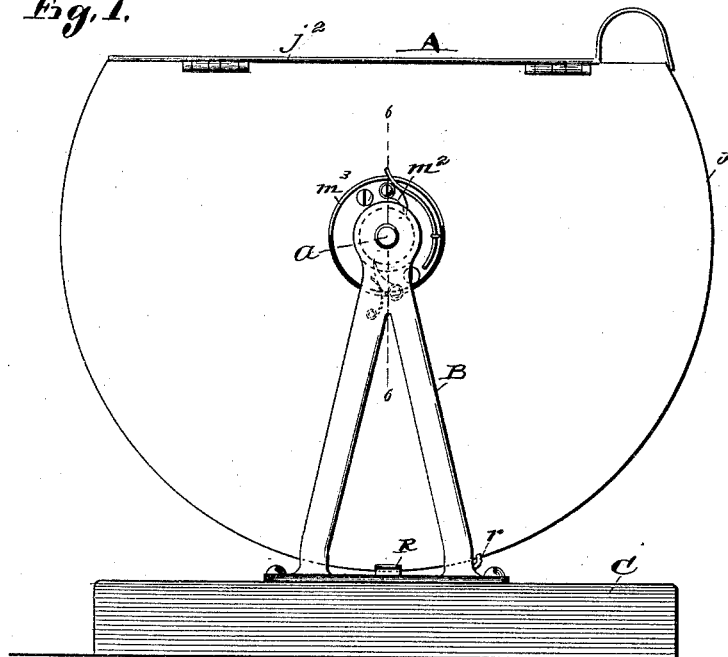
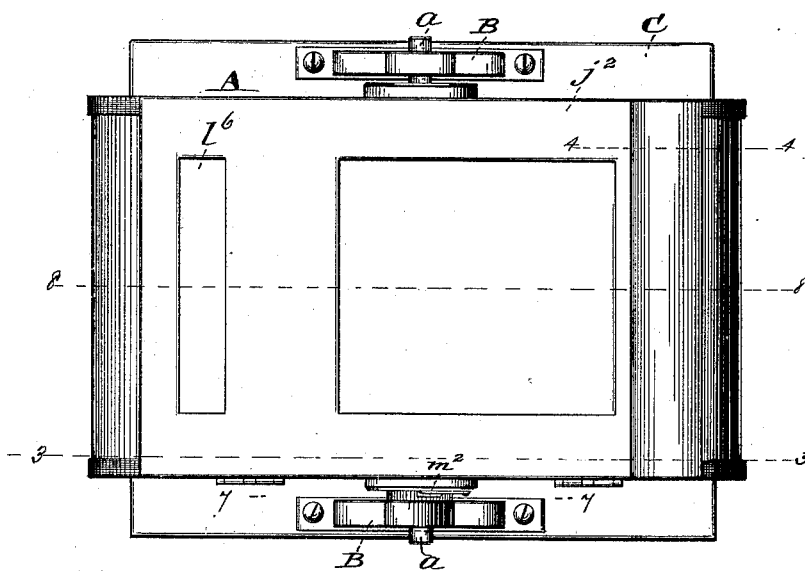


Fig. 2.

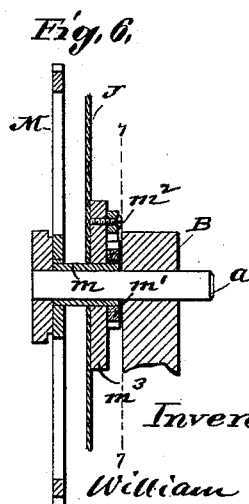
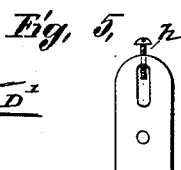
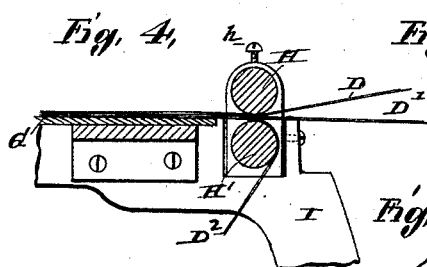
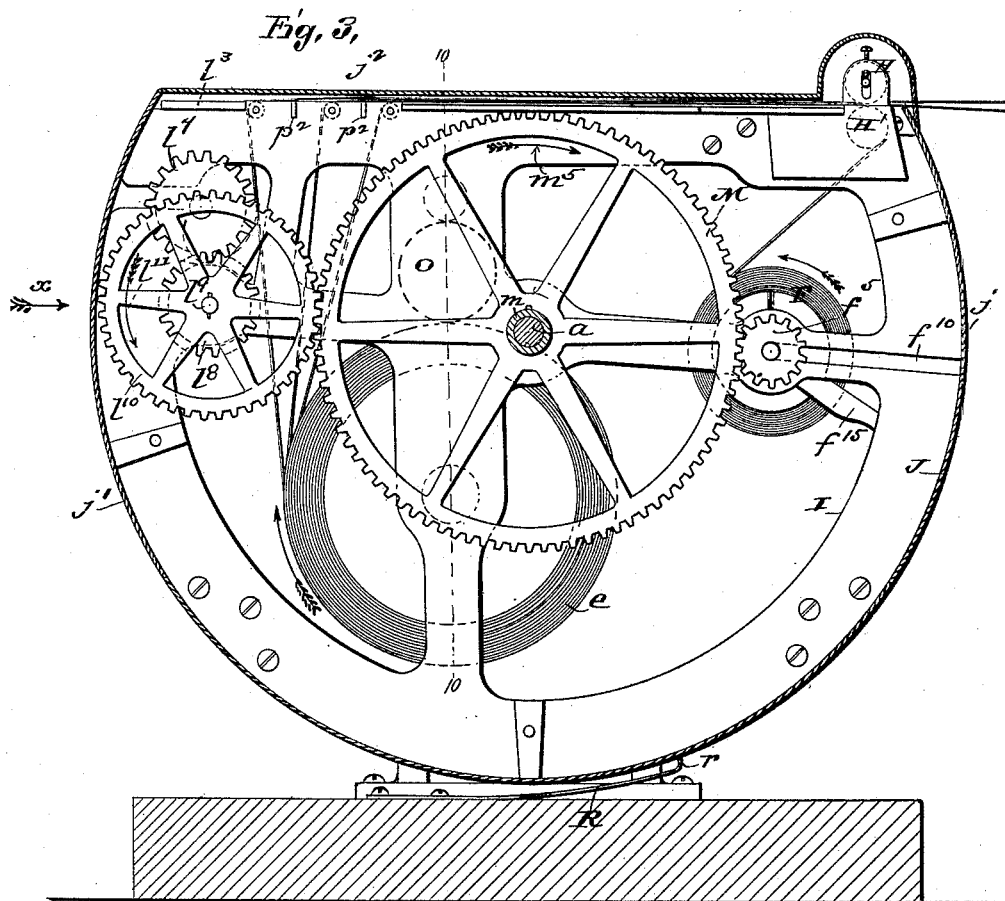


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G. N. Hinchman Jr.
Witness

Inventor:
William Assheton
by C. C. Moody atty

No. 422,872.

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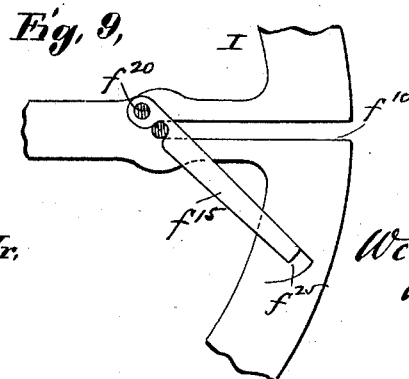
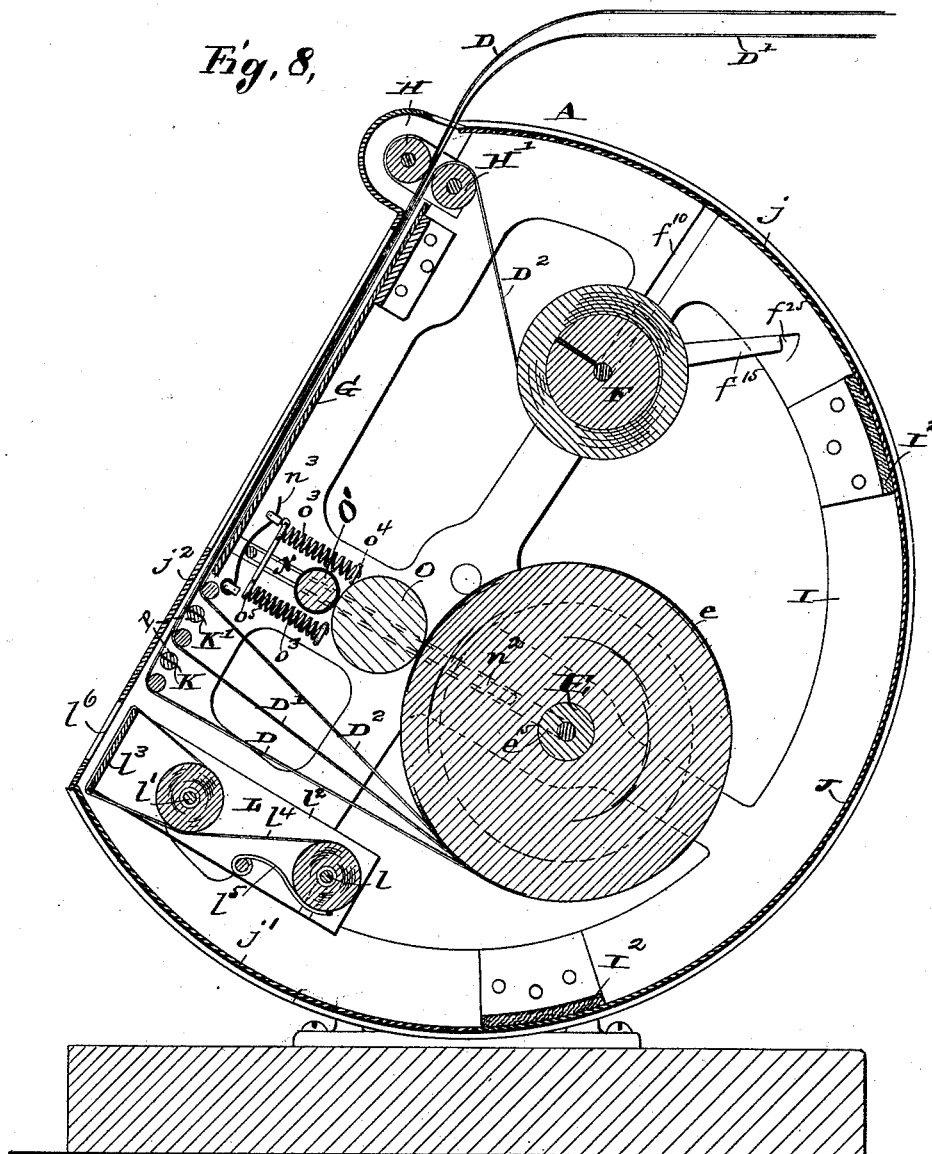
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Fig. 10,

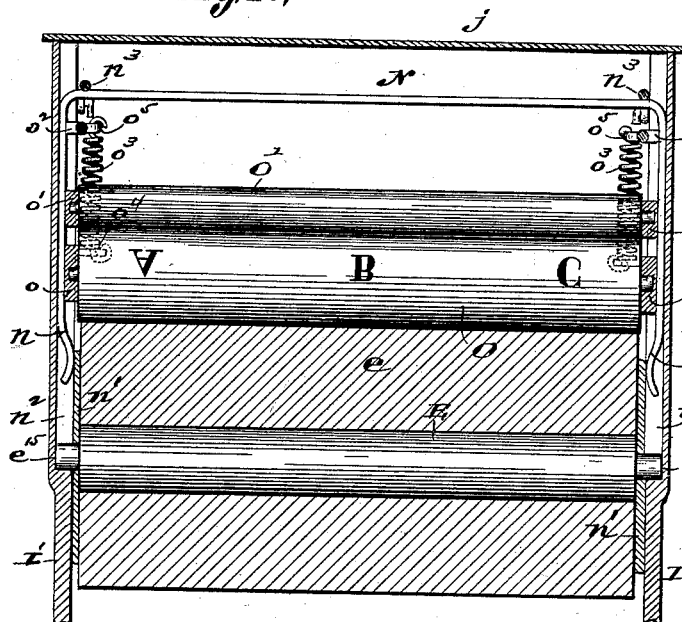


Fig. 11,

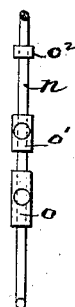


Fig. 12,

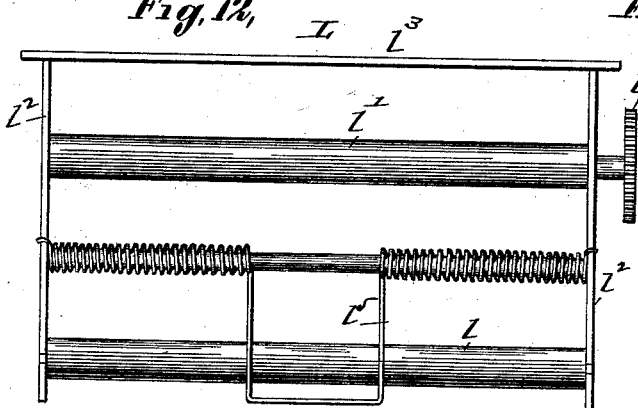


Fig. 13,

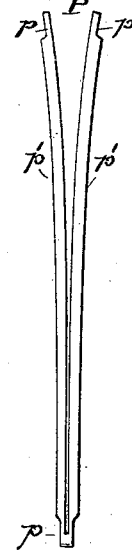


Fig. 14,

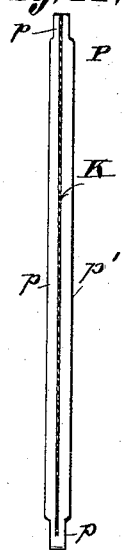
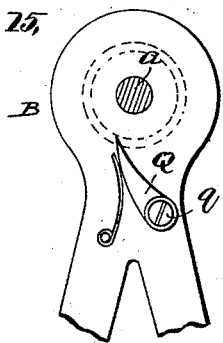


Fig. 15,



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UNITED STATES PATENT OFFICE.

WILLIAM ASSHETON, OF ST. LOUIS, MISSOURI.

AUTOGRAPHIC REGISTER.

SPECIFICATION forming part of Letters Patent No. 422,872, dated March 4, 1890.

Application filed April 16, 1888. Serial No. 270,821. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ASSHETON, of St. Louis, Missouri, have made a new and useful Improvement in Autographic Registers, of which the following is a full, clear, and exact description:

I have heretofore patented, December 6, 1887, No. 374,231, an improvement in autographic registers in which the register-case is adapted to be oscillated, and thereby effect the movement of the paper webs.

The present improvement in part relates to the construction referred to. Some of its features, however, can be applied to other forms of registers, and the tension device can be used upon almost any paper-roll to regulate the unwinding of the web. All of them can be advantageously combined in an oscillating register such as described.

The improvement consists of the tally device for verifying the entries made upon the main webs of the register, of the means for holding the carbon-paper, of the means for exerting a tension upon the delivery paper-roll, of the means for printing the outer paper web, of the means for holding the receiving-roll in place, of the means for communicating the oscillatory movement of the case to movable parts within it, and of other minor features of construction, all substantially as is hereinafter specified and claimed, aided by a reference to the drawings making part of this specification, in which—

Figure 1 is a side elevation of the improved register; Fig. 2, a plan of the same; Fig. 3, a vertical longitudinal section on the line 3 3 of Fig. 2; Fig. 4, a vertical longitudinal section on the line 4 4 of Fig. 2; Fig. 5, an elevation of the device for tightening the pressure-rolls; Fig. 6, a vertical cross-section on the line 6 6 of Fig. 1; Fig. 7, a vertical section on the line 7 7 of Fig. 2; Fig. 8, a vertical longitudinal section on the line 8 8 of Fig. 2, the case being inclined; Fig. 9, a detail, being a side elevation, looking in the direction of the view shown in Fig. 8, of one of the journals of the receiving-roller, (the view includes that portion of the frame which constitutes the journal-bearing, and also the pivoted arm used to confine the journal;) Fig. 10, a verti-

cal cross-section on the line 10 10 of Fig. 3; Fig. 11, a detail, being an elevation, from the interior of the register, of one of the end (vertical) portions of the delivery-roll tension-spring; (the printing-rollers' journal-boxes are shown attached to the part;) Fig. 12, an elevation, looking in the direction of the arrow *a*, Fig. 3, of the tally device; Fig. 13, a top view of the carbon-paper holder, its sides being opened apart as when the holder is free; Fig. 14, a view showing the holder as when closed to hold the carbon-paper; and Fig. 15, a section on the same line as that of Fig. 7, but looking in the opposite direction, and showing the upper end of the upright in which the register-trunnion is journaled, and the dog which is pivoted to the upright and which coacts with the ratchet upon the register.

The same letters of reference denote the same parts.

The register A, Figs. 1 and 2, saving as it may be modified or supplemented by the improvement, is substantially the same as that above referred to as having been patented to me. Its trunnions *aa* are journaled in the uprights B B to enable the register to be oscillated, as indicated by its positions in Figs. 3 and 8, respectively. The uprights in turn rest upon a suitable base C.

The roller from which the paper webs D D' D², &c., are delivered is shown at E, the receiving-roller is at F, and G represents the bearing-surface over which the paper webs are drawn, and upon which they are supported when written upon. The pressure-rollers, which are employed to press the upper web or webs sufficiently upon the lowest web D² to enable the lowest web as it is wound upon the receiving-roller F to effect the movement of the upper web or webs D D' past the surface G and to be delivered from the register, as indicated, are shown at H H'. The frame of the register consists substantially of the sides I I', united by the cross-pieces I², Fig. 8, and it is inclosed in a case J.

As thus far specified the construction is mainly the same as that above mentioned, the betterments, if any, being mainly mechanical, and the paper webs in the operation of

the machine being unwound from the roller E, drawn over the bearing G, and the under web being wound upon the roller F, the carbon-papers K K' are respectively interposed between the webs D D' and the webs D' D², and the webs D D' are delivered from the register.

L, Figs. 3, 8, and 12, represents the tally device. It consists, mainly, of a delivery-roll *l* and a receiving-roll *l'*, journaled in a frame *l²*, which is provided with a bearing *l³*. A paper web *l⁴* is wound upon the roll *l*, and its end is carried over the bearing *l³* and then around the roll *l'*. A suitable tension device—say in the form of the spring *l⁵*—is employed to regulate the unwinding of the web. The tally device L is inserted in the register so as to bring the bearing *l³*, with the superimposed web *l⁴*, into position opposite an opening *l⁶* in the register-case for the operator to write upon the web *l⁴*.

The winding of the web off from the roll *l* and onto the roll *l'* is effected, preferably, in the following manner: The shaft of the roll *l'* is provided with a pinion *l⁷*, which engages with a pinion *l⁸* on a shaft *l⁹*, which is journaled in a bearing in the frame of the register. The shaft is also provided with the gear *l¹⁰*, which in turn is in engagement with the gear M, that is upon the register-trunnion. The gear M is movable only in the direction of the arrow *m⁵*, Fig. 3, as will be presently explained; hence, when the register is tilted backward, as indicated in Fig. 8, the gear *l¹⁰*, shaft *l⁹*, and pinion *l⁸* are rotated in the direction of the arrow *l¹¹*, Fig. 3, and the pinion *l⁷* and roll *l'* are rotated in the opposite direction, and the web *l⁴* is moved past the opening *l⁶*. The special use of the tally-sheet will be described in connection with the operation of the register.

The tension device N, Figs. 8 and 10, for the paper-roll *e* upon the roller E, consists substantially as follows: A U-shaped spring is dropped or placed within the register-case so that its end portions *n n* press against the ends of the roll *e* and sufficiently to arrest the unwinding of the roll saving when the web is drawn by the action of the receiving-roll. The ends *n n* may press directly upon the roll *e*; but it is better for them to bear upon washers *n' n'*, which in turn clamp the roll *e* endwise. The tension-clamp N is held endwise in position by allowing its ends *n n* to be confined between the roll *e* and the frame of the register, and it is held laterally in place by having the ends *n n* come in grooves *n² n²*, respectively, in the frame. One advantage accruing from this form of tension device is being able to readily insert it in place after the roller E is in position. There may be a spring *n³*, Figs. 8 and 10, to hold the part N more securely in its place.

The printing mechanism.—In combination with the web which is discharged from the register means are employed for printing any desired inscription thereon. When two webs

D D' are discharged from the register, the printing is applied preferably to the upper one D, and preferably in the following manner: O, Figs. 3, 8, and 10, represents a roller bearing the form which it is desired to print upon the web. The roller is journaled in suitable boxes *o o*. O' represents an inking-roller journaled in the boxes *o' o'* and used to supply the ink to the roller O, which in turn bears upon the web. The rolls are made to bear upon the roll *e* as it diminishes in diameter, and as a desirable means to that end the boxes *o o'* are attached to the ends *n n* of the part N, which are also provided with the lugs *o²*. Springs *o³*, attached at the inner end *o⁴* thereof to some fixed part—such as the register-frame—and at the outer end by means of the cross-bar *o⁵* to the lugs *o²*, serve to draw the ends *n n* inward, and thereby cause the roll O to keep in contact with the roll *e* as it diminishes, and also exert sufficient pressure to effect the printing.

I desire not to be restricted to the particular printing device here shown, for its details and its location may be changed without departing from the principle of this feature of the improvement, which may be stated to be employing a printing device in combination with a register adapted to have a paper web drawn over a bearing which supports the web while being written upon, the movement of the web effecting the operation of the printing device, thereby providing for applying both a printed and a written inscription upon the web.

The carbon-paper holder P, Figs. 8, 13, and 14, is a single part folded upon itself, adapted, when free, to open, as in Fig. 13, and to be closed to clamp the paper K, as in Fig. 14, and at the ends the holder is flattened, as shown at *p*, and the holder is held in place and its folds *p' p'* drawn together to bind the carbon-paper K by dropping it into a bearing *p²* in the register-frame.

The following are the means for communicating the oscillatory movement of the register to the movable parts within the register.—The gear M, Figs. 3 and 6, is attached to a sleeve *m* upon the trunnion *a*. The sleeve in turn is attached to an encircling ratchet *m'*. The register-case is provided with a pawl *m²*, which coacts with the ratchet *m'*. The register-case being usually of a thin plate, the pawl is attached to a boss *m³* upon the case and between the ratchet and the case. When the register is tilted into the position of Fig. 8, the pawl *m²* rides upon the ratchet *m'*. At the same time the gear M is held from rotating by means of a pawl O, which at *q*, Fig. 15, is pivoted to the upright B and is adapted to engage with the ratchet *m'* when it tends to rotate with the register in the direction just described. The receiving-roller F is provided with a pinion *f⁵*, which engages with the gear M, and when the register is tilted in the position of Fig. 8 the pinion *f⁵* rolls upon the gear

M. This causes the roller F to rotate, and in consequence of its rotation the web D² is wound upon the roller F and all the webs D D' D² are unwound from the roller E and the webs D D' are discharged from the register, as indicated in Fig. 8. This movement of the register also, as above stated, effects the movement of the paper web of the tally device. When the register is tilted into the position of Fig. 3, the pawl m³ engages with the ratchet m', the pawl Q rides upon the ratchet m', and as a result all of the gears remain in the same relative position, but, as a whole, oscillate with the register, and in such oscillation the gear M rotates on the trunnion. The receiving-roller F is moved into its bearing through the slot f¹⁰, Figs. 3 and 9, in the register-frame, and is secured in its bearing by means of the pivoted lever f¹⁵, which is pivoted at f²⁰ to the register-frame, and is turned down to bear upon the shaft of the roller F, and its free end is suitably secured by passing it behind a spring-clip f²⁵. The bottom of the slot f¹⁰ is semicircular, and the lever f¹⁵ is provided with a semicircular notch that completes with said bottom the bearing of the shaft of the receiving-roll.

To enable the receiving-roller to be reached, the register-case is made with a removable section j, Fig. 3. The roller E is dropped through the grooves n², Fig. 8, into its bearing e¹⁵ in the register-frame. The section j, Fig. 8, is also made removable to provide access to the tally device. After the sections j j' are in place they are confined by means of the hinged top j², and whose free edge is capable of being locked. The register is steadied in an upright position by means of a spring-catch R, Figs. 1 and 3, whose free end r is adapted to engage in a notch in the case J, as shown in Fig. 1. On disengaging the catch R the register is free to be oscillated to and fro, as indicated by its two positions, shown respectively in Fig. 3 and in Fig. 8.

So far as the writing upon the web D is concerned the register is operated in the usual manner.

So far as the tally device is concerned the operation is as follows: The opening l⁶ in the register-case provides, as stated, access to the web l⁴. After the itemized statement—say an itemized bill of goods sold—has been entered upon the web D the operator enters the total of the statement or bill upon the web l⁴. Then, as the register is oscillated as described, the web l⁴ is moved along, and that part of the web l⁴ which bears the entry is carried past the opening l⁶ and out of reach. The next entry upon the web l⁴ is similarly made, and, in practice, beneath the first entry, and so on with every use of the register until it is desired to verify the entries upon the web D², when the tally device is withdrawn from the register, as well as the web D², and the two are compared. In this manner a tally-sheet is automatically shifted to be always in

position for use, and when used the tally-sheet is shifted so that it cannot be uncovered through the opening l⁶, to be tampered with.

When the register is being used in an establishment where other similar registers are used, each operator may have assigned to him a particular portion of the tally-sheet, leaving other portions thereof to be respectively appropriated by the other operators. This may be done by dividing the tally-sheet by transverse lines and printing the name of an operator at the head of each division.

The form-bearing roller of the printing device is shown bearing upon the paper-roll e, which thus constitutes an impression-cylinder. By suitably rearranging the various parts the printing device can be otherwise located within the register, or even without it, so that its form-bearing roller shall come in contact with the paper web. It may, for instance, be made to bear upon the web after the web has become separated from or unwound from the roll e, in which case a suitable support or backing must be provided for the web when pressed by the form-bearing roller. The printing devices may also be duplicated to enable two or more of the webs D D' D² to be printed, or even the tally-web. The screw n, Fig. 5, is for regulating the rollers H H' with relation to each other.

I claim—

1. In an autographic register, the combination, with the oscillating casing, the rolls l l', the bearing-surface l³, registering with the opening l⁶ in the casing, the tally-web, and the tension-spring, of the pinions l' l⁸, the gear-wheel l¹⁰, the gear-wheel m, the ratchet m', and the pawls m³ and Q, substantially as specified.

2. In an autographic register, the combination, with the oscillating casing, the rolls l l', the bearing-surface l³, registering with the opening l⁶ in the casing, and the tally sheet or web, of mechanism, substantially as described, whereby the tally-web can be moved a certain distance in one direction only when the casing is inclined in one direction, substantially as specified.

3. In an autographic register, the combination, with the oscillating casing, the receiving-roller, the delivering-roller, and the web D, rolled in similar directions on said rollers and passing over suitable rollers therebetween, of the pinion f, the gear-wheel M, the ratchet m', and pawls m² and Q, substantially as specified.

4. The combination of the oscillating casing, the tally device therein, and the pinion l', attached to said tally device, said pinion engaging with a train the main wheel of which is mounted on the shaft on which the casing oscillates, substantially as specified.

5. The combination, with the oscillating casing, the delivering-roller, the receiving-roller, the web rolled on said rollers in similar directions, and the tension-rollers H H'

between the delivering and receiving rollers, of the gear-wheel on the shaft on which the casing oscillates and the pinion meshing with said gear-wheel on the receiving-roller, substantially as specified.

6. The combination, with the roller E, bearing the roll *e*, the end plates *n'*, and the spring N, with its legs *n* resting on said end plates, of the rollers O O', having their journal-bearings secured to the legs *n*, and the

springs O³, with their lower ends attached to the casing and their upper ends to the spring N, substantially as specified.

Witness my hand this 13th day of April, 1888.

WILLIAM ASSHETON.

Witnesses:

C. D. MOODY,
A. M. EVERIST.