

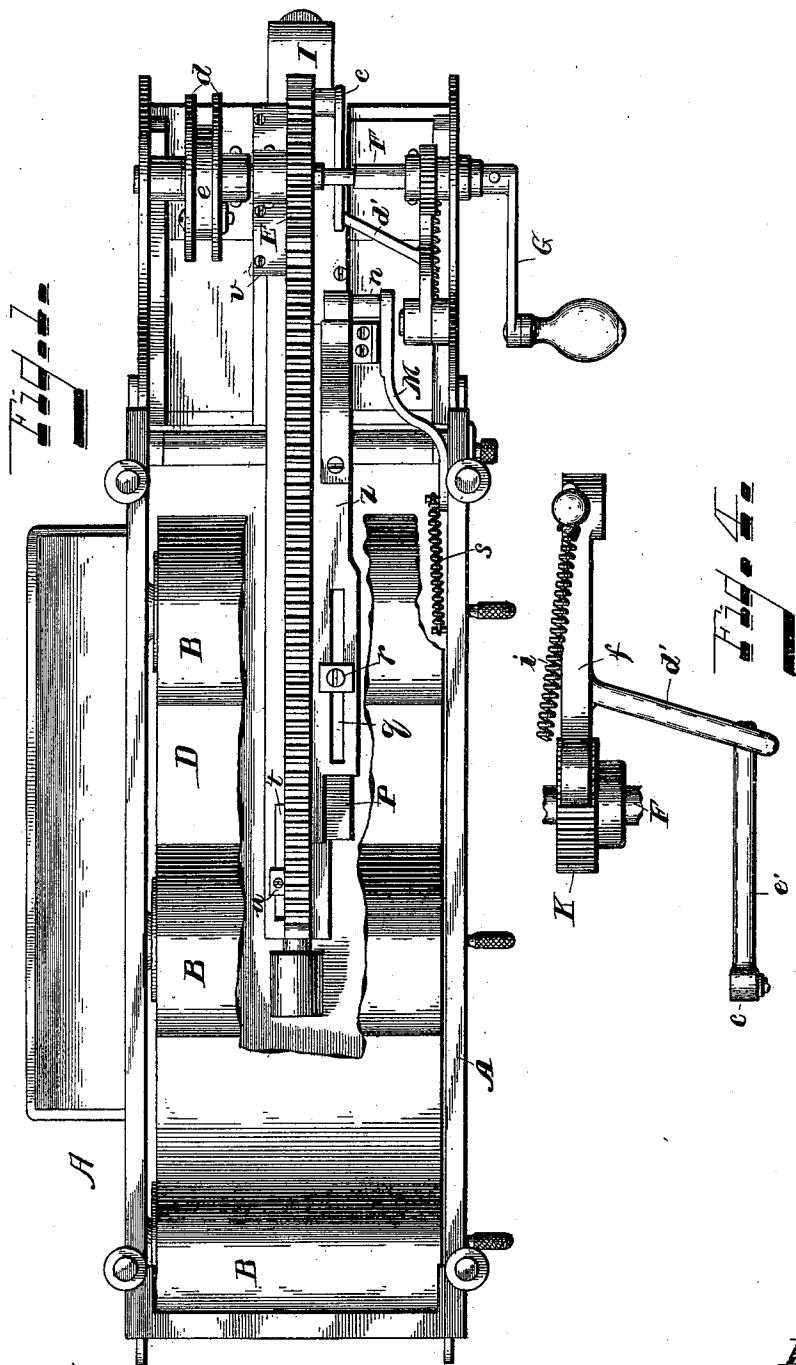
(No Model.)

2 Sheets—Sheet 1.

G. A. HUEWE.  
AUTOGRAPHIC REGISTER.

No. 598,933.

Patented Feb. 15, 1898.



Witnesses:  
Bernard H. Mansfield.  
H. C. Edwards.

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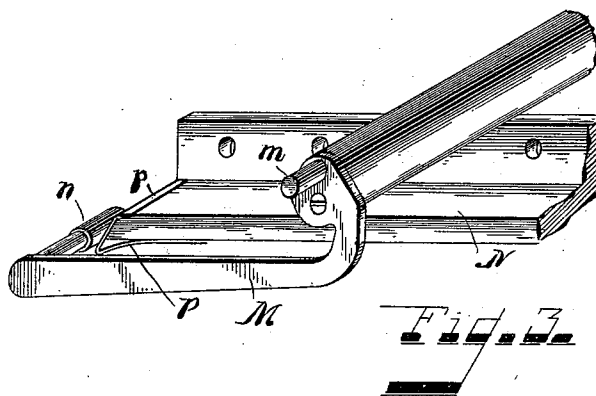
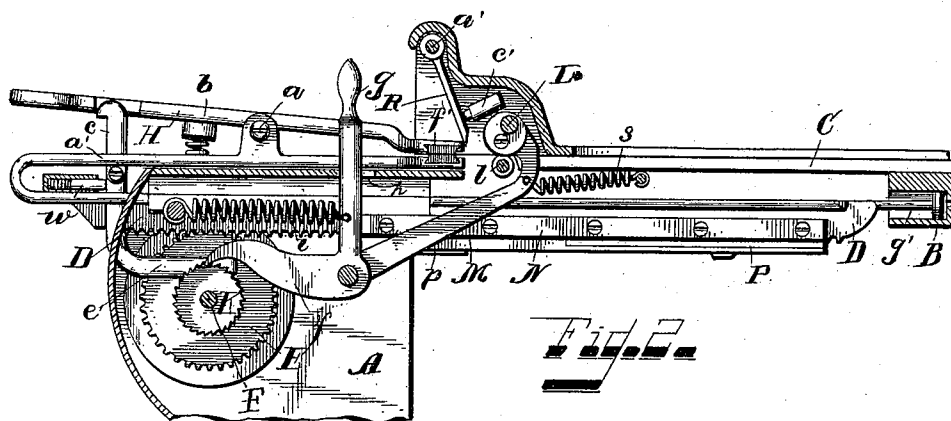
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Bernard J. Hausfeld.  
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# UNITED STATES PATENT OFFICE.

GEORGE A. HUEWE, OF CINCINNATI, OHIO, ASSIGNOR TO THE KEYS-LEE-HUEWE COMPANY, OF SAME PLACE.

## AUTOGRAPHIC REGISTER.

SPECIFICATION forming part of Letters Patent No. 598,933, dated February 15, 1898.

Application filed July 26, 1897. Serial No. 645,942. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE A. HUEWE, a citizen of the United States, residing at Cincinnati, in the county of Hamilton, State of Ohio, have invented certain new and useful Improvements in Autographic Registers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to machines for making duplicate copies of writings, and more particularly to that class of machines in which it is sought to feed the plurality of strips of paper from the supply-compartment in perfect registration, so that the machines can be used for bills of lading and the like, where perfect registration of the feed of the strips must be had to keep the printed matter on the original and duplicate in exact alinement.

The improvements to be hereinafter particularly pointed out and claimed are especially adapted to such a machine as is shown in my prior patent on autographic registers, No. 576,847, of February 9, 1897, although, of course, it will be understood that the principles of the invention are not to be limited to any particular form or construction of machine, but that they can be applied to any of the well-known constructions.

As I have already pointed out in my prior patent above mentioned, where autographic registers are designed to feed the strips of paper by feed-rollers or other friction devices, one or more of the paper strips are sure to slip and the required registration will be at once lost. I therefore substitute, as set forth in said patent, gripping-jaws to grasp and hold the several strips and to feed them uniformly without releasing until the desired amount has been fed. When these gripping-jaws are not actually engaged in feeding the paper—that is, while they are at rest or returning to grasp a new supply of paper—the strips are liable to be displaced at their forward ends by the operator or by the slight jar of the grippers in taking hold of a new supply or in other ways. It is therefore extremely desirable that at these times the paper strips should be held positively together and

in line. This has been accomplished by friction-rollers or friction-plates bearing on the strips to the rear of the cutting or severing edge; but heretofore during the feed of the grippers these friction devices have continued to maintain their pressure on the paper, and I have found that this constant pressure, notwithstanding the positive feed of the grippers, tends to throw the paper strips out of registration.

The first part of my invention therefore relates to the means devised for maintaining pressure on the strips to keep them even and prevent displacement when not being fed, but instantly to release the pressure the moment the feeding devices begin operation, the same to be again exerted with the conclusion of the feed. Again, where the gripper-jaws or other feeding devices are allowed to return to their normal position under spring-pressure or otherwise and are arranged to regrasp the paper strips suddenly this more or less violent action may also have its effect in tending to throw the paper strips out of registration.

A second feature of my invention therefore relates to a construction of parts in which this sudden reattachment of the feed mechanism is prevented, and while the feeding devices automatically again take hold of the paper strips the regrasp can be had without violence or jar.

A third feature of my invention consists in the substitution of jaws, of rubber, for the ordinary teeth of the grippers. Where the grippers are provided with teeth to grasp the paper, while the strips will not be shifted out of registration, the slight pull of the teeth in taking hold of the paper will cause it to creep or advance slightly, and as there is usually left a line or space for severing the strips in time this slight creeping of the paper will so advance the paper that the point of severance will come on the printed matter instead of at the designated severance places on the strips.

In the drawings, Figure 1 is a bottom plan view of my register with the base-plate removed. Fig. 2 is a side view of the front portion of same with the side casing removed. Fig. 3 is a detail perspective view of the ec-

centric pressure-roller with the actuating-plate of the rack-bar. Fig. 4 is a top plan view of the gripper-jaws-releasing mechanism.

The working parts are inclosed in the usual case, of which A A are the side walls, between which are journaled the paper strips, mounted on rolls B B, the strips being passed around guide-rods and over the writing-tablet C, where the manifolding material is interposed between the strips in the usual way. Sliding in suitable grooves underneath the tablet-plate is a rack-bar D, which meshes with the gear E, mounted on shaft F, journaled in the sides of the case and rotated by the hand-crank G. The outer end of the rack-bar D carries the grippers H H, the upper jaw of which is movable and pivoted at and to the stationary jaw, the jaws being closed by the spring *b* when released by the dog *c*, pivoted on the lug *a'* on the stationary jaw.

Mounted between suitable flanges *d d* on the operating-shaft F is the tension-spring *e*, which is wound up as the shaft is rotated and the rack-bar and the grippers are fed forward and serves to return the bar and grippers to their normal position at the conclusion of each feeding operation, while K is a ratchet mounted on shaft F and engaged by pawl *f* to prevent the return of the feeding devices until the full length of strips are fed from the machine and the pawl *f* is released by shifting the hand-lever *g*, attached to this pawl and passing up through the slot *h* in the case, the pawl *f* being normally held in engagement with its ratchet K by the coiled spring *i*, secured thereto and to the case.

L is the tension or pressure roller, normally bearing on a corresponding roller *l*, journaled in the case, and between which rollers the paper strips are passed from the writing-tablet. This tension-roller L is mounted eccentrically on the sides of the case on the studs *m m* and on one end carries the arm M, curved downward and frontward and provided with an inwardly-extending roller-arm *n*. Secured to the side of the rack-bar D by screws or otherwise is an angle-plate N, carrying at its forward end the spring-plate *p*, upon which the roller-arm *n* of the eccentric tension-roller rides.

P is a plate secured by set-screw *r* within the slot *q* in the angle-plate N, and by adjusting this plate in either direction the length of the plate N is adjusted the exact length of the proposed feed of the grippers, and the roller-arm *n*, when the machine is at rest with the grippers grasping a fresh supply of paper, is in such a position that with the commencement of the feed by the forward movement of the rack-bar D the roller will at once begin to ride up the beveled edge of the plate N on the spring-plate *p*. The effect of this is to rotate the eccentric tension-roller L on its studs *m m*, and the moment the feeding of the strips begins the tension of roller L will be released. As the rack-bar is advanced the tension continues released until the roller-

arm *n* reaches the end of the adjustable plate P, when the coiled spring *s*, attached to the arm M and the case, at once returns the tension-roller to its normal position bearing on the paper strips. This occurs, as I have stated, by reason of the adjustment in length of the cam-surface at the moment the grippers have reached the limit of the feed. The tension continues during the return of the feed mechanism and until the feed of the new supply of paper is commenced. The spring-plate *p* is bent downward and backward on a bevel, as shown, so that on the return the roller-arm *n* may press up the spring to pass the end of the angle-plate N, but will at once start up the bevel with each succeeding operation of the feeding devices.

Secured in a slot *t* on the rack-bar D so as to be adjustable thereon is a stop *a*, which strikes against the plate *v*, secured to the case, and thus stops the feeding mechanism at the desired length of the feed, the stop being adjustable for this purpose. The operator then presses down on the outer end of the movable jaw H, opening the grippers and releasing the paper, and the spring-pressed plunger *w*, acting on the dog *c*, causes the head of the dog to catch over the gripper-jaw and hold same open. The paper strips are then torn off against the knife R, hinged to allow the grippers to push it back to grasp the new supply of paper, and when the feed mechanism is in operation the knife is swung into a vertical position by the spring-pressed plunger. To return the grippers to their normal position, the operator then draws back the hand-lever *g*, releasing the pawl *f* from the ratchet K, so that the spring *e*, unwinding, revolves the shaft F in the opposite direction and thus returns the grippers to the case. Should the operator release the lever *g* before the grippers reach their normal position, however, the pawl *f* will at once catch its ratchet and stop the return. It is necessary, therefore, that the hand-lever shall be held back until the grippers are returned to the case ready to grasp a new supply of paper.

Attached to the pawl *f* and extending inward is an arm *d'*, while the dog *c* is extended backward to form a horizontal arm *e'*. These two arms are so disposed that when the pawl *f* is raised to allow the grippers to return the arm *e'* will pass under the arm *d'*, and as soon as the grippers have returned to their normal position the release of the hand-lever *g* will cause the arm *d'* to depress the arm *e'* and thus shift the dog *c* to release the gripper-jaw, while the spring *b* at once closes the grippers on the paper. In this way it will be manifest that the grippers can only close on the paper when the feed mechanism is at rest, as the release of the hand-lever *g* releases the dog *c*, holding the grippers open, while if the hand-lever *g* is released before the feed mechanism is returned the end of the arm *e'* has not reached a position where it can be depressed by the arm *d'*.

Instead of the usual teeth for the gripping-jaws I provide rubber blocks  $f'$   $f'$ , which grasp the paper without causing it to creep or advance, as do the ordinary teeth, as above set forth.

To prevent any jar when the gripper-jaws return, I arrange an air-cushion  $B'$ , attached to the case, consisting of a cylinder with a rubber valve, and form the end of the rack-bar  $D$  into a plunger  $g'$  to enter this cylinder and thus act as a cushion to stop the rack-bar and grippers as they reach the case.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a register for duplicate writings, provided with a plurality of paper strips, grippers to grasp and hold the paper strips, means for operating them to feed the paper over the writing-tablet, and a tension device bearing on the paper strips, with mechanism for automatically releasing the tension during the feed of the strips, substantially as shown and described.

2. In a register for duplicate writings, provided with a plurality of paper strips, grippers to grasp and hold the paper strips, means for operating them to feed the paper over the writing-tablet, and a tension device bearing on the paper strips, with mechanism to release the tension connecting same with the feeding devices whereby the operation of the feed releases the tension substantially as shown and described.

3. In a register for duplicate writings provided with a plurality of paper strips, grippers to grasp and hold the paper strips, means for operating them to feed the paper over the writing-tablet, and a movable tension-roller bearing on the paper strips with arm connecting same with the feed mechanism whereby the operation of the feed will release the tension, substantially as shown and described.

4. In a register for duplicate writings, provided with a plurality of paper strips, grippers to grasp and hold the paper strips, means for operating them to feed the paper over the writing-tablet, and an eccentrically-mounted tension-roller bearing on the paper strips with cam on the feed mechanism and arm connected to the tension-roller, contacting with said cam whereby the operation of the feed will shift said roller to release the tension, substantially as shown and described.

5. In a register for duplicate writings provided with a plurality of paper strips, a rack-bar, a pair of gripping-jaws carried thereby, a hand-crank with gearing for advancing said grippers and an eccentrically-mounted tension-roller bearing on the paper strips with cam on the rack-bar and arm connecting said tension-roller with said cam whereby the advance of said rack-bar will release the tension, substantially as shown and described.

6. In a register for duplicate writings provided with a plurality of paper strips, grippers to feed the paper strips over the writing-tablet, locking device to prevent the return of the grippers, means for releasing said locking device with dog to hold said grippers open and connecting mechanism between said dog and releasing device for actuating said dog to close the grippers upon their return to their normal position, substantially as shown and described.

7. In a register for duplicate writings provided with a plurality of paper strips, grippers to feed said strips, pawl-and-ratchet device to prevent the return thereof, releasing-lever therefor, with dog to hold open said grippers during the return and connecting-bar on said releasing-lever to release the dog upon the return of the grippers to their normal position, substantially as shown and described.

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