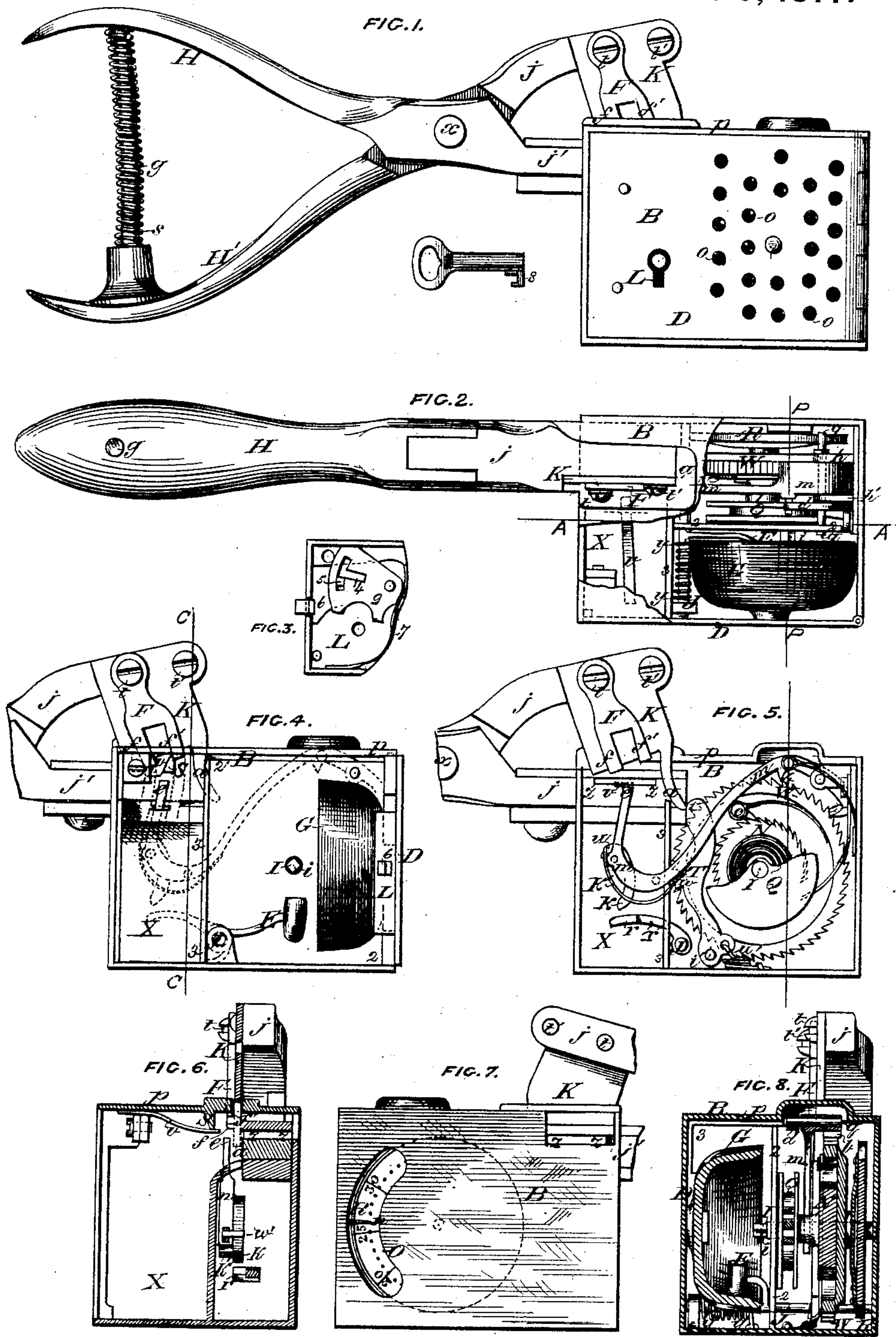


J. THOMAS. Car-Ticket Nippers.

No. 196,841.

Patented Nov. 6, 1877.



WITNESSES:
John L. Loeber
John H. P. H.

FIG. 9.

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INVENTOR:
James Thomas
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UNITED STATES PATENT OFFICE.

JAMES THOMAS, OF SAN FRANCISCO, CAL., ASSIGNOR OF PART OF HIS
RIGHT TO CHARLES E. BROAD AND NELSON SPINKS, OF SAME PLACE.

IMPROVEMENT IN CAR-TICKET NIPPERS.

Specification forming part of Letters Patent No. **196,841**, dated November 6, 1877; application filed
December 1, 1876.

To all whom it may concern:

Be it known that I, JAMES THOMAS, a resident of the city and county of San Francisco, State of California, have invented an Improved Car-Ticket Nipper suitable for Railroad and Street Cars, &c., of which the following is a specification:

My invention relates to mechanism provided in a car-ticket nipper, whereby the nip, when cut from the ticket by the nipping-knife, is made the actuating medium of both sounding an alarm and registering itself on a register provided therefor, in such manner that the nips of the tickets thus nipped off may all fall freely, one after another, into a separate compartment within the nipper-box, and the number of such nips correspond exactly with the number registered on the dial or train of dials; also, that the nipper-box may be so arranged with any suitable form of lock as to be accessible only by a particular key in the possession of persons employed for that purpose, so that these nips may be taken out and counted at certain intervals, the mechanism wound up again, and the registrar again started from its commencing point; the object of my invention being to make such nipper a check on the receipts of fares taken by the car-conductor, by only allowing a ticket-nip when actually cut off and deposited in the box to count and sound an alarm, and to prevent any recording of the same by the simple nipping movements of the nippers themselves, in whatever way they may be actuated, unless a ticket be thus inserted and cut off in the usual manner; also, to place such receipts and count on the registrar under the control only, and entirely, of the person or persons deputed to hold the key of the nipper-box, and to prevent any tampering with the mechanism of the apparatus, whereby a false count and register may be arranged and substituted.

Figure 1 is a longitudinal vertical elevation or side view of a car-ticket nipper embodying my invention. Fig. 2 is a plan of Fig. 1 with part of the nipper-box cover removed so as to show the interior mechanism. Fig. 3 is a vertical elevation of the lock for securing the door of the nipper-box. Fig. 4 is a longitudinal vertical elevation of the nipper-box with

door opened and portion of the nipper-jaws attached. Fig. 5 is a vertical longitudinal section of Fig. 2 through the line A A. Fig. 6 is a vertical transverse section of Fig. 4 through the line C C. Fig. 7 is a rear vertical longitudinal elevation of the nipper-box, showing the opening for the dial and portion of dial or registrar. Fig. 8 is a vertical transverse section of Fig. 2 through the line P P. Fig. 9 is a view of a ticket adapted to be used in connection with my ticket-nipper.

With reference to the drawings, H H' are the nipper-handles, pivoted to one another by a rivet-pin, *x*, and provided with a guide-rod, *g*, encompassed by a spring, *s*, and nipper-jaws *f f'*, to which a knife and box are respectively fitted, all of which parts are substantially similar to those at present in general use.

The several portions constituting my invention for the purposes aforementioned consist of a box, B, with contained mechanism attached to the lower jaw *j*, and a nipping-knife, K, provided with fork F *f f'*, and finger *a* attached to the upper jaw *j*, of which the following is a description.

The box B is constructed of metallic plates for sides, top, and bottom, but has one side hinged thereto as a door, D, and provided with a safety-lock, L, and key *l*.

The blade of the knife K terminates in a long finger, *a*, for actuating mechanism to be hereinafter described, and has also fitted to it, by a screw, *t*, and pin, a fork, F, which terminates in two prongs, *f f'*. Between these prongs, and in the same plane with them, a knob, *e*, forming part of the long arm of a bent lever, *m m*, is so arranged and fitted, by a pivot-pin, *q*, to lugs *h h'*, within the box B, that, when a ticket is pushed along the ordinary guide *z z* to the stop S on the cover *p* of the nipper-box, so as to be brought into a proper position under the blade K, and this blade is pressed down upon it, these prongs *f f'* of the fork F will press this ticket onto this knob *e*, and by this pressure cause it and the long arm of the lever *m m*, forming part thereof, to descend for a distance sufficient to actuate the mechanism for both the alarm and registering devices. In order to effect this the lever *e m m*, near its pivoting-point, is formed

into a double anchor-catch, $b m b'$, so arranged as, in the manner of clocks, that each pawl $b b'$ may be made alternately to catch in and actuate a toothed wheel, W , as this anchor is rocked backward and forward on the pivot-pin q by the double action caused by the depression of the knob e , and its after release, thus forming an anchor-escapement. This after release or return is effected by a spring, d , attached to the side of the box B , and fitted over the pivot-pin q to a pin on the lever near the pawl b' . But as it is found that, by the knob e following the fork-prongs $f f'$ immediately after each nip, this knob is liable to jam such nip of a ticket, the knob e is retarded for a certain interval of time during such movement, in the following manner: A bent lever or trigger, T , pivoted on a pin, v' , and dependent in part for its movements on a spring, u' , is provided with a tooth or catch, w , so as to catch and hold this lever $e m m$ by a pin, w' , fixed thereto, when this knob e of the lever $e m m$ has been depressed to its fullest extent. This movement is effected by the head 1 of the trigger T following the finger a of the knife K in its descent, being pressed thereon by the spring u' , so that when the notch or tooth w has been brought immediately over the lever-pin w' the lever $e m m$, on attempting to return to its original position, by means of the pressure of the spring d is held by this trigger T . When, however, the blade K has nearly returned to its former place, the finger a is made to touch and press backward the head 1 of this trigger, and thus instantly disengage the lever $e m m$, and allow it to return to its original position.

For the registering of each ticket nipped the toothed wheel W is fitted loosely onto a shaft, I , and is made to carry a pawl with spring c and registering-dial R . This pawl c is actuated by a ratchet-wheel, N , which, with a clock-spring, Q , are attached to this shaft I , the spring Q being fastened at one end to the side of the box, and wound round a drum on the shaft by means of a key till it has acquired the tension necessary. By this arrangement, on each full depression of the knob e a certain movement is made on the numbered registered plate corresponding to the movement of the wheel W . Since the divisions on the register are of the same number as the teeth on this wheel, and, by this means, as each ticket is nipped off by the knife K with fork F , the lever $e m b b'$ will allow of the register-dial advancing a certain distance, which, by being marked and numbered, may be readily read off, and for this purpose the register side of the box is provided with an opening, O , covered with glass, and a fixed needle, n , points in the center of such opening, so that as the numbered dial R rotates this needle will point to the exact number of nips or fares cut off by the nipping-blade.

For sounding an alarm as each ticket is nipped, to the bottom of the arched portion of the long arm of the lever $e m m$ a cam, k ,

is fitted by a pin, so that its top projecting lug u may rest on and against a similar projection provided therefor on one side of this lever. A spring, k' , is also attached to the lever $e m m$, so as to press onto the cam-lug u . Immediately below the bottom of this cam k , and separated from it only by a short space, is an arm, r , attached to a shaft, J . This shaft J is fitted to bearings on the bottom plate of the nipper-box, and, in addition to this arm r , is also provided with a hammer-rod and hammer, E . A spring, $y y$, is so arranged and wound round this shaft J and attached to the box B that, when this hammer E is raised out of its normal position, which is that of resting on the inner edge of the fixed gong G , it will, on being released, be forcibly brought back again onto this gong, thus sounding an alarm. When, then, the lever $e m m$ is depressed, the cam k will, after a short interval, actuate the arm r , and, consequently, lift the hammer E ; but when this hammer has been raised to a sufficient height to give a stroke to the gong, the cam k will slip through the opening or recess r' of the arm r , the hammer will be instantly released, and the gong struck, and this striking of the gong will take place just previous to the lever $e m m$ being held by the catch w of the trigger T . On the release of this lever $e m$, by the finger a of the knife K pressing back the trigger T , the cam k , on passing the arm $r r'$, will be forced backward on its pin, and will return to its original position again by means of the action of the spring k' on the lug u , so as to be again in place for actuating this arm $r r'$ and hammer E on the gong G , in the manner already described.

By this arrangement, it is evident that any nipping action of the nipper handles or jaws will neither register on the dial R nor sound an alarm on the gong G unless a ticket be inserted in the usual manner through the guide $z z$, to the stop S , provided on the plate p . Such ticket therefore becomes the actuating medium for operating the alarm mechanism and for registering itself.

In order to provide against the jamming together of the nips of tickets as they are nipped, in addition to the holding of the lever $e m m$ for that purpose, as already described, a spring, v , is attached to the cover p , so as to rest on and project for a short distance beyond the stop S . This spring necessarily yields to the nips, and allows them to fall without crowding into the nip-compartment X . By this joint action of withholding the knob e of the lever $e m m$ for a certain interval, and by springing the nips by the spring v , these nips will not be caught and held between the nipping mechanism.

The nipper-box B is provided, as stated, with a separate compartment, X , and is partitioned off from the general mechanism by a partial longitudinal plate from the side of the box meeting another divisional plate, $3 3$, placed transversely to it. For the alarm to be distinctly heard, perforations $o o o$ are made

in the sides of the box forming that portion covering the gong-compartment, and in order that no tampering with the mechanism may take place by means of these perforations, a longitudinal plate, 2 2, separates this gong from the other parts, as shown in Figs. 2 and 4.

The shaft I is made square at one end, *i*, so that a key fitted to it may be made to wind up the spring Q and adjust the dial to its initial point. This may be repeated at each trip when the nipper is surrendered for examination to the proper officials, or a train of gearing with several dials may be substituted in place of this single dial, so that the counting and checking, &c., need not be done more than once daily.

The lock is so arranged that the bit 8 of the key *l* shall have the wards at the top of the pipe or stem, and the mechanism of the lock to be operated by such key consists of the following parts: A tumbler, 9, provided with a T-shaped slot, 4, wherein the teat 5 of a bolt, 6, is made to operate, is fitted to a lock-casing, so that both the tumbler and bolt may be governed in their movements by a spring or springs, 7. When a right key, *l* 8, is applied, it will cause the teat 5 of this bolt to be shot back within the upright portion of this T-shaped slot, but any other key will only cause the tumbler to move on this teat on the longitudinal portion of this slot so that the lock can only be opened by the key that operates so as to cause the teat 5 to travel in the manner described.

The advantage claimed in such lock, wherein the key used has a bit at the top of the pipe, is, that no impression can be taken of the lock mechanism concealed from view whereby a false key may be readily fitted thereto, and the contents of the nipper-box tampered with.

With reference to Fig. 9—if 72 be a prize number, the top or nip end will be retained by the nipper-box, and the stub by a passenger, so that a railroad-car company, on publishing a prize-number, will have a double check from this nipper-box, and by the passenger, who is naturally anxious to take care of the stub.

I do not claim, broadly, a car-ticket nipper provided with alarm and registering devices, as I am aware that these are not new; but

What I claim as my invention, and for which I desire to obtain Letters Patent of the United States, is—

1. The knife K, provided with fork F *ff'*, adapted to operate, by means of the ticket-nip, on the oscillating lever *e m m*, anchor-escapement *b b W*, actuating mechanism for the same, as herein shown, and the registering-dial R, substantially as and for the purpose specified.

2. The knife K, provided with fork F *ff'*, adapted to operate, by means of the ticket-nip, on lever *e m k'*, cam *k u*, arm *r r'*, hammer attachment with spring E J *yy*, and the fixed gong G, all arranged, as herein shown, for sounding an alarm only when a ticket is nipped off, substantially as specified.

3. The combination of the knife K, provided with fork F *ff'*, adapted to operate, by means of the ticket-nip, on the oscillating lever *e m m*, to actuate the alarm and registering mechanism herein shown, or their equivalents, substantially as and for the purpose specified.

4. The knife K, provided with the finger *a*, in combination with the notched trigger T *w w'*, and the oscillating lever *e m m*, provided with pin *w'*, and return-spring *d*, all arranged as herein shown, whereby said lever, when depressed, may be caught by the trigger and held for a certain interval of time, so that the ticket-nips may have time to fall freely into the nip-compartment X, after having been cut from the ticket-stub, substantially as herein set forth.

5. The knife K, provided with fork F *ff'* and finger *a*, in combination with the trigger T *w w'*, oscillating lever, with anchor-escapement *e m b b' W*, and the registering and alarm mechanism described, or their equivalents, substantially as and for the purposes herein set forth and specified.

6. The lever *e m m*, provided with cam *k u* and spring *k'*, in combination with the shaft J, provided with arm *r r'*, spring *yy*, and hammer E, all arranged for striking the fixed gong G, substantially as and for the purposes herein set forth and specified.

7. The spring *v*, fitted onto the box-cover *p* and resting on the stop S, in combination with the ticket-guide *z z*, knife K, and oscillating lever *e m m*, substantially as and for the purposes herein set forth and specified.

8. The nipper-box B, fitted to the lower jaw *j'*, and provided with nip-compartment X, partitions 2 2 3 3, opening O, with fixed needle *n* for the registering-dial R, perforations *o o o* for the gong G, and hinged door D, fitted with lock L, as described, substantially as and for the purposes herein set forth and specified.

9. The combination, substantially as specified, of the escapement-lever, the cutter or knife, and the fork for operating on the escapement-lever through means of the nips cut from the ticket or slip.

JAMES THOMAS.

Witnesses:

JAMES L. KING,
LIONEL VARICAS.