3 Sheets—Sheet 1.

J. H. SMITH & J. MOSS.

DEVICES FOR PRINTING AND RECORDING CASH RECEIPTS.

No. 188,310. Patented March 13, 1877.

Fig. 1.

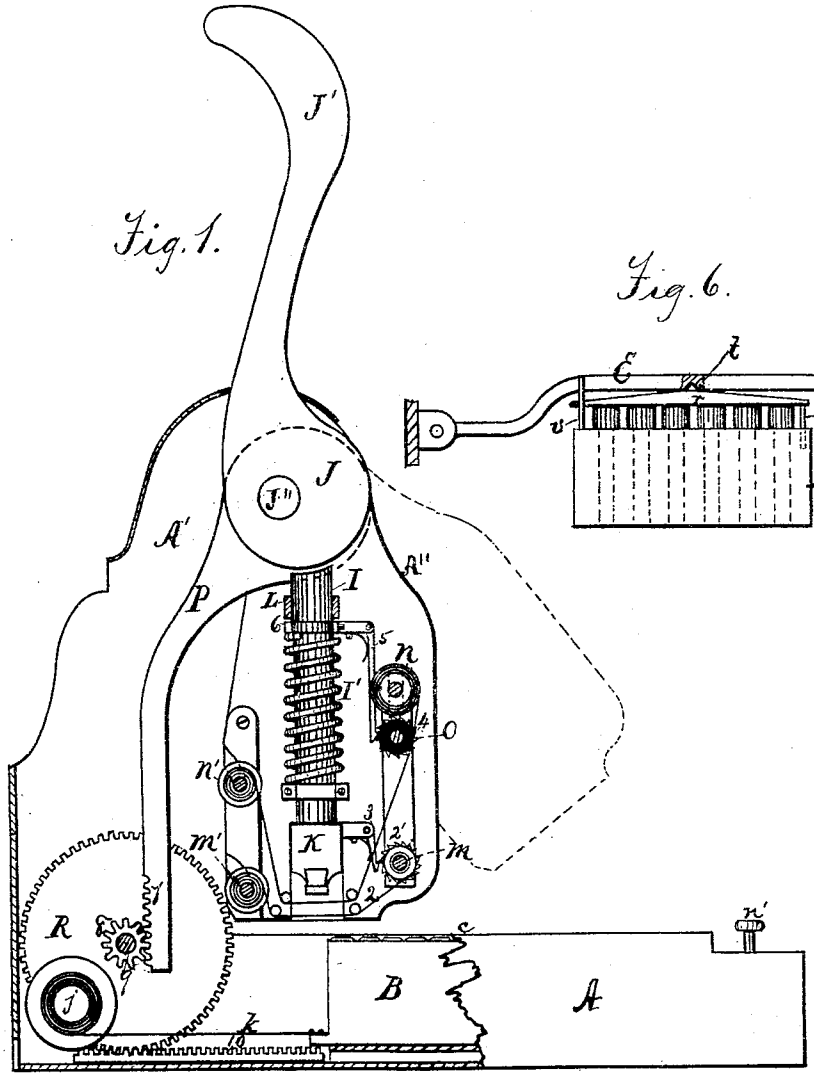

Fig. 6.

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DEVICES FOR PRINTING AND RECORDING CASH RECEIPTS.

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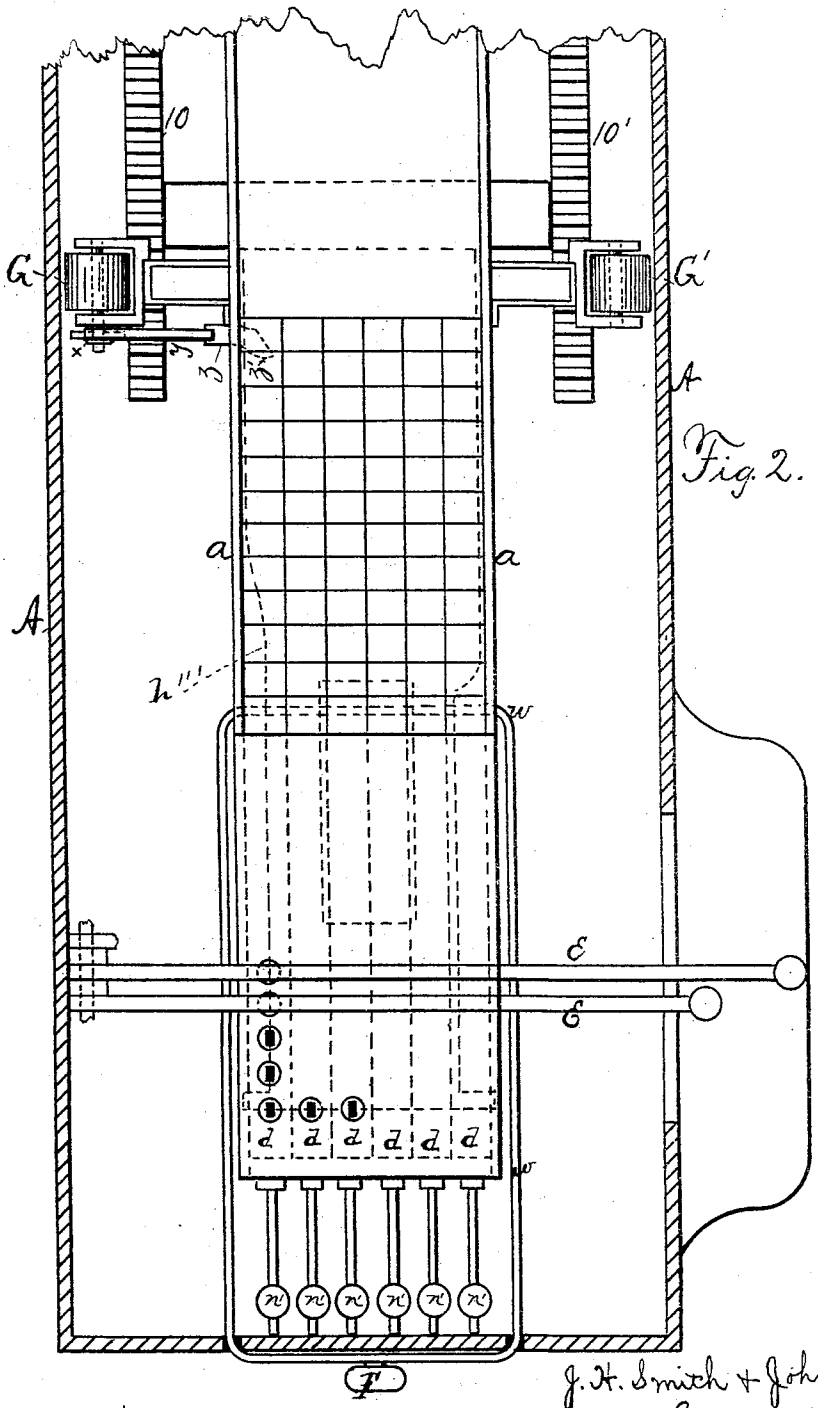

Fig. 2.

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3 Sheets—Sheet 3.

J. H. SMITH & J. MOSS.

DEVICES FOR PRINTING AND RECORDING CASH RECEIPTS.

No. 188,310. Patented March 13, 1877.

Fig. 3.

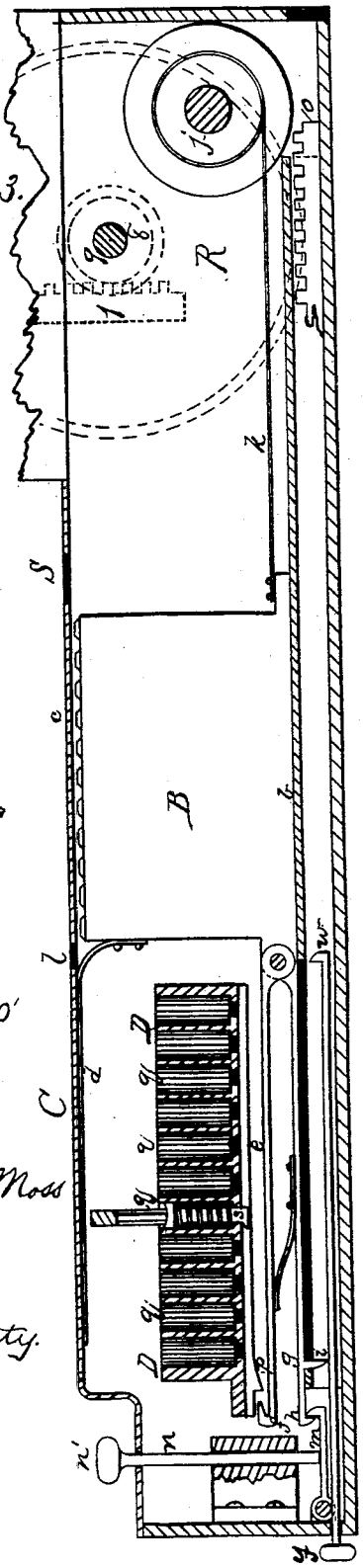


Fig. 5.

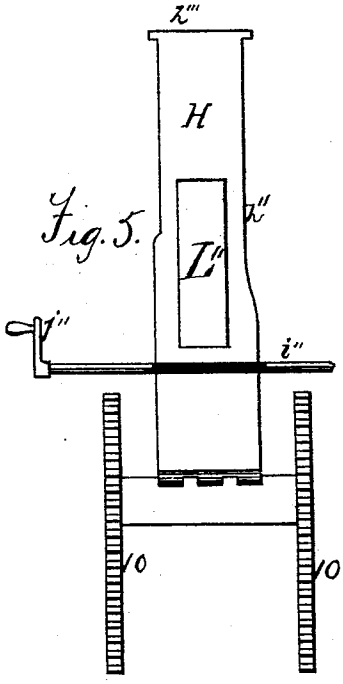
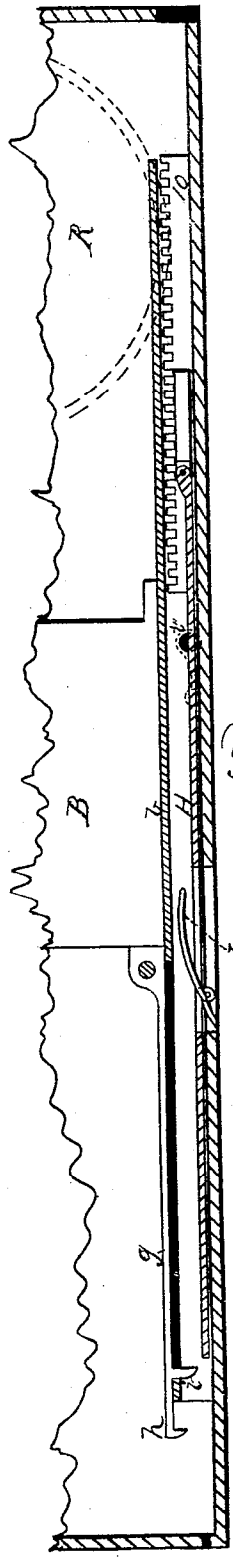


Fig. 4.



J. H. Smith & John Moss
Inventors. By
J. R. Drake
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Witnesses:
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J. R. Drake.

UNITED STATES PATENT OFFICE

JOHN H. SMITH, OF BUFFALO, AND JOHN MOSS, OF NEW YORK, ASSIGNORS OF ONE-THIRD THEIR RIGHT TO ERASTUS WIMAN, OF NEW YORK, N. Y.

IMPROVEMENT IN DEVICES FOR PRINTING AND RECORDING CASH-RECEIPTS.

Specification forming part of Letters Patent No. **188,310**, dated March 13, 1877; application filed October 25, 1876.

To all whom it may concern:

Be it known that we, JOHN HENRY SMITH, of Buffalo, in the county of Erie and State of New York, and JOHN MOSS, of New York, county and State of New York, (assignors of one-third to E. WIMAN, of New York city, county, and State,) have made certain Improvements in Cash-Receipt and Registering-Stamp Devices, of which the following is a specification:

This invention is to provide a machine for the purpose of keeping an exact record of all cash transactions, receipts, or disbursements in stores, offices, manufactories, or any business establishment or place where money is paid in. It is also intended to be a check on employés, and a preventive of dishonesty by clerks or others handling money received or paid out in such establishments. This is accomplished by registering on a paper strip inside the machine the amount of any transactions, and printing or stamping the same amount simultaneously upon the account, bill, or ticket inserted for that purpose, the two things being done at one operation or movement by the lever-handle, and the different amounts are set in the machine, for the printing or stamping, by knobs outside, attached to the operating-levers, all as hereinafter fully explained.

In the drawings, Figure 1 is a sectional side elevation with part of one side of the case removed; Fig. 2, a plan of the lower part with the top of case removed, showing the levers, slides, &c.; Fig. 3, a side sectional elevation, showing the operating parts, especially the devices for holding the printing-slides; Figs. 4, 5, and 6, detail views.

A represents the outside metal case, having two vertical division-plates, *a a*, (see Fig. 2,) and a bottom plate, *b*, secured to these partitions a short distance from the bottom of the case A, and upon the top of which a series of slides or slugs, B B, are set upright, side by side, which completely fill the space between the partitions *a a*. The top of these slides come up to the lower side of the case-cover C, and their upper surface is provided with figures or type, from 0 to 9, or with any other character, dollar-mark, or letters desired. To each of these slides is attached a thin long index slide or strip, *d*, (shown in dotted lines in Fig. 2,) having on its upper surface figures or other characters, to correspond exactly with those on the slide itself. The lower edge of each slide is attached to a long spring-guide, *e*, with a hook, *f*, on its end, and just below it is a corresponding spring-guide, *g*, with a hook, *h*, on its end, but turned down in an opposite direction from the one above it, which is turned up. Feet or catches *i* project down from each of these lower spring-guides *g*, and move, whenever the slide is operated, in long slots cut in the bottom of the plate *b*, their object to be presently explained. At the rear end of each of the printing-slides is attached a long watch-spring, *k*, which is coiled around a barrel, *j*, at the back. C is a metal plate, which covers the tops of the slides, but has an opening, *l*, across, through which the figure or figures on the index-strips *d d* will appear, to show if they have been set right, the figures on the slides appearing in an opening, S. There are six of these slides shown in the drawings, but as few or many can be employed as the extent of the business may require.

The slides, when not in use, are drawn forward, as in Fig. 3, and therefore the watch-springs *k k* are at their greatest tension. To keep the slides there the hook *h* on the end of the lower guide *g* engages with a spring hook or dog, *m*, and so on throughout all the slides. In connection with each of these dogs *m m* is a vertical pin, *n*, with a knob, *n'*, on top, with a figure on it corresponding with the row or slide it operates. By pressing any one or more of these knobs down, it disengages the hook *h* and releases that slide, as will be presently explained. D is a metal box or frame, secured to the partitions *a a* and over the spring-guides *e g*, having projections or catches *p p* on its front lower end, as shown in Fig. 3, and which engage the hooks *f f* of the spring-guides *e e* when the lower spring-guide *g h* is released

from dog *m* by the downward pressure on the knobs *n n'*.

This metal box D has rows of openings, in which are vertical spring-catches *q*, (one shown elevated in Fig. 3,) each having a foot or catch, *s*, on the bottom. In one direction the number of these spring-catches corresponds to the number of slides 6, and in the other direction to the number of characters or figures on the slides 11. These are all kept elevated by a spiral spring around each.

Running across above the tops of the catches *q q* are a number of bars or operating-levers, E E. (See Figs. 2 and 6.) There are as many of these operating-levers as there are rows of spring-catches *q q*, (eleven in this instance.) These levers are pivoted at one end to the inside of the case A, while the other ends project through the opposite side, and are provided outside with operating-knobs, making them operating-keys. These, when touched, push down underneath each a whole row of catches, *q q*, by means of a loose bar, *r*, (see Fig. 6,) setting on top of each row of spring-catches *q*, with a pin, *t*, on its upper part in the center, the top of the bar being beveled down each side of the pin, and said pin working in an opening in the under side of the lever E'. A guide-pin, *u*, is fastened to one end of the bar, and sets in a corresponding hole in the top of the box D, and another stationary guide-pin, *v*, is permanently attached to the box D at the other side, and keeps the levers separated.

By means of these levers and bars a whole row of the catches underneath each is pressed down at once, which causes the hooked feet *s s s* underneath to press down on the spring-guide *e*, and release any and all of the hooks *f f* that may be engaged, and being thus released they fly forward, and then catch on the hooked feet *s s* of the row pressed down, and are there held. This brings the number on the printing-slide B above in position in the slot S in the cover to print the number desired, and so on with as many numbers and slides as are required by the cash to be represented by printing, and also shows in the opening *l* the number on the index-slips *d d*.

The operation is as follows: Suppose it is desired to bring the amount 684.75 (or any other number) beneath the printing-opening S in the cover. First, press down the end knob No. 1, which acts upon the dog *m* beneath it, which causes that slide to jump ahead until it is stopped by the catch *f p* above it. This places it in position to be acted on by the side knobs and levers E. Then press down and hold down upon, say, knob 5, which will push down all the rows of catches and hooked feet *q s* beneath it. This releases the guide *e* and catches *f p*, and it jumps forward until it catches on the row of hooked feet *s s* just pressed down by the knob 5, and is there held. Then the second knob 2 will be pressed down, and the corresponding slide released a little, or just far enough to engage on the catches *f p* of the box, the same as the other slide. Then press down the side knob 7, which allows this slide to jump ahead until caught by the hooked feet *s* of the row of catches *q s*, pressed down by the knob 7, the same as the other, and there held. The number on the slide desired will, at the same time, show through the slot *l* and opening S, and so on to complete the entire amount, the end knobs *n n'* releasing the slides sufficiently to be acted on by the side knobs E, which have the numbers on them that are desired to have appear in the printing-opening S, and which are subsequently to be acted on by the printing devices, presently to be explained.

If a mistake is made by pressing the wrong knob, and the wrong slide or figure is therefore thrown out, it can be brought back to its original position by a loop, *w*, on the bottom of the inside of the case, (see Figs. 2 and 3,) and by pulling the outside knob F it engages with the tooth *i* on the spring-guide *g*, and is thereby drawn forward till it is caught by the dog *m*, and held till released for use. Any or all the slides can thus be drawn back by this loop *w* F. The slot *l* in the cover C shows what number is thrown forward for printing, so that the operator can detect an error and correct it at once by this loop.

The printing devices are as follows: G G' are two drums in suitable bearings, and in opposite sides of the case A, about midway between the two ends, on which an inking-ribbon is wound, it running over the top of one row of figures on the slides B, so as to cover whatever row of figures appears in the slot S. One of the drums G is provided with a ratchet-wheel, *x*, outside of the bearing, operated by a pawl, *y*, which is attached to a spring-arm, *z*, with a dog, *z'*, on the end of it, operated by a flat slide on the bottom of the case A, (see Fig. 5,) the side of which is cut away at *h''*, so that every time it is moved forward it engages the dog *z'*, and this moves the ratchet-wheel forward one tooth, and thus winds the paper strip on that drum and unwinds it from the other, G'. I is a vertical plunger or piston in case A', operated by the eccentric J, forming part of the operating lever-handle J'. The top of the plunger sits against the eccentric, and as the handle is drawn down it consequently forces down the piston. On the lower end of the piston is a head, K, with a rubber cushion set therein. This makes the printing-pad. The piston works in a guide, L, the piston being returned to position by the spring I'. M M' are drums, one each side of the plunger or piston, which carry a wide inking-ribbon, 2, beneath the plunger-pad, the front drum M being provided with a ratchet-wheel, 2', and operated by a pawl, 3, attached to the head

K of the plunger, which, at every upward movement, carries the inking-ribbon drum over one tooth, and unwinds it from the other drum, M′, just enough to present a fresh surface to the figures beneath. N is a drum on which a strip of paper is wound, and which runs down under the piston, and between it and the inking-ribbon 2, and is unwound from a roller, N′, on the opposite side of the plunger. The paper-roller N is moved every time the piston rises by a friction-roller, O, just beneath it, which is moved by a ratchet-wheel, 4, on its end, operated by a long pawl, 5, secured to the piston by a frame or clasp, 6, as shown in Fig. 1. By this arrangement two impressions of every amount or figure are printed, and with only one set of figures—one on the receipt or paper inserted by the cash-man between the figures on the printing-slides and the plunger, and another by the action of the plunger operating on this paper strip and intermediate inking-ribbon, as explained.

The printing-slides B are all automatically returned to their position, after each single impression, by the upward movement of the lever-handle and eccentric J, as follows: Two long vertical arms, P P, are set loose by eccentric eyes, or to the shaft of the eccentric J, and corresponding therewith, one on each side. On the back of the lower end of these arms are cogs or teeth 7, which mesh into a small cog-wheel, 8, on the side of a larger cog-wheel, R, (one each side, inside of the case A,) on a shaft, 9.

The cogs on these two wheels operate flat racks 10 10′ on the bottom of the case A, and these operate the slide H, before referred to, throwing it forward and back each time that the lever-handle is worked; and this slide H is for the purpose of not only operating the dog, which moves the inking-ribbon, as before stated, but also to carry back all or any of the printing-slides B B. When the handle J′ is raised the end *h‴* of the slide H engages with the feet *i i* on the bottom of any of the slides *g g* that may be out in use for printing, and carries them back to their original place, the hook *h* then engaging with the dog *m*, as before explained. A rod, *i″*, with a crank-handle, *j″*, outside the case, is provided, which lies on top of the flat slide H, (see Fig. 5,) just back of the spring L, which is attached to the bottom of the case A, and protrudes through a slot, L″ in the slide H. A portion of the center of this rod *i″* is cut away, making it flat, as shown in Fig. 5, which is to give the slide H, which is pressed up by the spring L′, a slight rise, by which its end *h‴* will catch into the feet *i i* of the bottom of the springs *g g* of the printing-slides, as before explained; but, to prevent them being carried back at every operation of the lever, so as to hold the slides to print more than once the same amount, the rod *i″* is turned over by the crank *j″*, and the round side of it is against the slide H, instead of the flat part. This prevents the raising of the slide at all, and thus prevents the end *h‴* from engaging the feet *i i*. This will permit of giving as many printings of the numbers on the slides in the openings S as may be desired, or until the rod is turned back again.

By this device, and the use of only the six end knobs and the eleven side knobs, we are enabled to make sixty-four changes or distinct characters, thereby saving greatly in number and complication of levers and knobs.

The front A″ of the upper part of the case A′, containing the piston I and all the operating paper-drums and inking-drums, is hinged onto the shaft J″ of eccentric, so that it can be swung out clear of the other parts, (see dotted lines, Fig. 1,) in order to get at the drums to renew the paper, ribbons, &c., and is very important for that purpose. It is confined by clasps when down in place.

We claim—

1. The slides B B, having the spring-guides *e g* and catches *f h i*, and in combination with the springs *k k*, as and for the purpose specified.

2. The combination of the printing-slides B B, the spring-guides *e g*, catches *f h*, knobs and pins *n n′*, dogs *m m*, the base *b*, box D, and catches *p p s s*, all arranged and operating substantially as specified.

3. The box D, with the spring-catches *q q s s* therein, and in combination with the operating side levers E E, case A, and slide H *h‴*, as and for the purpose specified.

4. The combination of the box D, spring-catches *q s*, bars *r r*, pins *t t*, guide-pins *u v*, and operating-levers E E, as and for the purpose specified.

5. In combination with the printing-slides B and their spring-guides *g* and catches *i*, the returning-loop *w* F, as and for the purpose specified.

6. In this device, the combination of the inking-ribbon drums G G′, the operating-ratchet *x*, pawl *y*, arm *z*, dog *z′*, and bottom slide H *h‴*, substantially as and for the purpose specified.

7. In combination with the printing-slides B B, the eccentric lever-handle J J′, printing-piston I K, spring I′, and the paper-drums and inking-ribbon drums, substantially as and for the purpose specified.

8. In this device, the combination and arrangement of the piston I I′, clasp 6, spring-pawl 5, and head K with the spring-pawl, for operating, respectively, the paper and inking-ribbon drums, as set forth.

9. In combination with the eccentric lever J J′ and its shaft J″, the eccentric arms P P, with cogs 7 7, cog-wheels 8 8 and R R, racks 10 10′, and slide H, as and for the purpose specified.

10. In combination with the catches *i i* of the printing-slides B B, the slide H *h‴*, having the slot L″ and the spring L, as and for the purpose specified.

11. The combination of the crank-bar *i''* *j''* and the slide H, having the slot L'' and spring L, as and for the purpose hereinbefore specified.

12. In combination with the upper case A', the swinging case A'', containing the piston I, and the paper and inking-ribbon drums, substantially as and for the purpose specified.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

JOHN H. SMITH.
JOHN MOSS.

Witnesses:
J. R. DRAKE,
T. H. PARSONS.