



No. 676,034.

S. ELLIOTT.  
SORTING PLATES.

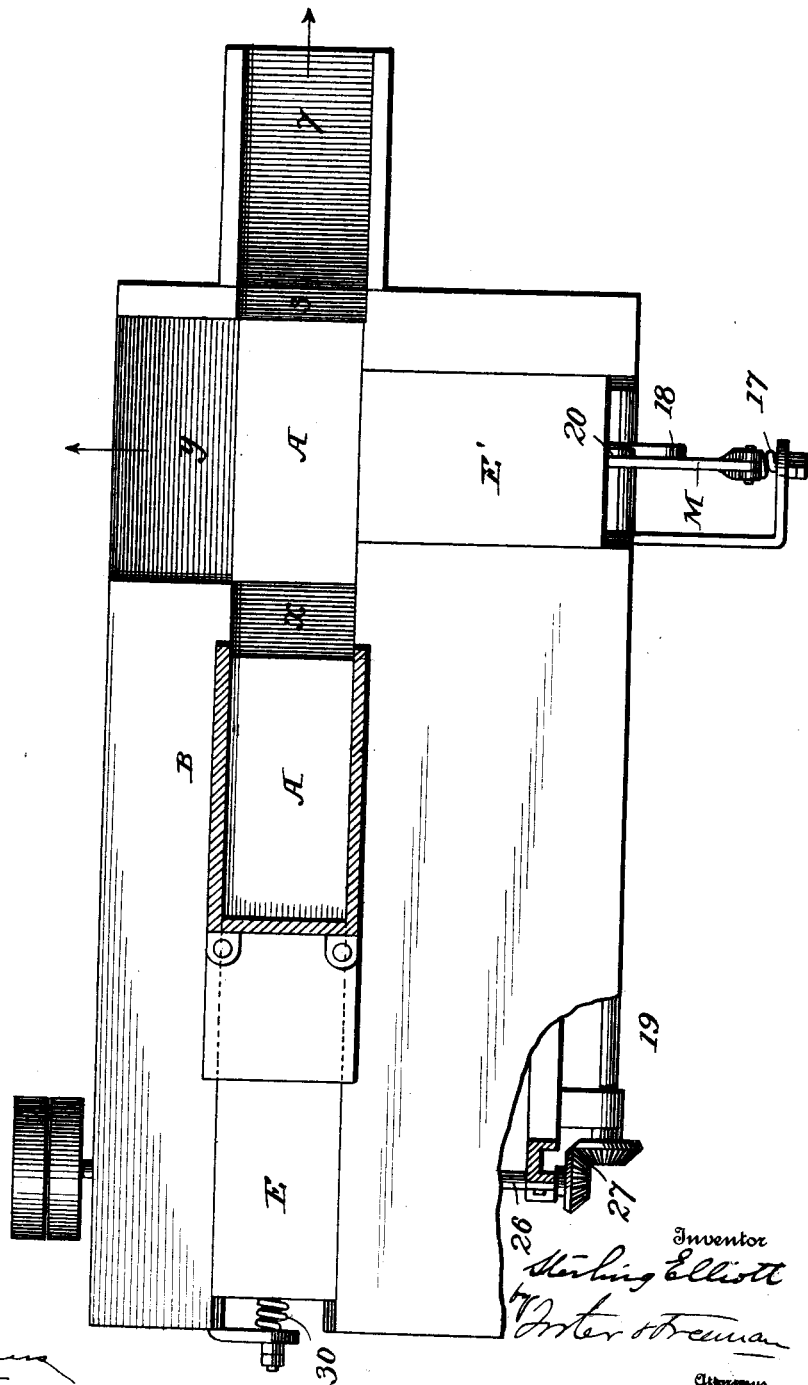
Patented June 11, 1901.

(No Model.)

(Application filed July 7, 1897. Renewed Nov. 12, 1900.)

4 Sheets—Sheet 2.

Fig. 3.



Witnesses

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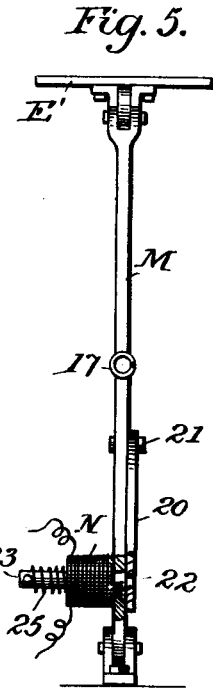
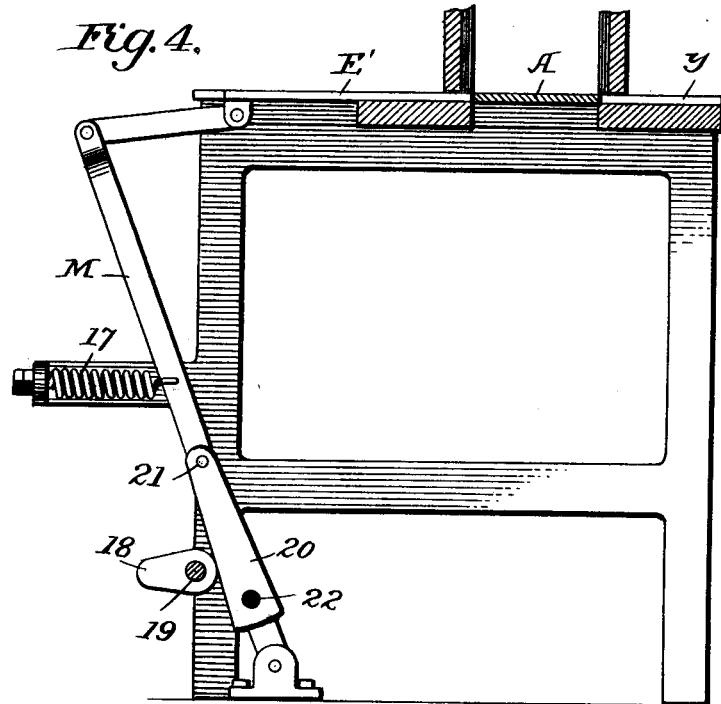
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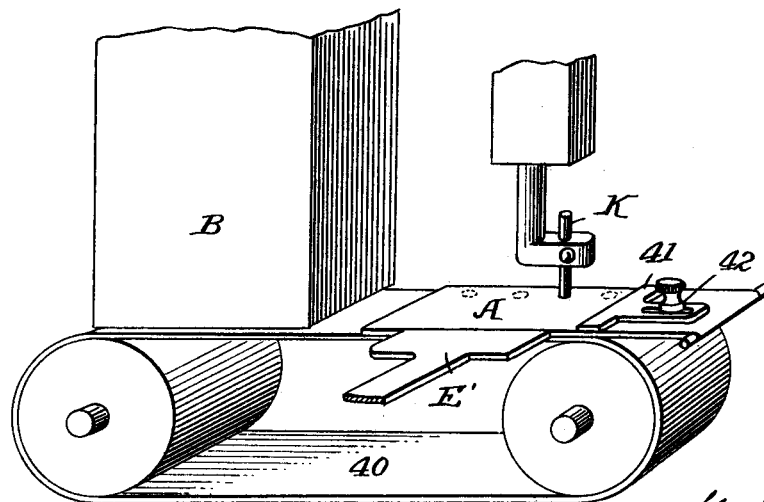
(No Model.)

(Application filed July 7, 1897. Renewed Nov. 12, 1900.)

4 Sheets—Sheet 3.



*Fig. 6.*



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4 Sheets—Sheet 4.

Fig. 8.

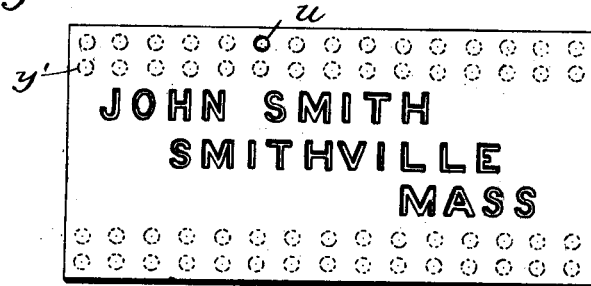


Fig. 9.

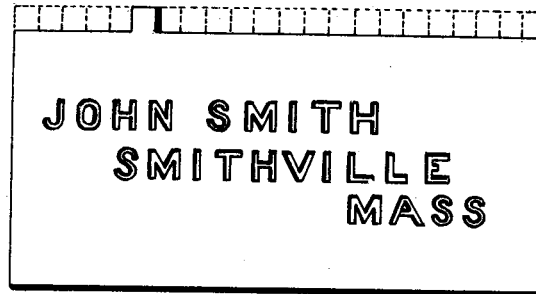


Fig. 10.

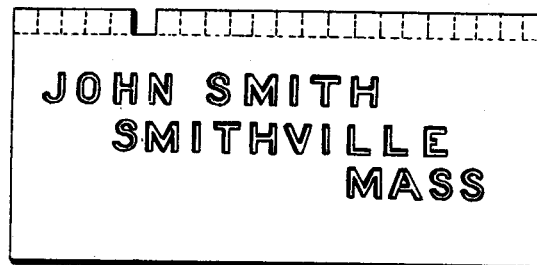
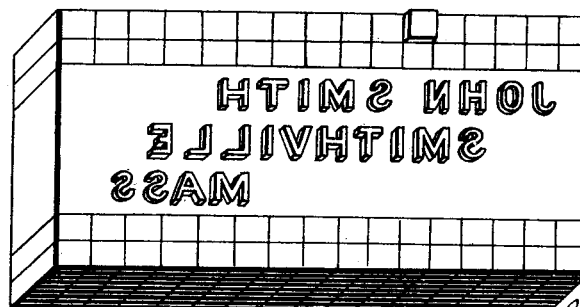


Fig. 11.



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# UNITED STATES PATENT OFFICE.

STERLING ELLIOTT, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE  
ELLIOTT COMPANY, OF SAME PLACE.

## SORTING-PLATES.

SPECIFICATION forming part of Letters Patent No. 676,034, dated June 11, 1901.

Application filed July 7, 1897. Renewed November 12, 1900. Serial No. 36,294. (No model.)

*To all whom it may concern:*

Be it known that I, STERLING ELLIOTT, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Sorting-Plates, of which the following is a specification.

My invention relates to sets of cards, plates, or articles which are intended for repeated use—as, for instance, plates for printing the names and addresses of subscribers for newspapers or periodicals, but some of which are used for a greater number of times than others; and my invention consists in providing the different plates of the set, including all for any given purpose, with regular successions of bearing or contact points terminating at different points upon the different plates, according to the number of times the plates are to be used, said bearing or contact points being situated so as to cooperate with a movable controller upon the moving part of a machine, whereby certain of the plates, according to the predetermined arrangement of the contacting points or parts, may be separated from the others, as fully set forth hereinafter and as illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal sectional elevation of an apparatus for addressing newspapers, &c., for use with plates embodying my improvement. Fig. 2 is a transverse section on the line 2 2, Fig. 1. Fig. 3 is a sectional plan. Fig. 4 is a transverse sectional elevation on the line 4 4, Fig. 1. Fig. 5 is a part sectional edge view of the lever device shown in Fig. 4. Fig. 6 is a perspective view illustrating a modified form of apparatus, and Figs. 7 to 11 illustrate different forms and arrangements of printing cards or plates.

For the purpose of illustrating my invention I have shown it in connection with an apparatus for printing addresses upon newspapers in connection with a series of stencils or stencil-cards A, each of which has series of perforations so arranged as to outline the name and address of one of the subscribers. The stencils may be designated by the general term "plates," as they may be of different kinds, but each series of which constitutes practically a set, some of which are to con-

tinue in use for a longer time than others. These stencils, one for each subscriber, are placed one above the other in a holder B, arranged above a table or platform D and above a channel *x* in said platform, in which channel reciprocates a pusher E, which may be carried back to the position shown in Fig. 1 at the rear of the lowermost stencil of the pile and which when moved in the direction of its arrow, Fig. 1, pushes the said lowermost stencil A along the channel *x* to a position opposite another channel *y* at right angles to the channel *x* and directly below a reciprocating head J. This head has a projection 5, around which extends a saturated strip 6, supplied with a suitable liquid ink, which can pass under pressure through the perforations in the stencil-plate to the surface of the wrapper of a newspaper X, supported below the stencil-plate upon a bed F, which may be raised and lowered by means of a pedal G.

Under the normal action of the parts described the pusher E will first push the lower stencil-plate from below the pile to a position below the head J. The operator places a newspaper X upon the bed F and then lifts the latter by means of the pedal to press the newspaper against the under side of the stencil-plate. The head J descends and presses the saturated strip 6 against the upper part of the stencil-plate, causing the ink to pass through the perforations and onto the wrapper of the newspaper. Meanwhile the pusher E has moved back to the position shown in Fig. 1. The operator then releases the treadle, takes off the paper addressed, and inserts another in its place, the head J rising and the pusher E moving forward and pushing another stencil into place, the contact of the second stencil with the first causing the latter to be discharged from the recess *s* at the right, Fig. 1, onto an inclined plate 7 and thence into any suitable receptacle. (Not shown.) As the second stencil takes its position the operator presses the pedal, lifts the second paper into position, and the head J descends and the second name and address is printed.

It is of course desirable that the above-described operations, in connection with the mechanism described or with any suitable mechanism that will properly shift the ad-

dressing-plates and bring them successively  
 into position to print addresses upon succe-  
 sive papers or other matter, shall continue so  
 long as the successive stencils contain the  
 5 names of those whose terms of subscription  
 have not expired. It is also desirable to throw  
 out of operation or discard or separate from  
 the remaining stencils those containing the  
 names of subscribers whose subscriptions  
 10 have expired or will expire upon the receipt  
 of the paper or other matter being printed.  
 To this end each of the stencils is provided  
 with a bearing or series of bearings or con-  
 tacts, (all of which I include under the term  
 15 "bearings,") the arrangement of which upon  
 the stencil varies according to the length of  
 the term for which the subscription is given  
 or the number of times the plate must be  
 used before being automatically separated  
 20 from the active plates or those which must  
 continue in use, and these bearings so coop-  
 erate with a pin or its equivalent (which I  
 term a "sorter") upon the machine that the  
 latter will operate to mechanically discharge  
 25 or separate from the others any stencil after  
 the printing from the latter of the last num-  
 ber of the publication covered by the sub-  
 scription.

In the apparatus illustrated the head J car-  
 30 ries a sorter-pin K, which may be arranged  
 progressively in different positions upon the  
 head or successively at different points there-  
 on, the position being changed or advanced  
 at each issue of the publication or at each  
 35 passage of the mass of plates through the ap-  
 paratus—that is, there being a succession of  
 openings  $y'$  to  $y^{13}$  in the head J (when the  
 publication is a monthly publication) the pin  
 is arranged first in the opening  $y'$  and its po-  
 40 sition is successively advanced upon the  
 printing of each monthly edition. If, how-  
 ever, no subscriptions are taken for less than  
 a certain time—say eight weeks—the pin need  
 not of necessity be put in place until two  
 45 monthly editions have been printed.

Assuming that the bearing or coacting fea-  
 ture of the stencils consists of imperforate  
 or solid parts or spaces, there is actually or  
 theoretically upon each stencil twelve points  
 50 coinciding with the twelve openings  $y$  of the  
 head J, and an opening  $u$  is made in each  
 stencil at such a point as will coincide with the  
 position which the sorter-pin K will occupy  
 with the issue of the number with which the  
 55 subscription expires. Thus assuming that  
 the subscription of "John Smith, of Smith-  
 ville, Mass.," expires with the sixth issue of  
 the publication after the subscription is re-  
 ceived the stencil A, containing the sub-  
 60 scriber's name, embodies five bearing-points  
 which on successive passages contact with  
 the sorting-pin and is punched at the sixth  
 point upon the stencil, and the pin K will co-  
 65 incide with this point after the sixth adjust-  
 ment of the said pin.

In the construction shown the pin slides  
 freely in each opening, but is held in any

position to which it is adjusted by the con-  
 tact of a spring 15, and when the head J rises  
 the upper end of the pin strikes the flange of 70  
 a contact-piece L upon the frame of the ma-  
 chine, so that the head continues to rise while  
 the pin is held stationary. When the head  
 descends, if the end of the pin makes contact  
 with the face of the stencil the movement of 75  
 the pin is arrested while the head continues  
 its descent, and this will be the case upon  
 each reciprocation of the head until the pin  
 in its descent, instead of meeting a bearing  
 on the face of the stencil, is brought toward 80  
 a stencil having an opening in line with the  
 pin, in which case the latter will pass through  
 the opening and meet and bear upon a con-  
 tact-piece L', completing an electric circuit,  
 which causes, through suitable mechanism, a 85  
 second pusher E' to move forward as the head  
 rises and push the opposite stencil A into the  
 channel  $y$ , and when the next stencil is  
 pushed into the channel  $y$  the first is dis-  
 charged from the said channel into a suitable 90  
 receptacle. (Not shown).

In the apparatus illustrated the pusher E'  
 is connected with an operating-lever M, which  
 moves outward under the influence of a spring  
 17 and inward under the action of a cam or 95  
 toe 18 on a rotating shaft 19, the said cam  
 bearing upon a wing 20, pivoted to one side  
 of the lever M and having an opening 22,  
 adapted to receive a bolt 23, carried by the  
 lever M. As shown, the bolt 23 is the core of 100  
 a solenoid N and normally is held out of the  
 opening 22 by the action of a spring 25; but  
 when the circuit is completed by the contact  
 of the pin K and contact-piece L' the coil  
 is excited and the core 23 is thrown outward 105  
 and into the opening 22, locking the wing 20  
 to the lever M. So long as the wing is not  
 locked to the lever it will swing freely under  
 the action of the cam 18; but when it is locked  
 to the said lever the wing and the lever to- 110  
 gether will be swung by the action of the  
 cam, and the pusher E' will operate to push  
 the opposite stencil into the channel  $y$ .

In the apparatus shown the shaft 19 drives  
 a shaft 26 through bevel-gears 27, and a cam 115  
 28 on the shaft 26 swings an operating-lever  
 M' in a direction to carry the pusher E in-  
 ward, while a spring 30 carries the parts in  
 the opposite direction.

I wish it to be understood that in describ- 120  
 ing the above apparatus I have done so only  
 to illustrate the application of my invention  
 and do not here claim the same, nor do I  
 claim an apparatus embodying the general  
 features specified, as this is the subject of a 125  
 separate application, Serial No. 2,050, of  
 1900. I have referred to stencils and sten-  
 cil-plates; but instead of these there may be  
 printing-plates—as, for instance, thin metal-  
 lic plates provided with rubber type  $s$ , (see 130  
 Fig. 7)—any necessary changes being made in  
 the printing-machine required by the change  
 in the character of the printing-plates. Fur-  
 ther, instead of bearing-points followed by

openings permitting the passage of the pin when the printing-plate is to be discarded there may be openings permitting said passage, so long as plates are to be retained followed by bearings, so that the shifting of the pin by final contact with the bearing of the plate causes the discharge of the latter, or a metallic strip or piece may be cemented to the printing-plate in proper position to make contact with the pin at proper times and complete a circuit. Further, the plate may have pins at the edge, Fig. 9, or openings at the edge, as shown in Fig. 10, for the reception of pins placed in proper position to make contact with cooperating devices, or there may be movable type-blocks, one, *t*, longer than the other, Fig. 11. Any of these may serve to vary the action of the shifters to throw out certain of the plates, and the said cooperating devices instead of being electrical may be mechanical. Instead of one pin K two or more may be used.

It will be evident that my improvement may be used not only in connection with a set of printing-plates or cards of any character whenever it is necessary that the different cards or plates of the set shall be repeatedly used; but some for a greater number of times than others.

While I have shown the pin K or controller as adjustable in respect to the indicators upon the plates, the said pin may occupy a stationary position upon the head J or other

moving part, and the plates may be so carried as to progressively occupy different positions.

Without limiting myself to any special character of plate, I claim—

1. A set of plates for automatic sorting consisting of a plurality of plates provided with bearing or contact points arranged in regular succession and terminating in different positions upon different plates of the set, to coact with an automatic sorting device to vary the action of the latter in connection with the plates after the number of operations of the plates in connection with the sorting device determined by the arrangement of said bearing-points, substantially as set forth.

2. A set of sorting-plates for repeated use consisting of a plurality of plates provided with means for actuating a sorting device, arranged in regular succession throughout the set according to the number of times the different plates are to be used, to vary the number of operations in connection with the sorting device according to the disposition of the actuating means on the plates, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

STERLING ELLIOTT.

Witnesses:

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