

(No Model.)

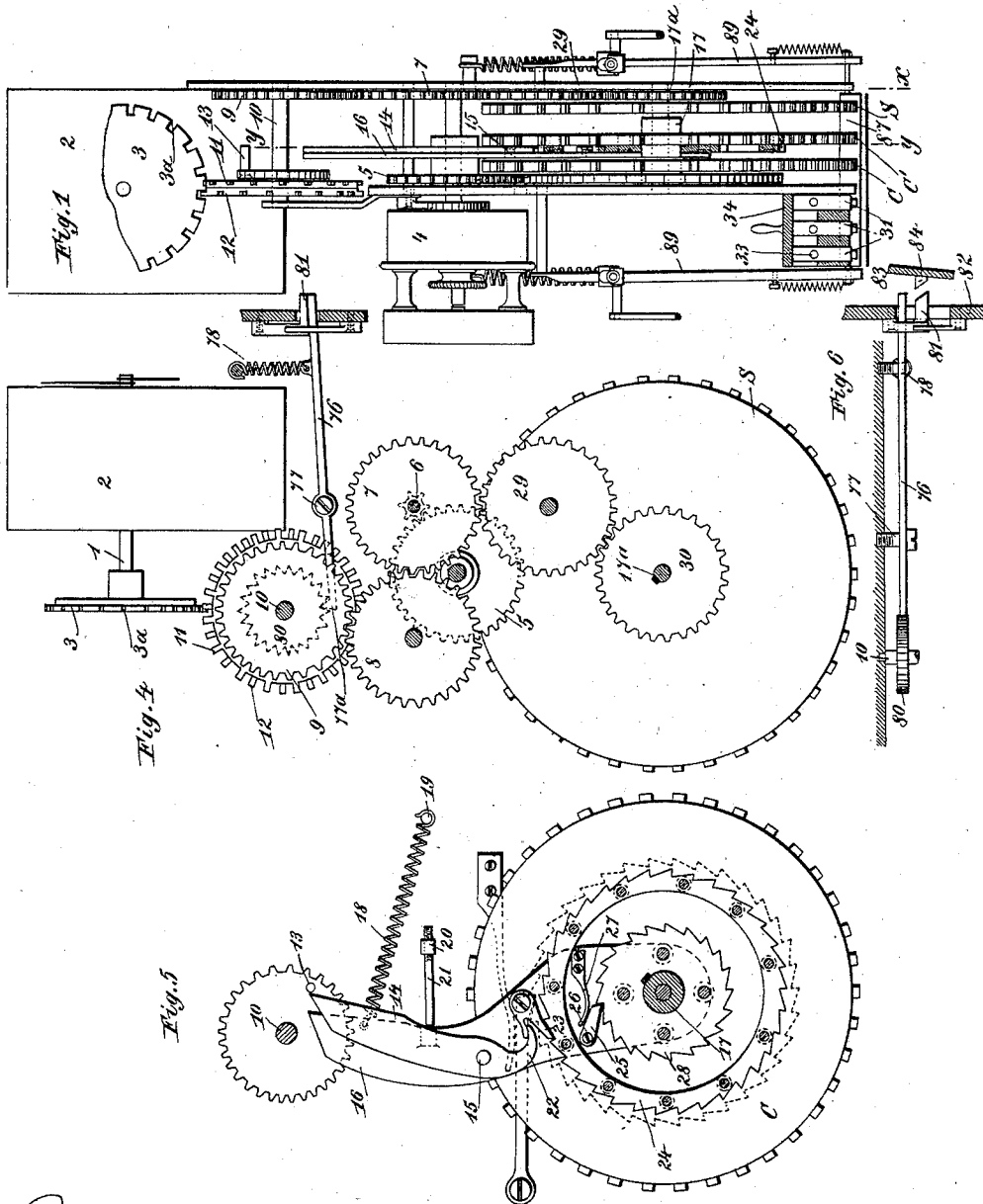
4 Sheets—Sheet 1

E. P. DUPUIS.

APPARATUS FOR AUTOMATICALLY DELIVERING CARDS INDICATING
TIME OF DELIVERY.

No. 566,449.

Patented Aug. 25, 1896.



Witnesses:
J. Green.
M. V. Bidgood

Inventor:
Edward Penning Dupuis
By Knight Bros
Atty.

(No Model.)

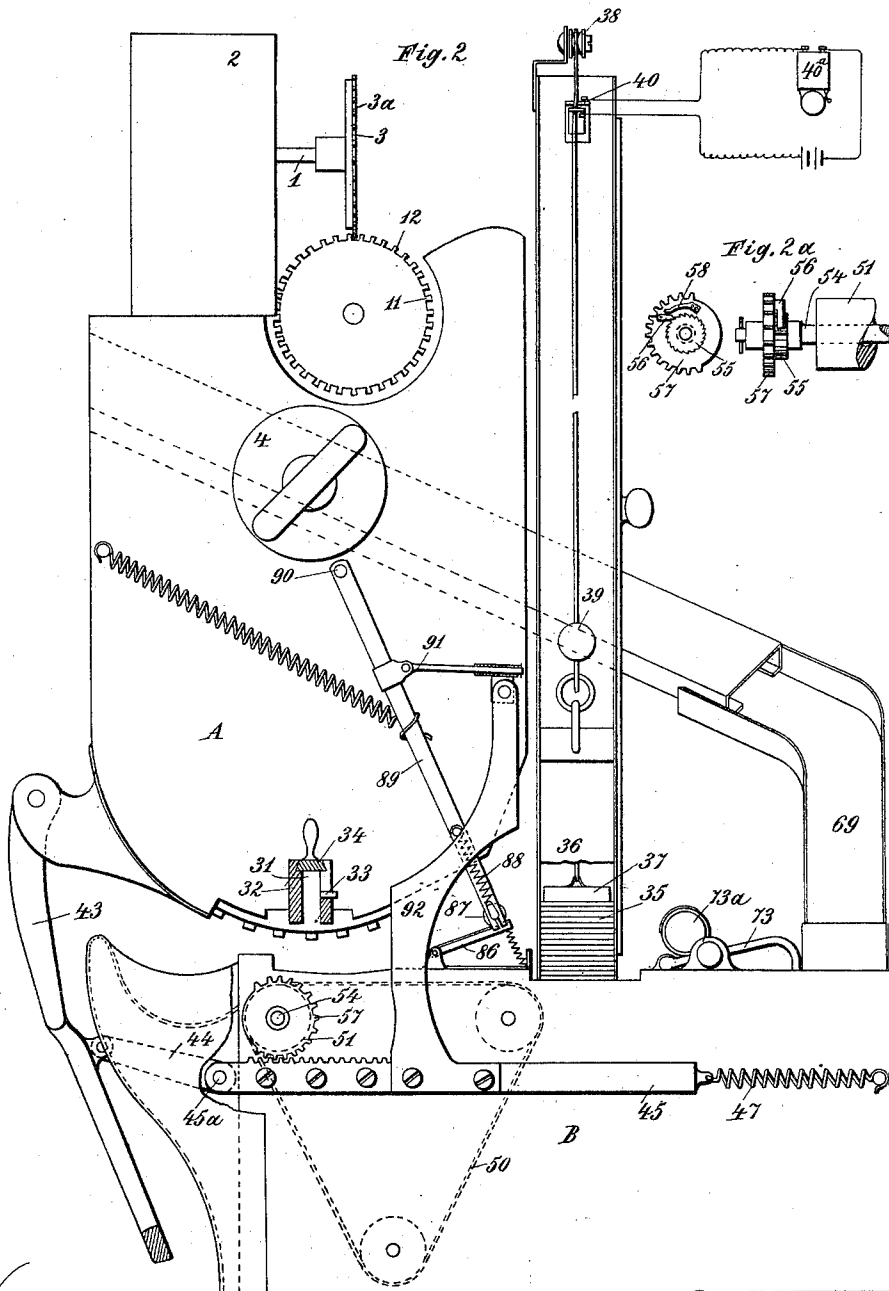
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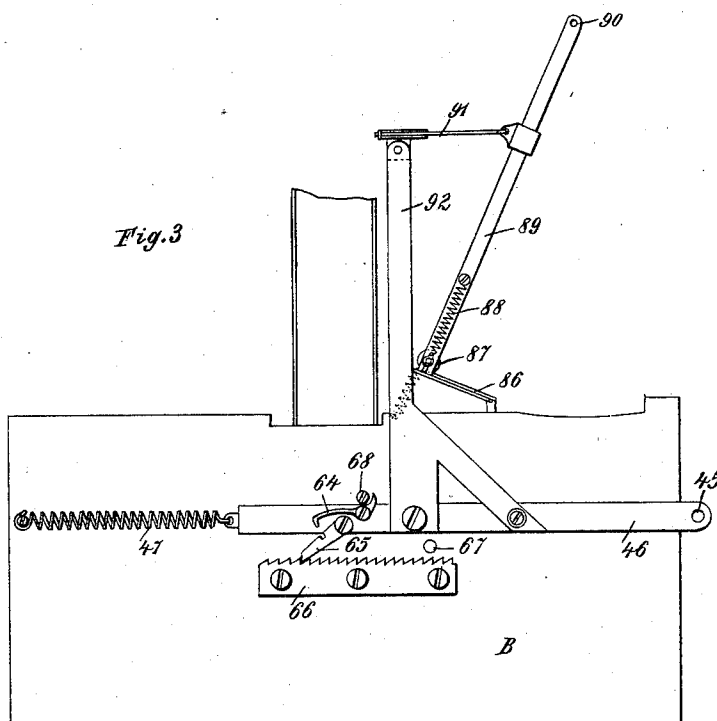
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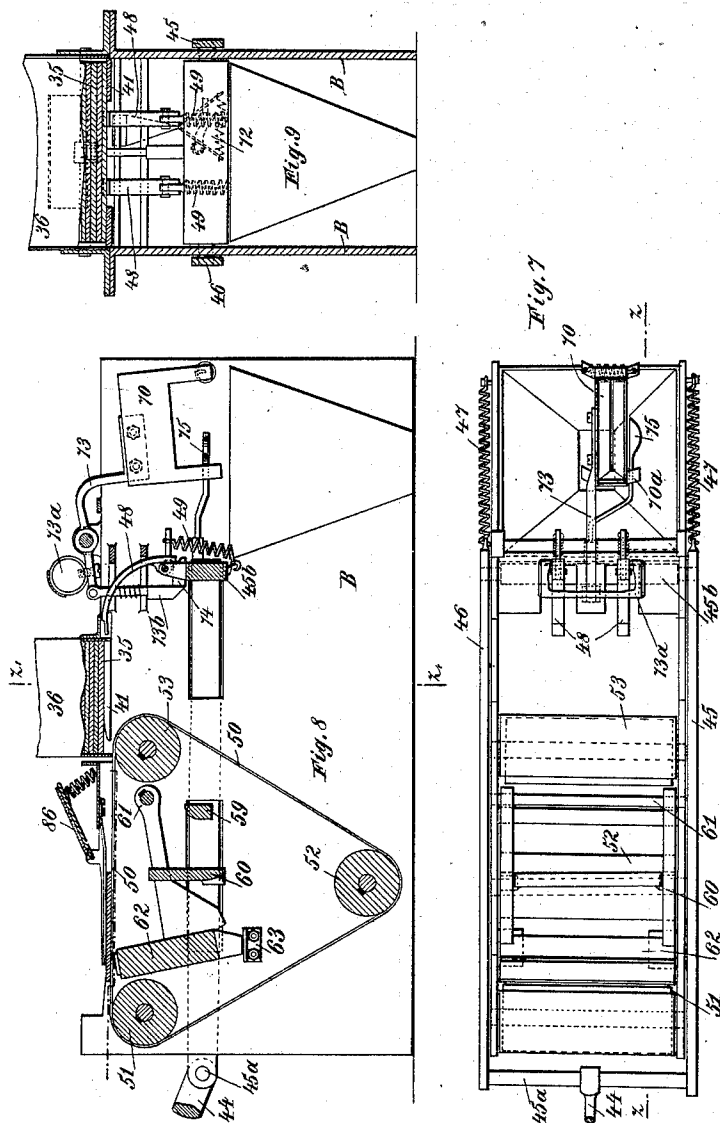
(No Model.)

4 Sheets—Sheet 4.

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Inventor:
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Attys

UNITED STATES PATENT OFFICE.

EDWARD PENNING DUPUIS, OF HALLE-ON-THE-SAALE, GERMANY.

APPARATUS FOR AUTOMATICALLY DELIVERING CARDS INDICATING TIME OF DELIVERY.

SPECIFICATION forming part of Letters Patent No. 566,449, dated August 25, 1896.

Application filed June 4, 1895. Serial No. 551,634. (No model.)

To all whom it may concern:

Be it known that I, EDWARD PENNING DUPUIS, a subject of the King of Prussia, residing at Halle-on-the-Saale, in the Kingdom of Prussia and German Empire, have invented certain new and useful Improvements in Apparatus for the Automatic Delivery of Cards Indicating the Time of Delivery, of which the following is a specification.

This invention relates to a new and improved apparatus for delivering tickets on which the time of delivery is printed, and which apparatus is especially adapted for use as a ticket-selling device or as a controlling device for workmen.

In the accompanying drawings, forming part of this specification, and in which like letters and figures of reference indicate like parts in all the views, Figure 1 is an end view of the upper part of the machine, showing the motor mechanism for the type-wheels. Fig. 2 is a side view of the apparatus, viewed from the left-hand side of Fig. 1. Fig. 2^a is a detail view. Fig. 3 shows the lower part of the mechanism, viewed from the right of Fig. 1. Fig. 4 shows part of the motor mechanism for the type-wheels in section on line *xx* of Fig. 1. Fig. 5 shows part of the motor mechanism for the type-wheels in section on line *yy*, Fig. 1. Fig. 6 is a plan view of the details shown in Fig. 4. Fig. 7 is a plan view of the device for releasing and printing the tickets. Fig. 8 is a vertical section on the line *zz*, Fig. 7. Fig. 9 is a vertical section on the line *z'z'* of Fig. 8.

The entire device is contained in two casings A and B, composed, essentially, of two side walls, held the proper distance from each other by suitable bolts.

The essential parts of the invention consist in the combination of two motor mechanisms, of which one is driven by a clock-movement of any desired construction with a uniform movement, whereas the other mechanism has a tendency to rotate the type-wheels at a uniform speed, but is prevented from doing so by a wheel driven by the first motor mechanism in such a manner that this uniform motion is converted into a step-by-step motion, one step being made each minute, so that the type-wheels are only turned during a most minute fractional part of a minute

and remain at rest during the remaining time, thereby preventing a movement of the type-wheels at the moment of printing and a stoppage of the entire mechanism.

On the minute-arbor 1 of the clock-movement 2 a disk 3 is fixed, the rim of which is provided with thirty equidistant notches 3^a.

The second motor mechanism is contained in a casing 4, and is composed of the usual clock-winding device with check-wheels and pawls, as usually provided in clocks. From the arbor of this second motor a toothed wheel 5, Fig. 4, is driven, which rotates the wheels 6 and 7, mounted on a common shaft. The wheel 7 engages a wheel 8, which in turn rotates the wheel 9, which is fastened on the arbor 10. With the wheel 9, two disks 11 and 12 are fixed on the arbor 10, the thickness of each of which is equal to the width of the notches 3^a, and said disks are separated from each other a distance equal to half the width of a notch *a*³, and said disks are at right angles to the disk 3 and are provided on their rims each with thirty teeth arranged alternately on the two disks. Therefore in case the teeth in the disk 11, for example, register with a notch *a*³ the disk 3 permits of a short turn of the arbor 10, which movement is checked by the following tooth of the disk 12, which tooth strikes against the disk 3. A minute elapses until the next notch *a*³ registers with the tooth of the disk 12, Fig. 1, and again permits of a turning movement of the arbor, which movement is again checked by the following tooth of the disk 11, and so on. These rotations of the shaft 10 are transmitted to the type-wheels C and C' by means of a pin 13, that rotates with the shaft, Fig. 5. A lever 14 is pivoted by means of a pivot 15 on a lever 16, which latter turns free on a sleeve 17, which carries the type-wheels C and C'. The lever 16 is pulled back by a spring 18, having one end attached to the lever 16 and the other end to the pin 19 on the casing, and compels the lever 14 to follow. The movements of the lever 16 are limited by an adjustable stop 21, which is screwed into a nut 20 on one of the side walls of the casing. At each complete rotation of the disks 11 and 12, that is, after one hour, the lever 14 is pressed back and its curved end 22 passes into a check-pawl 23, whereby

the latter is disengaged from the teeth of a ratchet-wheel 24, attached to the type-wheel C', which ratchet-wheel prevents an accidental forward rotation of the hour type-wheel. By continued rotation of the disks 11 and 12 the pin 13 also presses back the lever 16, whereby the spring 18 is brought in tension. Finally, the pin 13 releases the levers 14 and 16, whereupon the lever 16 is rapidly withdrawn by the spring 18, which movement is transmitted by means of the pawl 25 to the ratchet-wheel 28, which is mounted on the sleeve 17. The pawl 25 is pivoted by means of the screw 26 on the lever 16, and is pressed by the spring 27 against the teeth of the ratchet-wheel 28. The throw of the lever 16 is regulated by means of the stop 21 in such a manner that the hour type-wheel is turned exactly one twenty-fourth when an hour has elapsed. On this type-wheel the numerals "1" to "12" for day and night are arranged equidistant in two groups.

Adjacent to the type-wheel C' a type-wheel C of like size is mounted on the sleeve 17, upon which the types "A. M." are arranged successively twelve times for the daytime and the types "P. M." twelve times successively for night-time. The disks 11 and 12 are moved by the wheels 7 and 8 step by step, which motion, by means of the intermediate wheel 29, is transmitted to the wheel 30, which is fixed on the type-wheel shaft 17^a, on which is fixed a type-wheel S, carrying the types one-sixtieth.

The gearing between the type-wheel S and the wheel 5 is so proportioned that the type-wheel S is rotated one-sixtieth each minute and after one hour has the proper type in position for printing. Besides these type-wheels the types 31 for the days, months, and years are provided, which are changed by hand when necessary. The same are inserted in the casing 32 and are provided with pins 33, which hold the types 31 in their lowest positions, a dovetailed slide 34 preventing the types from being pressed back during the printing operation, Fig. 2. The cards 35, which are to be printed, are contained in a box 36 and are pressed downwardly by a weight 37, which is fastened to one end of a cord 38, passing over a suitable pulley and carrying at its other end the ball 39.

As the stack of tickets decreases the weight 37 descends and the ball 39 rises and finally presses the springs 40 at the top of the box 36 against each other and closes an electric circuit, whereby an electric bell 40^a is sounded calling the attention of the person in charge to the fact that no more tickets can be removed from the apparatus. The bottom ticket rests on the tongues 41. (See Fig. 8.)

The cards are removed and printed in one operation by operating a lever 43, which is pivoted at 42 to the casing A. Said lever, by means of the link 44, shifts the sliding bars 45 and 46, which are guided longitudinally on the sides of the casing B and are rigidly con-

nected by a cross-rod 45^a, and said sliding bars 45 and 46 and the lever 43 are returned to the initial position by springs 47. The two bars are also connected by a cross-bar 45^b, passing through the casing B, which cross-bar has two curved arms or pushers 48, which are pressed by springs 49 against the bottom ticket. (See Fig. 8.) When the sliding bars 45 and 46 are moved outward by operating the lever 43, the pushers 48 push the bottom ticket from the tongues 41 upon an endless elastic band 50, passing over the rollers 51, 52, and 53. The pushers 48 push the ticket until it is exactly below the types.

When the ticket has been printed, the movement of the band 50 moves it out of the apparatus. The band is shifted by means of the roller 51, fixed on the shaft 54, (see Figs. 2 and 2^a,) on which a ratchet-wheel 55 is wedged. A toothed wheel 57 is mounted loosely on the shaft 54, to which is pivoted the pawl 56, which in turn is pressed by a spring 58 against the teeth of the ratchet-wheel 55. When the lever 43 is withdrawn, the pawl 56 slides over the teeth of the ratchet-wheel 55 without rotating the roller 51, but when the lever 43 is pulled back the toothed wheel 51 is turned to the left and the pawl 56 rotates the ratchet-wheel 55 and the roller 51, whereby the band 50 is shifted and the printed ticket is delivered. The distance that the band 50 is shifted corresponds exactly to the width of a printed ticket.

The printing is done by means of a cross-bar 59, carried between the bars 45 and 46, which cross-bar strikes against a swinging plate 60, suspended freely from the hammer 62, which is pivoted at 61 between the side walls of the casing and rests on the stop 63. By pulling outward the lever 43 the cross-bar 59 presses the plate 60 against the bottom edge of the hammer 62, whereby the latter is raised and presses the elastic band 50 and the ticket resting on the same against the types. By pulling outward the lever 43 still farther the plate 60 is caused to slide over the cross-bar 59, and the hammer 62 drops back upon its stop 63. When the lever 43 is pulled back, the pivoted plate 60 passes freely over the cross-bar 59 without moving the hammer 62. To prevent withdrawing a printed card from the apparatus before the lever 43 has been pulled outward to its full extent, which would cause disorder in the operating of the apparatus, a hook 64 is mounted pivotally on the bar 46, Fig. 3. Below the same a check-pawl 65 is pivoted to the bar 46, which pawl is provided in its upper edge with a notch, and when the bar 46 is pulled outward the pawl 65 slides over the teeth of the rack 66, attached to a side wall of the casing. On said side wall two pins 67 and 68 are provided, and when the lever 43 is pulled outward the pawl 65 remains engaged with the teeth of the rack 66 and prevents pulling back the lever 43. When the lever has been pulled outward to its full extent, the pawl 65 rides upon

the pin 67 and is disengaged from the teeth of the rack 66, whereby it comes in contact with the hook 64, and is held by the same in raised position, so as to permit pulling back the lever 43. When the lever 43 has been pulled back to its full extent, a lug on the hook 64 comes in contact with the pin 68, whereby said hook is raised and the pawl 65 is released and drops into the position shown in Fig. 3.

The tickets are to be delivered upon the inserting of a coin or a controlling disk or check for workmen, and for this purpose the chute 69, Fig. 2, has been provided, from which the coins or checks drop into a receiver 70, Figs. 7 and 8, composed of two side pieces, which are pivoted together each at their upper edges and are held together by a spring 72, so that the coin or check remains in the receiver 70. The receiver 70 is attached to a lever 73, and is held in raised position by a weight 73^a, whereby the bolt 73^b is held in lowered position in front of the cross-bar 45^b, thus preventing the lever 43 from being pulled outward. Only when a coin or check has been dropped into the receiver is the counterweight 73^a overcome and the bolt 73^b raised so that the bars 45 and 46 can be moved outward.

An arm 75 projects from the cross-bar 45^b, which, when the lever 43 is pulled outward, strikes against a bottom lug of the receiver 70, so that the latter is pressed to one side to permit the coin to drop out of the receiver 70 and the bolt 73^a to assume its initial position. To permit of adjusting and setting the clock-movement, without turning the type-wheels, the disengaging device shown in Figs. 4 and 6 has been provided, which consists of a lever 76, mounted pivotally at 77 in the casing A and provided with a tooth 77^a, which can engage the toothed wheel 80 on the shaft 10 when the front end of the lever 76 is depressed. The lever 76 is constantly drawn upward by a spring 78. A pawl 81 is pivoted on the end wall 82 of the casing A and locks the lever 76, and only releases the latter after the said pawl has been pushed to one side. If the person attending to the apparatus forgets to disengage the pawl 81, the type-motor mechanism remains at rest, as the lug 77^a locks the disks 11 and 12. This is prevented by a lug 84, attached to the door 83, which latter closes the end of the casing, and only upon opening this door can the clock-movement be wound.

Before the person that has wound the clock mechanism leaves the apparatus it is evident that he will close the door 83, whereby the lever 76 is automatically released. The types are inked by means of a pad 86, that is provided with printing-ink. A roller 87 is passed over this pad, which roller is attached by means of springs 88 to levers 89, which are pivoted at 90 to the walls of the casing A. Each lever 89 is connected with a connecting-rod 91, attached to the arms 92 of the levers

45 and 46, so as to move forward and backward with the same, so that every time a ticket is removed the roller 87 is moved from the pad over the types.

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

1. In an apparatus for printing the time of delivery upon tickets, the combination of the type-wheels, a motor mechanism geared to the type-wheels for rotating them, a clock-movement, means controlled by the clock-movement for regulating the operation of the motor mechanism and therethrough the movement of the type-wheels, and means for successively delivering the tickets into position under the type-wheels and printing thereon, substantially as set forth.

2. In an apparatus for printing the time of delivery upon tickets, the combination of the type-wheels, the motor mechanism geared to the type-wheels for rotating them, the controlling-disks 11 and 12, the clock-movement, and the notched disk 3 on the clock-movement and engaging the disks 11 and 12, substantially as set forth.

3. In an apparatus for printing the time of delivery upon tickets, the combination of suitable type-wheels, means for operating them, a reservoir for supporting blanks to be printed upon, a sliding frame, pulleys geared to said frame, an endless band or belt passing around said pulleys means for ejecting a blank from the reservoir onto the endless band, and means operated by the sliding frame to impress the blank against the type-wheels, as set forth.

4. In an apparatus for printing the time of delivery upon tickets, the combination of suitable type-wheels, means for operating them, a reservoir for supporting blanks to be printed upon, a sliding operating-frame, a latch for locking said frame in inoperative position, coin-operated means for releasing the frame, pulleys geared to the frame, an endless band passing around the pulleys, fingers carried by the frame and adapted to engage and eject blanks from the reservoir, onto the endless band, a pivoted hammer, and means carried by the frame for operating the hammer and printing upon the blanks, as set forth.

5. In an apparatus for printing the time of delivery upon tickets, the combination of the type-wheels, the motor mechanism for rotating them, the clockwork for regulating the movement of the type-wheels, and means for cutting out the type-wheels, consisting of a pivoted spring-pressed lever 76 having a nose 77^a adapted to engage one of the gear-wheels, a pawl 81 adapted to hold the lever in engaged position, a door 83 for closing the apparatus, and a lug 84 carried by the door and adapted to engage the pawl 81 for disengaging the lever, substantially as set forth.

6. In an apparatus for printing the time of delivery upon tickets, the combination of the type-wheels and operating and controlling

mechanisms, and the operating-bars 45 and 46 adapted to deliver a ticket and make an impression thereon through suitable mechanism, with a receiver adapted to receive a coin
5 or check, a pivoted lever upon which said receiver is supported, and a bolt connected to said lever and engaging and locking the bars 45 and 46, said bolt being withdrawn to release the bars 45 and 46 upon the introduc-

tion of a coin into the receiver, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

EDWARD PENNING DUPUIS.

Witnesses:

HUGO PATAKY,
CHAS. H. DAY.