(No Model.) 6 Sheets—Sheet 1.

O. E. LUNDSTEDT.

POSTAL DATE AND TIME STAMPING MACHINE.

No. 472,951. Patented Apr. 12, 1892.

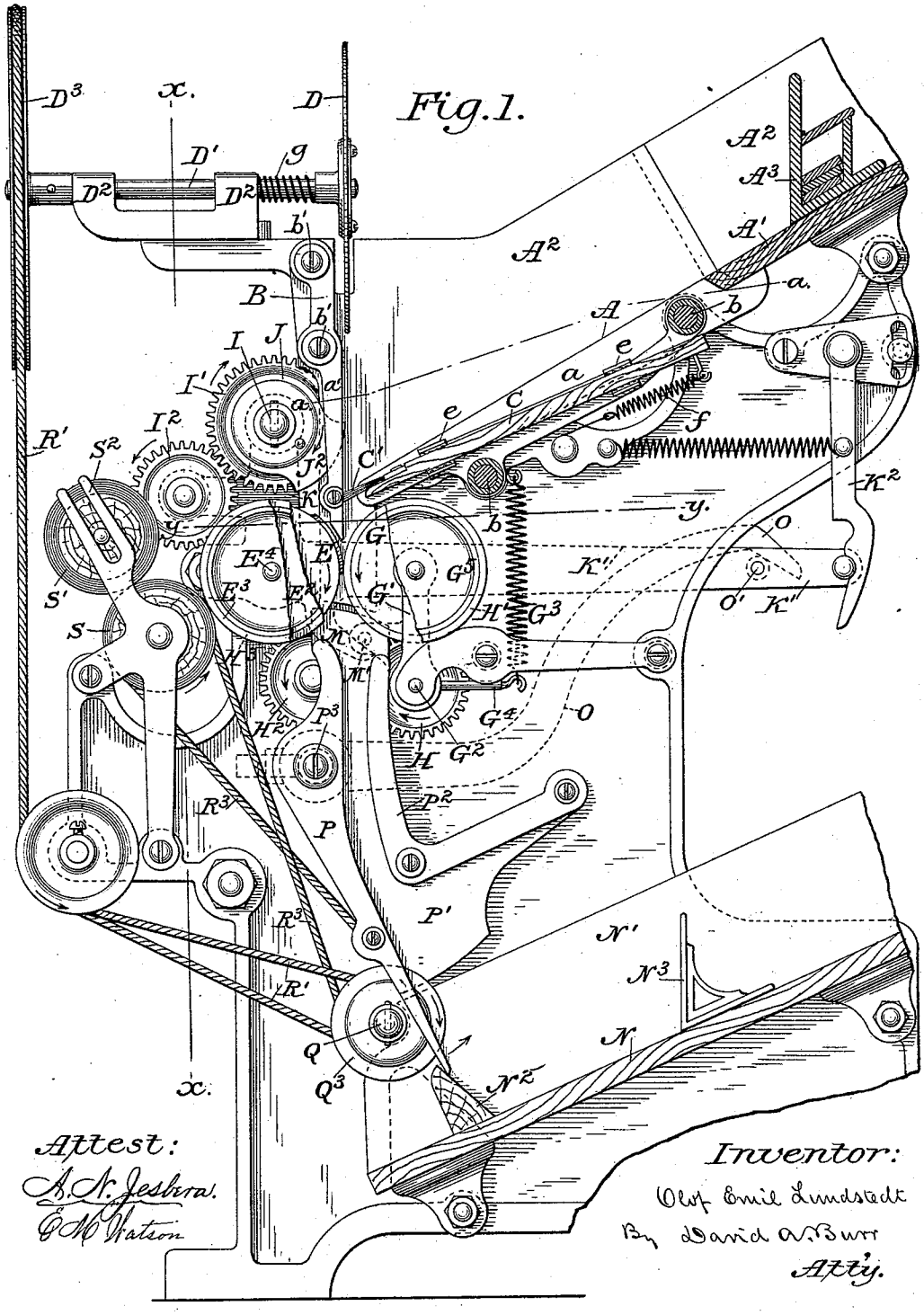

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Fig. 2.

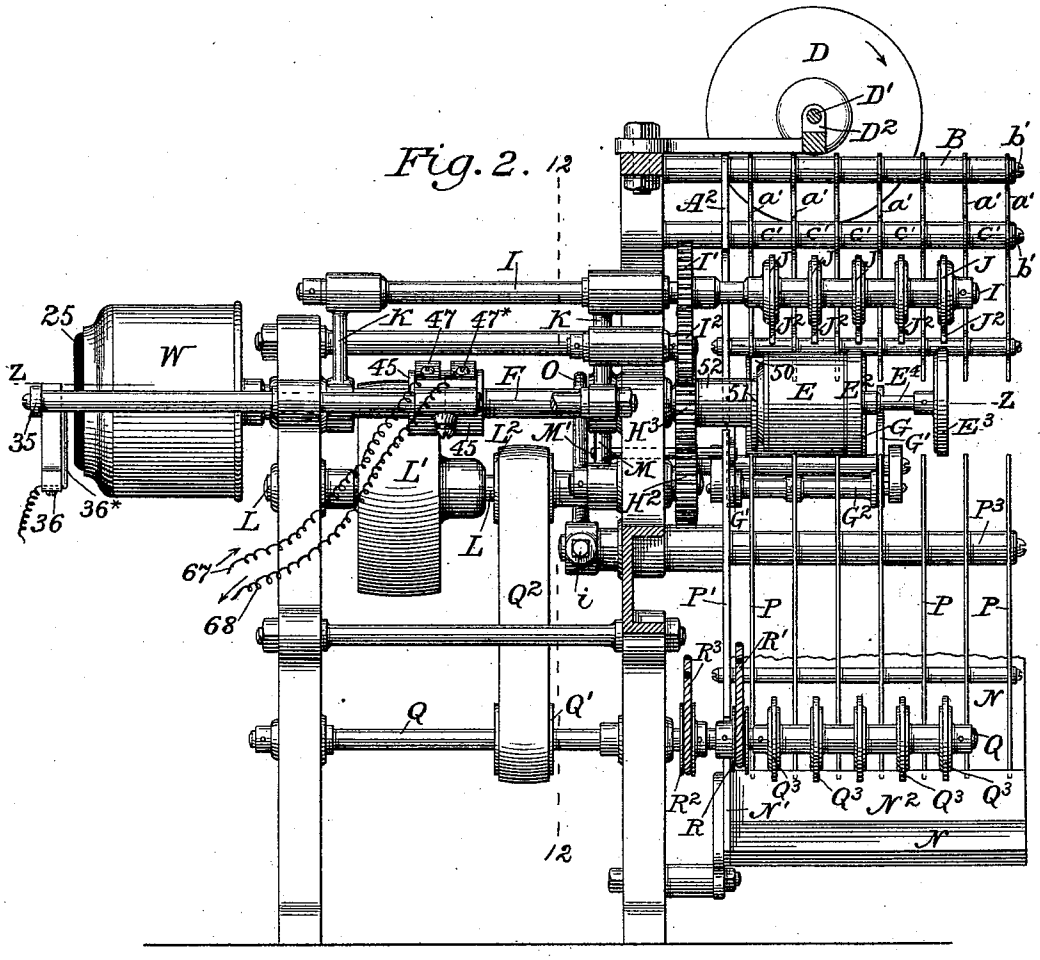

Fig. 3.

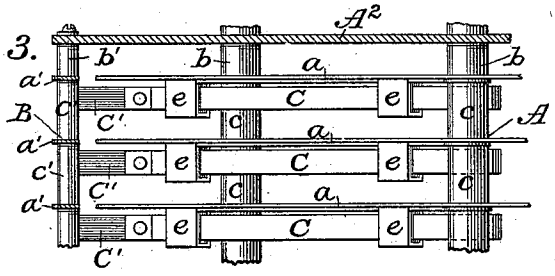

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Fig. 4.

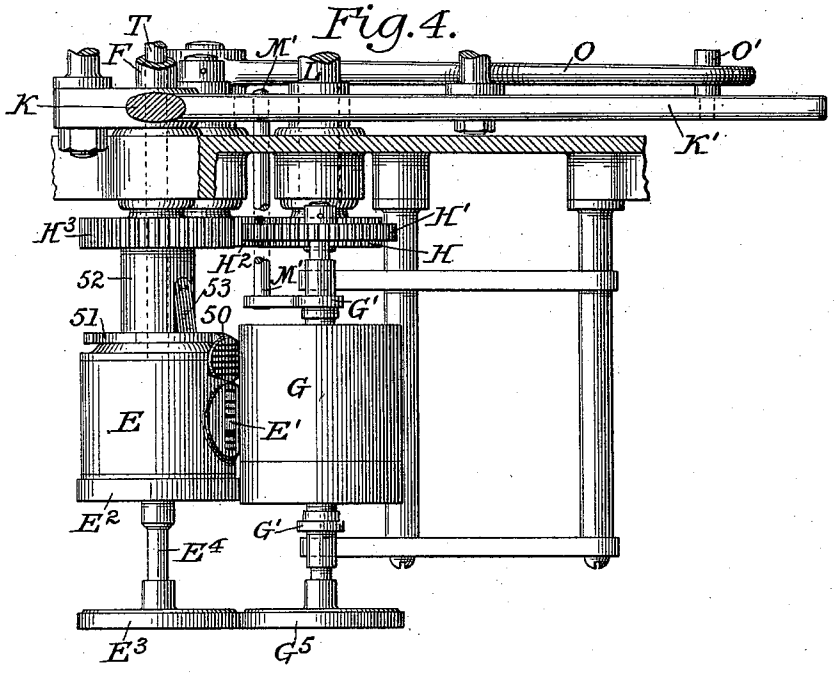

Fig. 5.

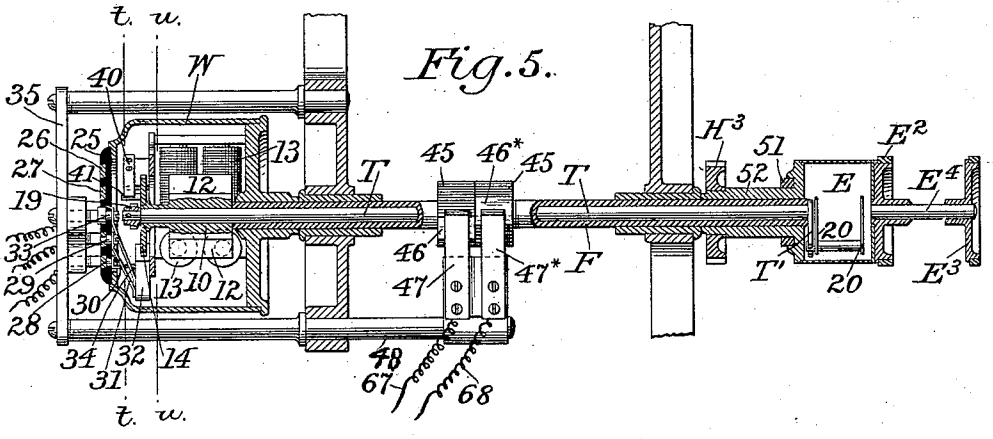

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Fig. 6.

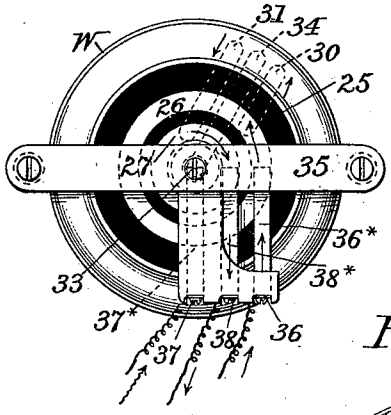


Fig. 7.

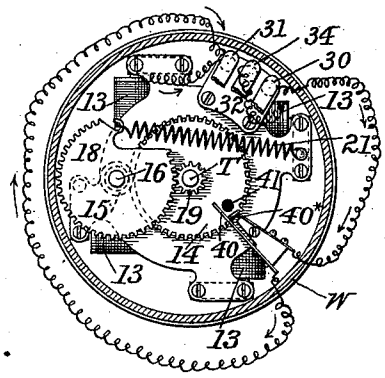


Fig. 8.

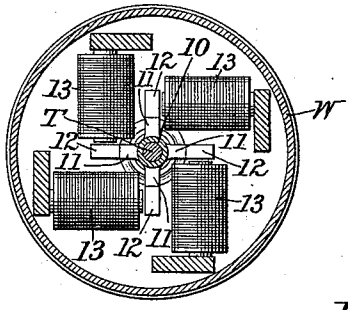


Fig. 9.

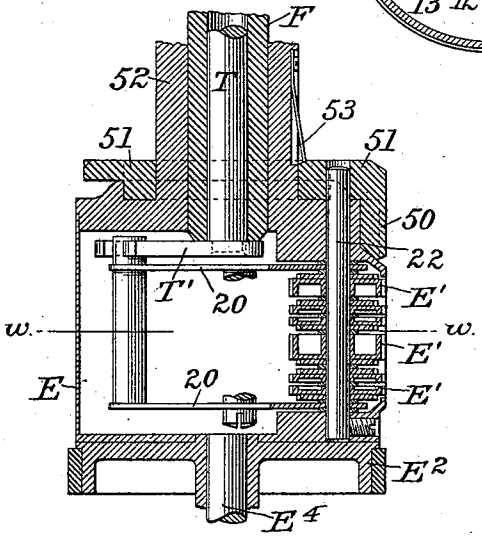
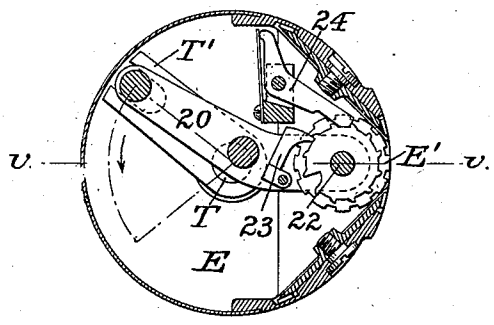


Fig. 10.



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POSTAL DATE AND TIME STAMPING MACHINE.

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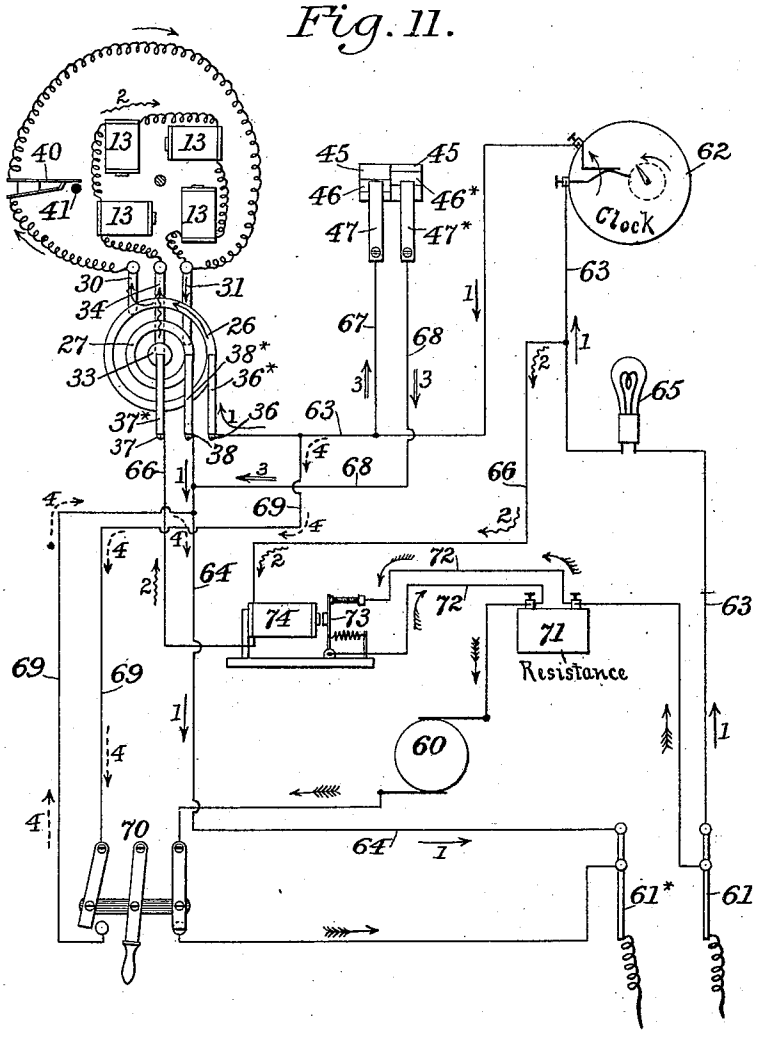
Fig. 11.



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O. E. LUNDSTEDT.

POSTAL DATE AND TIME STAMPING MACHINE.

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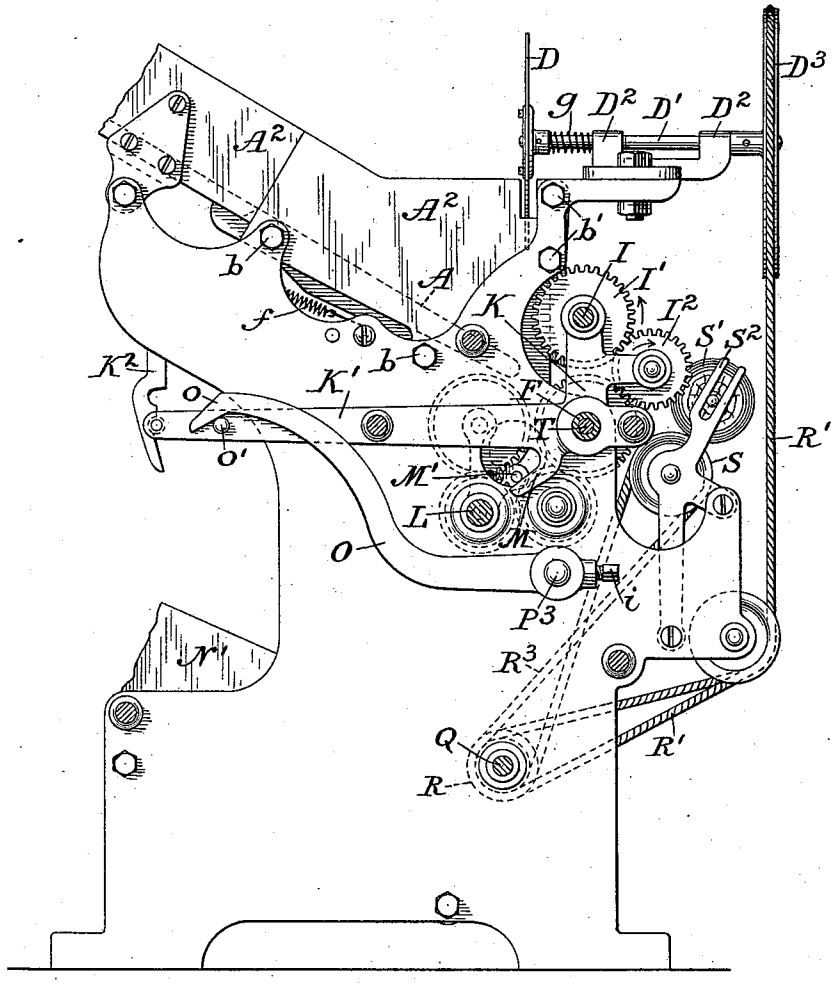
Fig. 12.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

OLOF E. LUNDSTEDT, OF BROOKLYN, NEW YORK, ASSIGNOR TO JOHN M. GLOVER, OF ST. LOUIS, MISSOURI.

POSTAL DATE AND TIME STAMPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 472,951, dated April 12, 1892.

Application filed March 27, 1891. Serial No. 386,640. (No model.)

To all whom it may concern:

Be it known that I, OLOF E. LUNDSTEDT, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Postal Date and Time Stamping Machine; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, making a part of this specification.

My invention relates to an improvement in dating and canceling stamps for letters, and has for its object to provide a machine for use in post-offices which shall automatically print with accuracy and great dispatch upon a number of letters in succession the time and date of imprint, and, if required, simultaneously cancel the postage-stamp upon the letter.

It consists in the combination, in a machine to be driven by an electrical or other motor, of a revolving head carrying date and time printing wheels automatically adjusted at regular intervals by means of a clock, so as to accurately indicate the correct time, a canceling-stamp, feed-rollers, and other devices, substantially as is hereinafter described and claimed, whereby the letters to be stamped, after being placed collectively upon a guideway, are thence carried forward automatically and fed one at a time in proper form and order into position to receive the impress of the printing and canceling devices and thereafter delivered in proper order from the machine.

In the accompanying drawings, Figure 1 is a side elevation of the dating and canceling machine, its motor being omitted from the view. Fig. 2 is a vertical section in line *x x* of Fig. 1, affording a rear elevation of the principal portion of the machine, some of the parts being broken away to better illustrate underlying details; Fig. 3, a detailed section in line *a a* of Fig. 1, illustrating the construction of the upper guideway, from which the letters are fed to the machine; Fig. 4, a section through the frame-work on line *y y* of Fig. 1, affording a plan view of the end of the machine containing the printing and canceling devices; Fig. 5, a horizontal longitudinal section in line *z z* of Fig. 2; Fig. 6, an end view of the head containing the electro-magnets; Fig. 7, a cross-section of said head in line *t t*, and Fig. 8 a similar section in line *u u* of Fig. 5; Fig. 9, a horizontal central section, on an enlarged scale, of the printing-head detached in line *v v* of Fig. 10; and Fig. 10 a cross-section on same scale in line *w w* of Fig. 9; Fig. 11, a diagram illustrating the combination and arrangement of the electric motor, time-piece, switch, resistance devices, and electrical connections by means of which the machine is operated. Fig. 12 is a section on the line 12 12 of Fig. 2, looking toward the right.

Similar letters and numerals indicate like parts in all of the figures.

A represents the inclined guideway, upon which the letters, previously assorted so as to bring the superscription and the postage-stamps upon all of them in the same relative position, are placed on edge with their faces to the front. This guideway A is composed of a series of narrow plates *a a*, set on edge, with narrow open longitudinal intervals between them, forming a grating, which is supported upon transverse rods *b b*, passing through apertures in the plates, the width of the intervals being determined by means of collars *c c* of uniform length fitted upon the rods between the plates, as shown in the detail, Fig. 3. The upper end of the inclined grating or open guideway A may be extended by means of a solid wooden or metallic plate A′ of the same width, and its sides are guarded by suitable side plates A^2 A^2. The lower end of the inclined guideway A is brought into close proximity to a vertical wall B in the form of an open grating corresponding with that of the guideway and constructed of the strips *a′ a′*, transverse rods *b′ b′*, and spacing-collars *c′ c′*, as shown in Fig. 2. This wall or grating B projects slightly below the end of the guideway A, and a narrow space is left between the two the entire width of the way to permit of the passage downward of the letters, one at a time, from the end of the guideway. This narrow delivery-space is intersected by the tips of a series of brushes C′ C′, Fig. 1, fitted upon the ends of bars C C, mounted between the plates *a a* of the in-

clined way, and which are supported to have free longitudinal play in boxes *e e*, secured between the plates, the same being preferably lined with felt or other soft material to prevent the brush-bars from rattling therein. Each brush-bar C is moved automatically forward by means of a light spring *f*, so as to carry and hold the tip of its brush lightly in contact with the vertical wall B at the foot of the guideway.

An adjusting-disk D of large diameter is mounted centrally in front of the vertical wall B upon the end of a shaft D′, mounted to rotate in suitable journal-boxes D^2 D^2 immediately above the top of the wall at a right angle with its face, and whose outer end is provided with a suitable driving-pulley D^3. The shaft D′ is left free to have longitudinal play in its bearings, and is automatically carried forward endwise by means of a light encircling spiral spring *g*, its movement being arrested by the collar or hub of the pulley D^3. The lower half of the disk D is thus made to overlap the wall B, so that the upper ends of the letters carried down upon the guideway toward said wall will rest against the wheel.

A carriage A^3 is mounted to run freely down the inclined guideway A, said carriage being weighted, so as to cause it to carry down before it with an even pressure the letters which are to be stamped and which have been severally placed on edge in front thereof upon the guideway. The carriage thus acts automatically by its gravity to retain the letters in proper place and order and to move them forward against the wall B and the revolving disk D.

The date and time printing-wheels E′ E′, Figs. 4, 9, and 10, for the apparatus are mounted within a cylindrical head or casing E upon an axis 22 therein, independent of that of the head. The head is secured to the end of a tubular shaft F, which extends parallel with the wall B below and at the rear thereof. The head is thus made to revolve with the shaft, and at each revolution thereof the peripheries of the printing-wheels contained therein are brought into line of print in the vertical plane of the front face of the wall B and beneath its lower end. (See Fig. 1.)

A suitable impression-roller G, properly faced to serve as a platen for the type on the printing-wheel and whose radius corresponds with the distance of the face of the type on the printing-wheels from the axis of the head in which they are mounted, is mounted immediately opposite the printing-head E, so that a letter-envelope passing between the two shall be thereby carried into contact with the printing-wheels in manner to receive an impression therefrom, Figs. 1 and 4. The bearings for the journal-shaft for the impression-roller G are formed in the ends of parallel arms G′ G′, projecting from a rock-shaft G^2, mounted immediately below the roller in suitable bearings in the frame-work of the machine, and this rock-shaft is oscillated to carry the arms G′ and impression-roller G automatically toward the printing-head E by means of a light spring G^3, attached to a rod G^4, projecting radially from the rock-shaft.

The impression-roller is made to revolve in unison with the printing-head E by means of a pinion H, which gears with a toothed wheel H′, fixed upon one end of the impression-roller, and with a pinion H^2, which gears in turn with a toothed wheel H^3 on the shaft F, which carries the printing-head E. The pinion H is fixed upon the inner end of a driving-shaft L, whose outer end is journaled in a bearing in the outer end of the frame-work by which the machine is supported, as shown in Fig. 2, said driving-shaft being fitted with a driving-pulley or band-wheel L′, by means of which the machine may be geared to its motor.

The contact of the printing-wheels E′ E′ with the impression-roller G is guarded and rendered uniform by means of a circular disk or wheel E^2, fixed upon the outer end of the printing-head E concentric with its axis, and of a corresponding disk or wheel E^3, (see Figs. 2 and 4,) connected and attached to the first at a suitable distance therefrom by a connecting rod or spindle E^4, whose axis coincides with that of the printing-head, the radius of said disks E^2 and E^3 being made equal to the extreme distance of the face of the type on the printing-wheels in the head E from the axis of said head. The inner one of these steadying-disks is made to bear against the periphery of the impression-roller G, which is extended longitudinally to admit thereof, and the outer disk E^3 is made to bear against a corresponding disk G^5, mounted upon an extension of the axial shaft, upon which the roller G is mounted, as shown in Fig. 4, the diameters of said disks and of the roller G being all equal, as above set forth.

In addition to the adjustable date and time printing-wheels E′, carried by the head E, the head is also provided with a device for canceling the postage-stamps upon the letters. This canceling device consists of a plate 50, adapted to make when inked a suitable impression upon the letter, said plate being attached to the head E so as to project slightly from its periphery in a line with and on the same plane as the face of the time-printing wheels, Figs. 2, 4, and 9. The attachment is effected by means of a ring or collar 51, to which the plate is secured and which is made to fit upon a projection or hub 52 at the end of the head in an annular seat or rabbet formed to receive it, as shown in Fig. 9. When placed in its seat and properly adjusted, the ring and canceling-plate are confined by a spring-catch 53, secured to the hub to engage the outer face of the ring.

A shaft I is mounted above and parallel with the shaft F, which carries the printing-head and in the same vertical plane, and is geared to rotate in unison with the shaft F by means of a toothed wheel I′, fixed upon the shaft I to mesh with a pinion I^2, which gears with the toothed wheel H^3 on the shaft

F, Figs. 1 and 2. This feed-shaft I carries a series of disks J J J, fixed thereon at intervals corresponding with the openings between the bars a' a' of the wall or grating B, and which are severally formed each with a segmental peripheral projection J^2 thereon, whose radius corresponds with the distance between the face of the type on the printing-wheels and the axis of the printing-head in which they are mounted, and which at each revolution of the disk will pass between the proximate bars a' a' of the grating B, so as to project slightly beyond the face thereof into contact with the face of the letter-envelope borne against it by the action of the weighted feed-carriage A^3. The feed-shaft I and the shaft F, carrying the printing-head E, are so geared as that the disks J shall move at the same speed and in unison with the printing-head, and their segmental feed projections J^2 J^2 shall pass between the bars a' slightly in advance of the contact of the printing-wheels E' E' with the impression-roller G. The periphery of each of the feed projections J^2 is faced with rubber or felt or its equivalent, so as to produce a frictional contact with the letters carried against it.

The feed-shaft I and the pinion I^2, by which it is geared with the shaft F, are both journaled in a swinging frame K, which is pivoted loosely upon the shaft F beyond or outside of the guideway A for the letters and above the driving-shaft L, as shown in Fig. 2. An arm or lever K' extends from the frame K at its pivotal axis toward the front of the machine, where a pin projecting from said arm is engaged by a latch K^2, which is adapted to secure the levers in two positions. In the one or lower position thereof (see Fig. 1) the feed-shaft I is carried forward to bring the disks J J into an operative position, so that the feed-segments J^2 J^2 may project through the grating. In the other or raised position of the levers the disks J J are carried away from the grating, so as to become inoperative. A toe M, (see dotted lines, Fig. 1,) projecting from the lever-frame K, is also made to contact with a pin M', (see, also, Figs. 2 and 4,) projecting from a bracket on one of the arms G', which carry the impression-roller G in such manner as that when the levers K' are elevated to throw the feed-segments back clear of the slotted wall, and thereby arrest the feed of the letters to the printing-head E, the impression-roller will be made to oscillate upon the rock-shaft G^2, and be thereby swung away from the printing-head, so as to prevent its becoming inked thereby.

A delivery-way consisting of an inclined plate N, preferably arranged to be parallel with the guideway A and having suitable side boards or lateral guards N', is fitted in the frame-work of the machine at a little distance below the impression-roller, and a chute consisting of a grated rear wall P, side plates P', and a grated front wall P^2 is interposed between the lower end of the delivery-way and the under side of the printing-head E and impression-roller G, the top of the rear wall P being placed under the printing-head E a little to the rear of the plane of its contact with the impression-roller G. This rear wall P is in the form of a grating, similar to the wall B in the upper part of the machine.

A rotating shaft Q is mounted immediately above the foot of the delivery-way N and at the rear of the lower end of the grated rear wall P of the delivery-chute, and is geared by a pulley Q' and belt Q^2 to a pulley L^2 on the driving-shaft L, so as to be made to rotate in unison with the upper feed-segments J' J' and the printing-head E. Upon this lower shaft Q is fitted a series of circular disks Q^3 Q^3 at intervals apart corresponding with the openings between the bars of the rear wall P of the chute.

The delivery-chute P P' P^2 is pivoted near its upper end upon a transverse rod or rock-shaft P^3, so that its lower end may rest against the inner side of a transverse ledge or strip N^2 at the foot of the delivery-way N and swing forward therefrom, so as to clear the chute from the feed-disks Q^3 Q^3, and at the same time push forward the letters resting on the way. The oscillation of the delivery-chute, whenever the feed of the letters through the machine is arrested, is produced automatically by means of a lever O, (see Fig. 4 and dotted lines, Fig. 1,) projecting from the rock-shaft P^3, upon which the chute is pivoted, and which is so bent as to carry its forward end alongside the lever K', in position to rest upon a lateral pin O' upon said lever, so that when the lever K' is lifted to throw the feed mechanism out of gear it will also operate to oscillate the delivery-chute in manner as described. This lever O is secured to the rock-shaft P^3 by means of a set-screw i, which permits of its adjustment on the shaft. The periphery of each feed-disk Q^3 Q^3 is faced with rubber, felt, or other soft adhesive fabric, and the shaft Q is so placed in relation to the chute that when the latter is allowed to swing back to its normal position, with its lower end resting against the foot-ledge N^2 of the delivery-way, the peripheries of the disks shall project slightly beyond the face of the rear wall P, and thereby contact with the letters passing down the chute to feed them onward. When the chute is swung forward, it is carried clear of the disks, so that they will no longer operate to move the letters.

The shaft Q is fitted with a pulley R, Fig. 2, carrying a cord R', (see Fig. 1,) by which it is geared to the driving-pulley D^3 of the upper adjusting-disk D in the machine to impart motion thereto. It is also geared by means of a second pulley R^2 and cord R^3 to the inking-rollers for the printing-head. These inking-rollers S S' are journaled in the frame-work of the machine, one above the other, in such position that the lower distributing-roller S shall contact with the type carried by the printing-head E at each revo-

lution of the head, while the upper feed-roller S′ rests by gravity upon the distributing-roller, its journals being to this end fitted in the customary manner in slotted bearing-boxes S^2.

The time and date wheels carried with the printing-head E are actuated by means of a spindle T, extending longitudinally through the tubular shaft F, upon which the printing-head is secured and by means whereof it is revolved. This central spindle T admits of rotation within the shaft F independently thereof and projects into a cylindrical head or casing W, secured upon the outer end of the shaft F to revolve with it.

A sleeve 10 (see Fig. 5) is fitted loosely upon the end of the spindle T within the head W, and from this sleeve four arms 11 11 11 11 (see Fig. 8) are made to radiate at right angles with each other and serving to support the ends of a soft-iron plate 12, fitted and secured upon the arms to extend parallel with the sleeve. Electro-magnets 13 13 are secured within the casing opposite each of the four soft-iron plates 12, each plate being thus made to serve as an armature for the magnet, its movement to and from the magnet being in the arc of a circle, having the spindle T as its center and operating to produce an oscillating rotatory movement of the sleeve 10 upon the spindle. This oscillating movement of the sleeve 10 about the spindle T as its axis is communicated, greatly enlarged, to the spindle itself by means of a train of gearing consisting of a large toothed wheel 14, (see Fig. 7,) fixed upon one end of the sleeve, or of the frame carried by the sleeve, to gear with a small pinion 15 upon an arbor 16, revolving in fixed bearings provided for it within the head W, and which carries, also, a large toothed wheel or segment 18, which meshes with a small pinion 19 on the end of the spindle T. Thus a slight oscillation of the arms 11 11, carrying the armatures 12 12, is made by means of said gearing to produce a rocking movement of the spindle T of sufficient amplitude to impart to an oscillating pawl-frame 20, (see Figs. 5, 9, and 10,) secured to the opposite end of said spindle within the printing-head E, the extent of movement required for actuating the time and date wheels. The armatures 12 12 are automatically retracted from the magnets by means of a spring 21, which may be attached, as shown in Fig. 7, to the periphery of the toothed wheel or segment 18 in the above-described gearing.

The date and time printing wheels E′ E′ revolve upon a shaft 22, which is fitted within the head E, parallel with but at one side of the shaft F, upon which the head revolves. They are operated in the customary manner by means of pawls 23, carried by the oscillating frame 20, (see Fig. 10,) which is actuated, as described, by the oscillation of the central spindle T under the action of the magnets 13 13, the spindle T being connected with the frame 20 by a radial arm T′, which engages loosely at its outer end the outer end of the frame. A reverse movement of the printing-wheels is prevented, as usual, by a spring-actuated pivoted dog 24.

The magnets 13 13 are excited and brought into action at regular intervals by the movement of a suitable time-piece, which operates to make and break in the customary manner an electric circuit in which the magnets are included. The connection of this circuit with the magnet is obtained by means of a circular end plate or disk of insulating material 25, (see Figs. 5 and 6,) covering the outer end of the head W and fixed thereto to revolve with it and in whose outer face are inlaid or inserted two metallic rings 26 27, each of which is placed in electrical connection by means of transverse pins 28 and 29, passing through the insulating-disk 25, with metallic conducting tongues or strips 30 31, (see Figs. 5 and 7 and dotted lines, Fig. 6,) which project from a block or plate 32 of rubber or other insulating material secured within the head W. A third conducting-pin 33 is inserted through the center of the insulating end plate 25, and is made to contact with a third conducting tongue or strip 34, attached to the insulating-block 32.

A cross-bar 35 is secured to the frame-work of the machine to extend diametrically across the outer face of the insulating end plate 25 at a short distance therefrom, and three insulated binding-screws 36, 37, and 38 are fitted in said cross-bar to connect severally with elastic tongues 36*, 37*, and 38* of thin metal, which are made to bear, respectively, with a constant pressure, the one 37* against the central conducting-pin 33 (see dotted lines, Fig. 6,) and the other two against the two concentric rings 26 and 27 of the revolving end plate, so that the electrical connection between the outer binding-screws 36, 37, and 38 and the conducting-strips 30, 31, and 34 remains constant during the revolution of the head and its magnets.

The conducting-strips 31 and 34 (see Figs. 6 and 7) are connected by suitable wires with the coils of the magnets 13 13, and these are all included in one circuit. The third conducting-strip 30 is connected with a wire extending in a loop to the conducting-strip 31 to form a circuit, which is controlled by a spring-plate 40, included therein, and whose elasticity operates normally to form a contact with an opposite plate 40* to close the circuit. This circuit-closer is fixed within the head W to revolve with it, and its spring-plate is so disposed with reference to the radial arms 11, supporting the armatures 12, that an insulated pin 41, (see Figs. 5 and 7,) projecting from the toothed wheel 14, shall extend into such close proximity and relation to the spring that when the arm is oscillated by the closing of the armatures the pin will operate to move the spring 40 away from its contact-plate 40*, and thus break the circuit established through it. As the oscillation of the armatures 12 12 produces the movement of

the date and time wheels E′ E′, it follows that the circuit is opened during the movements of said wheel and again closed when the movement is completed.

The collars of insulating material 45 45 are fitted side by side in contact at any suitable point upon the shaft F, and are secured thereto by set-screws to revolve with it. Each carries upon its periphery a transverse metallic strip or plate 46 46* in such manner that the inner ends of the plates on the two collars may be brought into close electrical contact. By turning either collar an adjustment of the two plates 46 46* relatively to each other and to a line parallel with the axis of the shaft may be obtained, so that the edge of one of the plates may be placed more or less in advance of the corresponding edge of the other plate without breaking the contact of their ends.

Electrical conducting springs or tongues 47 47* are secured to an arm 48, extending for support from the frame-work of the machine parallel with the shaft F, in position to permit the outer ends of the tongues to rest severally, each upon one of the transverse plates on the collars, whereby an electrical circuit may, for a purpose to be hereinafter described, be closed from the one tongue 47 through the two contacting plates 46 46* to the other tongue 47* at each revolution of the shaft, the relative duration of contact being determined by the relative adjustment of the plates. The insulating-collars 45 are so adjusted upon the shaft F that the tongues rest upon the conducting-plates, so that a circuit may be closed through them at the moment when the printing-wheels are at line of print and an impression is being taken therefrom. By the time this has been accomplished the continued revolution of the shaft will carry the plates from under the tongues, allowing the latter to rest upon the insulating-collars, and thereby breaking the circuit through them. The duration of the time during which the circuit will remain closed through the plates and tongues is readily adjusted by turning one of the collars independently of the other until the front edge of its plate is more or less in advance of that of the plate upon the other collar.

The machine is driven by an electrical motor 60 of any approved description, (see the diagram Fig. 11,) to be operated by a current from a dynamo or from a central electrical station, the connections or binding-posts for which are represented by 61 61* in said diagram. The motor 60 is geared by a belt to the driving-pulley L′ of the machine.

The date and time wheels E′ are adjusted automatically once every minute or at other measured intervals of time by means of a clock 62 of any approved description, which is fitted in the customary manner with a device for opening an electric circuit in a shunt from the main dynamo-circuit by the wires 63 64. This circuit extends from the one binding-post 61 by means of the wire 63 to the make-and-break device in the clock 62, thence to the binding-screw 36 of the head W, containing the electro-magnets by which the printing-wheels are adjusted, thence through the connecting-strips 36*, 26, and 30, and the switch 40 and its connecting-wires to the strip 31, thence through the strips 31 27 to the binding-screw 38, and thence by the conducting-wire 64 to the binding-post 61*, which completes the circuit. This circuit is protected from undue tension by an incandescent lamp 65 or other form of resistance device included therein. It is normally closed, and when opened by the movement of the clock at each minute or other predetermined interval the current is allowed to follow a shunt-circuit through a wire 66, connected near the clock to the wire 63, and which extends thence to the binding-screw 37 of the head W, and through the conducting-strips 33 and 34 to the coils of the several electro-magnets, which are thereby all connected in circuit, and thence to the conducting-strip 31, through which and its connections with the return-wire 64 the circuit will be completed back to the binding-post 61*. The shunt-circuit is of greater resistance than the first circuit and normally little current flows over it; but when at each break of the first circuit by the clock the entire current is compelled to flow over the shunt-circuit the electro-magnets 13 13 are thereby brought into action to move the armatures 12 12 and thereby retract, in manner as hereinbefore described, the pawls, by whose return movement under the stress of the spring governing them the minute-wheel of the time indicating and printing mechanism is actuated. As the armatures are attracted by the magnets their movement will operate, by means of the insulated pin 41, to open and hold open the switch 40 until they are released by the close of the main clock-circuit, which, however, will now be held open at the switch after it has been closed at the clock until, as will be presently explained, it is automatically closed by the closing of a shunt-circuit formed by the contact of the tongues 47 47* with the plates 46 46* on the insulating-disks 45 45, fitted upon the shaft F, carrying the printing-wheels, said plates being so adjusted on the shaft as to close said shunt-circuit so soon as the printing-wheels have made their impression and are free to be moved. This shunt-circuit is formed by means of a wire 67, connecting the wire 63 of the clock-circuit with the tongue 47, and a second wire 68, connecting the tongue 47* with the wire 64 of the clock-circuit. It is thus made impossible for the date and time wheels to be moved so long as they are in position to make an impression; but if the action of the clock by which their movement is mediately effected occurs at the time when an impression is being made the action of the pawls by which they are actuated is suspended until the wheels have moved out of line of print.

To guard against an intermission in the

movement of the date and time wheels during a stoppage of the machine, when by chance the tongues are left resting upon the insulating-disks 45 instead of upon the conducting-plates 46 46* on said disks, a third shunt-circuit is provided in connection with the switch, by means of which the electric motor by which the machine is driven is thrown in and out of circuit, so that the action of the switch in cutting out the motor and stopping the machine will close said auxiliary shunt. This third auxiliary shunt is obtained by connecting the wire 63 in the main clock-circuit and the wire 64 by means of wires 69 69 with the switch 70, in manner substantially as shown in Fig. 11, whereby if a stoppage of the motor occurs when the shunt through the wires 67 and 68 is open the shunt through the wires 69 will be closed as a substitute therefor, so as to permit the release of the magnets to operate the date and time wheels at the proper moment in manner as described.

To facilitate the proper movement of the time-wheels by the action of the clock and of the magnets brought into circuit thereby during the movement of the machine at its highest rate of speed, a resistance-box 71 is placed in the circuit between the dynamo or source of electrical supply at 61 61* and the motor 60, and a short circuit 72 is provided for the current around this resistance-box, to be closed by the contact of a spring carrying the armature 73 of a relay-magnet 74, whose coil is included in the second shunt-circuit between the clock and the head W, formed by the wire 66, so that when the time-controlling circuit is broken by the movement of the clock to cause a movement of the time-wheels the magnet 74 of the relay will be excited, and the consequent movement of its armature will operate to break the short circuit 72, and, by throwing the resistance-box 71 into the motor-circuit, cause the motor to slow up until the clock-circuit is closed again.

In the operation of the machine the letters to be stamped or impressed are placed on edge on the guideway A, all facing toward the wall B, with the postage-stamps thereon in the upper corner, next to the disk D, so as to be forced and fed toward the wall and disk with a constant gentle pressure by the weight of the carriage A^3, bearing against them. The foremost letter will be moved laterally by its contact with the disk D, so as to be carried evenly against the side wall of the guideway, by which movement all the letters are brought into the same relative position with regard to the printing-wheels beneath. At each revolution of the disks J′ the feed-segments J^2 come into play to bear against the face of said foremost letter, and by frictional contact therewith force it down past the brushes C′, which offer but slight resistance thereto, and into position to be caught between the printing-head E and impression-roller G, which in their revolution will draw the letter down between them and deliver it into the chute P beneath them. In passing between the printing-head and impression-roller the letter will receive an imprint from the time-wheels of the exact date and time of the impression, and its postage-stamp will be at the same time cancelled. Reaching the lower end of the delivery-chute, the letter will be forced in behind that which preceded it by the action of the revolving rubber-faced disks Q^3 Q^3 bearing upon it, and as each successive letter is thus inserted at the foot of the delivery-way N those in front will be forced in regular order up said delivery-way, being kept in due form by means of a light carriage N^3, placed upon the way. While the letters are thus passing through the machine the time-wheels E′ in the printing-head E, by which each letter is imprinted with the date and hour of impression, are automatically moved, to indicate accurately the time, by the intermittent action of the pawls in the head E, occasioned by the intermittent vitalization of the magnets 13 13 in the head W, caused by the make and break at regular intervals through the action of a clock 62, and in manner as hereinbefore described of an electric circuit including said magnets. It is obvious that in the normal operation of the machine the printing-head E rotates much more rapidly than the time-wheels are changed and that many letters are stamped in one minute, if that be the unit of time adopted in which said wheels are to be actuated.

I claim as my invention—

1. The combination, in a postal date and time stamp, of an inclined way, a slotted wall extending across the lower end thereof, leaving an intervening opening, a follower moving automatically down the way, devices for propelling in a direction parallel with the face of the wall the letter-envelopes pressed against it, so as to produce their delivery at its lower end, and a disk revolving in a plane parallel with the face of the wall and overlapping a portion of its upper end, substantially in the manner and for the purpose herein set forth.

2. The combination, in a postal date and time stamp, of an inclined way, a transverse wall at the foot thereof, devices for propelling in a direction parallel with the face of the wall the letter-envelopes pressed against it to produce their delivery at its lower end, and spring-actuated bars movable at right angles to the face of the wall and terminating in elastically-yielding tips to contact lightly against the lower end of the wall under the foot of the inclined way, substantially in the manner and for the purpose herein set forth.

3. The combination, in a postal date and time stamp, with its revolving printing-head and its opposite impression-roller, of an inclined delivery-way beneath said roller, a slotted or grated chute interposed between the lower end of the inclined way and the printing-head, and revolving disks mounted at the

rear of the slotted chute to project severally through the slots therein, whereby the envelopes passing down the chute are fed forward by contact with the peripheries of said disks, substantially in the manner and for the purpose herein set forth.

4. The combination, in a postal date and time stamp, with its revolving printing-head and its opposite impression roller, of a pivoted slotted or grated delivery-chute whose upper end stands normally in position beneath said head and roller to receive the envelopes delivered therefrom, a rotating shaft mounted at the rear of the lower end of the chute, and disks fitted upon said shaft in position to project through the bars of the chute when it is in its normal position and be clear therefrom when the lower end of the chute is swung forward, substantially in the manner and for the purpose herein set forth.

5. The combination, in a postal date and time stamp, with an inclined way and a transverse slotted wall at the foot thereof, leaving a narrow open interval between the two, of a rotating shaft mounted in a pivoted frame at the rear of the wall to oscillate to and from it, disks mounted on said shaft having peripheral projections adapted to pass through the slots in the wall when the frame is swung toward it and to be clear thereof when the frame is swung back, an arm extending from the swinging frame to operate it, and a catch to confine said arm, substantially in the manner and for the purpose herein set forth.

6. The combination, in a postal date and time stamp, with an inclined receiving-way, of a grated wall at the lower end thereof, leaving a narrow open interval between the two, an oscillating frame at the rear of said wall, a shaft revolving in said frame, carrying feed-segments to revolve between the bars of the grated wall, an arm or lever operating the swinging frame, whereby it is caused to swing to and from the wall, a revolving printing-head, an opposed impression-roller, a swinging frame in which said impression-roller is mounted, a spring carrying said roller against the printing-head, and a finger extending from the swinging frame, carrying the impression-roller into position to be engaged by the lever actuating the swinging frame which carries the revolving feed-segments, whereby when said segments are swung back from their operative position the impression-roller will be swung clear of the printing-head, substantially in the manner and for the purpose herein set forth.

7. The combination, in a postal date and time stamp, with an inclined receiving-way, of a grated wall at the lower end thereof, leaving a narrow open interval between the two, an oscillating frame at the rear of said wall, a shaft revolving in said frame, carrying segments to revolve between the bars of the grated wall, an arm or lever operating the swinging frame, whereby it is caused to swing to and from the wall, a revolving printing-head and its opposite impression-roller mounted below the end of the receiving-way, an oscillating chute mounted below said head and roller, feed-disks mounted upon a shaft at the rear of the chute to project through the slots in the chute when the latter is in its normal position, and an arm projecting from said chute into engagement with a pin upon the arm or lever governing the swinging frame carrying said feed-disks, whereby when the segments are swung away from the slotted wall of the upper inclined way the delivering-chute will be swung away from its feed-disks, substantially in the manner and for the purpose herein set forth.

8. The combination, in a postal date and time stamp, with its revolving printing-head, of the detachable collar encircling one end thereof, the spring confining said collar, and the canceling plate or stamp carried by said collar, substantially in the manner and for the purpose herein set forth.

9. The combination, in a date and time stamp, with the printing-head mounted on a tubular rotating shaft, of an arbor mounted within the head parallel with the shaft and at one side thereof, a printing-wheel mounted to revolve upon said arbor, a ratchet-wheel actuating the printing-wheel, a rock-shaft extending into the head through its tubular shaft, an arm projecting radially within the head from the rock-shaft, and an oscillating pawl actuated by the movement of said arm to engage the ratchet-wheel, substantially in the manner and for the purpose herein set forth.

10. The combination, in a date and time stamp, of a tubular shaft, a central rock-shaft inclosed within the tubular shaft to revolve with it and oscillating independently thereof, a head attached to and revolving with the tubular shaft, indicating mechanism revolving independently upon a lateral shaft fixed in said head to move with it, and an oscillating frame mounted within the head to actuate the indicating mechanism and itself actuated by the independent movement of the rock-shaft, substantially in the manner and for the purpose herein set forth.

11. The combination, in a time-stamp, of a revolving head and time-indicating wheels mounted within the head to revolve independently thereof, substantially in the manner and for the purpose herein set forth.

12. The combination, in a time-stamp, of a revolving head, revolving time-printing wheels mounted within the head upon an independent axis and whose type-faces are brought to line of print through an opening in the head, and an opposite impression-roller serving as a platen for the printing-wheels at each revolution of the head, substantially in the manner and for the purpose herein set forth.

13. The combination, in a time-stamp, of a revolving head, an opposite revolving impression-roller contacting with the head, time-

printing wheels revolving independently in the head upon an independent axis and brought to line of print against the impression-roller by the revolution of the head, and devices for feeding letter-envelopes in between the head and impression-roller to be carried forward by their revolution, substantially in the manner and for the purpose herein set forth.

14. The combination of a tubular shaft, the head or casing attached to the end of the shaft to revolve with it, a shaft rocking independently within the tubular shaft and projecting into the head, a wheel and intermediate devices whereby the type-wheel is rotated by the rocking of the shaft, a loose sleeve upon the end of the rock-shaft, a pinion fixed to said sleeve and geared mediately to the rock-shaft, an arm projecting radially from said sleeve within the head, an armature attached to said arm, an electro-magnet fixed to the head in position to attract said armature, and a spring to retract it, whereby the rock-shaft is oscillated by the action of the magnet while revolving in unison therewith about a common axis, an electric circuit connected with the magnet, and a make-and-break mechanism included in said circuit, substantially in the manner and for the purpose herein set forth.

15. The combination, in a time-stamp, of a revolving head, time-wheels revolving within said head upon an independent axis, a rock-shaft projecting into the head coincidently with its axis, intermediate mechanism for actuating the time-wheels, an electro-magnet and intermediate mechanism for actuating the rock-shaft, said magnet revolving in unison with the head, an electric circuit, a clock-movement included therein and operating to make and break the circuit at regular intervals, and a shunt including said magnet, substantially in the manner and for the purpose herein set forth.

16. The combination, in an electro-magnetic time-stamp, of a revolving head, time-wheels revolving independently within said head, a rock-shaft projecting into the head coincidently with its axis, intermediate mechanism for actuating the time-wheels from said shaft, an electro-magnet and intermediate mechanism for actuating the rock-shaft, said magnet revolving in unison with the head, means for moving the rock-shaft in opposition to the magnet, a clock-movement included in an electric circuit and operating to make and break the circuit at regular intervals, an automatically-closed switch in said circuit, a device operated by the armature of the magnet to open the switch, and a shunt-circuit from the clock-controlled circuit of greater resistance than said clock-circuit and in which the magnet is included and through which the current will be diverted when the clock-circuit is opened, a normally-open shunt of low resistance about said magnet, and means to close said shunt, substantially in the manner and for the purpose herein set forth.

17. The combination, in an electro-magnetic time-stamp, of a revolving printing-head, time-printing wheels revolving independently within said head, a rock-shaft projecting into the head coincidently with its axis, intermediate mechanism for actuating the printing-wheels from said shaft, an electro-magnet and intermediate mechanism for actuating the rock-shaft, said magnet revolving in unison with the head, a clock-movement included in an electric circuit and operating to make and break the circuit at regular intervals, an automatically-closed switch in said circuit, a device operated by the movement of the armature of the magnet to open the switch, a shunt-circuit from the clock-controlled circuit of greater resistance than said clock-circuit and in which the magnet is included and through which the current will be diverted when the clock-circuit is open, conducting-wires forming a short circuit from the clock-circuit, and a circuit-closing device included in said short circuit and mounted to revolve in unison with the printing-head, whereby the short circuit will be closed when the printing-wheels are at line of print, substantially in the manner and for the purpose herein set forth.

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

OLOF E. LUNDSTEDT.

Witnesses:
A. N. JESBERA,
A. WIDDER.