No. 670,619. Patented Mar. 26, 1901.

J. L. LISTER.

STAMP CANCELING AND POSTMARKING MACHINE.

(No Model.) (Application filed Apr. 12, 1900.) 3 Sheets—Sheet 1.

Fig. I.

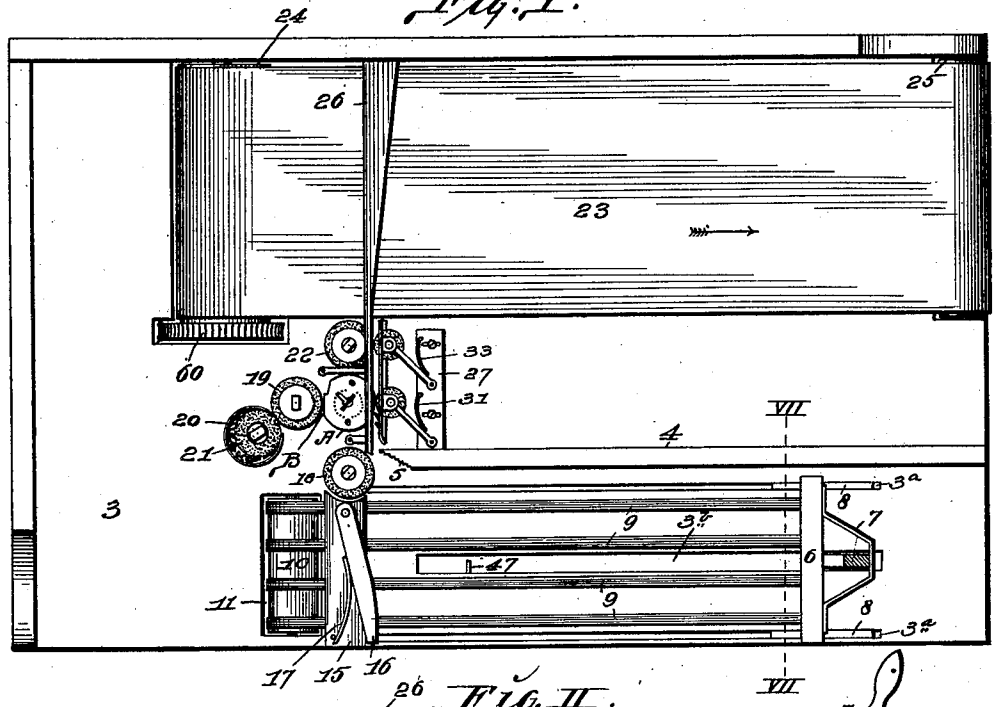
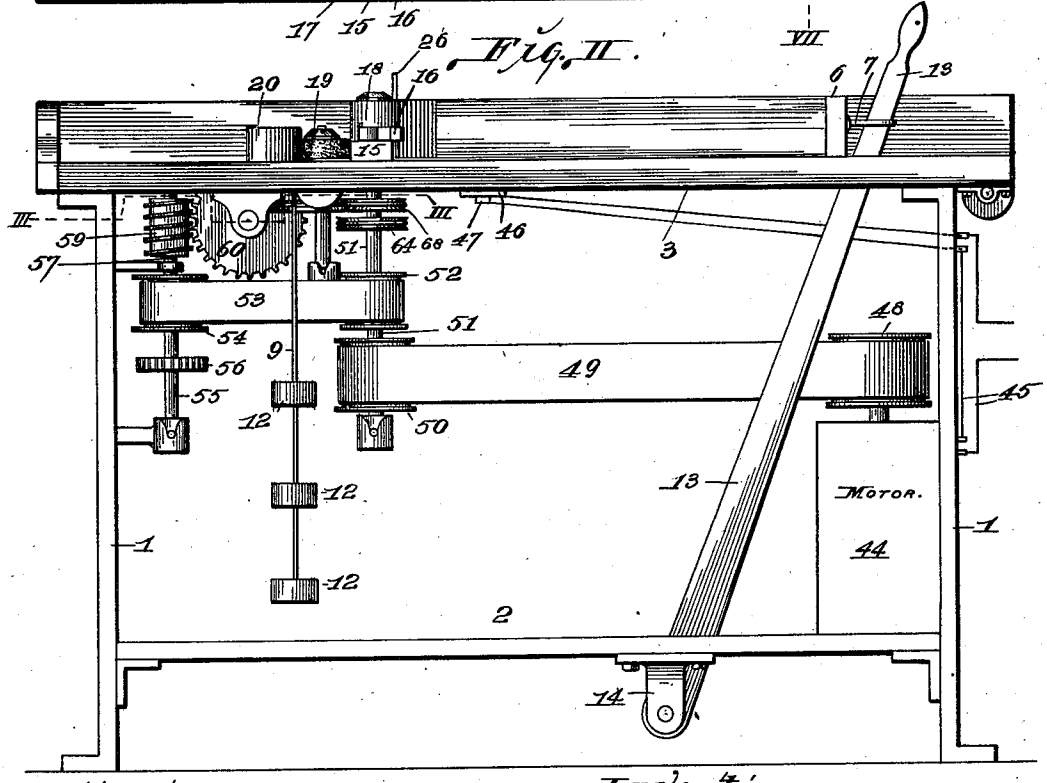


Fig. II.



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E. S. Knight

Inventor:—
John L. Lister:—
By Wright Bros. atty's.

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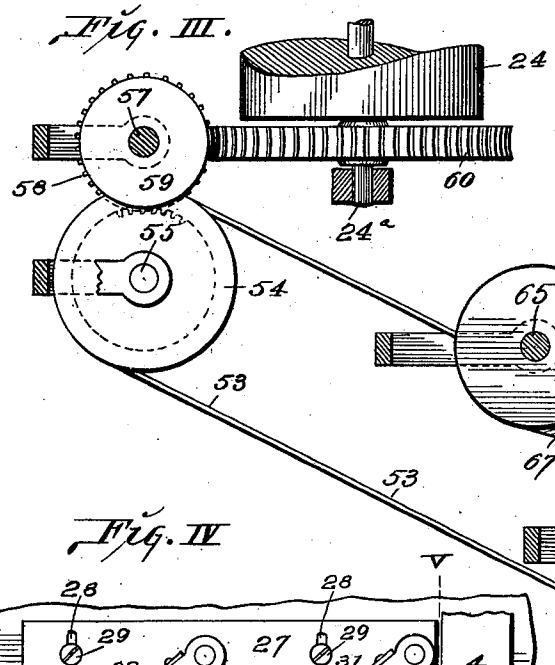
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STAMP CANCELING AND POSTMARKING MACHINE.

(No Model.) (Application filed Apr. 12, 1900.) 3 Sheets—Sheet 2.

Fig. III.



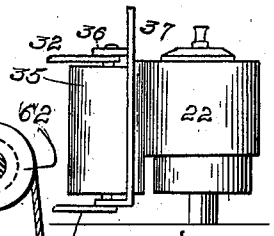


Fig. 20.

Fig. IV.

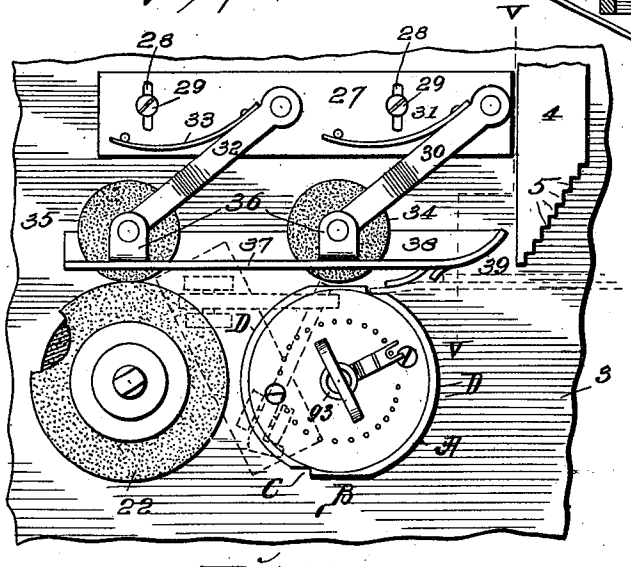


Fig. V.

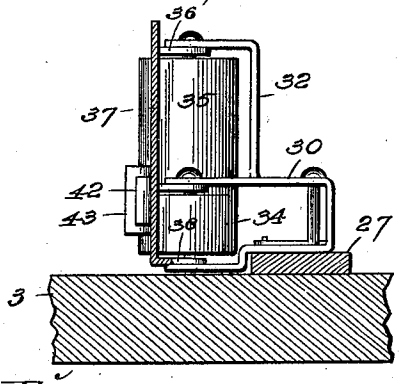


Fig. VI.

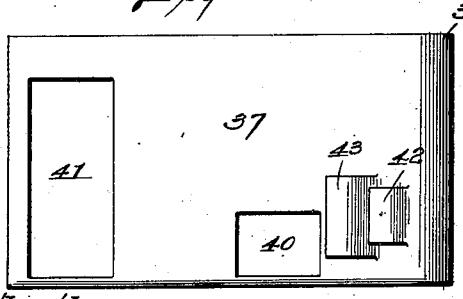
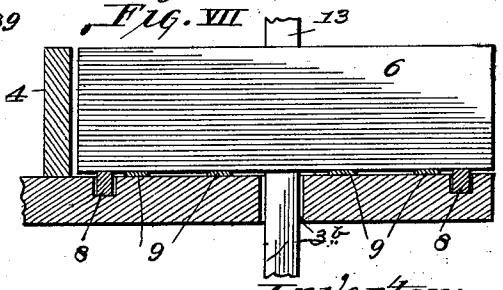


Fig. VII.



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No. 670,619. Patented Mar. 26, 1901.

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STAMP CANCELING AND POSTMARKING MACHINE.

(No Model.) (Application filed Apr. 12, 1900.) 3 Sheets—Sheet 3.

Fig. VIII.

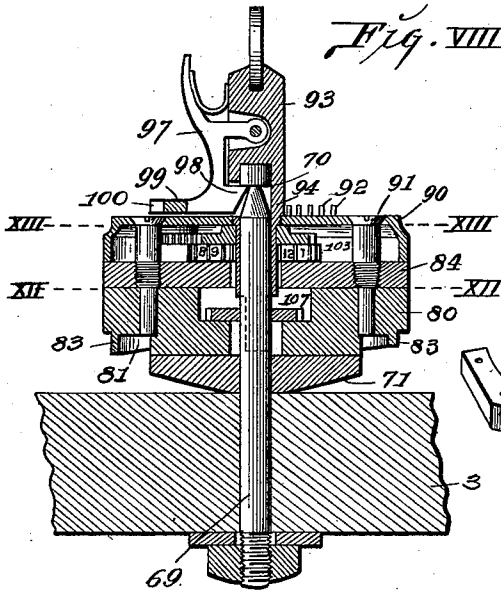


Fig. IX

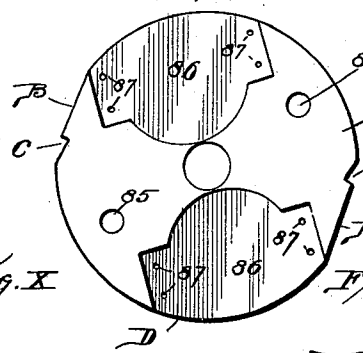


Fig. X



Fig. XI.

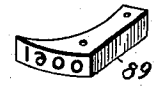


Fig. XII

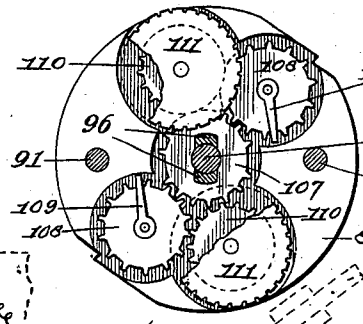


Fig. XIX.

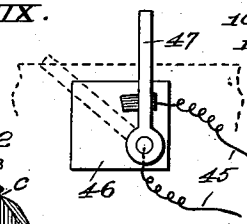


Fig. XIII.

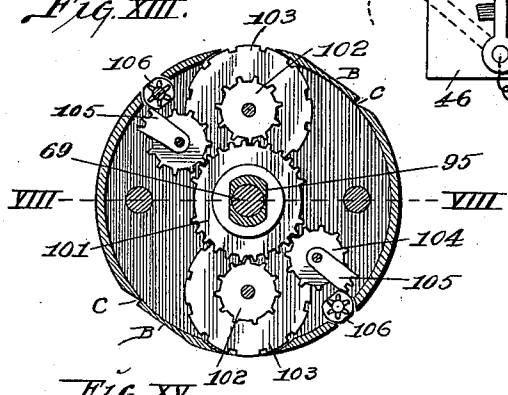


Fig. XV.

Fig. XIV.

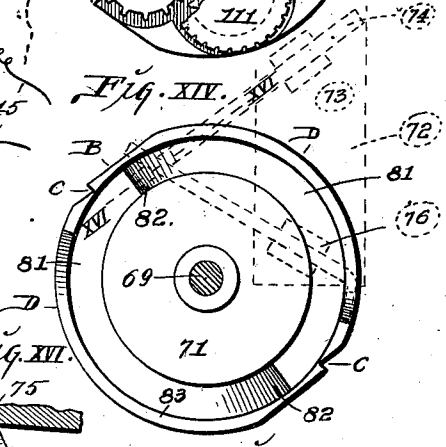
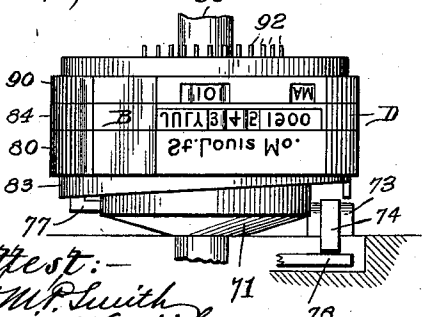


Fig. XVI.



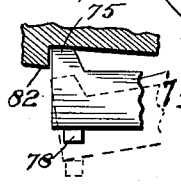
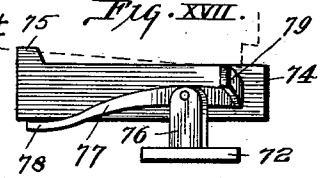


Fig. XVII.



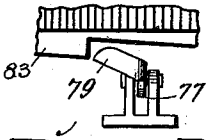


Fig. XVIII.

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UNITED STATES PATENT OFFICE.

JOHN L. LISTER, OF ST. LOUIS, MISSOURI.

STAMP-CANCELING AND POSTMARKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 670,619, dated March 26, 1901.

Application filed April 12, 1900. Serial No. 12,505. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. LISTER, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Automatic Stamp-Canceling and Postmarking Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to that class of machines used in the postal service for canceling the stamps of and postmarking mail-matter, the present invention having reference to a machine of similar nature to that shown and described in Letters Patent of the United States issued to me February 27, 1900, No. 644,525.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a top or plan view of my improved machine. Fig. II is a front elevation. Fig. III is an enlarged horizontal sectional view taken on the line III III, Fig. II. Fig. IV is an enlarged detail view of the marker-head and the means for presenting the mail-matter thereto and delivering it therefrom. Fig. V is a view, partly in vertical section, taken on line V V, Fig. IV, showing the pressure device by which the mail-matter is held to the marker-head in elevation. Fig. VI is a detail face view of the mail-matter pressure-plate. Fig. VII is a cross-sectional view taken on the line VII VII, Fig. I. Fig. VIII is a vertical sectional view through the marker-head, taken on the line VIII VIII, Fig. XIII. Fig. IX is a detail view showing the under side of the intermediate disk of the marker-head. Fig. X is a detail perspective view of the month impression-type. Fig. XI is a detail perspective view of the year impression-type. Fig. XII is a cross-sectional view taken on the line XII XII, Fig. VIII. Fig. XIII is a cross-sectional view, taken on the line XIII XIII, Fig. VIII, through the marker-head. Fig. XIV is a view of the under side of the marker-head. Fig. XV is a face view of the marker-head and coexisting parts. Fig. XVI illustrates a fragment of the lower part of the marker-head and shows in elevation the stop device arranged to control the movement of the marker-head. Fig. XVII is a detail side view of the marker-head stop device. Fig. XVIII is a detail end view of the marker-head stop device. Fig. XIX is a detail view of the switch that controls the motor of the machine. Fig. XX is a side elevation of the delivery feed-roller and its coöperating roller.

The frame of the machine is composed of legs 1, joined by a cross-piece 2. Mounted on the frame is the table 3 of the machine. Surmounting the table 3 is a guide 4, that is provided at its inner end with steps 5, the purpose of which will be hereinafter explained.

6 designates a follower adapted to travel along the surface of the table 3, being guided thereon by shoes 8, that move in grooves 3^a in the table. The follower 6 has attached to it a series of tapes or straps 9, that extend to and over a roller 10, journaled in suitable bearings fixed to the machine-table and located in openings 11 contained by the table. The tapes 9 have connected to them a series of weights 12, (see Fig. II,) the weights 12 being suspended over the cross-piece 2 and adapted to move to and from said cross-piece. The purpose of these weights is to draw the follower 6, that carries the mail-matter, forward, and the object in arranging them at intervals upon the tapes 9 is the same as that described in my Letters Patent hereinbefore referred to—viz., to compensate for the decrease in the amount of mail-matter to be moved by the follower 6 as said mail-matter is fed to the marking mechanism. The mail-matter placed in front of the follower 6 is fed forwardly automatically through the medium of the weights 12, as explained, and when a fresh batch of mail-matter is placed in front of the follower said follower is retracted by a hand-lever 13, pivoted to a hanger 14, suspended from the cross-piece 2 and having its upper end arranged in a loop 7 fixed to said follower.

Located on the table 3, above the tapes 9 and in proximity to the roller 10, is a stop-block 15, to which the mail-matter is carried by the follower 6. Pivotally mounted on said stop-block is a lever 16, the forward free end of which is backed by a spring 17, that holds said free end of the lever projected at an incline to its pivot, so that as the mail-matter is delivered against said lever it will be thrown

at an incline to the face of the stop-block 15 to be the more readily caught by the initial feed-roller 18, by which the articles of mail-matter are fed from the batch carried forward in front of the follower 6. As the mail-matter is carried forwardly toward the marking mechanism, to be hereinafter described, such mail-matter is thrown by the initial feed-roller 18, bearing in frictional contact therewith, into the steps 5 at the inner end of the guide 4, and each article is gradually moved along said steps until it reaches the innermost step, from which it is fed to the marking mechanism.

A designates the marker-head, a detailed description of which will be hereinafter given. The marker-head is provided at its circumference with flat surfaces B, (see Figs. I and IV,) and in the periphery of the head are notches C, that receive the ends of the mail-matter to be marked, and each article of mail-matter fed into the marking mechanism by the initial feed-roller 18 enters one of the notches C, and the pressure exerted upon the article causes the article to start the marker-head in revolution. The curved portions D of the marker-head are the faces thereof containing the postmarking and stamp-canceling arrangements. The marker-head A is not connected to the driving mechanism of the machine, but the driven inking-roller 19, connected to the driving mechanism, continues the turning of the marker-head after its initial start by the mail-matter by reason of the inking-roller being brought into frictional contact with the curved faces D of the marker-head each time that an article of mail-matter operates against the marker-head.

20 designates an ink-well that contains an ink-delivery roller 21, arranged in frictional contact with the inking-roller 19.

22 is the delivery feed-roller that conveys the mail-matter away from the marker-head A and delivers it to the endless conveyer 23. The conveyer 23 is driven in the direction indicated by the arrow in Fig. II and travels on rollers 24 and 25. The conveyer is surmounted by a guard 26, projecting thereacross, arranged to throw the letters face upwardly as they are delivered onto the conveyer as they leave the delivery feed-roller 22.

27 designates a plate adjustably mounted on the table 3, being connected thereto by screws 29, that pass through slots 28 in said plate, thereby permitting of the plate being moved toward or away from the marker-head and the delivery feed-roller 22.

30 and 32 are frames pivoted to the plate 27, that are backed by springs 31 and 33. The frames 30 and 32 have journaled in them pressure-rollers 34 and 35, the roller 34 being a short one, corresponding to the height of the marker-head A, and the roller 35 being a long one, corresponding to the height of the delivery feed-roller 22. The pivot-pins of said rollers extend into ears 36, fixed to the guide-plate 37. (See Figs. I, IV, and V.) The guide-plate 37 is formed with a lower flange 38 and a curved forward end 39, that extends into a position immediately in the rear of the stepped inner end of the guide 4. The guide-plate 37 is provided with an aperture 40, (see Fig. VI,) through which the pressure-roller 34 projects into proximity with the marker-head A, and said plate also contains an aperture 41, through which the pressure-roller 35 projects to bear against the delivery feed-roller 22. Projecting from the guide-plate 37 are tongues 42 and 43, the tongue 42 serving to offer resistance to a second article of mail-matter, while the tongue 43 guides a first-entering article into the notches C as said articles are fed to the marker-head, as illustrated in dotted lines in Fig. IV. The first-entering article starts the rotation of the marker-head A and causes said marker-head to be turned until one of the curved surfaces D of the marker-head is brought into juxtaposition with the pressure-roller 34, and the other curved surface D is brought into contact with the driven inking-roller 19, so that the inking-roller may complete a half-turn of the marker-head and pass the article of mail-matter through between the marker-head and the pressure-roller 34 to mark it, after which it is caught between the feed-roller 22 and the pressure-roller 35 and passes therefrom to the conveyer 23.

I will next describe the driving mechanism of the machine.

44 designates an electric motor having connection by wires 45 with a switch 46, (see Figs. I and XIX,) that is located beneath the table 3. One of the wires 45 is connected to the plate of the switch 46, while the other wire is connected to the swinging switch-arm 47. The switch-arm 47 projects across a slot 3^b in the table 3, as seen in Figs. I and XIX. The slot 3^b permits the rocking movement of the hand-lever 13, that has connection with the follower 6, and each time that said hand-lever reaches and strikes said switch-arm the arm is thrown out of bearing with the contact of the switch 46 into the position seen in dotted lines, Fig. XIX, thereby automatically stopping the operation of the machine. The shaft of the motor 44 is equipped with a driving-pulley 48, that receives a driving-belt 49. The driving-belt 49 leads to and around a pulley 50 on an upright shaft 51, (see Figs. I and III,) that is mounted in suitable bearings.

52 is a pulley on the shaft 51, that is connected by a belt 53 to a pulley 54 on a vertical shaft 55, that is equipped with a pinion 56. In the rear of the shaft 55 is a shaft 57, provided with a pinion 58, (see Fig. III,) that meshes with the pinion 56. The turning of the shaft 55 therefore imparts a like motion to the shaft 57 through the pinions 56 and 58, and on the shaft 57 is a worm 59, that turns with said shaft. The worm 59 engages with

a worm-wheel 60 on the shaft 24ª of the conveyer-roller 24, and through this medium the conveyer-roller is turned to impart movement to the conveyer 23. The initial feed-roller 18 is carried by the shaft 51.

The delivery feed-roller 22 is carried by a shaft 61, equipped with a pulley 62, connected by a belt 63 to a grooved pulley 64, mounted on the shaft 51, the pulley 62 being of smaller diameter than the pulley 64, from which it is driven, in order to obtain an increase of speed in the shaft 61 and an increase of speed for the delivery feed-roller 22, so that the mail-matter may be thrown quickly away from the marker-head onto the conveyer 23 after the marking has been effected.

The inking-roller is carried on a shaft 65, equipped with a pulley 66, that is connected by a crossed belt 67 to the pulley 68, carried by the shaft 51. By the use of the crossed belt 67 the shaft 65, and likewise the inking-roller, are turned in reverse direction to the feed-rollers 18 and 22, so that the marker-head A may be turned by said inking-roller in a direction corresponding to the feed-rollers instead of contrary to them.

I now come to the detailed description of the marker-head used in my machine.

The head is mounted on the vertical shaft 69, supported in the table 3. (See Fig. VIII.) The shaft 69 is provided with a shoulder-head 70, the marker-head being arranged to turn on said shaft. The base 71 of the head is formed with a tapering lower face, so as to offer the least resistance to the turning of the head by frictional contact with the table. Each time that the marker-head is turned a half-revolution to mark an article of mail-matter it is essential that the head be again stopped with one of the flat faces B opposing the pressure-roller 34, so that one of the notches located at said flat face is in position to receive the next succeeding article of mail-matter that is to be marked. In order to effect this stoppage of the marker-head, I utilize a pivoted dog, that engages the head in the manner to be presently explained.

72 designates a plate set into the table 3 beneath the marker-head and provided with bearings 73. (See Fig. XV and dotted lines in Figs. IV and XIV.)

74 designates the pivoted dog, one end of which is mounted in the bearings 73 and the long end of which is provided with a tooth 75. 76 designates bearings also mounted on the plate 72, that are arranged at an angle to the bearings 73. In the bearings 76 is mounted a lever 77, the long end 78 of which extends to a position beneath the long end of the dog 74, while the short end of said lever is provided with an angle-arm 79. The lower disk 80 of the marker-head is provided at its under side with a groove 81, that contains two shoulders 82, (see Figs. XIV, XV, and XVI,) the disk 80 being also provided with two cam-rims 83. The tooth 75 of the dog 74 is arranged in the groove 81, and the angle-arm 79 of the lever 77 is arranged to receive the bearing of the cam-rims 83. The cam-rims 83 and the shoulders 82 are so arranged with relation to each other that each time the highest part of either of the cam-rims 83 reaches the arm 79 the long end 78 of the lever 77 is elevated and the tooth 75 of the pivoted dog is moved upwardly in the groove 81 to engage the shoulder 82 that has been moved into proximity therewith, and by this means the marker-head is stopped at the desired location. The marker-head ceases to rotate each time that one of its flat sides faces the inking-roller 19, by which it is driven during the period that the curved surface of the marker-head travels in contact with the inking-roller. The lever 77 is at this time freed by reason of the cam-rim 83 moving off of the arm 79, thereby permitting the descent of the long end of the dog 74 and freeing the marker-head for rotation when the succeeding article of mail-matter engages it.

84 designates the intermediate disk of the marker-head, provided with threaded apertures 85 and recesses 86 in its under side. Arranged in the recess 86 are pins 87, that receive the month-type 88 and the year-type 89, (shown in Figs. X and XI,) said type being arranged so that the character ends thereof project beyond the curved faces D of the marker-head. 90 designates the top disk of the marker-head, that is formed with a recess within it and is connected to the intermediate disk 84 by screws 91, having stem ends that protrude beyond said intermediate disk into the lower disk 80. On the upper surface of the top disk 90 are upwardly-projecting pins 92, the service of which will be hereinafter referred to. 93 designates a handle to which is pivoted a spring-controlled lever 97, provided with a hook 98, adapted to enter the wall of said handle and engage the shoulder-head 70 of the shaft 69 to hold the handle to said shaft. Projecting from the lever 97 is an arm 99, provided with a notch 100, arranged to receive any one of the pins 92, whereby the handle 93 may be held from movement when the lever is in engagement with the shaft 69, so that said handle is retained in fixed position relative to the parts of the marker-head.

The inner end of the handle 93 is tubular and forms a sleeve 94, the said sleeve having flattened sides 95, (see Fig. XIII,) located in the recess in the top disk 90, and tongues 96, located in the recess in the lower disk 80. Fixed to the sleeve 94 at the location of the flattened sides 95 is a central broken pinion 101, the teeth of which mesh with the teeth of pinions 102, that carry the hour-marking wheels 103. There are two series of teeth upon this pinion 101, the whole number of teeth corresponding to the twenty-four hours of a day, and the space between the two sets of teeth separates the A. M. and P. M. periods from each other.

104 designates small pinions the teeth of

which mesh with the pinion 101, there being twelve teeth on the pinions 104, corresponding to each set of the teeth on the pinion 101, whereby each set of the teeth on the pinion 101 cause a complete rotation of the pinions 104. The pinions 104 carry sectors 105, that mesh with the teeth of the A. M. and P. M. period wheels 106. (See Figs. VIII and XIII.) By this arrangement on each rotation of the small pinions 104 the A. M. and P. M. period wheels are turned a half-revolution to change the position of the A. M. and P. M. characters at the face of the marker-head.

107 designates a central pinion secured to the tongues 96 of the sleeve 94. (See Figs. VIII and XII.) The teeth of this pinion 107 mesh with the teeth of outer pinions 108, that carry fingers 109. The pinions 107 and 108 are so arranged and constructed that when the pinion 101 has been turned a complete revolution in the twenty-four hours of the day the pinions 108 and fingers 109 will be turned a complete revolution. Each time that the fingers 109 are revolved they engage the teeth of pinions 110, fixed to the day-character wheels 111, so that the wheels 111 are shifted to bring the next succeeding day-of-the-month character at the periphery of the marker-head. With the exception of the changing of the month and year type 88 and 89 the entire dating mechanism is operated by the turning of the handle 93 when the handle is freed by releasing the lever 97 from engagement with the pins 92, as will be clearly understood from the foregoing description.

The guard 26, which projects across the conveyer 23 and also across the delivery feed-roller 22 and marker-head, is a feature of material importance in the machine in that by the use of such guard the articles of mail-matter passed onto the conveyer thereagainst are delivered in an upright position until they reach the conveyer and are then thrown face upwardly upon the conveyer. By this arrangement the mail-matter is all delivered to the conveyer and thrown thereupon in uniform manner and in "workway" condition, so that no additional labor is involved in assorting and "facing" the mail-matter subsequently to its being originally faced before being placed in front of the follower 6 and fed to the marker-head.

The delivery feed-roller 22 is of reduced diameter, as seen in Fig. IV, at its lower end in order that while the upper end thereof is bearing in contact with the pressure-roller 35 to carry the mail-matter therethrough the reduced lower end is out of contact with said mail-matter, thereby forming an open passage-way through which the marked part of the article of mail-matter is free from any contact with the feed-roller and is therefore not blurred as it is fed away from the marker-head.

I claim as my invention—

1. In a machine of the character described, the combination of a table, a marker-head, feeding mechanism, a follower arranged to carry the mail-matter to said feeding mechanism, pressure-rollers, a guide-plate, and tongues projecting from said guide-plate arranged to direct the articles of mail-matter into engagement with said marker-head, substantially as described.

2. In a machine of the character described, the combination of feeding mechanism, a marker-head, a follower, a series of straps connected to said follower and adapted to ride on said table and whereby the articles of mail-matter are supported and carried by said straps in front of said follower, and weights carried by said straps substantially as described.

3. In a machine of the character described, the combination of feeding mechanism, a marker-head, pressure-rollers, a conveyer, and a guard projecting across said conveyer adapted to face the articles of mail-matter as they are delivered onto the conveyer, substantially as described.

4. A marker-head for postmarking and stamp-canceling machines comprising a series of surmounted disks, a pair of central pinions mounted on said disks, hour-designating wheels pivoted on one of said disks opposite each other and geared to one of said pinions, and wheels having characters designating the day of the month pivoted on another of said disks opposite each other and geared to the other of said pinions, and means for operating said pinions in unison, substantially as described.

5. A marker-head for postmarking and stamp-canceling machines, comprising a series of surmounted disks, a pair of pinions mounted on said disks, hour-designating wheels pivoted on one of said disks diametrically opposite each other and geared to one of said pinions, wheels bearing characters indicating the periods of the day also geared to said pinion, and wheels bearing characters indicating the day of the month pivoted on another of said disks diametrically opposite each other and geared to the other of said pinions, substantially as described.

6. In a marker-head for postmarking and stamp-canceling machines, the combination of a series of disks, a central pinion, means for turning said pinion, diametrically opposite outer pinions geared to said central pinion, fingers carried by said outer pinions, and wheels bearing characters indicating the day of the month, said wheels being arranged to receive the engagement of said fingers, substantially as described.

7. In a marker-head for postmarking and stamp-canceling machines, the combination of a stem having a head-dating mechanism contained by said marker-head, a handle fitting over said stem and by which said mechanism may be moved, pins projecting from said marker-head, and a notched spring-pressed lever pivoted to said handle adapted to engage the head of said stem and arranged

to engage said pins to retain the handle and dating mechanism from movement, substantially as described.

8. In a machine of the character described, the combination of a marker-head having a shoulder-containing groove in its under side and provided with cam-rims, a dog arranged beneath said groove, and a pivoted lever having one end arranged beneath said dog and the opposite end arranged to receive the travel of said cam-rims, whereby said lever is actuated to move said dog into engagement with the shoulder in the groove of the marker-head, substantially as described.

JOHN L. LISTER.

In presence of—
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M. P. SMITH.