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PATENTED JAN. 23, 1906.

G. W. COFFMAN.
MARKING MACHINE.

APPLICATION FILED APR. 15, 1904.

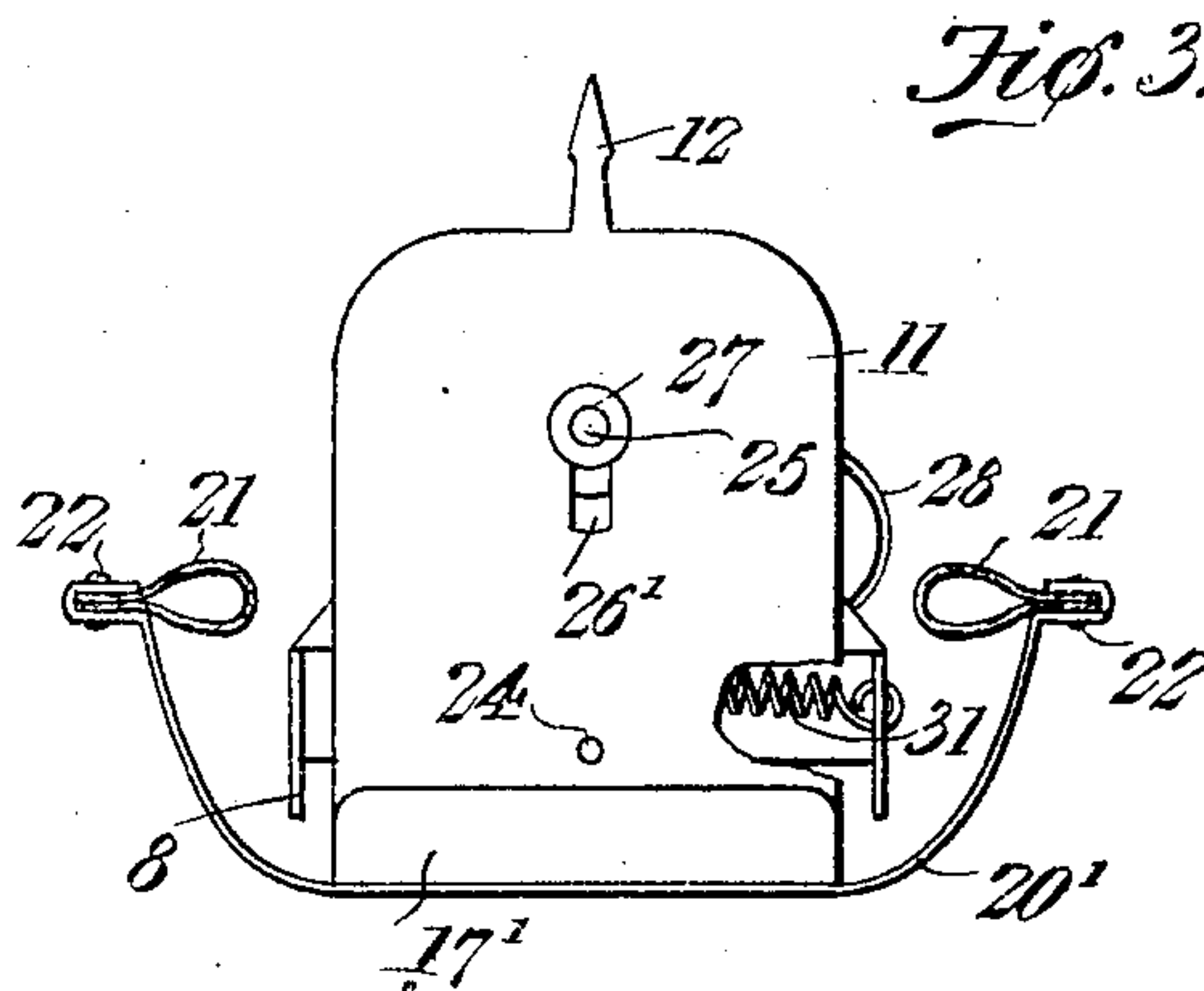
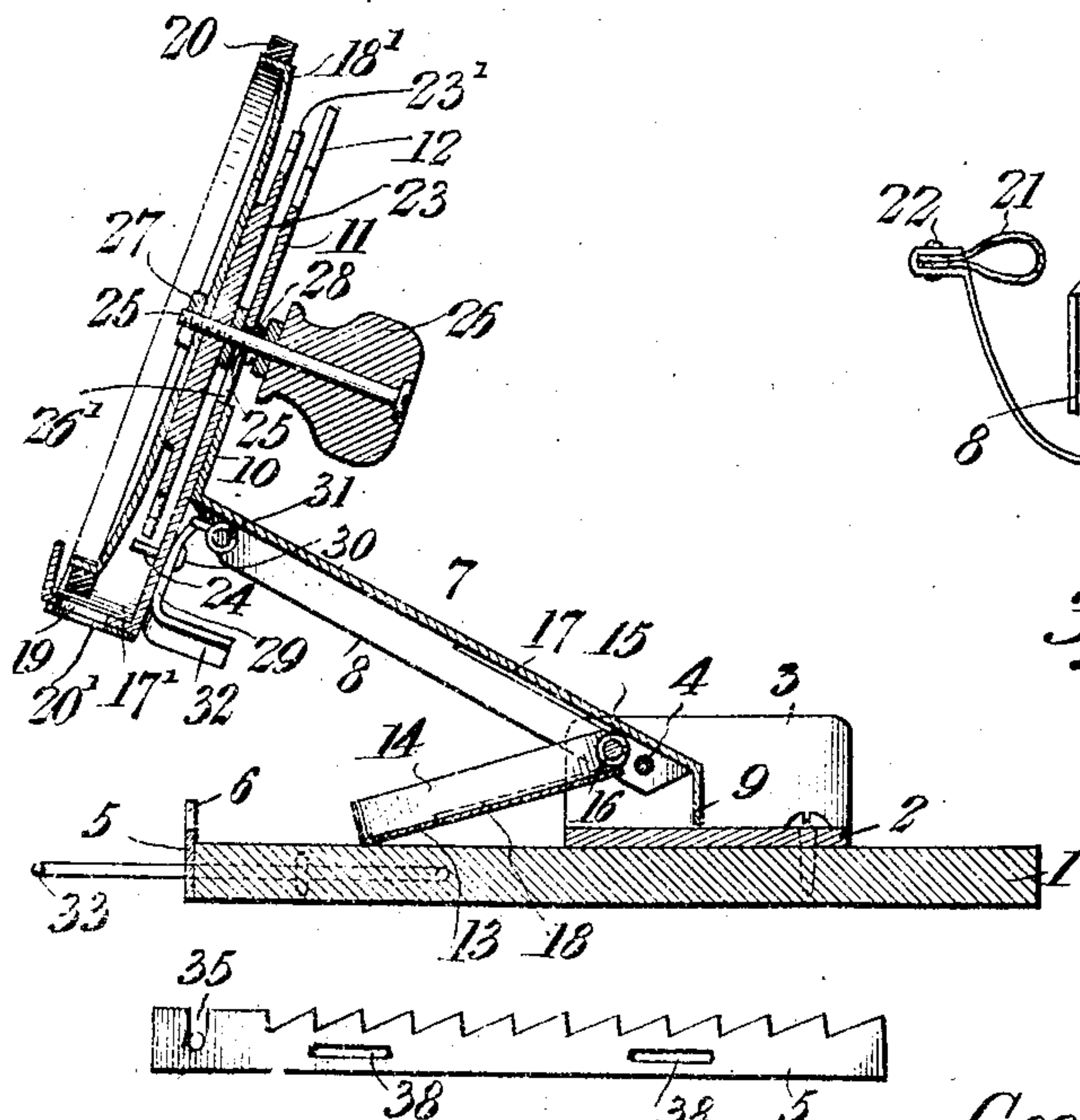
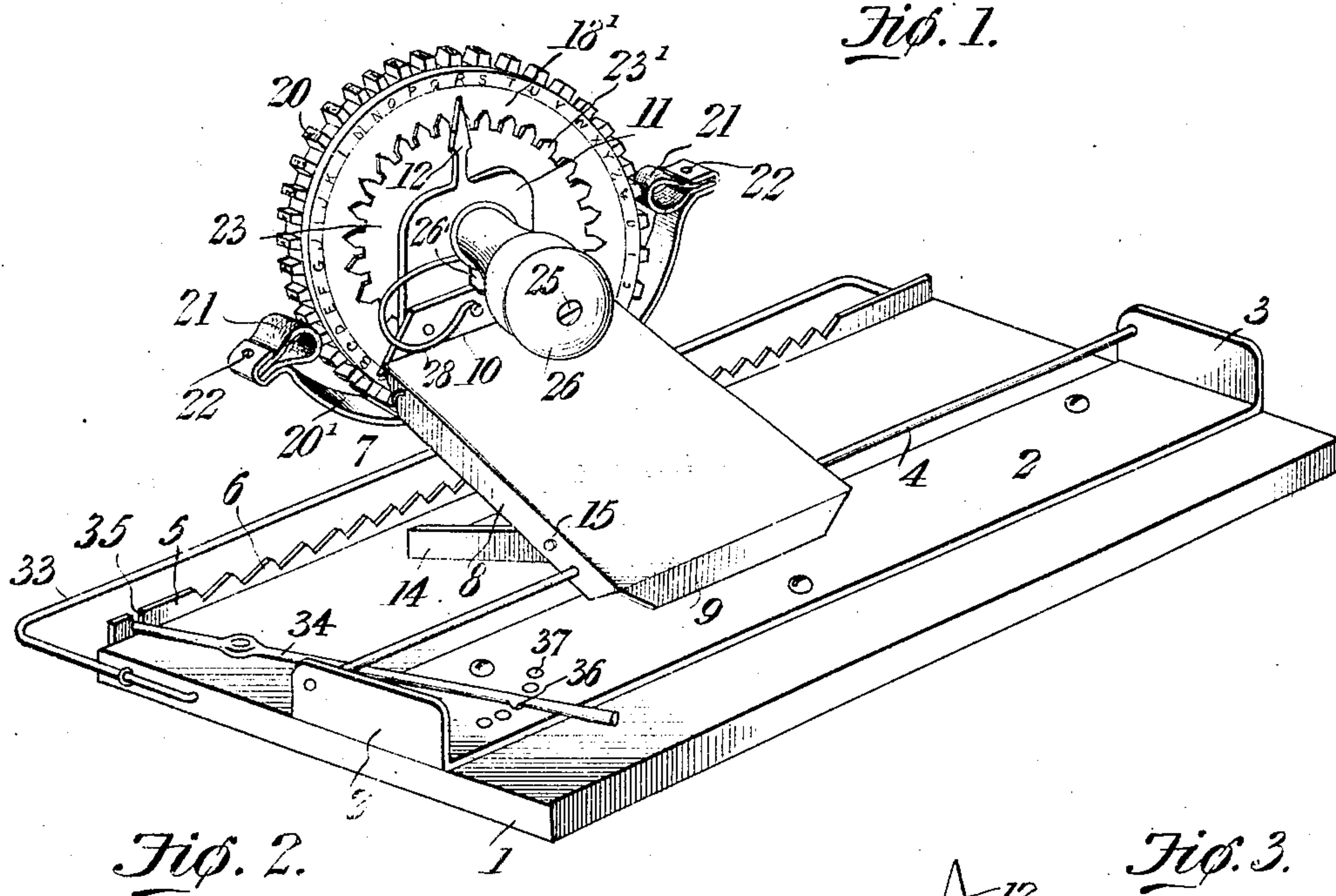
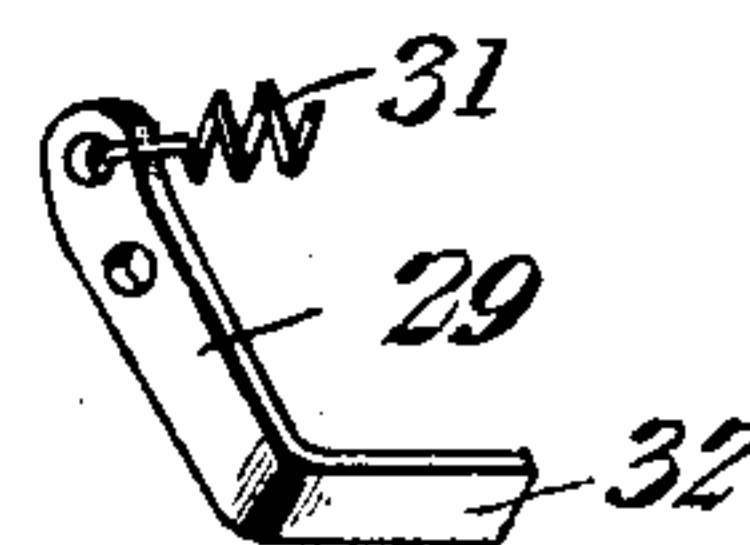


Fig. 4.



Witnesses:
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Fig. 5.

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UNITED STATES PATENT OFFICE.

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MARKING-MACHINE.

No. 810,468.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed April 15, 1904. Serial No. 203,369.

To all whom it may concern:

Be it known that I, GEORGE WILLIAMSON COFFMAN, a citizen of the United States, residing at St. Louis, State of Missouri, have invented a new and useful Marking-Machine, of which the following is a specification.

This invention relates generally to marking-machines, and particularly to one adapted for use in addressing shipping cases and parcels, for printing display-cards, notices, signs, price-tickets, bulletins, &c., for marking merchandise of various kinds, and for employment for any other purpose where it will be found applicable and advantageous.

The object of the invention is to present a machine of this character which shall combine great simplicity of construction, high efficiency and durability in use, and which will not require especial training on the part of the operator to manipulate it.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists, generally stated, in a marking-machine embodying in its construction a novel form of type-wheel and means for bringing the proper types carried thereby to printing positions and for temporarily locking the wheel against rotation, novel means for shifting the carriage to present successive printing characters, novel means for elevating the carriage above the printing-surface and for holding it thus positioned, and novel means for supplying ink to the printing characters.

The invention consists, further, in the various novel details of construction and combination of parts of a marking-machine, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, there is illustrated one form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof.

In the drawings, Figure 1 is a view in perspective of the machine taken from the rear. Fig. 2 is a view in vertical transverse section taken through the center of the machine. Fig. 3 is a view in rear elevation of a portion of the carriage, the type-wheel being removed. Fig. 4 is a detail view of the car-

riage-feed dog. Fig. 5 is a detached detail view of a portion of the feed-rack.

Referring to the drawings, 1 designates the base of the machine, which may be constructed of any suitable material, preferably of wood, and of any desired size to meet different requirements that may arise. Upon the base is a track-bed 2, which consists in this instance of a sheet of metal having upturned ends 3, that are orificed to receive the carriage-track 4, which consists of a bar of metal circular in cross-section and combined at its terminals in any preferred manner with the ends of the track-bed. Secured to the front edge of the base is the feed-rack 5, which consists of a strip of metal provided with teeth 6 of a contour to cause the carriage to move to the right at each operation of the type-wheel, presently to be described.

Mounted upon the track 4 is the carriage (designated generally 7) and comprising a sheet of metal provided with downturned flanges 8, through the lower ends of which pass the carriage-track 4. The rear end of the carriage is provided with a downturned flange 9, that is adapted to bear upon the track-bed, and thus limit the upward movement of the carriage, the forward end of the carriage being provided with an upstanding flange 10, to which is connected in any suitable manner, as by being riveted thereto, a plate 11, which constitutes a type-wheel carrier and has its upper portion furnished with a pointer 12, that operates in the usual manner to determine when the proper type has been brought to position to make an imprint. The carriage is held normally elevated or in the position shown in Fig. 2 by a locking-dog 13, which consists of a sheet of metal bent to present side flanges 14, that are held combined with the flanges 8 of the carriage by a pin 15, which extends through both of the flanges. Upon the pin is mounted a coiled spring 16, the terminals 17 and 18 of which bear, respectively, against the under side of the carriage and the upper side of the dog and serve to hold the carriage elevated and the dog in positive engagement with the base, thus to lock the carriage against lateral movement which would interfere with the proper operation of the type, the spring 16 thus subserving the double function of a carriage-lifting and a locking-dog-actuating element. The plate 11 extends down below the carriage and is bent to present a channel or trough 17', in which the periphery of the

type-wheel 18' is disposed, the lower wall of the trough being provided with a slot or orifice 19, through which the printing-type 20 will project. Secured in this instance to the under side of the trough 17' is a shield 20', constructed, preferably, of thin flexible metal and having an opening through which the type project, the opening in the shield being just sufficient to permit projection of one type at a time, so that blurring or double printing will be positively obviated. The terminals of the shield have combined with them inking-pads 21, which may be constructed of any suitable material, generally of felt, and are held in position by folding the ends of the shields upon themselves and then securing the pads in the crotches thus formed, as by rivets 22. This form of inking attachment is exceedingly simple of construction and will be found thoroughly efficient for the purposes designed, and owing to the yielding manner in which it is supported rapid wearing away of the type, which will generally be of rubber, is positively prevented. The type may be of any desired number and generally will include the alphabet, the numerals from "1" to "0," a set of punctuation-marks, and the dollar and cent marks. The type-wheel (shown more clearly in Fig. 2) is a dish-shaped structure, to the periphery or rim of which the type are attached in any preferred manner, as by being cemented thereto. Around the rear face of the type-wheel and adjacent to its periphery the printing characters are duplicated, thus to enable the operator to bring the proper type over the printing-opening in the shield. Of course it will be understood that a character on the rear face of the type-wheel will necessarily refer to a character diametrically opposite it—that is to say, if the letter "A" is to be printed this character on the face of the type-wheel will be at the top, while diametrically beneath will be the printing-type A. In order to center the type with relation to the opening in the shield and also to preclude shifting of the wheel in the act of printing, a type centering and wheel locking disk 23 is employed which is rigidly combined with the type-wheel and comprises a circular plate of metal having its periphery formed with approximately apexiform teeth 23', that are designed to interlock with a stud 24, carried by the lower portion of the plate 11. The interlocking of the teeth of the disk 23 with the stud 24 is secured by means of the shank 25 of the wheel-operating knob 26, the shank being mounted for limited vertical movement in a slot 26' in the plate, the knob being held combined with the type-wheel by a nut 27. The disk 23 is normally held raised with its teeth out of engagement with the stud by a spring 28, having one end secured in any suitable manner to the flange 10 of the carriage and its other end looped around the

knob-shank, as clearly shown in Fig. 1. This limited vertical movement of the type-wheel not only effects its positive locking against turning by coaction between the disk 23 and stud 24, but also causes the type to be projected through the slot or orifice in the shield and be held centered therein while the imprint of the type is being stamped upon the surface to be printed.

The means for imparting a step-by-step movement to the carriage on each depression of the type-wheel comprises a feed-dog 29, which is approximately L-shaped in elevation and is pivoted at 30 to the lower portion of the plate 11, a coiled spring 31, connected with the upper end of the dog and with one of the flanges 8 of the carriage, serving to hold the said end always in engagement with the under side of the carriage, the length of the vertical member being such that when it is in engagement with the carriage its toe or lower member 32 will occupy an angular position relatively to the teeth of the feed-rack. On the initial depression of the type-wheel the toe of the dog will engage one of the teeth of the feed-rack and upon continued downward depression or movement of the type-wheel will force the carriage laterally a space equal to one of the type, this operation taking place as each character is printed and in advance of the impression.

As a means for guiding the operator in printing the characters in a straight line a gage 33 is combined with the front of the base and is in the nature of a wire bail, secured in position in any preferred manner. In the use of the machine when a new line is to be started the whole machine is moved toward the operator a sufficient distance to bring the gage in line with the lower edge of the last line printed, and when thus adjusted accurate alinement of the work will be secured. To effect spacing of one word from another, the carriage is partly depressed, and the dog by coaction with the feed-rack will move the carriage as many spaces as may be desired, the spring 28 serving to hold the printing characters above the face of the shield 20'.

It is a desideratum in machines of this character to make it possible to space narrow and wide letters so that they will be an equal distance apart, and to effect this result in the present machine there is a lever 34 provided, which is pivoted intermediate of its ends to the base and has its forward end disposed in a notch 35 in the feed-rack. At a point near the rear end of the lever is a pintle or offset 36, which is designed to engage with any one of a series of orifices 37, formed in the track-bed 2; the rear end of the lever being extended beyond the track-bed in order to permit of its being readily grasped by the operator. The feed-rack is provided with two longitudinal slots 38, through which project pins or screws to hold the feed-rack as-

sembled with the base, the slots permitting a limited lateral movement of the feed-rack in both directions. The operation of this part of the device is as follows: Suppose it be desired to print the letter "I," which is the narrowest letter in the alphabet. In order to have this letter spaced to correspond with the spaces between the other letters, the rear end of the lever 34 is moved to the right a sufficient distance to bring the offset into the next adjacent orifice from the one which it normally engaged; and this moves the feed-rack slightly to the left and allows the lever to print closer to the preceding one. By moving the end of the lever to bring the offset into engagement with one orifice to the right of that normally occupied the next letter printed will be spaced a distance from the letter "I" equal to that of the preceding letter. For printing extra wide letters, like "M" or "W," it will be necessary to move the lever to the left to the first orifice, thus causing the feed-rack to be moved a slight distance to the right, and thereby increasing the space for the letter to be printed. While the employment of this device is of advantage, it is to be understood that it may be used or not at the pleasure of the operator; but as it will render the machine adaptable for printing artistic display-cards its use will generally be found advantageous.

While the type-wheel is herein shown as provided only with capital letters, it is to be understood that, if preferred, it may also be provided with small letters, and as this will be apparent detailed illustration thereof is deemed unnecessary.

It will be seen from the foregoing description that although the machine of this invention is exceedingly simple of construction it combines in a feasible and practical manner all of the elements necessary to effect rapid printing for the purposes designed, and moreover, by the manner in which the parts are constructed and combined danger of derangement and breakage in use is reduced to a minimum.

Having thus described the invention, what is claimed is—

1. In a marking-machine, a vibratory carriage supporting printing mechanism, a carriage-locking dog, and a spring operating to lift the carriage and actuate the dog.

2. In a marking-machine, a vibratory carriage supporting printing mechanism, a locking-dog combined therewith, and a spring operating to lift the carriage and to actuate the dog.

3. In a marking-machine, a vibratory carriage supporting printing mechanism, a carriage-locking dog pivotally combined therewith, and a spring having outward-diverging terminals to engage respectively with the carriage and with the dog.

4. In a marking-machine, a vibratory car-

riage supporting printing mechanism, a bar carried thereby, a carriage-locking dog hinged upon the bar, and a coiled spring mounted upon the bar and having its terminals bearing respectively against the under side of the carriage and the upper side of the locking-dog.

5. In a marking-machine, a track-bed, a carriage supported over the track-bed for longitudinal and vibratory movements, a flange carried by the rear end of the carriage, a locking-dog combined with the carriage, and a spring operating to actuate the locking-dog and to lift the carriage thereby to bring the flange into engagement with the track-bed to lock the carriage against movement.

6. In a marking-machine, a carriage provided with downturned flanges at its sides and one end, a bar passing through the side flanges, a locking-dog hinged upon the bar, and a spring having coils engaging the bar and its terminals in engagement with the under side of the carriage and the upper side of the dog, and operating normally to hold the dog and terminal flange in engagement with the base portion of the machine.

7. In a marking-machine, a vibratory carriage, a plate disposed at an angle thereto and provided with a slot and with a pointer, a type-wheel having its shank mounted in the slot, a type-centering and type-wheel-locking disk carried by the type-wheel, and a stud carried by the plate to engage with the disk to lock it against rotation.

8. In a marking-machine, the combination with a base of a vibratory carriage for supporting a type-wheel, a feed-rack combined with the base, a lever fulcrumed upon the base and having one end in engagement with the feed-rack to effect shifting thereof thus to vary the point of imprint of the type, and means for locking the lever at any desired adjustment.

9. In a marking-machine, a base a vibratory carriage combined therewith and supporting a type-wheel, a feed-rack combined for longitudinal movement with the base, and a lever fulcrumed upon the base and having one terminal in engagement with the feed-rack, and its other terminal furnished with an offset to interlock with suitable orifices in the base to hold the feed-rack at any desired adjustment.

10. In a marking-machine, the combination with a vibratory carriage, of a plate provided near its upper portion with a slot, and near its lower portion with a trough provided with an orifice, a type-wheel carried by the plate and adapted to have its type projected through the orifice in the trough, a shield having an orifice registering with that of the trough, said shield being provided with flexible extensions, and yieldable inking-pads carried by the extensions.

11. In a marking-machine, the combination

with a vibratory carriage, or a plate combined therewith and provided with a slot, a type-wheel having its shank projected through the slot and provided with an operating-knob, a spring carried by the plate and engaging the knob-shank and exerting upward pressure thereon, a type-centering and type-wheel-locking disk rigid with the type-wheel, and a stud carried by the plate to co-act with the teeth of the disk to hold the type-wheel against rotation when its shank is moved to the lower end of the slot.

12. The combination with a base, of a track-bed, a track carried thereby, a vibratory carriage supported upon the track and provided with a stop coacting with the track-bed to limit the upward movement of the carriage, a spring-pressed dog combined with the carriage and coacting with the base to lock the former against lateral movement, a

plate provided with a vertical slot, a printing element having a shank projected through the slot, a perforated shield disposed below the printing element and carrying inking mechanism, a stud carried by the plate, a toothed disk combined with the printing element and designed to engage the stud to lock the printing element against rotation during the printing operation, means for returning the printing element to its normal position after the printing operation, and means for returning the carriage to its normal position.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE WILLIAMSON COFFMAN.

Witnesses:

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C. C. CRAIG.