

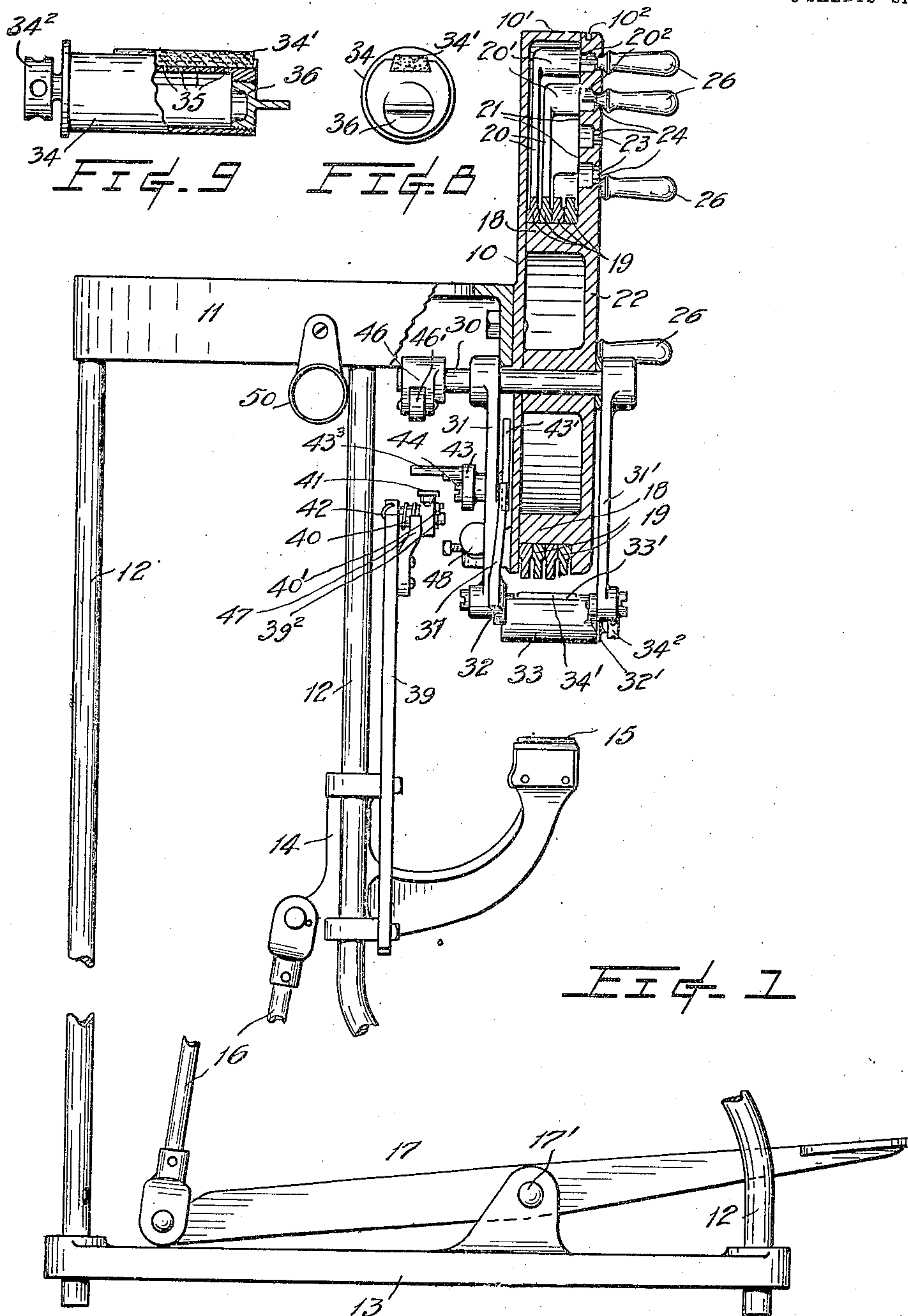
No. 890,961.

PATENTED JUNE 16, 1908.

J. D. CALDWELL.
PRINTING MACHINE.

APPLICATION FILED MAY 31, 1907.

3 SHEETS—SHEET 1.



WITNESSES:

Horace Barnes
Chas. E. S. Burch

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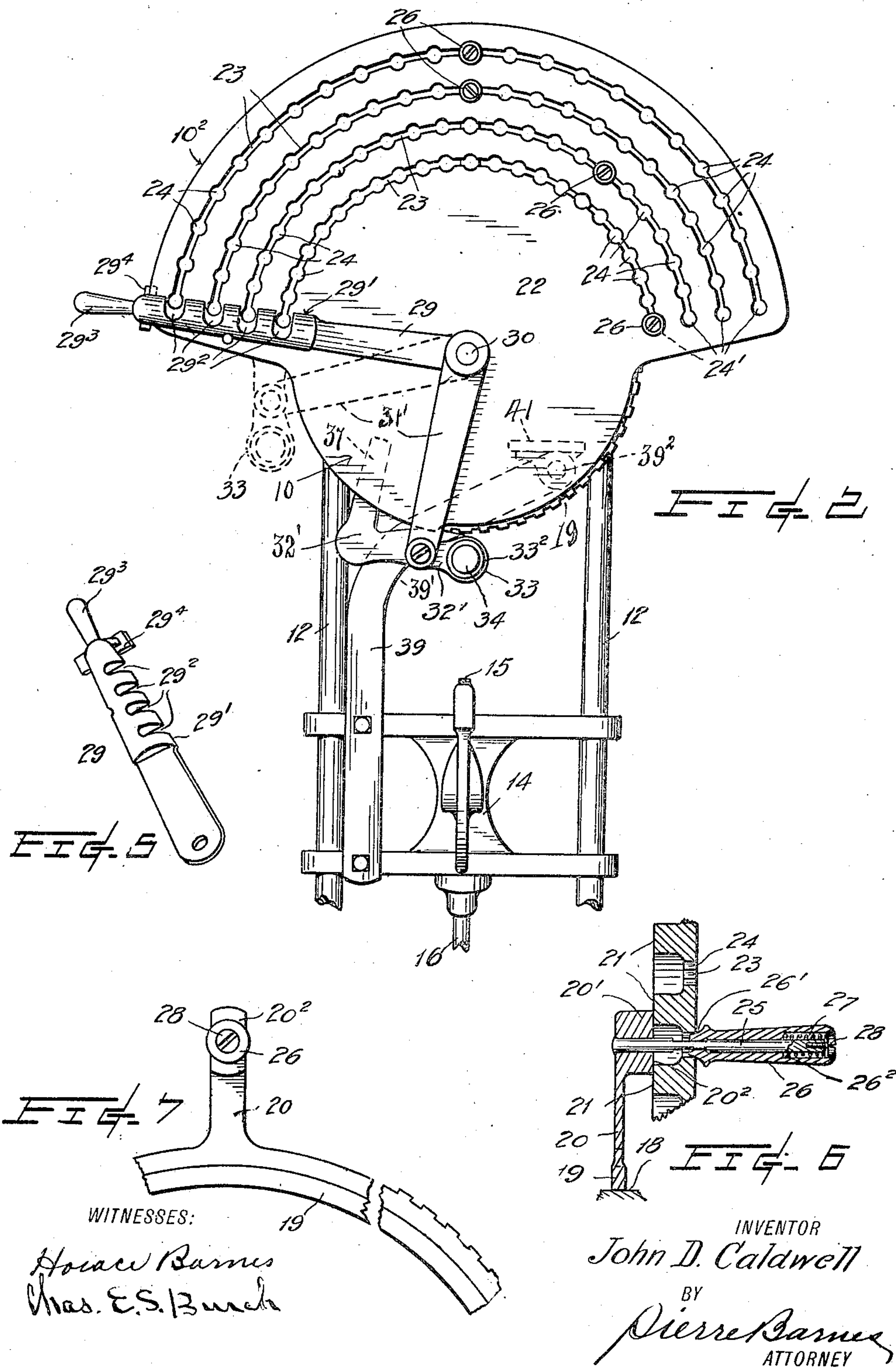
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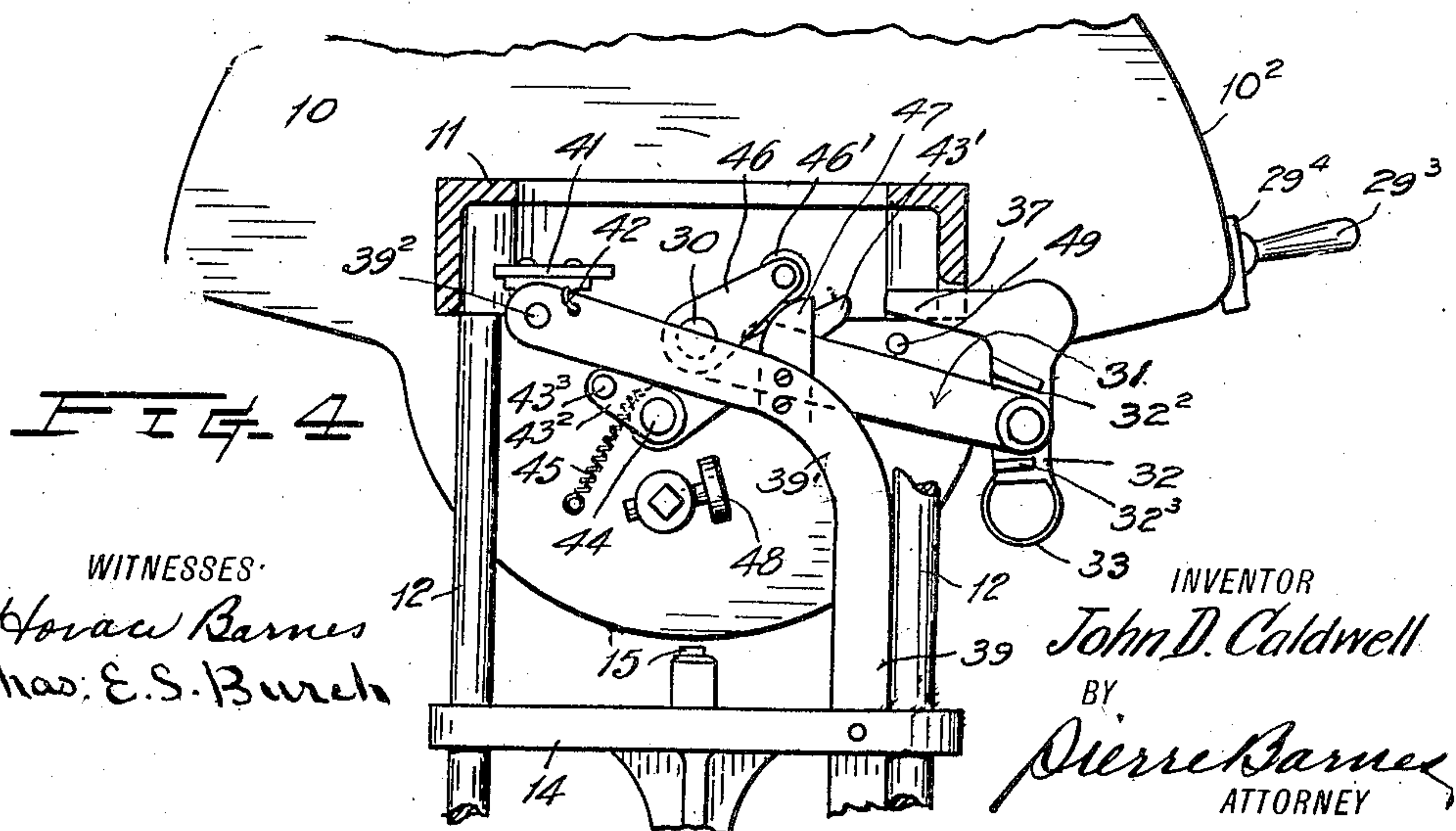
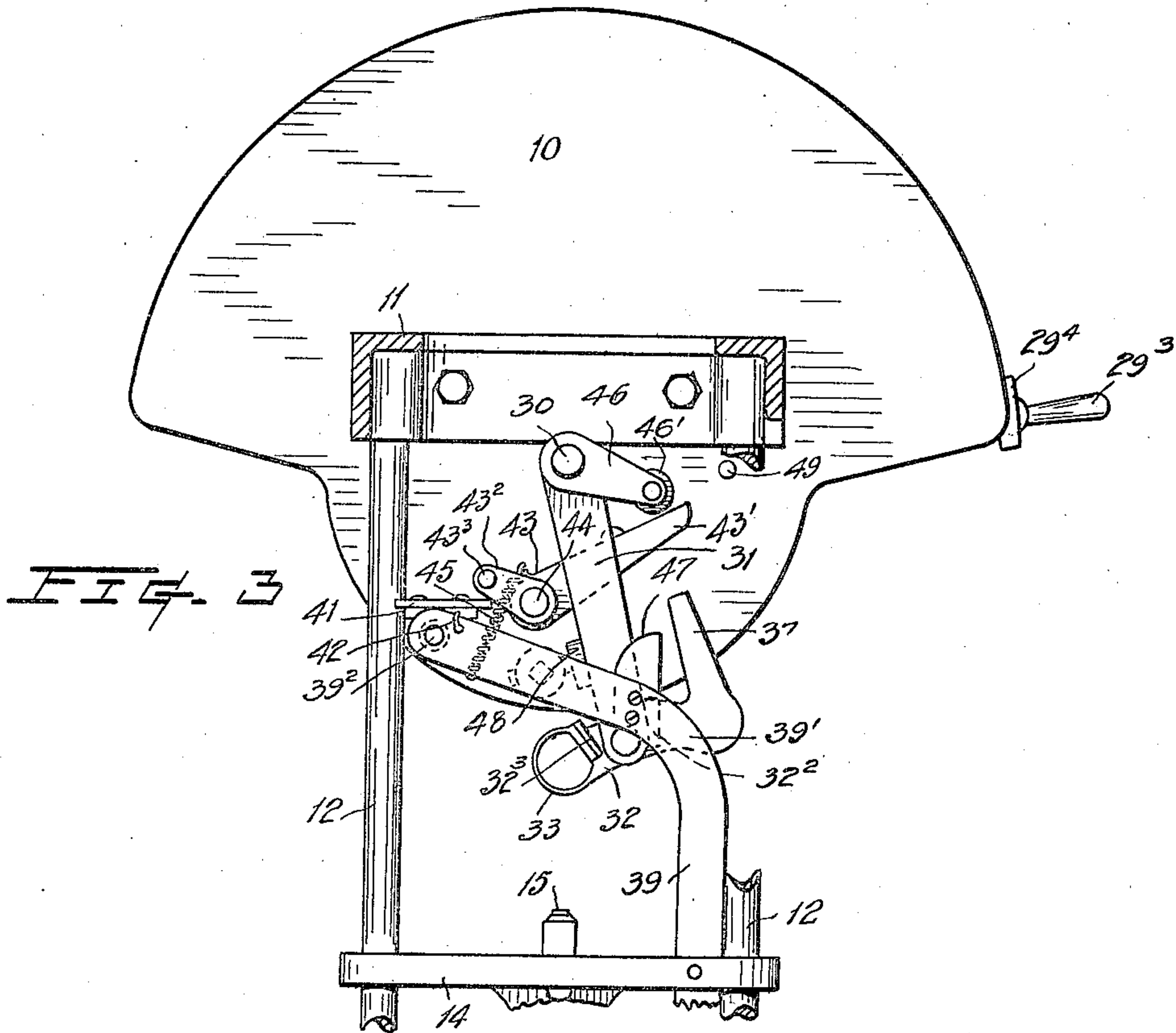
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UNITED STATES PATENT OFFICE.

JOHN D. CALDWELL, OF SEATTLE, WASHINGTON.

PRINTING-MACHINE.

No. 890,961.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed May 31, 1907. Serial No. 376,579.

To all whom it may concern:

Be it known that I, JOHN D. CALDWELL, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Printing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to printing machines more specifically to improvements in machines employed for stamping or marking articles and the object of the present invention is to so improve the apparatus as to facilitate the setting and marking operations, and generally to render the device more convenient and serviceable.

15 The invention consists in the novel construction, adaptation and combination of parts as will be hereinafter described and claimed.

20 In the drawings, Figure 1 is a side elevation, partly in section, of a device embodying the invention; Fig. 2 is a front elevation of the upper portion of the same; Fig. 3 is a rear elevation of the upper portion of the machine but with the frame-work at the rear in section and illustrating the inking mechanism in its normal or inoperative condition; Fig. 4 25 is a view similar to Fig. 3, but with the inking mechanism retracted from interference with the carrying on of the printing operations; Fig. 5 is a perspective view of the key disengaging arm; Fig. 6 is a detail sectional view of the ring setting and securing devices; Fig. 30 7 is a front elevation of a portion of the type ring; Fig. 8 is an end view of the ink reservoir; and Fig. 9 is a side elevation of the same, shown partly in section.

40 The improved device comprises a casing 10 rigidly attached to a head 11 surmounting a plurality of upright columns 12 which are supported by a base 13. Two of the columns 12 serve as guides for a vertically 45 movable cross-head 14, carrying a platen 15, and actuated through a connecting-rod 16 from a treadle 17 which is fulcrumed at 17' to said base.

50 In the improved device the casing is provided interiorly with a cylindrical barrel 18 upon which is rotatably mounted side by side a number of rings 19 having upon each similar peripherally disposed type characters. Provided integrally and extending radially 55 from each of these rings is an arm 20 each arm respectively terminating in a rectangu-

larly extended portion 20' finished at its ends to present a smooth wearing face 20² opposing the planed surfaces 21 provided for each at the rear of the casing face-plate 22. 60

The face plate 22, is provided with a plurality of arcuate slots 22' one for each of said rings, and are arranged to be concentric with said barrel 18. Said slots are severally provided throughout their lengths with a series 65 of opposing notches 24 which are spaced and denominated to correspond with the characters aforesaid upon the type rings.

Fixedly connected with each of the extended portions 20' of the 20 mentioned and 70 extending through the respective slots is a stud 25 having thereupon and exteriorly of the casing, a sleeve 26, or key, as it will be hereinafter designated, provided with a tapering inner end 26' adapted, when brought 75 into registry with any of the cavities 24 furnished by the respective pairs or notches 24, to be partially socketed therein and be thus detachably maintained, see Fig. 6, by a spring 27 acting between a recessed shoulder 80 26² and the head of a screw 28 adjustably engaged with the stud.

When the machine is inoperative the rings are desirably arranged to present in the plane of the platen portions of their peripheries un- 85 provided with type characters, as would occur when the rings have been swung through the medium of the respective arms and keys to cause the latter to register with certain of the cavities, as 24', which are advantageously 90 disposed at the extreme right hand end of the various slots.

To adjust or set the type into predetermined operative positions, viz. within a printing line directly above the platen, the 95 keys are individually withdrawn by the operator from the cavities 24' and thence by swinging movements successively bringing the keys into positions to register with the cavities respectively appropriated to the de- 100 sired characters, thus shifting the rings to correspondingly position the selected type as desired. When the type have been thus set they are reliably held against accidental displacement by the spring-pressed controlling 105 keys, when released, being socketed in the face-plate cavities, and are then capable of being utilized to repeatedly mark the goods when the same are forcibly impressed there- 110 against upon the upwardly thrust platen.

Previously to a re-setting of the type for a new series of markings, the rings are prefer-

ably returned to their initial inoperative positions by engaging their keys within the cavities 24'. This is accomplished by means of a wiper-bar 29, see Figs. 2 and 5, which is pivotally connected immediately in front of the face plate to a pin 30 extending axially of said slots and through the casing. The wiper-bar is provided with a shank of a substantially wedge-shape in cross section, that is to say, it gradually increases from a sharp advance edge 29' to a maximum thickness adjacent of its following edge, and is formed with notches 29² in its advance edge which are respectively disposed to be in line with the several said slots. The wiper-bar in being swung about its pivotal axis causes its notches to straddle the inner tapering ends of the keys and dislodge the latter from their seats within the cavities, and whereupon by a continuation of such action by the wiper they are swept into positions for seating within the cavities 24' when the wiper is retracted, to permit the play of the springs 27. To facilitate the manipulation of the wiper it is provided with a handle 29³ which is protruded beyond the peripheral wall 10' of the casing; and in order that the wiper may be held in juxtaposition with the face-plate a groove 10² is provided in said wall to slidably receive an offset block 29⁴ of the wiper.

31 and 31' are arms fixedly secured, as by set screws, to a pin 30 and are respectively disposed in the rear and in front of the head portion 10—22, and have tiltably connected to their outer extremities, lugs 32, 32', of a cylindrical chambered member 33 provided with a longitudinal opening 33' in its circular wall and with an open front end 33² into which the reservoir for the marking fluid is introduced. This reservoir 34, see Figs. 8 and 9, is substantially cylindrical and of such diameter as to fit snugly within the member 33 and is formed with a longitudinal dovetail shaped recess in its periphery for the reception of a detachable ink-dauber 34', of felt, or an equivalent absorbent material. The portion of the reservoir wall which contacts with the dauber is provided with a plurality of perforations 35 through which the ink percolates to supply the dauber when the reservoir is successively tilted, as during the marking operations, as will be presently described.

36 is a detachable plug to provide a closure for an opening at one end of the reservoir through which the latter is charged with ink and at the other end of the reservoir is, desirably, a knob handle 34² protruding from the member 33 to facilitate the withdrawal of the reservoir when it is to be unemployed for a considerable time, as at the end of a working day.

The lug 32 is prolonged beyond its connection with the arm 31 and terminates in an angularly directed finger 37; while upon each

side of this arm 31 the lug is provided with stops 32² and 32³ adapted upon occasion to act against and limit the swing of the member 33 with respect to the arms 31 and 31'. By reason of the unbalanced condition of the member 33 together with its attachments, the same will be maintained normally by the stop 32² in the position illustrated in Fig. 3, and with the dauber 34', which protrudes through the opening 33' of said member, at some distance below the type rings.

Rigidly secured to one side of the cross-head 14 is an upwardly extending bar 39 which is bent, as at 39', to carry above the other side a forwardly projecting stud 39² upon which is a sleeve 40 carrying a plate 41 which is normally maintained in a horizontal position by a spring 42 pressing a protruding portion 40' of the sleeve against a fixed stop 39² of the stud. A lever 43 is fulcrumed to a pin 44 secured to the rear of the casing, and the lever arm 43' is arranged to vibrate in the same plane as the finger 37, while the arm 43² is provided with a pin 43³ adapted to be engaged by the plate 41 and be carried therewith for a short distance during the upward travel of the latter which effects the impinging of the first named arm with said finger, to cause the uplifting of the reservoir for applying the ink to the exposed type during the beginning of the upward movement of the cross-head. Such rectilinear movement of the plate 41 carries the pin 43³ therewith until it is withdrawn from the path of the plate by the circular course taken by the pin, whereupon the lever 43 is released and returned by a retractile spring 45 to its normal position whereat the lever arm 43' will not obstruct the finger 37 to interfere with the swinging of the arms 31, 31', which carry the ink reservoir, into their extreme elevated position, shown in Fig. 4, while the cross-head is completing its upward stroke to bring the goods against the inked type. This action of the last named arms is accomplished by the provision of another arm 46 upon the pin 30 and provided with an anti-friction roller 46' which is engaged by and carried with a cam-faced lug 47 adjustably secured to the bar 39.

The just described appliances, when actuated, swings the ink reservoir out of the reach of any fabric which may be upon the platen as the latter is carried upwardly to imprint the article, and as the platen descends with the cross-head, the reservoir and the actuating mechanism therefor, is allowed to return through the action of gravity to their initial positions, as shown in Fig. 3; and, through the peculiar mounting of the sleeve 40, the plate 41 is tilted backwardly against the opposing force of the connected spring to permit the passing of the lever-arm 43² thereby. Furthermore, by the oscillations of the reservoir which ensues during the travel of the reservoir to and from the type, the ink is

agitated sufficiently to keep the dauber amply charged.

48 is a stop adjustably secured to the casing for limiting the downward swing of the arms 31, 31', to bring the inking devices in alinement with the previously set type, while the upward throw of the same is advantageously limited by a stop such as 49.

50 is a cylindrical attachment to the frame to provide a receptacle for the reservoir when the machine is inoperative, and is chambered to make a close fit and prevent the evaporation of the liquid ink.

The operation of the invention will, it is thought, be understood from the foregoing and will need no further description.

The construction of the various devices employed in the invention are such as to adapt them to their several functions and render the machine positive in its action and very easily manipulated to accomplish a good grade of work. The setting of the type characters is easily performed and are automatically locked in place and so maintained while they are being employed in marking similarly grouped characters upon any number of articles. The operation of the keys which retain the type in printing position may be done individually, and each of them separately manipulated to move the type directly into reset position, or they may be all disengaged by the action of the wiper to return them to initial positions previously to a re-arrangement thereof.

The inking contrivances are peculiarly adapted for the class of work for which the invention is intended and is characterized by the provision of devices whereby the ink is applied to the type immediately before each printing operation. The ink reservoir is carried out of proximity of the article being marked by a quick movement and in such a manner as to insure a proper supply of ink to the dauber. Furthermore, by the provision of an enlarged bearing of substantial and rigid construction I am enabled to employ less cumbersome and more easily controlled type carrying members than hitherto and insure a firm resistant to any undue shocks which may be imparted from the platen during the printing operations, thus safeguarding the machine against derangement as well as furnishing an extended seat for the various type rings to enable them to withstand the above noted strains without distortion.

Having described my invention, what I claim is,—

1. In a device of the class described, an inclosing casing having a plurality of concentric slots in one of its walls, a drum within said casing, a plurality of annular type rings arranged side by side upon said drum and adapted to be oscillated thereon and having spaced type characters on one portion of their

peripheries, means connected to the blank portions of said rings for individually rotating the rings into permanent printing positions comprising a radial arm on each ring, a rod projecting from each arm through the slots in said casing, means for independently securing the rings in adjusted positions comprising spring-pressed sleeves on said rods, a platen, means for pressing said platen against the type rings, and inking devices operating to supply ink to the type carriers between the actions of the platen.

2. In a printing machine, the combination with a casing provided interiorly with a cylindrical bearing, of type-rings mounted upon said bearing and adapted to be severally rotated into various predetermined positions an arm extending from each of said type rings, devices carried by said arms for engaging within spaced cavities of the casing for retaining the rings in set positions, and a device for engaging said devices to disengage the rings.

3. In a printing machine, the combination with the casing, type-rings rotatably mounted within said casing, an arm upon each type-ring and spring-pressed devices carried by said arms and adapted to engage the casing to maintain said type-rings in various positions, of an arm pivotally connected with the casing and provided with a series of notches adapted to register with the respective said devices for disengaging the same.

4. In a device of the class described, an inclosing casing having a plurality of concentric slots in one of its walls, a plurality of rings within said casing and each provided with a radial arm, spaced type characters upon one portion of each ring rods projecting from said arms and extending respectively through said slots, and spring-pressed sleeves on said rods and operating to lock the rings in selected positions.

5. In a device of the class described, an inclosing casing having a plurality of concentric slots in one of its walls and with spaced recesses communicating with said slots, a drum within said casing, a plurality of rings arranged side by side and mounted for independent oscillation upon said drum and each provided with spaced type characters upon a portion of the periphery of each and a radial arm extending from the blank portion of each ring, a rod projecting from each of said arms and extending through one of said rods and adapted to yieldably engage consecutively in said slots, a sleeve upon each of said rods, a spring within each of said sleeves and operating to maintain the sleeve yieldably in engagement in one of the slot recesses, a platen, means for periodically operating said platen, an inking device, and means for operating said inking device between the actions of said platen.

6. In a printing machine, the combination

with the casing having a plurality of concentric slots in one of its walls, of rings having type characters upon a portion of the periphery of each, means operating upon the blank portion of each ring to adjustably move said rings into predetermined printing position, comprising a radial arm on each ring, a rod projecting from each arm through the slots in said casing, a platen, means for elevating the platen, means embodying spring-pressed sleeves on the rods for locking the rings in desired position, and inking devices operating to supply ink to the type carriers between the actions of the platen.

7. In a device of the class described, an inclosing casing having a plurality of concentric slots in one of its walls and with spaced recesses communicating with said slots, a plurality of type rings each having a radial arm, a rod projecting from each of said arms and extending respectively through said slots, a sleeve slidable upon each of said rods, and a spring carried by each of said rods and operating to maintain said sleeves yieldably in engagement consecutively with the recesses in said slots.

8. In a device of the class described, an inclosing casing having a plurality of concentric slots in one of its walls and with spaced recesses communicating with said slots, a plurality of type rings each having a radial arm, a rod projecting from each of said arms and extending respectively through said slots, a sleeve slidable upon each of said rods, a spring carried by each of said rods and each operating to maintain one of said sleeves yieldably in engagement consecutively with the recesses in said slots.

9. In a printing machine, the combination with the casing provided with arcuate slots, a cylindrical bearing within the casing, a plurality of type-rings mounted upon said bearing and severally provided with a stud extending through the respective slots, a spring-pressed sleeve mounted upon each said stud and adapted to be socketed in various spaced positions throughout the lengths of said slots whereby predetermine type of the respective rings may be retained in printing position, and a wiper arm adapted to disengage the sleeves from said sockets and also transmit them to positions wherein the type-rings are inoperative.

10. The combination with a casing having interiorly a cylindrical bearing and a face-plate provided with a plurality of concentric slots severally provided with a series of cavi-

ties, a plurality of type-rings rotatably seated upon said bearing, an arm for each of said rings and severally provided with a bent extremity adapted to bear against the inner surface of said face-plate, studs for said arms and extending through the respective slots, sleeves seated upon said studs and provided with tapering ends adapted to be socketed interchangeably within the cavities of the respective slots, and springs acting to cause the sleeves to engage the face-plate and within said cavities.

11. In a device of the class described, the combination of a casing having a plurality of concentric slots in one of its walls and provided with a segmental guide channel, a plurality of type rings within said casing having spaced type characters upon a portion of the periphery of each, means for setting said type rings to bring any desired type character into printing position, comprising a radial arm carried by each ring, a rod carried by each arm and extending through the concentric slots of the casing, a sleeve slidable upon each of said rods adapted to consecutively engage recesses in the wall of the casing and lock the type rings in desired position, a platen, means for periodically actuating said platen, and inking devices operating to supply ink to the type carriers between the actions of the platen.

12. In a device of the class described, a casing having a plurality of concentric slots in one of its walls and with a segmental guide channel, a plurality of type rings within said casing and each provided with a radial arm having an extended portion bearing against the slotted wall, a rod projecting from each of said extended portions through the adjacent slot, a sleeve slidable upon each of said rods and adapted to consecutively engage said recesses and each provided with a tapered inner end, a spring carried by each of said rods and operating to maintain said sleeves yieldably in engagement consecutively with said slot recesses, an arm swinging from said casing and provided with spaced notches corresponding to said sleeves and each notch inclined to enable them to operatively engage the tapered portions of the sleeves.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN D. CALDWELL.

Witnesses:

PIERRE BARNES,
CHAS. E. S. BURCH.