No. 791,941. PATENTED JUNE 6, 1905.

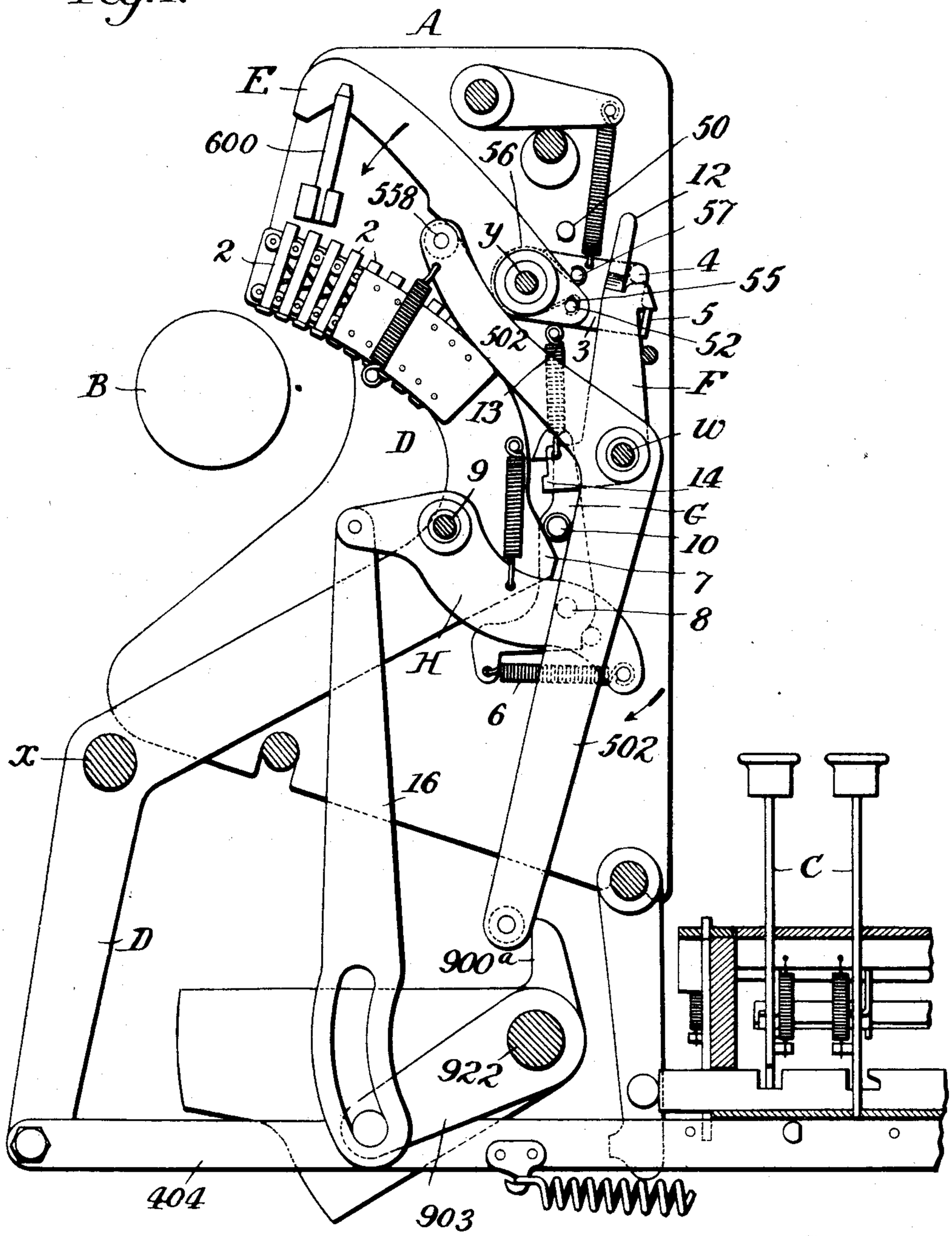
W. H. PIKE, JR.

RECORDING MECHANISM FOR ADDING MACHINES.

APPLICATION FILED FEB. 13, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



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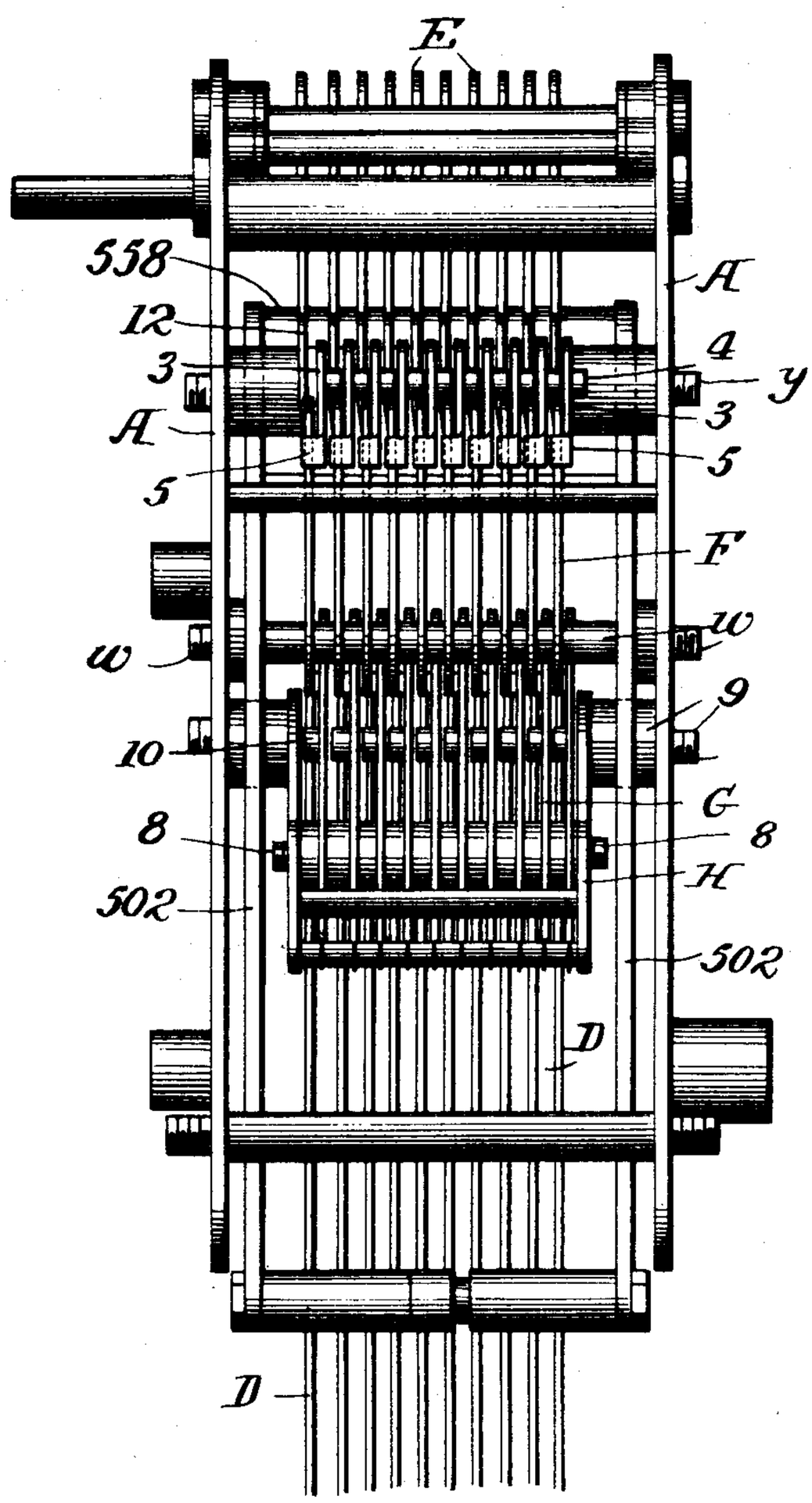
2 SHEETS—SHEET 2.

Fig. 2.



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No. 791,941. Patented June 6, 1905.

UNITED STATES PATENT OFFICE.

WILLIAM H. PIKE, JR., OF ORANGE, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO PIKE ADDING MACHINE COMPANY, OF ORANGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

RECORDING MECHANISM FOR ADDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 791,941, dated June 6, 1905.

Application filed February 13, 1904. Serial No. 193,458.

To all whom it may concern:

Be it known that I, WILLIAM H. PIKE, Jr., a citizen of the United States, residing at Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Recording Mechanism for Adding-Machines, of which the following is a specification.

In certain kinds of adding-machines it is common to employ a series of recording devices, such as levers, arranged side by side and carrying each a series of numbered printing-bars or numbered type, and combined with these are keys and appliances whereby on depressing proper keys the corresponding numbers will be presented by the recording devices in position to be impressed on the paper carried by a platen. Where the amount to be represented is such that there must be one or more ciphers at the right, means have been employed whereby on shifting the recording device which is to print the last figure at the right represented by a digit the succeeding recording devices at the right will be mechanically set to print ciphers. My invention is a simple and effective means to secure this mechanical action, as fully set forth hereinafter and as illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of sufficient of an adding-machine to illustrate my improvement. Fig. 2 is a front elevation.

While the present invention may be applied to various forms of adding-machines, I have for the purposes of illustration in the accompanying drawings shown it embodied in a machine of the character illustrated and described in my Patent No. 763,692, dated June 28, 1904.

Referring to the drawings, A represents so much of the frame as is required to understand my invention, B the usual platen, and C represents the keys, and there are connections, including spring-impelled strips 404, whereby after any key is depressed and a stop normally preventing movement of the parts has been removed by rotation of a shaft 922 a recording device, shown as a lever D, pivoted at *x*, will be shifted until a type having a number corresponding to that of the key depressed is brought into printing position above the platen. All of these features may be of any of the usual or desired constructions, and, further, each recording device may, as usual, support a number of sliding type-bars 2, and a spring-actuated hammer E is pivoted at *y* in position when released to strike the type-bar which is in position to print.

Each hammer has a tailpiece or arm 3 and a side lug 4 extending toward the hammer of the recording device of the next lower denomination, and a lip 5 of each hammer may be engaged by the hook of a detent, shown as a lever F, pivoted at *w*. A finger 12 projects upward from each detent in a position back of the lug 4 of the hammer of the next higher denomination, and a spring 13, connected with each detent, tends to keep it in engagement with the lip 5 of its hammer. With each detent coöperates a retainer or catch G, shown as a lever, pivoted on a cross-bar 8, carried between two swinging arms H, pivoted at 9 to the side frames. Each catch G has a hooked end and is thrown in one direction by a spring 6 to cause its hook to extend over a shoulder 14 of the detent.

Upon each recording device D is an inclined shoulder 7, across which extends a lug 10 from the side of the adjacent catch G. The arms H are swung in the direction of their arrows by the movement of a bar 16, operated from an arm 903 on the driving-shaft 922, and each recording device which is not associated with a key that is depressed will be moved sufficiently by said operating parts to bring its cipher-type above the platen, the angle of the shoulder 7 being such that this movement of the recording device will not affect the position of the coacting catch G.

When after the setting of the recording devices by the keys the shaft 922 of the machine is set in motion, the forward ends of the arms H will be caused to descend, carrying the catches with them, by reason of the bar 16 being moved upwardly by the arm 903.

Where a recording device has moved but one step, (neither of the coöperating keys having been depressed,) the descent of the coacting catch will bring its lug 10 against the shoulder 7 and the catch will be thrown forward out of engagement with the detent F, which will not be operated. Where, however, a recording device has been so shifted as to bring a type-bar bearing a digit into printing position, the shoulders 7 of such bars will be carried beyond the lugs 10 and the coacting catches will not be forced back on their descent, but will swing the connected detents to release the hammers, which will descend and strike the type-bars and print the numbers.

The hammers are all normally supported in their elevated positions by a cross-bar 558, mounted at the upper ends of arms 502, which rock about the axis of the pivot *w* and are actuated by a projection 900[a] on a cam on the driving-shaft 922, the parts being so arranged that said bar 558 will be removed from beneath the hammers before the latter are released by the catches G. Guides 600 are preferably arranged between the several hammers.

Each hammer on its descent will carry its bearing or lug 4 against the finger 12 of the next lower detent and shift the said detent so as to release the hammer which it engages, and the descent of this hammer will shift the detent coacting with the next lower hammer, and so on until all the hammers not released by the action of the catches are released in rapid succession, each by the movement of the next higher hammer.

As the hammers not released by the catches G are those coacting with the recorders which have been moved only sufficiently to bring the ciphers into printing position, the effect will be to print ciphers in line with the numbers caused to be printed by the depression of the keys.

As illustrated, the hammer consists of two pieces E and 3, both pivoted on the shaft Y. A stud 52 in each part E projects into an oblong slot 55 in the arm 3, and a spring 56, which bears on a stud 57 in the arm 3 and on the stud 52 on the part E, tends to keep the part E and the arm 3 in the relative position shown in the drawings, while allowing a slight independent motion of the part E in the direction of the arrow when the movement of the arm 3 is arrested by the stop 50.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. The combination with a series of recording devices and a hammer for each device, of a detent for each hammer, and a bearing carried by each hammer arranged to shift the next lower detent when the hammer descends, substantially as set forth.

2. The combination with a series of recording devices and a hammer for each device, of a detent for each hammer, means for shifting said detent as the recording device is brought to printing position, and a bearing carried by each hammer arranged to shift the next lower detent when the hammer descends, substantially as set forth.

3. The combination in an adding-machine, of the series of type-carrying levers, key-controlled means for positioning the type-carrying levers, a series of hammers, a detent engaging each hammer to prevent its descent, means for disconnecting the detents controlled by the action of the keys, and projections carried by the hammers whereby each detent is disengaged from its hammer by the projection of the next higher hammer, substantially as set forth.

4. The combination in an adding-machine, of the series of type-carrying levers, key-controlled means for positioning the type-carrying levers, a series of hammers each having a projecting arm and a lug or bearing thereon, a detent engaging each hammer to prevent its descent, means for disconnecting the detents controlled by the action of the keys, and fingers on the detents each arranged to engage the lug of the next higher hammer, substantially as set forth.

5. The combination of the series of recording devices, series of hammers, a detent engaging each hammer to hold it out of action, means whereby the release and movement of each hammer operates the next lower detent, a series of catches engaging the detents, means for shifting them to release the detents, and shoulders on the recording devices arranged to disconnect the catch from the detent when a recording device is not moved to a position to print a digit, substantially as set forth.

6. The combination with a series of recording devices having a series of hammers, of a detent for each hammer, and means operable by a hammer upon the release of the hammer from its detent for releasing the hammer of the next lower order, as set forth.

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

WILLIAM H. PIKE, Jr.

Witnesses:

EDMUND G. LANGHORNE,

EMILE C. BATAILLE.