

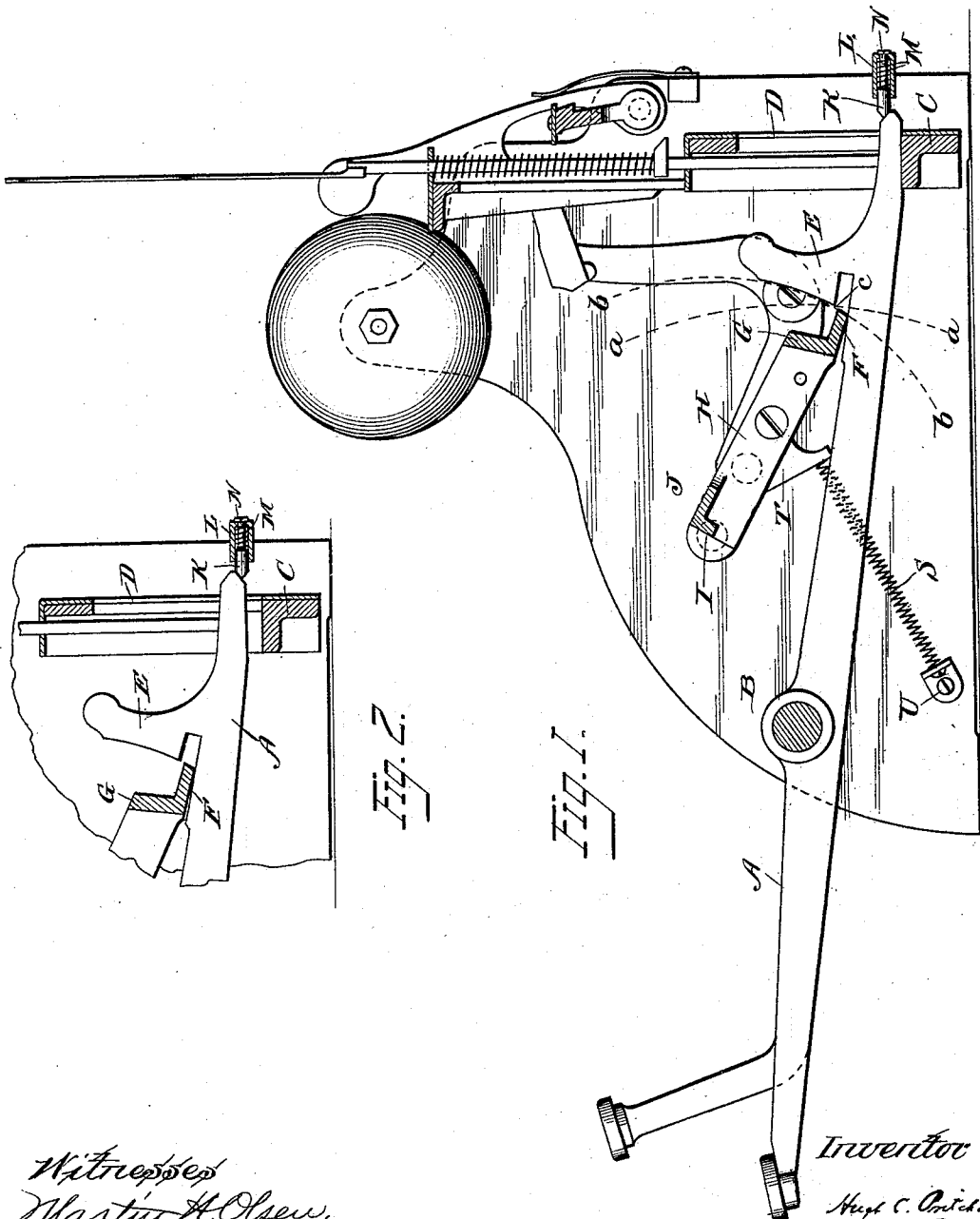
(No Model.)

2 Sheets—Sheet 1.

H. C. PRITCHARD.
CASH REGISTER AND INDICATOR.

No. 496,169.

Patented Apr. 25, 1893.



Witnesses
Martin H. Olsen,
Thomas Durant

Inventor
H. C. Pritchard
by Edward Reston
his atty

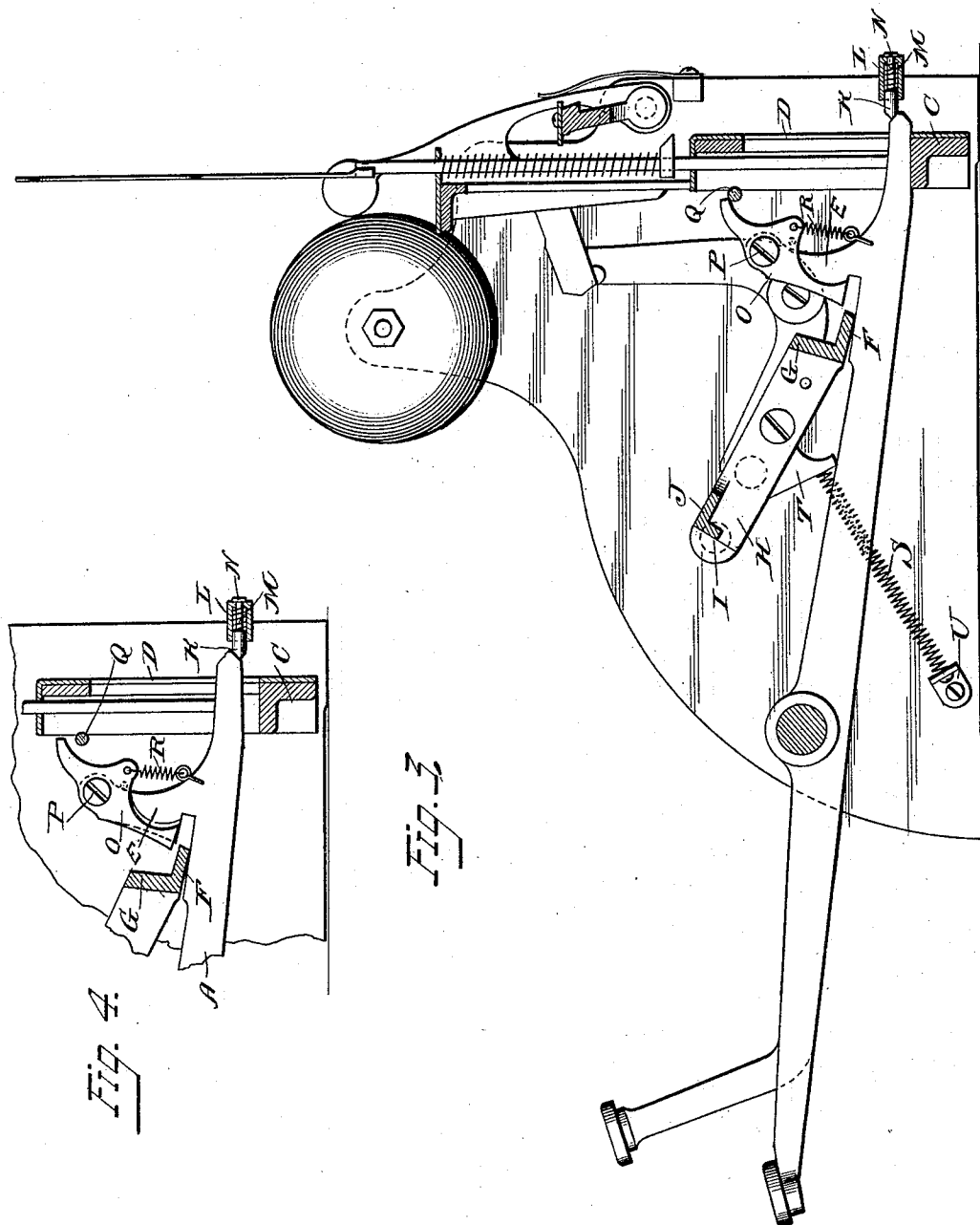
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CASH REGISTER AND INDICATOR.

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Witnesses
Martin H. Olden.
Thomas Durant

Inventor
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UNITED STATES PATENT OFFICE.

HUGH C. PRITCHARD, OF DAYTON, OHIO, ASSIGNOR TO THE NATIONAL CASH REGISTER COMPANY, OF SAME PLACE.

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 496,169, dated April 25, 1893.

Application filed January 4, 1893. Serial No. 457,217. (No model.)

To all whom it may concern:

Be it known that I, HUGH C. PRITCHARD, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented a certain new and useful Improvement in Cash Registers and Indicators, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a novel key coupling device for machines of this character, by means of which it is possible to operate with one hand any combination of keys desired by slightly depressing the keys in succession and then completing the strokes of all of them by fully depressing the last or any other one of them.

I am aware that it has heretofore been proposed to equip machines of this character with key coupling devices by which this general mode of operation could be carried out, but my invention involves a new combination of parts and a different mode of operation for accomplishing the same result; all as will be hereinafter set forth and particularly pointed out in the claims.

In the accompanying drawings Figure 1 represents a vertical section of so much of a cash register and indicator of well known form as is necessary to illustrate my invention; Fig. 2 an enlarged detail of the coupling devices shown in Fig. 1; Fig. 3 a vertical section corresponding to Fig. 1, showing some auxiliary coupling devices added to the construction shown in Fig. 1; and Fig. 4 an enlarged detail of the coupling devices shown in Fig. 3.

The same letters of reference are used to indicate identical parts in all the figures.

The operating keys are, or may be, of familiar construction, consisting of levers A hung upon a horizontal shaft B supported by the side-frames in the lower forward part of the machine. The rear ends of the levers A rest upon a cross-piece C of the frame-work in the lower ends of vertical slots in the usual guide plate D, by which slots the rear ends of the keys are guided in their vertical movements. The keys are provided upon their

upper sides near their rear ends with the usual slotted lugs or hooks E which co-operate with a flange F upon the rear side of a bar G extending across the entire series of keys and forming part of a vibrating frame composed of said bar, side-arms H at its ends by which it is pivoted to the side-frame of the machine at I, and a brace-bar J connecting the forward ends of the side-arms H.

The flanged bar G constitutes a well known form of key coupling bar and co-operates with the slotted lugs E in the following manner: It will be noticed that the point of the hook formed by the slot in the lug E moves upward in the arc *a-a* when the front end of the key lever is depressed, while the rear edge of the flange F moves in the arc *b-b*. The two arcs intersect each other at *c*, the result being that whenever the front end of a key lever is depressed and its rear end and the flanged bar G thereby lifted the flange F will enter the slot in the lug E and the key lever thereby become hooked to the bar G. If two or more keys be simultaneously depressed they will all become attached to the bar G in a similar manner, but it will be readily understood that two or more keys cannot be successively attached to the bar. If one key be depressed far enough to couple it to the bar, and be then released, it and the bar will at once drop back to normal position, unless some arresting device be applied to the bar, and even in the latter case while one operated key will be held from returning to normal position it will still be impossible to depress any other keys and catch them upon the bar.

My present invention consists in combining suitable arresting devices with the key levers, by which when the front end of any lever is slightly depressed and then released it will be caught and held from returning to normal position, so that any desired number of keys may be successively depressed a short distance and be held in their depressed positions by the arresting devices, and the adjustment of the parts is such that when the coupling bar is further lifted by the continued depression of any one of the keys which have been started its flange will enter the slots in the lugs of all of the slightly depressed keys

and they will all become attached to the bar and carried along with the key to which pressure is applied; all as will be hereinafter more particularly described.

5 The arresting devices applied to the keys may be of any suitable construction and arrangement, such, for instance, as spring catches or gravity catches co-operating with the rear ends of the keys; but in the present
10 instance I have shown them in the form of sliding plungers or rods K confined in bores in a bar L extending across the machine immediately in rear of the rear ends of the key levers. The rear halves of these sliding rods,
15 within the bores, are reduced in size and surrounded by coiled springs M confined between the rear ends of the bores and the shoulders formed on the rods. The forward movement of the rods under the pressure of the springs
20 is limited by the heads of screws N engaging the rear side of the bar L, the screws passing loosely through holes in said bar and entering the rear ends of the rods K. It will thus be seen that the rods K are free to be forced
25 rearward against the resistance of the springs N, and when released will be thrown forward to normal position by said springs. The front ends of the rods K are beveled in opposite directions upon their upper and lower sides
30 and project immediately over the rear ends of the key levers when the latter are in normal position, the rear ends of the key levers being preferably beveled to correspond to the beveled ends of the rods K. Under the
35 above construction, whenever the front end of a key lever is depressed its rear end in rising will force its co-operating rod K rearward until it clears the end of said rod, whereupon the latter will spring forward beneath the end of the key, and if the key be
40 then released the rod K will support it and prevent it returning to normal position, as shown in Fig. 2. In this position of the parts the point of the hook of the slotted lug of the
45 operated key stands slightly above the upper edge of the flange F of the coupling bar, and immediately in the path of travel of the latter, see Fig. 2, so that if the coupling bar be now lifted its flange will catch the hook of
50 the slightly depressed key and the key will become coupled to the bar and carried with it. It will thus be seen that if any one or more keys be slightly depressed and then released and held by the spring plungers in the
55 position indicated by the dotted lines, and any other key be then depressed to its full extent and the coupling bar G thereby lifted, the flange of the latter will engage the points of the hooks of all of the slightly depressed
60 keys and carry the keys with it. In this manner and by this means it is possible to start any desired number of keys and then complete the operation of all of them by fully depressing any one or another of them.

65 It has heretofore been proposed to successively couple several operating keys to a

coupling bar or frame by means of several coupling pawls or plates carried by the main coupling bar or frame, so that one operating key could be caught upon one coupling pawl
70 or plate, another upon another, and a third upon a third, and the operation of all the keys be completed by giving the main coupling frame a full movement by depressing any one or another of the keys; but so far as I am
75 aware I am the first in the art to produce a combination of parts by which two or more keys can be successively coupled to a single rigid coupling bar, and my invention in this respect contemplates broadly the combina-
80 tions set forth in my respective claims, without regard to the particular construction and arrangement of the parts.

In Figs. 3 and 4 I have shown the operating key levers provided with auxiliary coupling
85 plates O pivoted at P to the upper ends of the lugs E. When the operating keys are in normal position the upper rear ends of the plates O rest upon a rod Q extending entirely across the machine and are held in
90 normal position by said rod against the stress of springs R connected to the plates and to the key levers and tending to throw their upper ends rearward and their lower ends forward. Whenever the front end of any key
95 lever is depressed and its rear end lifted its plate O is carried away from the rod Q and its spring permitted to throw the lower end of the plate forward over the flange F of the coupling bar G and thereby immediately
100 couple the key to the bar. If the key lever be released it will be caught and held by the spring plunger K at its rear end, and if any other key lever be then depressed the lower end of its plate O will be thrown slightly forward
105 against the rear edge of the flange F at the first movement of said second key lever and as the rear end of the lever continues to rise the lower end of its plate O will yield as it passes the edge of the flange F and then
110 spring forward and catch over the flange. In this manner and by this means any desired number of keys may be successively coupled to the bar G, for the purpose described.

The coupling bar is yieldingly held in and
115 returned to normal position by a coiled spring S connected at its upper end to an arm T upon one of the side-arms H of the bar and at its lower end to a cleat U upon the side frame of the machine. The spring S is of
120 sufficient strength to return the coupling bar and operated keys to normal position after the keys have been given a full stroke and released, the lower beveled sides of the rear ends of the key levers permitting them to
125 press back the spring plungers K and pass them as they come to normal position.

As heretofore stated, any other suitable arresting devices for the keys may be substituted for the spring plungers K, and even
130 where such spring plungers are employed it is evident that they might be carried in bores

in the rear ends of the keys and co-operate with a fixed bar, instead of being arranged in the manner shown and described.

Having thus fully described my invention,
5 I claim—

1. The combination of a series of key levers, each provided with a hook, a coupling bar hung upon a pivotal support eccentric to the fulcrum of the key levers and provided
10 with a flange adapted to engage the hooks upon the levers when the latter are operated, and suitable arresting devices co-operating with the key levers to prevent return of them to normal position after they have been slightly
15 depressed, substantially as and for the purpose described.

2. The combination of the key levers A fulcrumed on the shaft B and provided with the hooks consisting of the slotted lugs E, the
20 coupling bar G hung by arms H upon pivotal supports at I and provided with the rearwardly projecting flange F adapted to co-op-

erate with the slotted lugs E, and suitable arresting devices, as the spring plungers K, co-operating with the rear ends of the key
25 levers A, substantially as and for the purpose described.

3. The combination of the key levers A fulcrumed on the shaft B and provided with the slotted lugs E, the coupling bar G hung by
30 its arms H upon pivotal supports at I and provided with the rearwardly projecting flange F adapted to co-operate with the slotted lugs E, the plates O pivoted to the lugs E and adapted to co-operate at their lower ends
35 with the flange F on the coupling bar, the springs R and rod Q co-operating with the plates O, and the arresting devices co-operating with the rear ends of the key levers, substantially as and for the purpose described.

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Witnesses:

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