

Sept. 3, 1946.

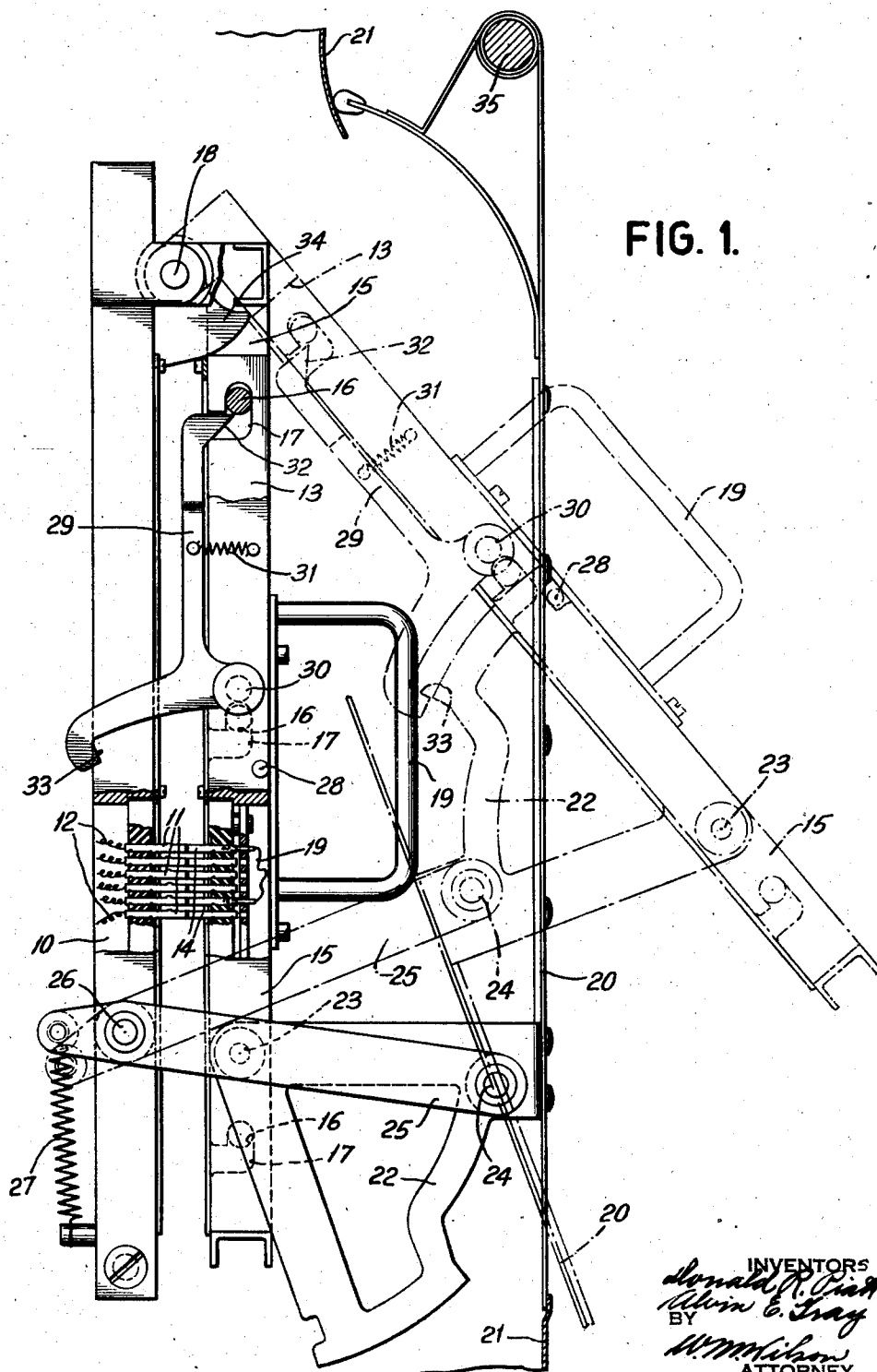
D. R. PIATT ET AL

2,407,176

PLUGBOARD

Filed Dec. 12, 1944

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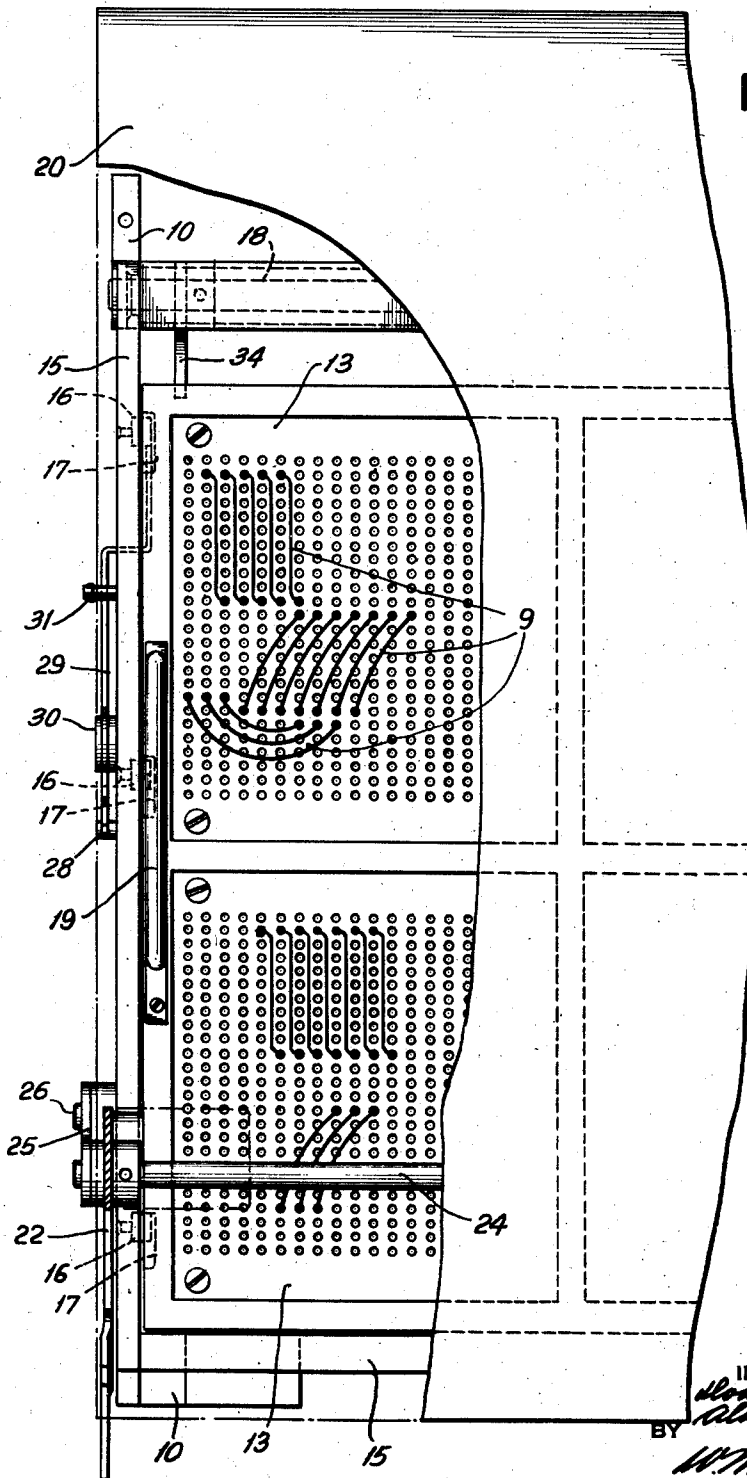
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FIG. 2.



INVENTORS
Donald R. Piatt
Ralph E. Gray
BY
W. M. Milburn
ATTORNEY

UNITED STATES PATENT OFFICE

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PLUGBOARD

Donald R. Piatt, Endicott, and Alvin E. Gray,
Binghamton, N. Y., assignors to International
Business Machines Corporation, New York,
N. Y., a corporation of New York

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3 Claims. (Cl. 173—328)

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This invention relates to electric plugboards for perforated record controlled accounting machines.

In these machines separate columns of data on record cards are analyzed by separate sensing brushes, which are electrically connected to control magnets to effect the proper operation of accumulating and printing as well as other operations of the machines. The electric sensing brushes of the various card columns are connected to the desired columns of printing type and different orders in the accumulating devices or to other control elements of the machine. The means interconnecting the brushes and these other parts of the machine include wire connected jacks which may be plug connected between any of the brushes and any of the columns of orders of printing and accumulating devices or other control devices.

It has become the practice to provide a so-called setup plugboard for the machine, on which there are columns and rows of sockets interconnectible by removable plug wires. A frame or holder is provided as part of the machine body into which the plugboard is inserted for cooperative action with the machine. Such a plugboard and receiving frame are illustrated in Lake Patent No. 2,111,118 granted March 15, 1938. When it is required to change the plugging arrangement, it has been necessary with present arrangements to bodily remove the plugboard from its frame and from the machine, so that it may be laid upon some horizontal surface in order to have access to the plug connections.

It is the principal object of the present invention to provide a frame mechanism into which the plugboard may be inserted and which is arranged to swing the plugboard from its contact making position into a position where the plugging face of the board lies in such a position that a change in the plugging arrangement may be made without removal of the plugboard from the supporting frame.

Other objects of the invention will be pointed out in the following description and claims and illustrated in the accompanying drawings, which disclose, by way of example, the principle of the invention and the best mode, which has been contemplated, of applying that principle.

In the drawings:

Fig. 1 is a side elevation of the plugboard frame mechanism with the operating position shown in full lines and the open or plugging position shown in dotted outline.

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Fig. 2 is a partial front elevation of the mechanism looking toward the left in Fig. 1.

Referring to the drawings, the support 10 is permanently secured to a machine such as an accounting machine. This stationary member is provided with a plurality of contact members 11, some of which are adapted to be connected by wires 12 to the sensing brushes of the machine while others are connected to printing, accumulating and various control parts. The removable plugboard 13 is provided with cooperating contact members 14 which make electrical contact with members 11 when the parts are in the full line position shown.

The plugboard 13 is positioned within a frame 15 where it is supported on pins 16 (see Fig. 2) riveted in frame 15. Bayonet slots 17 are cut in the ends of the plugboard 13 for engagement with the pins 16. The frame 15 is pivoted for rocking on a rod 18 supported in suitable brackets on the stationary member 10, and through the mechanism yet to be described the frame may be rocked counterclockwise to the dotted line position. When in such position, handles 19 affixed to the plugboard 13 may be grasped to slide the plugboard slightly upward to disengage the slots 17 from pins 16 and then lifted bodily out of the frame.

This dotted line position of the frame and plugboard enables the operator to make changes in the arrangement of plug wires 9 without removing the board from the frame.

Extending parallel to frame 15, when the frame is in its full line or closed position, is a door 20 which provides a closure in the casing 21 of the machine. Integral with door 20 is a cam shaped member 22 which has a pivotal connection at 23 with frame 15. The cover 20 also supports a rod 24 which serves as a pivot for link 25 whose other end is pivoted at 26 to the stationary member 10. A spring 27 serves to bias link 25 in a counterclockwise direction.

When it is desired to "open" the mechanism, handle 35 attached to the cover 20 is grasped and the upper end of the cover is moved downwardly in an arc with rod 24 serving as the pivot point, to the dotted line position. This rocking of the cover will carry member 22 with it and cause pivot 23 to swing counterclockwise and in turn rock frame 15 about its pivot 13 to the dotted line position as shown. The extent of rocking of the parts is limited by engagement of member 22 with a pin 28 in the frame, and it will be observed that in this open position frame 15 is locked against clockwise movement since any

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pressure now exerted directly against the frame, as by the operators leaning thereon while making plugging changes, is resisted by link 25 acting through member 22 and pin 28.

To "reclose" the mechanism, cover 20 is rocked back to its full line position, with the initial rocking causing counterclockwise rotation of member 22. Provision is made for preventing the reclosure if the board 13 is not fully seated in the frame by pivoting a latch 29 at point 30 of the frame with a spring 31 urging a nose 32 into bayonet slot 17. If the board is not fully seated, the lower edge of the bayonet slot 17 will hold nose 32 away to cause hook 33 to engage member 22 and lock the member and cover 20 against movement.

Further provision is also made in the form of an arcuate plate 34 to lock the board in seated position immediately upon the closing of the apparatus and throughout subsequent operations until the board is again in its fully open or dotted line position. This plate 34 is located adjacent the upper edge of board 13, so that such edge is under plate 34 at all times except in the open position.

While there have been shown and described and pointed out the fundamental novel features of the invention as applied to a single modification, it will be understood that various omissions and substitutions and changes in the form and details of the device illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention. It is the intention therefore to be limited only as indicated by the scope of the following claims.

What is claimed is:

1. In a machine having a stationary plug-board panel, the combination of a plugboard supporting frame pivoted at the upper end of 40

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said panel, a plugboard insertible in the frame and swingable with the frame to move the plugging face of the board outward and upward to an accessible plugging position, a member pivoted to the frame, a link pivoted to the stationary panel, said member and link being articulated to form a toggle to hold the frame in its plugging position, a latch for locking said member to the frame, and means controlled by the plug-board when it is not set in a predetermined location in the frame for causing the latch to lock the frame in plugging position.

2. The invention set forth in claim 1 in which a stationary guide is located in the path of movement of the plugboard to prevent movement of the board in its frame when the frame is out of its plugging position.

3. An interconnecting plugboard for accounting machines comprising a fixed set of contacts and supporting means therefor, a movable set of contacts engageable with the fixed set, a supporting frame for the movable set of contacts, pivotal means for holding the frame in a vertical plane when the sets of contacts are engaged, 25 a cover plate parallel to said frame, said frame pivotally supporting said cover plate near its lower extremity, a single link pivotally connected at its opposite ends to the cover plate and the said supporting means, the pivot point of the cover plate on the frame lying in a straight line 30 through the pivot points of the link and intermediate the same, said link and cover plate being arranged when the cover plate is rocked about its pivot to cause the frame to rock about its pivot with the surface thereof nearest the cover plate moving outwardly and upwardly to render the set of contacts therein accessible for plugging.

DONALD R. PIATT.
ALVIN E. GRAY.