Sept. 15, 1936. E. MEIER 2,054,385

REGISTERING CARD INDEX TRAY

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Fig. 1.

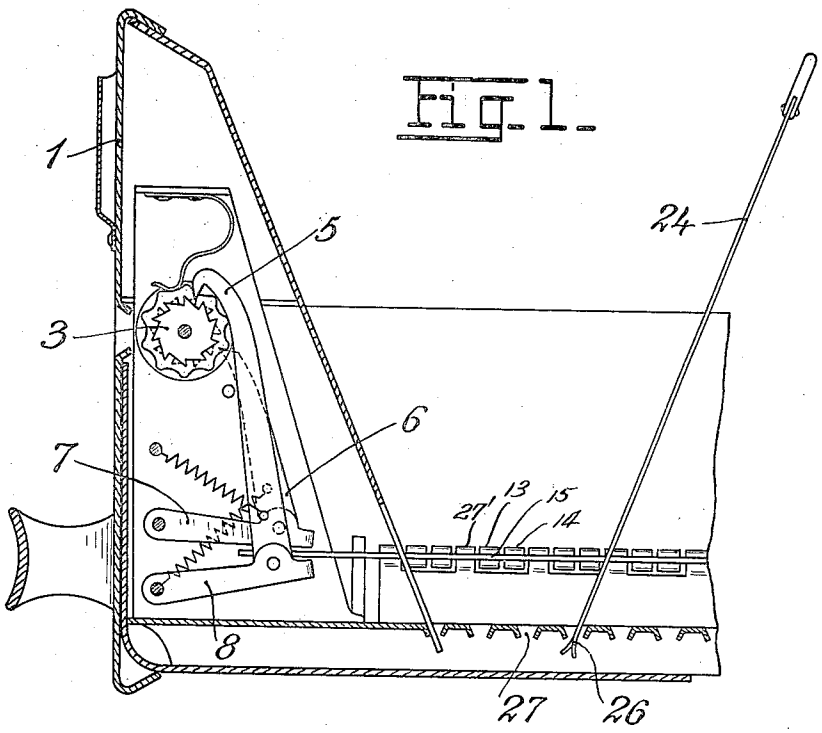
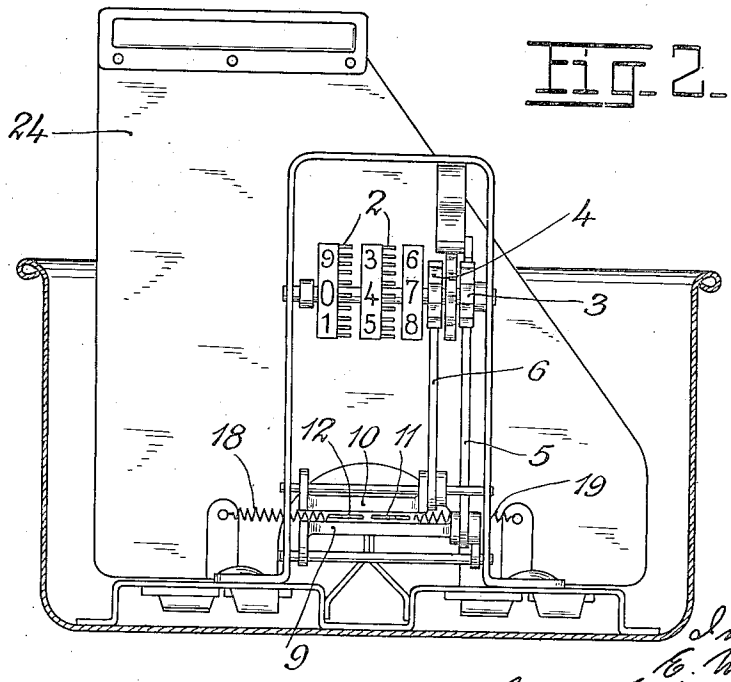


Fig. 2.



Inventor:
E. Meier,
By E. F. Wendroth
Atty

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Fig. 3.

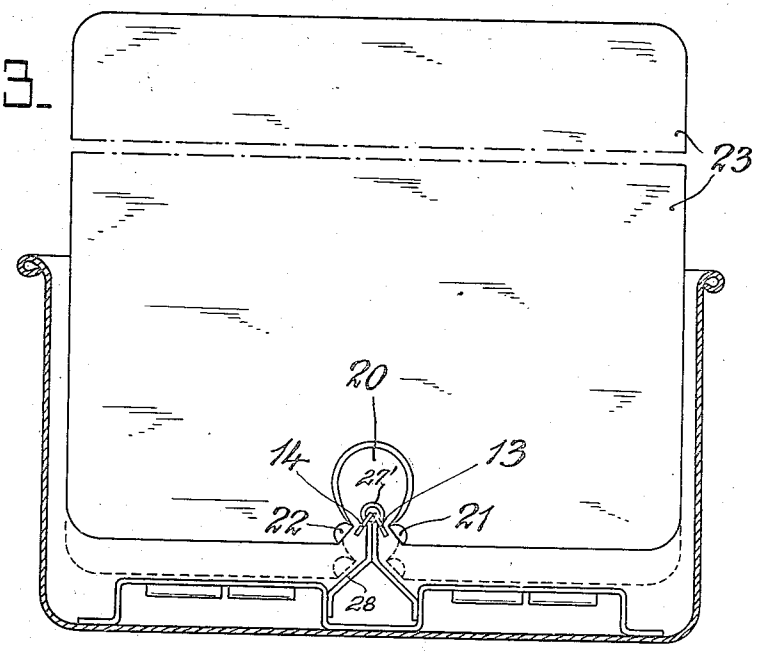
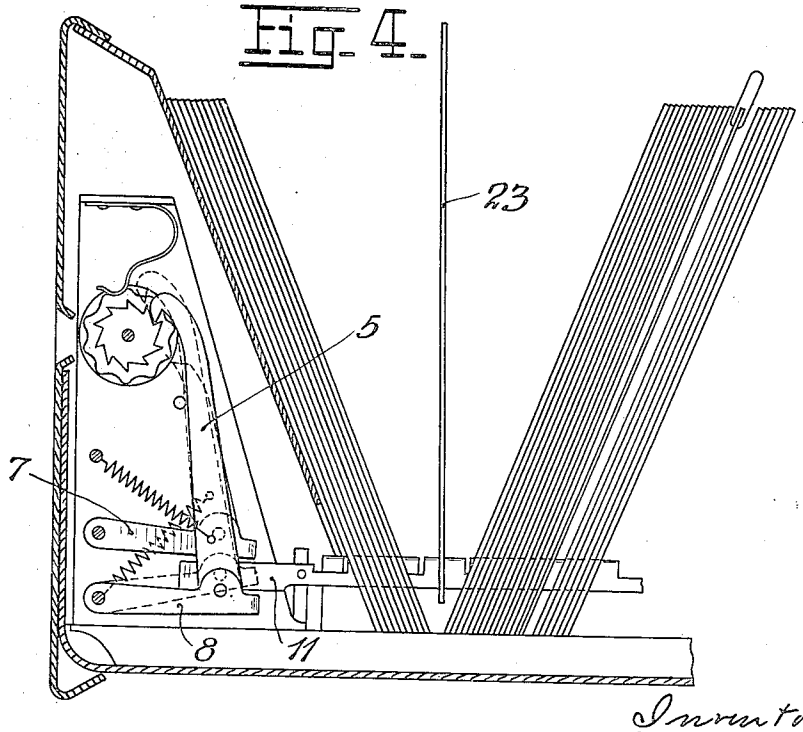


Fig. 4.



Inventor:
E. Meier
By E. F. Wendroth
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REGISTERING CARD INDEX TRAY

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Fig. 5.

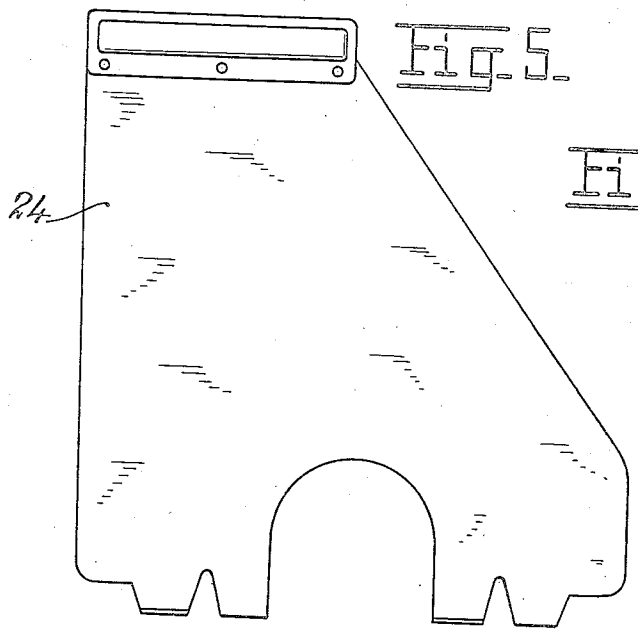


Fig. 6.



Fig. 7.

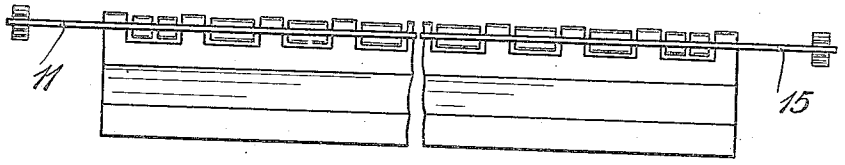


Fig. 8.

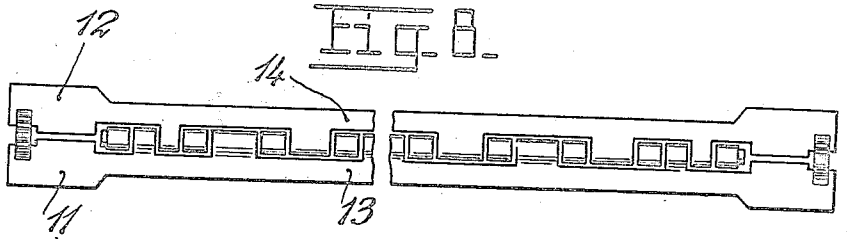
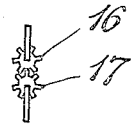


Fig. 9.



Inventor:
E. Meier
By E. F. Wenderoth
Atty

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UNITED STATES PATENT OFFICE

2,054,385

REGISTERING CARD INDEX TRAY

Erling Meier, Fornebo, near Oslo, Norway, assignor to A/S Elektrisk Bureau, Oslo, Norway

Application February 14, 1935, Serial No. 6,548
In Norway February 14, 1934

2 Claims. (Cl. 235—91)

The present invention relates to a card index tray which is provided with a counting mechanism adapted to be actuated in such a manner by the index cards, that it will automatically register and indicate the number of cards in the tray and also continually register cards which are put in or taken out later on.

In order to achieve this object the card index tray or drawer is provided with a counting mechanism, which is actuated in such a manner by the cards that the counting mechanism is advanced one unit, when a card is inserted, whereas one unit is deducted each time a card is taken out.

The counting mechanism can be of any conventional type provided with a two-way ratchet mechanism and should preferably be so located that the numbers are visible through a window at the front of the tray or drawer.

The actuating of the counting mechanism in one sense or the other is caused by means of actuating members extending along the whole depth of the tray or drawer and adapted to cooperate in such a manner with suitable notches or openings in the card, that they will move the counting mechanism one unit forwards when a card is inserted and one unit backwards when a card is taken out.

A suitable form of a registering card index tray in accordance with the invention is illustrated on the drawings:

Fig. 1 is a partial longitudinal section of a card index tray or drawer with registering mechanism,

Fig. 2 is a section of the tray or drawer taken immediately behind the front wall,

Fig. 3 is a cross section of the tray or drawer during the insertion of a card.

Fig. 4 is a longitudinal section through part of the tray or drawer and the registering mechanism during the insertion of a card,

Figs. 5 and 6 illustrate a division card in front and side view.

Figs. 7, 8 and 9 are side view, plan and end view of the members by means of which the cards actuate the registering mechanism.

As it will be seen on Figs. 1 and 2 a counting or registering mechanism is located immediately behind the front pane 1 of the tray or drawer, said mechanism being adapted to be actuated by means of a two-way ratchet mechanism comprising ratchet wheels 3, 4 and pivoted spring actuated ratchet pawls 5, 6. Said ratchet pawls 5, 6 are pivotally connected with the free end of pivoted ribs 7, 8, which carry transverse arms 9, 10, which extend parallel to each other a slight distance apart.

Between the transverse arms 9, 10 are located the end flaps 11, 12 of two hinged ribbons or strips 13, 14, which extend along the whole depth of the tray or drawer, and which may swing upwards and downwards about the long hinged pin 15.

The said hinged strips or ribbons 13, 14 are illustrated on Figs. 7, 8 and 9 on which it will be also seen that they are in engagement with each other by means of small pinions 16, 17, so that they will always perform symmetrical pivoting movements.

The ribbons or strips 13, 14 are maintained in normal position by means of suitable springs, such for instance as indicated on Fig. 2 at 18 and 19.

It will be understood that in case the strips 13, 14 are turned upwards from their middle position, they will act to lift pawl 6, which causes a retracting movement of the counting mechanism, so as to deduct one unit. If on the other hand they are turned downwards, they will act to pull the pawl 5 downwards, as indicated on Fig. 4, thereby causing the counting mechanism to move forwards one unit.

The manner in which the strips 13 and 14 are maintained in position in the tray together with the supports and mountings therefor are clearly shown in Figures 1 and 3. In Figure 3 the supporting member for the pin 15 is indicated as an inverted Y-shaped member 28 having loops 27' at the top thereof into which the pin 15 fits in the same manner as an ordinary hinge. The loops upon the member 28 are clearly shown in Figure 1 and in between these loops the hinge members upon the strips 13 and 14 are clearly shown.

The springs 18 and 19 as shown in Figure 2 are connected to or near the outer edge of the flaps 11 and 12 and the springs 18 and 19 tend to keep the flaps and the strips 13 and 14 in the normal horizontal position.

The card utilized in connection with this card index tray or drawer is provided, as indicated on Fig. 3, with a notch or incision 20 at the middle of its lower edge, the said incision being given the form of an oval or horseshoe which is so connected with the lower edge, that there is formed on both sides of a comparatively narrow opening pointed parts 21, 22. The incision 20 preferably has its edge provided with a reinforcement of sheet metal or the like, in case the cards are not

made of a very tough and wear resistant material.

When a card of this form is introduced into the tray or drawer, the points 21, 22, as it appears from Fig. 3, will press the hinged strips 13, 14 downwards, and the flaps 11, 12, which are located between the transverse arms 9, 10 on the pivoted ribs 7, 8, will then, as it appears from Fig. 4, pull arms 8 downwards, whereby the pawl 5 will be moved from the position indicated in dotted lines to the position indicated in full lines, advancing the counting mechanism one unit.

If a card 23 is removed after having been placed on the bottom of the tray or drawer, the points 21, 22 will pull the hinged strips 13, 14 upwards, and the flaps 11, 12 will consequently lift arm 7 with pawl 6 so as to move the counting mechanism one unit backwards.

In connection with the registering card index tray or drawer with cards it is preferred to use division cards of the type indicated on Figs. 5 and 6.

These division cards 24 may be made of a suitable sheet metal or the like, and are provided with a wide incision 25 in their lower edge, so that they go quite clear of the hinged strips 13, 14. The lower edge is further provided with tongues 26, which are alternately bent slightly to opposite sides, and which are inserted into slots 27 in the bottom of the tray or drawer, whereby it is obtained that the division cards 24 can only be turned a limited angle off the vertical position. In this manner the division cards act to support the usual index cards, so that the latter are prevented from falling backwards or forwards, whereby an undesired actuating of the registering mechanism might take place.

I claim:

1. In a card index tray or drawer a counting mechanism operable in opposite directions, ratchet pawls one for operating said counting mechanism forwardly, and another for operating it backwardly, a strip pivoted along one of its edges and extending along the whole depth of the tray or drawer, said strip being operatively connected with said pawls to actuate one or the other of said pawls when turned in one direction or the other about its pivot.

2. In a card index tray or drawer a counting mechanism operable in opposite directions, ratchet pawls one for operating said counting mechanism forwardly, and another for operating it backwardly, two strips extending along the whole depth of the tray or drawer, said strips being hinged to a common hinge pin and being normally held yieldingly in horizontal position, and flaps on said strips cooperating with said pawls, so as to actuate one of said pawls when the strips are pressed downwards and the other pawl when the strips are pulled upwards.

ERLING MEIER.