

Jan. 28, 1969

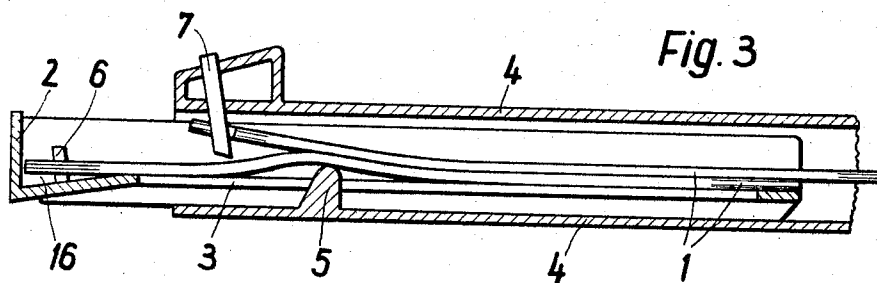
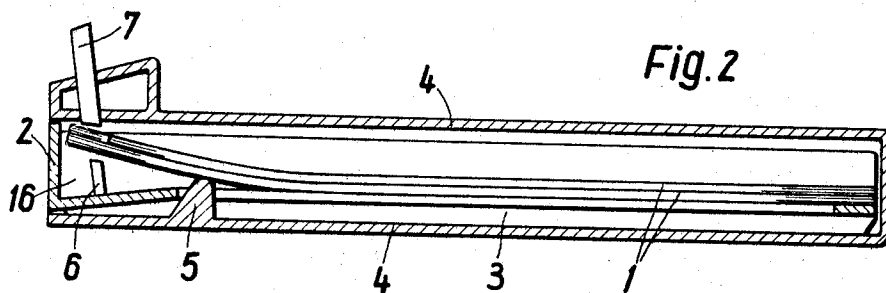
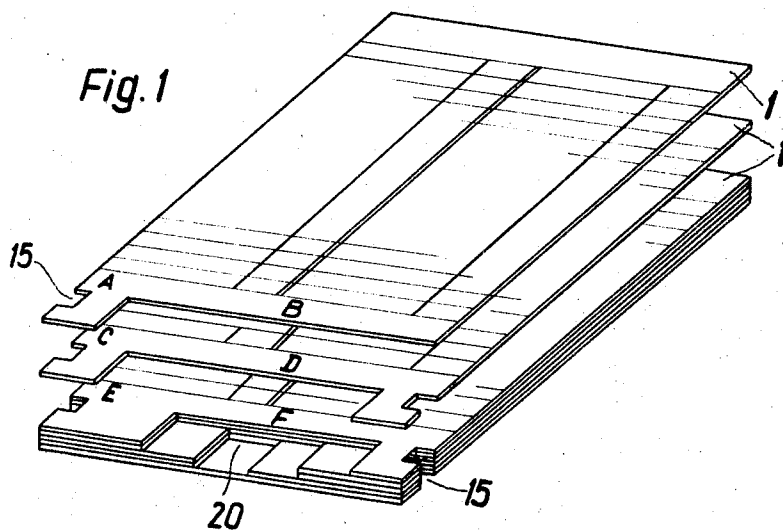
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3,423,862

CARD INDEX WITH SELECTING MEANS

Filed March 18, 1966

Sheet 1 of 2



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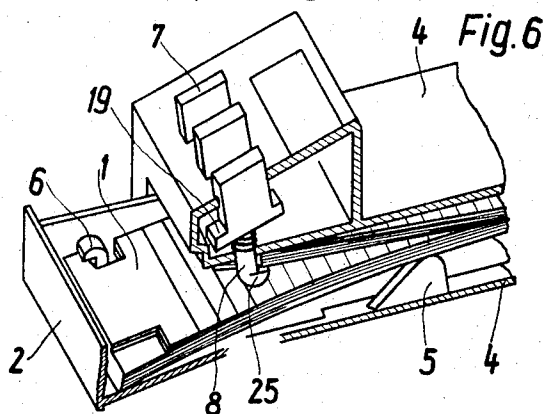
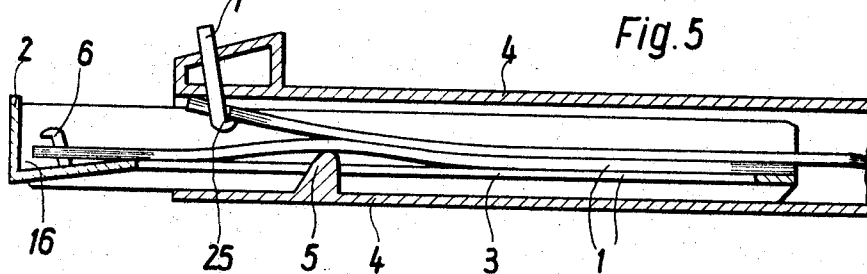
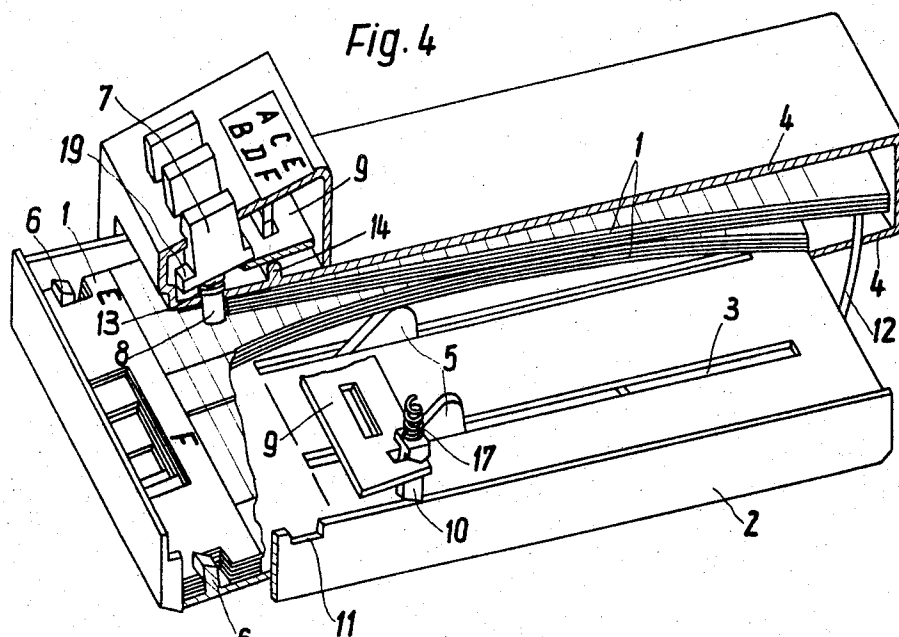
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Sheet 2 of 2



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CARD INDEX WITH SELECTING MEANS

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6 Claims

ABSTRACT OF THE DISCLOSURE

A card index having a plurality of flexible superimposed index cards mounted in a drawer movable in a case. The cards have entrainment recesses which are in register and selector recess which are different in width for successive cards. A plurality of selector means are mounted on the case which, when depressed, bend the card, and cards beneath it, to a position wherein it is engaged on an entrainment member and the drawer is released to withdraw from the case carrying the selected card in the uppermost position.

The invention relates to a card index, consisting of a case with a drawer (acted on by a push spring and closed by a fillet) for accommodating index cards with reference numbers, letters and so on, and with a device for unlocking the drawer and releasing the index card selected by means of a set key, pushing out the unlocked drawer by means of the push spring.

It is known to provide a mechanical card index with a drawer for accommodating index cards and with a device making possible the release of the particular index card desired and selected. In this known type of construction there is provided in the front third of the drawer a pivotable lid covering the index cards and having a slider type key by means of which the desired index card is selected. In this connection the key is provided with a bent-over tongue-shaped projection which is guided in stepped recesses provided in the front edge of the index cards and engages under the selected index card. The key simultaneously serves for releasing the devices locking the drawer which is controlled by a push spring. After the desired index card has been selected by moving the key and simultaneously the drawer drive system unlocked, the drawer is forced out of the case, the lid of the drawer being simultaneously swung up to release the selected index card.

In known card indexes two manual operations are necessary to release a given index card; to set the selected index card the key must be moved, and only after this the same key is used to unlock the drawer drive. As the cards lying over the selected index card are gripped by the swung-up lid and transferred by this into a vertical position, only a small surface is available for writing on the index cards, corresponding in fact to about a third of the total surface area of the drawer. Furthermore it is difficult to withdraw individual index cards to write on them. The cards must be drawn out of the yoke holding them. The swung-up lid partly covers the selector dial of the telephone apparatus applied on the index case so that this is not freely available. In the case of known card indexes additional devices are necessary when using a drawer lid which can be swung up, and these seriously increase the liability of the apparatus to accident.

The object of the invention is therefore to provide a card index of simple construction, permitting writing on and withdrawal of individual cards from the drawer without difficulty and which can be operated by one manipulation. This object is attained in accordance with the invention in that in a card index consisting of a case with a drawer acted on by a push spring and closed by means of

a fillet, for accommodating index cards with reference numbers, letters or the like—and this is what forms the invention—the bottom of the rearwardly open drawer is provided with parallel longitudinal slots for the passage of snug type cams, which are fixed to the bottom of the box type case and are at a predetermined distance from the case opening, corresponding, when the drawer is pushed in, to the length of a base part of the drawer bounding a recess and falling away obliquely in relation to its front wall, at the longitudinal edges of which drawer there is provided in each case an entrainment member for engagement in correspondingly shaped entrainment recesses of the index cards of resiliently elastic material, which have index type selector recesses provided at the adjacent end face for engagement of the selector keys acting on the fillet for closing the drawer, in such a way that is to say that when a selector key is pressed down the selected index cards are bent down with any stack of cards lying below over the cams and are pressed into the recess and in the entrainment element of the drawer, after which the fillet is swung out of its locking position.

For swinging the fillet out of a catch element of the drawer accommodating the fillet there is provided in the path of travel of the selector keys a control rail which can be struck by these and can be tipped transversely to their longitudinal direction round a sung, in which rail, on the longitudinal side opposite the selector keys, the fillet (pressed by the action of a spring into the catch element of the drawer) is guided and supported during the swivelling out.

Each selector key is under the pressure of a counter-spring and has two lateral shoulders bounding the upward thrust produced by a spring, and below these a pin adapted to the profiles of the selector recesses of the index cards.

In a further feature of the invention the selector recesses of the index cards extend at their front ends stepwise from the left and from the right longitudinal side to the center of the index cards; their size decreases in conformity with the alternate staggering with each index card lying below.

An example of an embodiment of the invention is represented in the drawing and described in more detail in what follows. In the Figures:

FIGURE 1 shows a multiplicity of superimposed index cards with selector recesses provided at their ends, viewed in perspective.

FIGURE 2 is a vertical longitudinal section of a card index.

FIGURE 3 shows the card index as in FIGURE 2, but with the drawer partly run out.

FIGURE 4 shows the card index, partly in perspective and partly in section.

FIGURE 5 is a further form of embodiment of a card index in vertical longitudinal section, and

FIGURE 6 is the card index as in FIGURE 5, partly in perspective, partly in section.

In a preferred form of embodiment in FIGURE 4 the card index constructed in accordance with the invention consists of a case 4 with a drawer 2, open at the rear end and guided on the bottom of the case, for accommodating a multiplicity of index cards. The index cards 1 are of resiliently elastic material; they are provided on their longitudinal sides, that is to say adjacent to the ends of the cards, with entrainment recesses 15. The ends of the index cards 1 have selector recesses 20, which extend stepwise from the left and from the right card longitudinal sides to the center of the index cards, and become smaller, in conformity with the alternate staggering, with each index card lying below. The alternate staggering is preferably so arranged that the left

hand steps are formed by the first, third, fifth and seventh cards and the right hand steps by the second, fourth and sixth cards (FIGURE 1).

The base of the drawer 2 (guided in the case 4), which is acted on by a push spring 12, is provided with parallel longitudinal slots 3 for the passage of snug-shaped cams 5 fixed to the bottom of the case. The cams 5 are at a predetermined distance from the opening of the case, corresponding when the drawer 2 is pushed in to the length of a bottom part of the drawer 2, bounding a recess 16 and sloping obliquely downwards in relation to its front wall; there is provided on its cheek-type longitudinal edges in each case an entrainment element 6 for engagement in the entrainment recesses 15 of the index cards 1.

There engage in the selector recesses 20 of the index cards 1 selector keys 7 which act on a fillet 10 to close the drawer 2. Each selector key 7 is under the pressure of a counter-spring 13 and has two lateral shoulders 19, which bound the upward thrust produced by the spring 13. Below the shoulders 19 each selector key 7 is provided with a pin 8, which is adapted to the profile of the selector recesses 20 of the index cards 1.

To close the drawer 2 the fillet 10 engages in a recess 11 provided in the longitudinal side wall of the drawer 2, that is to say adjacent to its end face. In order to be able to swivel the fillet 10 out of the recess 11, there is provided in the path of travel of the selector keys 7 a control rail 9 which can be struck by them and can be tipped transversely to their longitudinal direction round a snug 14 formed on the box-type case 4. There is guided in the control rail 9 on the longitudinal side (opposite the selector keys) of the fillet 10 pressed under the action of a spring 17 into the recess 11 of the drawer 2, which fillet is simultaneously supported on the control rail 9 during the swivelling-out.

In a further form of embodiment of the card index the pins 8 of the actuating keys 7 are made hook-shaped at their free lower ends. The hook-shaped pin portion designated by 25 is so arranged that when the actuating key 7 is pressed down the said pin portion engages under the card stack to be held back and thus holds this securely in position (FIGURES 5 and 6). The surfaces on the bottom side of the hook 25 are made arcuate, so that in its downward movement the pin 8 can be moved past the front edges of the index cards without damaging them. In order to avoid, when the key 7 is pressed down, the front section of the cards of the stack being lifted as the drawer 2 accelerate forward, the entrainment elements 6 are bent down in a hook shape at their upper free ends in the forward direction of movement of the drawer 2. The outer upper horizontal surface of the hook-shaped portion is formed arcuately as a journal surface.

The card index formed in accordance with the invention works as follows: When not in use the drawer 2 is held in the case 4. By means of the cams 5 guided through the drawer bottom the index cards 1 are easily lifted in the zone adjacent to their end face having the selector recesses 20, so that this portion of the cards comes to lie below the selector keys 7 (FIGURE 2).

If a selector key 7 is now actuated by finger pressure the pins 8 of this key press on the projecting index card corresponding to the key in the cut-out zone of the selector recesses 20 of the index cards 1 and bend this over the cams 5 with the other index cards (if any) lying below this index card, so far into the recess 16 of the drawer 2 that the entrainment elements 6 engage in the lateral entrainment recesses 15 of the index cards 1. Simultaneously any other index cards there may be remaining in the case are held back by the pins 8 in that the said pins 8 engage the index card or cards lying above the selected index card 1 through the particular larger selector recess concerned and thus prevent this index card and the other index cards lying above it, because of the forces of friction involved, from being carried out with the drawer 2 as this travels out.

During the further downward movement of the actuated selector key 7 this strikes the tippable control rail 9. The lever movement of the control rail 9 opposed in direction to the key movement causes the swivelling out of the fillet 10, resiliently pressed down by means of the spring 17, from the catch element 11 of the drawer 2. The control rail 9 and the fillet 10 are so arranged that the unlocking of the drawer 2 does not take place until the selected index card 1 with any other index cards lying below have been gripped by the entrainment members 6 engaging in the entrainment recesses 15 of the index cards and the index cards remaining in the case 4 are locked.

The forward movement of the drawer 2 is effected after the swivelling out of the fillet 10 from the catch element 11 by means of the push spring 12 preferably taking the form of a spreader spring. When the drawer 2 is moved forward, the index cards 1 gripped by the entrainment members 6 are simultaneously drawn out of the case 4, so that the selected index cards, if requisite as the uppermost of a stack of index cards, are fully available for inspection or for writing on. During the forward movement of the drawer 2 the index cards remaining in this slide away, because of the resiliently-elastic properties of the card material, over the snug-shaped cam 5 and through under the actuate pin 8 (FIGURE 3).

The extent to which the drawer 2 travels out is determined by the length of the slot 3 provided in the bottom of the drawer 2. The end of each slot can have a rubber bolster to reduce the noise made by the impact.

The back of the cam 5 nearest the front side of the appliance is made with such a marked level that after the removal of the index cards these can easily be inserted again in the correct stack sequence.

When the finger is removed from the actuated selector key 7 after operating the appliance, this is moved by the return spring 13 back again into the starting position determined by the shoulder 19. Simultaneously the release rail 9 releases the fillet 10 which catches in the recess 11 of the drawer 2. The fillet 10 is pressed back into the catch element 11, if after using the appliance the drawer 2 is pushed into the case 4. When the drawer 2 is pushed in, the push spring 12 is again placed under stress and the stack of index cards, as shown in FIGURE 2, passes into the selection position.

The card index constructed in accordance with the invention is superior to the known appliances, yet is simpler in design and easier to produce. If operated correctly any error in selection is excluded. The appliance is extremely simple to handle because of the automatic outward travel of the drawer and the manner in which the index cards lie completely free in this, i.e. are easily removable, for writing on and so on. If after the removal of an index card the drawer is accidentally closed, then by actuating the particular key assigned to the missing index cards, the particular corresponding index card stack travels out and the missing or removed index card can then be placed on it. The construction of the appliance is economical of space. The case accommodating the drawer for the index cards is formed as a base fitting, for a telephone apparatus for example, with a pedestal surface and base fillets. When the drawer has travelled out it does not in any way hide the selector dial of the telephone fitted on the case. The index card which has travelled out is visible. The hook-shaped construction of the lower free ends of the pins 8 of the actuating keys 7 also makes possible a short-period actuation of the selector keys 7, without an error in selection being thereby possible.

I claim:

1. A card index comprising a case having top and bottom walls, a drawer slidably movable relative to said case, said drawer having therein a plurality of flexible superimposed index cards, each of said cards having entrainment recesses therein which register when the

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cards are superimposed in said drawer, each card having a selector recess differing in width from the recess of other cards, and the cards being arranged such that the recesses in the cards are progressively wider from the first card to the last card, said case having transversely spaced snug-shaped cams mounted on the inside of the bottom wall adjacent the front of the case, said drawer having parallel longitudinal slots for accommodating said cams, a pair of card entrainment members integral with the bottom of said drawer received in said entrainment recesses, a plurality of transversely mounted and vertically reciprocal actuating keys supported on said top wall of said case and corresponding in number to the number of index cards, each of said actuating keys arranged to abut a non-recessed area of a different one of said cards, whereby vertical depression of one of said keys will bend a selected number of said cards over said cams for engaging said card entrainment members within said card entrainment recesses with selector recesses, and a push spring coacting between said case and said drawer constantly urging said drawer into an open position, releasable means maintaining said drawer in a closed position against the action of said spring, and means operable by depression of any of said keys for releasing said releasable means.

2. A card index according to claim 1 in which said releasable means for maintaining said drawer closed comprises a spring biased fillet engageable with a catch element in said drawer, said means for releasing said releasable means comprising a rail pivotally mounted adjacent said keys and adopted to be pivoted by actuation of a key to move said fillet against the spring bias to release the drawer.

3. A card index according to claim 1 in which each actuating key comprises a depending pin portion having

a profile adopted to the profiles of the selector recesses of the index cards, at least one laterally extending shoulder, spring bias means acting against said shoulder to normally keep said key out of contact with said cards.

4. A card index according to claim 3 in which the free lower end of the pin is angled downwards in the closure direction of the drawer and the bottom surface of the angled-down section is arcuately formed as a journal surface.

5. A card index according to claim 1 in which the selector recesses of the index cards extend stepwise at their front ends from the left and from the right along sides towards the center of said cards and are smaller in size correspondingly to the alternate staggering at each index card lying below.

6. A card index according to claim 1 in which the entrainment member is angled downwards in the outward travel direction of the drawer.

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U.S. Cl. X.R.

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