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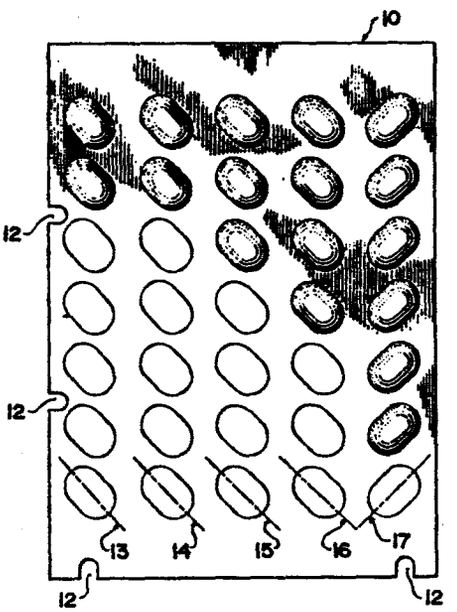
(54) Package for dispensing medication.

(57) A package for medication comprises a blister pack (10) in the form of a single blister sheet defining a plurality of pockets (11) filled with the medication and covered with a rear foil layer (30). In addition the blister pack (10) can be covered with an outside relatively permanent plastics cover (20, 21) including means for hanging the cover on suitable supports. The pockets (11) of the blister sheets are arranged in five columns of seven rows with four of the columns having elongate axes (13, 14, 15, 16) of the pockets inclined to the left and the final column having the axes (17) inclined to the right. This provides a readily visible indication that the user has reached the final column thus requiring reordering of further medications in a replaceable blister pack. A slight change in angle between the four left-wardly inclined columns prevents use of counterfeit medications.



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"PACKAGE FOR DISPENSING MEDICATION"

BACKGROUND OF THE INVENTION

This invention relates to a package for dispensing medication.

It is known for example from U.S. Patent 4,384,649 to provide a package for dispensing medication which comprises a pair of outer cover sheets which are hingedly secured together so that they can be opened and then latched together in a closed condition in which the sheets lie closely adjacent. In the closed condition the cover sheets surround and enclose a blister pack of the type comprising a flexible plastics sheet deformed to provide a plurality of pockets into each of which can be received a dose of the medication. The pockets are then closed by a frangible foil layer which covers the rear side of the blister sheet. The cover sheets include openings which cooperate with the pockets of the blister sheet so that the pockets are exposed through the openings. In this way the blister sheet is fully supported by a relatively rigid plastics cover sheet which is effectively a permanent structure and can be refilled with further blister packs. At the same time the pockets of the blister pack are exposed through the openings of

the cover sheet whereby the flexible blister sheet can be compressed and the dose of medication expelled through the frangible foil layer.

It is also known in packs of medication which cover a set period of time, for example a month, to provide indication on the package of a requirement for reordering a new supply for the following time period. The requirement can be printed on the package directly, for example using a different colour, in the area where the user has reached a point on the package which requires a reordering.

In the above described system where a replacable blister pack and backing sheet are encased in a relatively permanent plastics cover, it is much more difficult to provide a permanent printed record on the plastics cover which is sufficiently visible and effective to remind of the necessary reordering.

SUMMARY OF THE INVENTION

It is one object of the present invention, therefore, to provide an improved medication package of this type which more readily indicates the reordering period.

Accordingly the invention provides a blister pack for dispensing doses of medication, the pack com-

prising a sheet of flexible plastics material deformed to one side of the sheet so as to define a plurality of pockets each for receiving a respective dose, each pocket being elongate along a first axis so as to define a pocket length which is longer on said first axis than along an axis at right angles thereto, the pockets being arranged in a plurality of columns with a plurality of pockets in each column, said first axis of the pockets of all the columns except one end column being arranged to lie substantially parallel and inclined to one side of the respective column and said first axis of the pockets of the end column being arranged to lie substantially parallel and in a direction clearly visibly different from the pockets of the other columns.

The one end column can have the pockets arranged inclined in the opposite direction to the other columns with both being inclined at approximately 45° to the column itself.

According to further aspects of the invention, the above blister pack can of course be provided in combination with the medication itself and a backing sheet to form a replacable pack. Furthermore the so formed replacable pack provides a further aspect in combination with a pair of cover sheets which are rela-

tively permanent. In addition the cover sheets themselves provide a yet further aspect including openings shaped to cooperate with the pockets.

DESCRIPTION OF THE DRAWINGS

Figure 1 is a top plan view of a blister sheet according to the invention.

Figure 2 is an end elevational view of the blister sheet of Figure 1.

Figure 3 is a top plan view of the plastics cover sheets in an opened condition.

Figure 4 is a top plan view of the plastics cover sheets in a closed condition showing in a portion only of the cover sheets the blister pack of Figure 1 filled with suitable medication.

Figure 5 is a cross-sectional view along the lines 5-5 of Figure 4 on an increased scale.

DETAILED DESCRIPTION

A blister pack is indicated generally at 10 in Figure 1 comprising a sheet of flexible plastics material which is stamped to form a number of blisters or pockets 11. Each pocket 11 is of slightly elongate shape that is with semi-circular ends and straight sides defining a generally oval shape which is suitable to receive either circular pills or elongate capsules of medication.

The cross-section of the pockets is generally shown in Figure 2 where it will be noted that the pockets are upstanding from one side of the base sheet and have a flat base and slightly inclined sides so that the pockets can be simply formed by a stamping process from the flat flexible sheet.

At the same time as forming the pockets, cut-outs 12 can be provided on a side edge and a bottom edge of the rectangular base sheet.

Turning again to the pockets, it will be noted that these are arranged in five columns of seven rows each to provide a total of 35 pockets. The first four rows are as shown inclined so that the elongate axis of the pocket indicated relative to one pocket at 13 is inclined to the left relative to the direction of the respective column. The angle of inclination of the pockets of the four columns is of the order of 45°. The pockets of each column are inclined at the same angle as the top pocket illustrated respectively at 13, 14, 15 and 16. However, as is visible by careful inspection of the pockets, the angle of inclination varies slightly so that in the example shown the first pocket indicated at 13 has an angle relative to the column of 42°, the second pocket has an angle indicated at 14 of 44°, the angle indicated

at 15 is 45°and the angle indicated at 16 is 46°. However, these angles are exemplary only and can be varied depending upon design parameters.

The right hand column is arranged with the pockets providing an angle of the axis indicated at 17 of the order of 45° but inclined to the right of the column. Thus the pockets of the right hand column are clearly visibly distinct from those of the remaining columns.

Turning now to Figure 3, an outer cover of a relatively stiff plastics material is provided for receiving the blister pack of Figures 1 and 2. The cover comprises two sheets 20 and 21 of the plastics material connected at a hinge line 23 provided by separate hinge portions 22. A plurality of press fasteners are arranged around the periphery of the sheets 20 and 21 with one of the sheets, in this case the front sheet 21 having press studs 24 which are on the underside of the sheet as illustrated in Figure 3 and which cooperate with openings 25 in the sheet 20. Thus, there are two such press fasteners in the bottom edge, two in the side edge and three at the upper edge so that when folded together the sheets can be press fastened together to assume the condition indicated in Figure 4. Each of the sheets 20 and 21 is stamped to provide openings corresponding in

shape and location to the blisters or pockets of the sheet of Figures 1 and 2 and arranged so that when folded into the condition of Figure 4 the openings overlie and also overlie the pockets.

The rear sheet 20 also includes in the upper edge a pair of openings 26 which have lead in slots 27 so that the sheet can be simply clamped onto a pair of parallel bars which can pass through the slot 27 by flexing of the plastics material surrounding the slot and then can retain the sheet in position on the bars for example hanging vertically downwardly therefrom. The front sheet 21 has a pair of cut-outs 28 of sufficient size to clearly expose the slots 27 so that when folded the whole cover can be latched onto the bars as previously explained. In addition the front cover 21 includes a lower cut-out 29 which extends from the bottom edge upwardly to provide a rectangular opening through which a portion of the rear cover can be seen as illustrated in Figure 4.

In order to complete the blister pack using the sheet of Figure 1 and indicated at 10, the medication can be placed into the open pockets and then covered with a foil layer indicated at 30 in Figures 4 and 5 so as to encase the medication indicated at 31 within the pock-

ets.

A blister pack including the foil layer, the medication and the blister sheet can be sold as a replacement item for use with the plastic cover which is of an effectively permanent construction. In practice where commonly used medications are involved the blister sheet and foil layer together with the medication can be assembled at a suitable manufacturer or distributor of the medication. In other cases where the medication is less common or specifically tailored for a particular patient, a pharmacist can purchase blister sheets and assemble these together with the medication and foil layer in a suitable simple machine of conventional type.

The blister pack incorporating the medication and foil layer is then assembled into the cover by placing the pockets or blisters through the front cover 21 and then closing the rear cover 20 to encase the rear surface. This condition is illustrated best in Figure 5. Medication can then be extracted from the pockets by depressing the blister sheet and expelling the medication through the foil layer to drop out rearwardly of the rear cover 20. It is arranged that the extraction of the medication starts at the top left hand pocket of the arrangement as illustrated in Figure 4 so that the first

28 medication doses can be expelled by applying the thumb of the user along the axis of the elongate pocket to depress the pocket and expel the medication.

However, when the fifth column of medication is reached and therefore it is necessary to reorder a further package to continue the supply of medication, this will be clearly apparent to the user by the changing orientation of the axis of the pocket. This change is clearly visible and also the changing orientation requires the user to re-orient the relevant pocket relative to the thumb so as to properly depress and expel the medication.

The cut-out 29 and also a further rectangular cut-out 291 adjacent the top edge of the front cover 21 allows written information to be exposed for reading by the user giving relevant details relating to the medication. Such written information can be carried on the front surface of the blister sheet as a printed label attached thereto by suitable adhesive.

The slight change in inclination between the pockets of the four left hand columns avoids the possibility of improper or counterfeit medications being used in the cover. This reduces the possibility of incorrect medications being given to patients since only the proper

or authorized blister sheets and medications can be used with the cover.

CLAIMS

(1) A blister pack for dispensing doses of medication, the pack comprising a sheet of flexible plastics material deformed to one side of the sheet so as to define a plurality of pockets each for receiving a respective dose, each pocket being elongate along a first axis so as to define a pocket the length of which is longer on said first axis than along an axis at right angles thereto, the pockets being arranged in a plurality of columns with a plurality of pockets in each column, said first axis of the pockets of all the columns except one end column being arranged to lie substantially parallel and inclined to one side of the respective column and said first axis of the pockets of the end column being arranged to lie substantially parallel and in a direction clearly visibly different from the pockets of the other columns.

(2) A medication dispensing package comprising a blister pack in the form of a sheet of flexible plastics material deformed to one side of the sheet so as to define a plurality of pockets, each pocket being elongate along a first axis so as to define a pocket the length of which is longer on said first axis than along an axis at right angles thereto, the pockets being

arranged in a plurality of columns with a plurality of pockets in each column, said first axis of the pockets of all the columns except one end column being arranged to lie substantially parallel and inclined to one side of the respective column and said first axis of the pockets of the end column being arranged to lie substantially parallel and in a direction clearly visibly different from the pockets of the other columns, each pocket containing a respective dose of medication, and a frangible layer secured to the other side of the sheet so as to close said pockets whereby compression of each pocket causes the dose to be expressed through said frangible layer.

(3) A medication dispensing package comprising a blister pack in the form of a sheet of flexible plastics material deformed to one side of the sheet so as to define a plurality of pockets, each pocket being elongate along a first axis so as to define a pocket the length of which is longer on said first axis than along an axis at right angles thereto, the pockets being arranged in a plurality of columns with a plurality of pockets in each column, said first axis of the pockets of all the columns except one end column being arranged to lie substantially parallel and inclined to one side of

respective column and said first axis of the pockets of the end column being arranged to lie substantially parallel and in a direction clearly visibly different from the pockets of the other columns, each pocket containing a respective dose of medication, a frangible layer secured to the other side of the sheet so as to close said pockets whereby compression of each pocket causes the dose to be expressed through said frangible layer, and a cover member formed from a plastics material having a pair of substantially planar sheets interconnected by a flexible hinge portion and including means for latching the cover sheets together in a closed condition enclosing said blister sheet and frangible layer, said cover sheets including a plurality of openings arranged such as in the closed condition the openings overly with the openings of one of the sheets each receiving a respective one of the pockets.

(4) A package for use in dispensing medication comprising a cover member formed from a plastics material having a pair of substantially planar sheets interconnected by a flexible hinge portion and means for latching the cover sheets together in a closed condition, said cover sheets including a plurality of openings arranged such that in the closed condition the openings

overly, each opening being elongate along a first axis so as to define an opening the length of which is longer on said first axis than along an axis at right angles thereto, the openings being arranged in a plurality of columns with a plurality of openings in each column, said first axis of the openings of all the columns except one end column being arranged to lie substantially parallel and inclined to one side of the respective column and said first axis of the pockets of the end column being arranged to lie substantially parallel and in a direction clearly visibly different from the pockets of the other columns.

(5) The invention according to Claim 3 or 4 wherein one of the cover sheets includes a pair of spaced latch members for attaching the cover sheet to a pair of spaced parallel bars of a support frame.

(6) The invention according to Claim 3, 4 or 5 wherein one of the cover sheets includes further openings through which written material on the blister sheet can be observed.

(7) The invention according to any preceding claim wherein the pockets of all the columns except the one end column are inclined to one side at an angle of the order of 45°.

(8) The invention according to any preceding claim wherein the pockets of the end column are inclined to the opposite side of said end column relative to the pockets of the other columns.

(9) The invention according to any preceding claim wherein each pocket has rounded ends so as to define a generally oval shape and wherein each pocket has semi-circular ends interconnected by straight sides.

(10) The invention according to any preceding claim wherein said first axis of the pockets of the columns excepting said end column vary slightly in angle from one column to the next adjacent column.

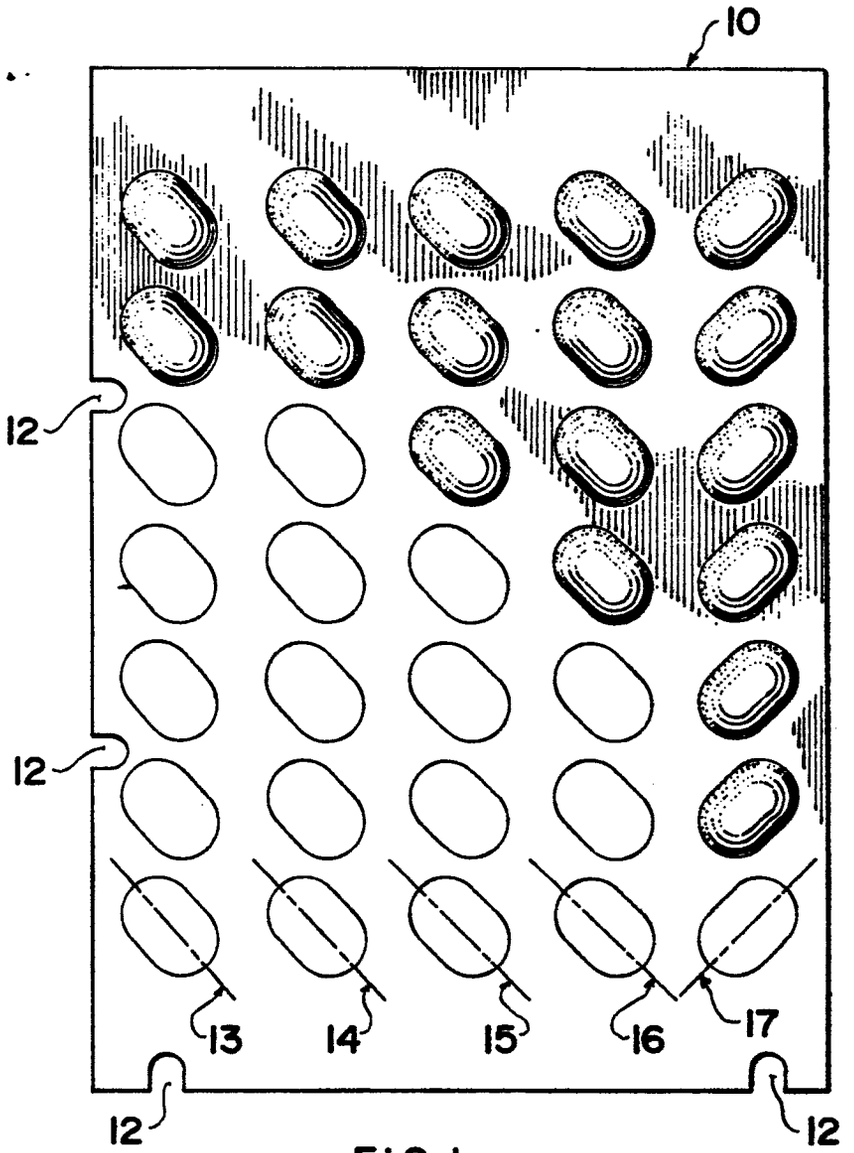

FIG. 1

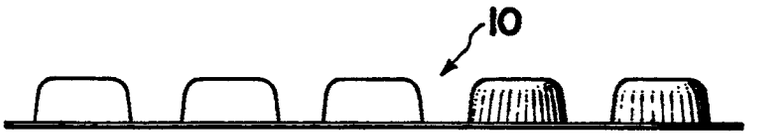

FIG. 2

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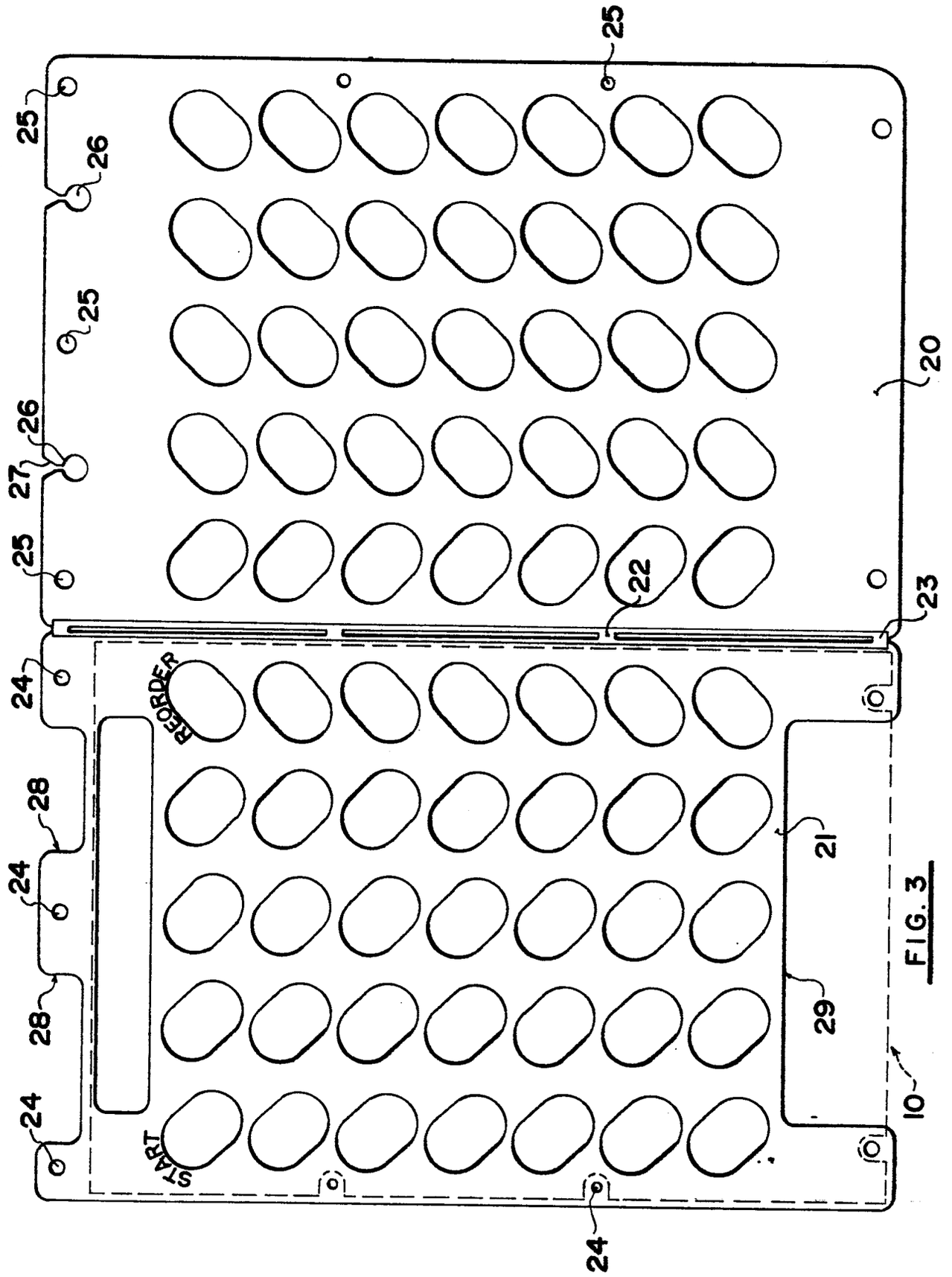

FIG. 3

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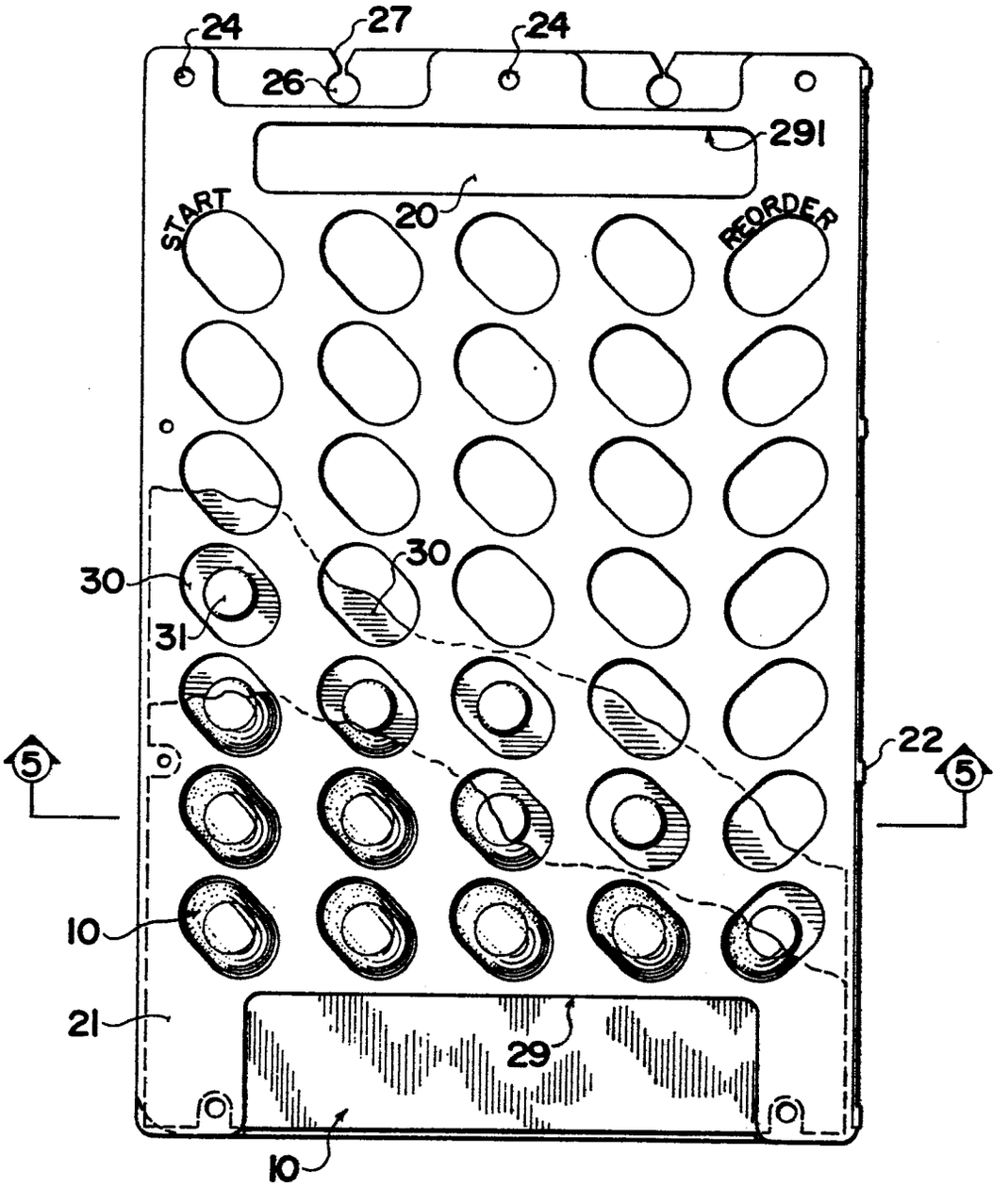

FIG. 4

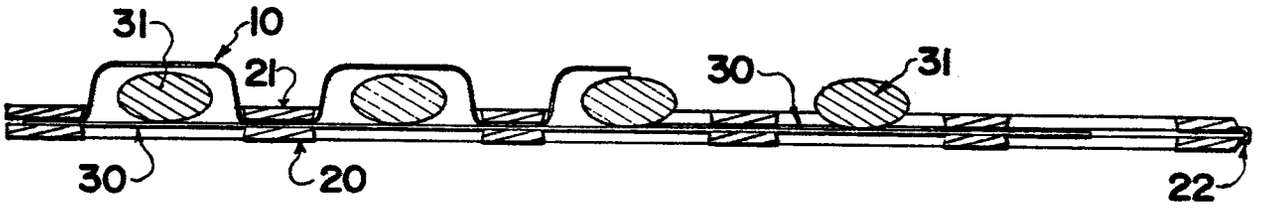

FIG. 5