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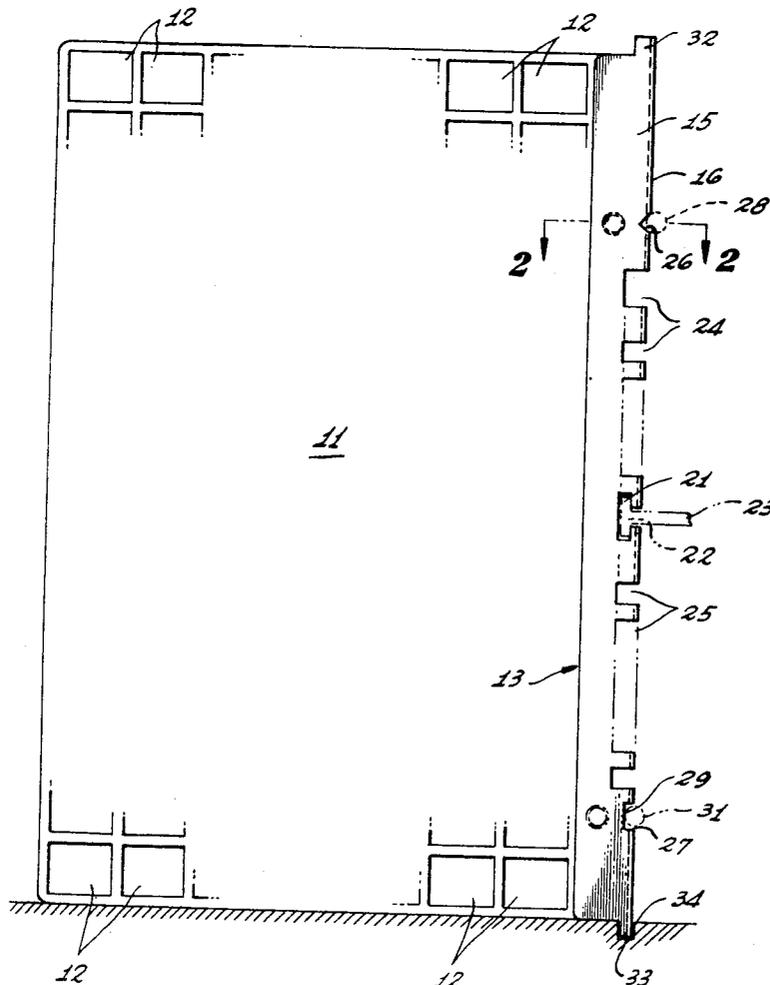
[54] **CARD-TYPE STORAGE ITEM AND CLIP**
 9 Claims, 2 Drawing Figs.

[52] U.S. Cl. 235/61.12
 [51] Int. Cl. G06k 19/00
 [50] Field of Search 235/61.12;
 209/80.5, 110.5

[56] **References Cited**

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ABSTRACT: A card-type item for random access storage and retrieval formed of a transparent photographic film card or sheet carrying a plurality of microimages and having a metallic stiffening clip along one edge, such as a vertical edge, of U-shape within which that edge of the card or sheet is disposed and to which is interlocked as by dimpling of the metallic clip. The outer edge of the clip is provided with notches in any desired code, such as binary, to identify each item by the coded notches and their cooperation with address plates or bars positioned to permit only a single card-type item to be withdrawn from a store of a plurality of items. The opposite ends of the clip are provided with extensions of different breadth to positively orient the item in upright position. The outer edge of the clip is also provided with a generally central extractor notch to receive an extractor head and with upper and lower register notches, at least one of which locates the item vertically and the other establishes the vertical axis. The stiffening clip is desirably of magnetic material for initial magnetic movement of an addressed item from the store.



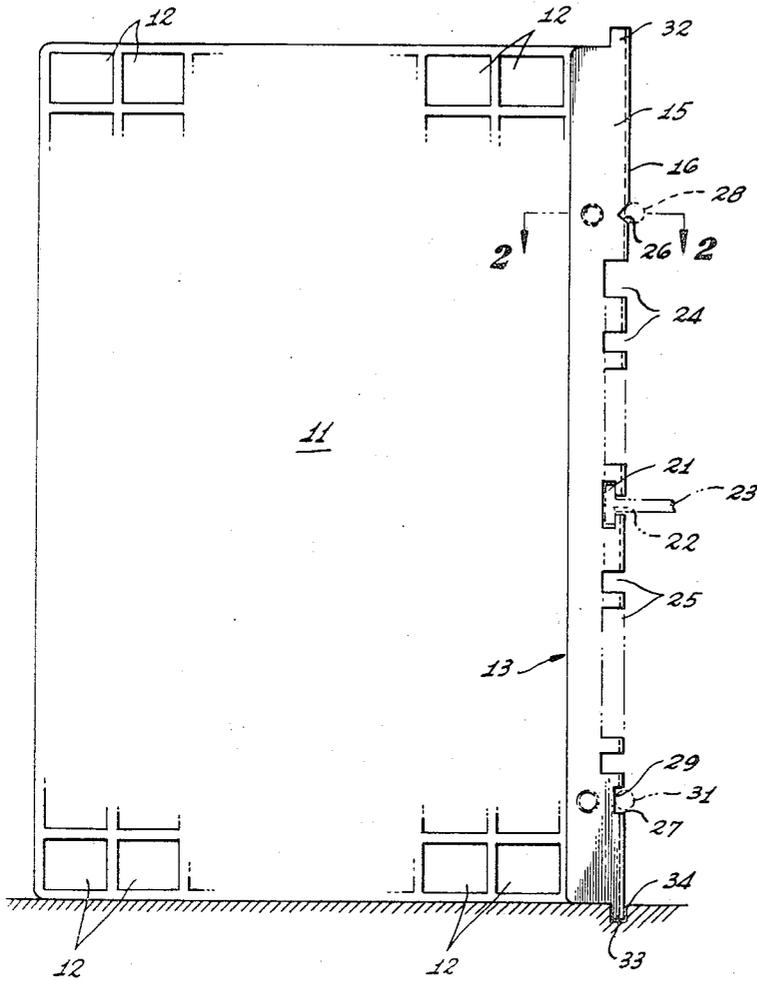


Fig. 1

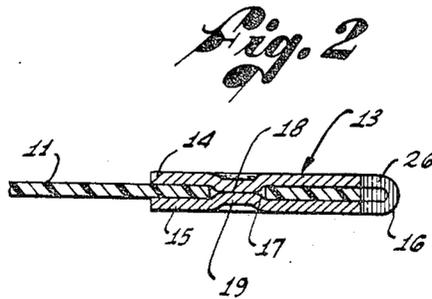


Fig. 2

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CARD-TYPE STORAGE ITEM AND CLIP

BACKGROUND OF THE INVENTION

1. This invention is in the field of card-type items, such as microfiche, for random access information storage and retrieval.

2. It is known in the storage and retrieval of information to use transparent photographic film on which are a plurality of rows and columns of microimages and to store such card-type items in a group in which they are individually identified by edge notch coded addresses. It is likewise old to form such cards with magnetic edge strips by which an addressed card is attracted for initial movement from the store.

However, card-type items of the prior art have been relatively expensive and have not, in general, provided means facilitating the extraction and registering of the items, nor been provided with means preventing ambiguity in their positioning, all of which are included in the card-type item of the present invention.

SUMMARY OF THE INVENTION

The card-type item of the present invention, such as a microfiche for random access information storage and retrieval, comprises an information storage card or sheet of transparent photographic film having a plurality of rows and columns of microimages thereon. A U-shaped magnetic clip is attached to one edge of the microfilm sheet by having the sheet edge inserted into the U-shaped clip and the clip interlocked therewith as by dimples in the sides of the clips extending into openings through the microfilm sheet. The outer or bight edge of the clip is provided with a plurality of coding notches which uniquely identify the item by the coded number thereof and with at least three additional notches, a central one of which is generally T-shaped to receive an extractor head by which the item is pulled out of the store and two other notches for registering the card-type item in a delivery position, such as a projector gate. One of the register notches may be V-shaped to cooperate with a rounded register surface to index the item vertically while the other register notch provides a vertical surface engaging a cooperating register surface to locate the axis of the item vertically.

In addition, the clip may be provided with end extensions of different breadth, the smaller of which may be received in a guiding groove in which it rides, which groove will not receive the larger extension whereby the item is oriented in upright position.

Other objects and features of the invention will be apparent to those skilled in the art from the following specification and the appended drawing.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a side elevational view of a card-type storage item according to the present invention with certain cooperating elements shown in phantom; and

FIG. 2 is a partial transverse sectional view on the line 2-2 of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The card-type item according to the present invention is comprised of a card or sheet 11 of photographic film upon which there are a plurality of columns and rows of microimages 12. Along an edge of the film sheet, as shown the forward side edge, is mounted a clip 13, preferably of magnetic material, and of narrow U-shape in cross section, with legs 13, 14 and 15 and a bight 16. The edge of the microfilm sheet within the clip is provided with a pair of holes 17 therethrough and the opposite sides of the clip are dimpled at 18 and 19 to be extruded into the holes 17 whereby the clip is solidly interlocked with the microfilm sheet. Alternatively, the clip could be cemented to the microfilm card or sheet and if

desired a spot weld can be made through the dimples which will not only join them but cause local melting and flow of the film at the dimples to insure more positive registration and attachment between the clip and film. The edge of the film is desirably cut back before securement to the clip in an area in which the following described notches in the bight 16 of the clip are placed.

Adjacent the vertical midpoint of the clip is a T-shaped notch 21 which is adapted to receive a complementary T-shaped head 22 on an extractor arm 23 by which a selected card-type item is withdrawn from the store and registered or indexed in a delivery position such as a projector gate.

Above and below the extraction notch 21 are a plurality of coding notches 24 and 25 which may be in any desired code, such as standard binary, binary coded decimal, grey binary, octal, and the like to individually identify each card by number regardless of its storage position. These notches cooperate with address plates or bars which are received in the notches to select a card which is uniquely addressed by the position of the plates or bars, an addressed item being partially withdrawn from the store by magnetic attraction on the clip 13 as explained in the copending application of Eugene H. Irasek, Ser. No. 528,231, filed Feb. 17, 1966 for RANDOM ACCESS STORAGE AND RETRIEVAL DEVICE.

Above and below the identifying notches 24, 25 are a pair of register notches 26 and 27 of which the notch 26 is V-shaped and is adapted to cooperate with a rounded registering rod 28 at the projector gate to index the item vertically. The register notch 27 provides a vertical surface 29 cooperating with the edge of a second rounded rod 31 to locate the axis of the card vertically.

The clip 13 is provided with upper and lower extensions 32 and 33 of which the lower, 33, is narrower to be just received within a guide notch diagrammatically illustrated at 34, the wall of the notch being interrupted at the withdrawal position to permit forward withdrawal of the item by the extractor arm 23. The extension 32 is broader than the notch 34 and will not be received therein so that the item will be oriented in upright position and is prevented from being loaded in the store upside down.

While certain preferred embodiments of the invention have been specifically illustrated and described, it will be understood that the invention is not limited thereto as many variations will be apparent to those skilled in the art and the invention is to be given its broadest interpretation within the terms of the following claims.

We claim:

1. An edge-stiffening clip for card-type microfiche comprising:
 - an elongated magnetic member substantially U-shaped in cross section to have its legs disposed on opposite sides of an edge of the film;
 - means on said member for mechanically engaging an extractor therewith;
 - a plurality of identifying coding notches in the bight edge of said member; and
 - register notches at opposite sides of said identifying notches adapted to cooperate with register surfaces to index the clip in a delivered position.
2. The clip defined in claim 1 in which one of said register notches is substantially V-shaped to cooperate with a rounded surface to index the clip axially and the other of said register notches presents a surface to locate the axis in rotation relative to the first register notch.
3. The clip defined in claim 1 in which said extractor engaging means comprises a notch in the bight of said clip substantially centrally thereof for interlocking with the extractor.
4. The clip defined in claim 1 including end extensions on said clip of different breadths adapted to cooperate with a restrictive notch receiving only one of them whereby to orient the clip end for end.
5. A card-type item for random access information storage and retrieval comprising a microfilm card having the clip of

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claim 1 secured to an edge thereof with the edge of the microfilm card received between the sides of the U-shaped clip.

6. The card-type item of claim 5 in which said microfilm card edge is provided with perforations within the clip and at least one side of the clip is dimpled inwardly into the perforations to interlock the clip and the microfilm card.

7. The card-type item defined in claim 6 in which both sides of the U-shaped clip are dimpled inwardly to meet within the perforations through the microfilm card.

8. The card-type item defined in claim 7 in which said opposite side dimples are spot-welded together within the card perforations.

9. The card-type item defined in claim 5 in which: said extractor engaging means comprises a notch in the bight of the clip substantially centrally thereof for interlocking with the extractor;

one of said register notches is substantially V-shaped to cooperate with a rounded surface to index the item axially and the other of said register notches presents a surface to locate the axis in rotation relation to the first register notch; and

end extensions on said clip of different breadths for orienting the item end for end.

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