United States Patent [19]

Napoleone et al.

[11] **3,771,670**

[45] **Nov. 13, 1973**

[54] **TICKET STACKER**

[75] Inventors: **Nunzio Napoleone**, Wellesley; **Alan M. Swett**, Milton, both of Mass.

[73] Assignee: **Dennison Manufacturing Company**, Framingham, Mass.

[22] Filed: **Jan. 3, 1972**

[21] Appl. No.: **214,827**

[52] **U.S. Cl.** ..... **214/6 BA**, 271/87

[51] **Int. Cl.** **B65g 57/30**

[58] **Field of Search** ..... 271/61 BF, 87; 214/6 BA, 7

[56] **References Cited**

UNITED STATES PATENTS

3,040,862	6/1962	Schmermund et al.	214/6 BA X
2,928,672	3/1960	Johnson et al.	271/61 X
2,133,260	10/1938	Wolff	21/6 BA
2,401,719	6/1946	Braun	271/61 X
2,811,352	10/1957	Bornemann	271/87 X

FOREIGN PATENTS OR APPLICATIONS

671,014	10/1964	Italy	214/6 BA
409,761	10/1966	Switzerland	214/6 BA

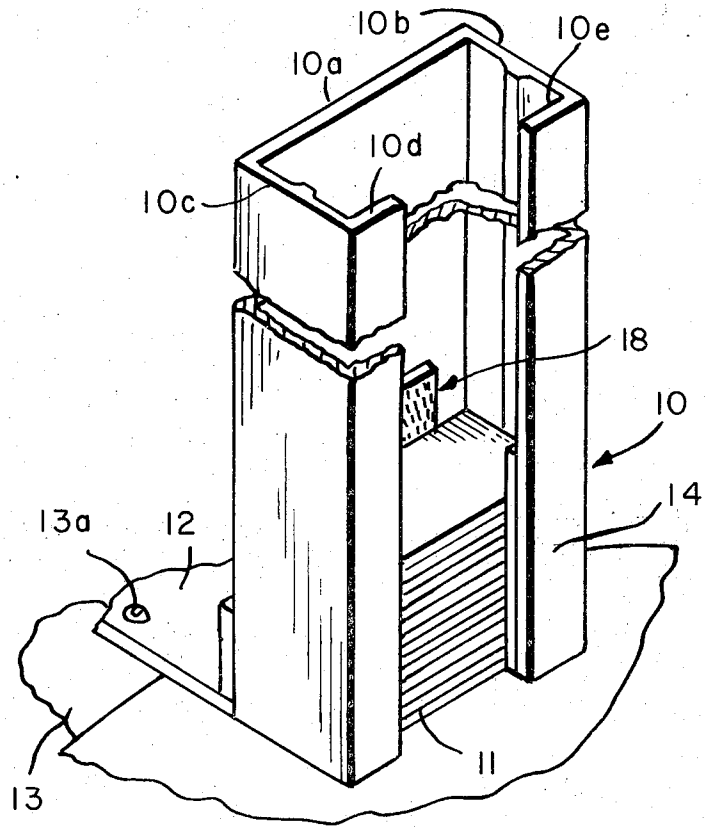
Primary Examiner—Robert J. Spar

Attorney—Sewall P. Bronstein et al.

[57] **ABSTRACT**

A ticket stacker comprising a plurality of walls for positioning a ticket therebetween and a plurality of fibers supported by said walls in a manner to hold in a stacked fashion a plurality of tickets forced into the stacker.

2 Claims, 7 Drawing Figures



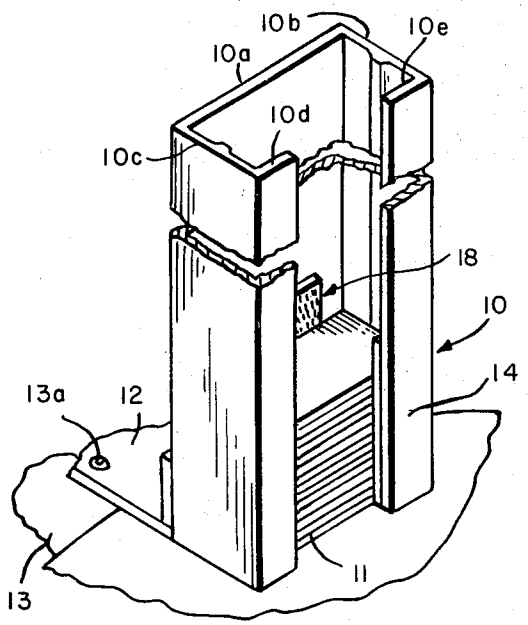


FIG. 1

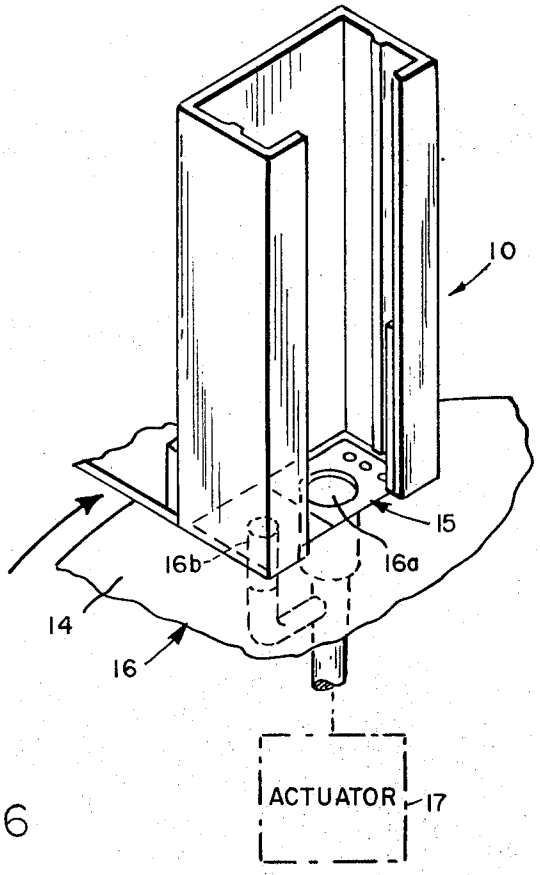


FIG. 2

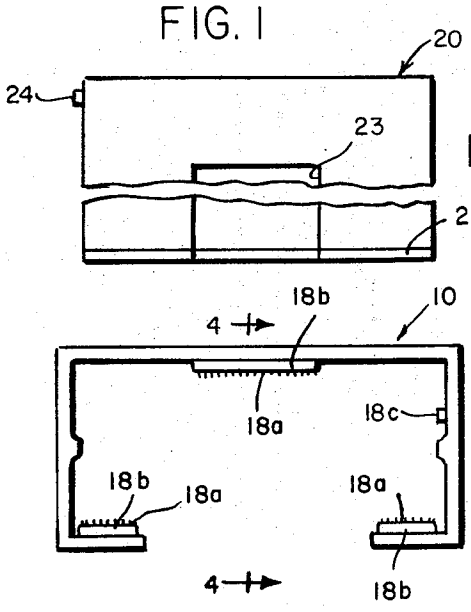


FIG. 6

FIG. 3

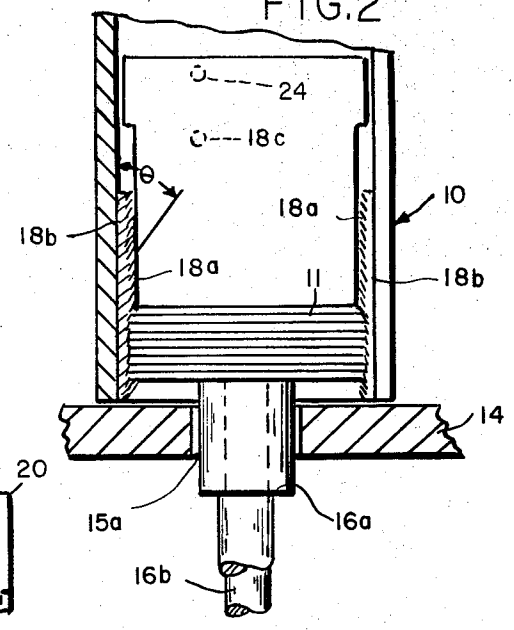


FIG. 4

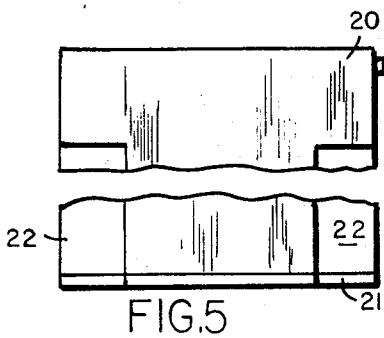


FIG. 5

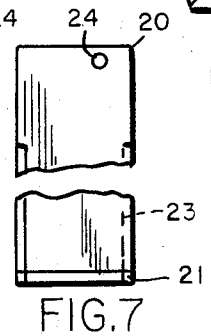


FIG. 7

TICKET STACKER

BACKGROUND OF THE INVENTION

This invention is directed to a new and improved stacker for receiving and storing tickets such as coded tickets placed on clothing or the like.

Over the years, many types of ticket stackers have been developed for storing tickets forced into the stacker from the bottom thereof. Although such stackers of the prior art have proven to be quite acceptable, there has developed a need for a new, improved and less costly stacker construction.

In order to provide the new and improved stacker of this invention, there is provided new and improved ticket holding means mounted and supported at the mouth of the inside of the guide walls of the stacker, for receiving a ticket and then holding it in place.

The new and improved holding means preferably comprises a plurality of "one way" fibers, preferably of plastic, which are preferably flexible, and also bendable, and are positioned in such a manner that tickets may be pushed past the fibers by a force applied to a ticket in one direction and then retain the tickets after the pushing force is withdrawn. Most preferably the fibers extend inwardly at an angle of about 20° to 60° from the inner stacker side walls with respect to the inner vertical surface of the guide walls of the stacker.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view showing the stacker of this invention supporting a plurality of tickets therein;

FIG. 2 is a perspective view showing means for pushing tickets into the stacker;

FIG. 3 is a bottom plan view of the stacker; and

FIG. 4 is a sectional view showing a ticket being pushed into the stacker with the weight on top of the tickets;

FIG. 5–7 illustrate an end and two sides of a suitable weight for use in the stacker.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Reference now should be had to FIGS. 1–7 for a description of the stacker of this invention.

At **10**, there is shown a stacker having guide walls, **10***a*, **10***b*, **10***c*, **10***d*, and **10***e* which are constructed to store tickets shown at **11** in a vertical stack (one on top of the other) between the guide walls. The stacker **10** is supported by a support member **12** coupled to a machine base **13** by a bolt-washer combination **13***a* above a rotatable turret **14** upon which tickets are carried to the stacker.

The rotatable turret of this invention is essentially of the disc type shown in U.S. Patent application Ser. No. 56,281 filed July 20, 1970, now U.S. Pat. No. 3,689,065 which is commonly owned by the assignee of this application. The turret **14** is of the type which carries tickets between various stations and is preferably of the type which has a plurality of ticket receivers **15** which are shaped such that a pusher **16** comprising pusher members **16***a* and **16***b* may pass through holes or cutouts **15***a* and **15***b* formed therethrough to push a ticket **11** held by the receiver into and between the stacker walls **10***a* – **10***e*. The pusher also includes an actuator **17** electrically or vacuum operated, coupled thereto for raising the pusher **16** to force a ticket **11** into the stacker.

At **18** there is shown ticket holder means which comprises a plurality of "one way" fibers **18***a* and a backing **18***b* for supporting the fibers much the same as a backing of a carpet.

As shown in FIGS. **1**, **3** and **4**, holder means **18** are coupled to the inside of walls **10***a*, **10***d* and **10***e* and are positioned at the mouth of the stacker, that is the opening of the stacker positioned closest to the turret **14**.

The backing **18***b* is coupled to the inner walls by an adhesive, such as any general purpose adhesive. The fibers **18***a* may be of materials such as plastic or rubber and may include materials such as nylon, phenolics, polystyrene, acrylics or the like. A material known as 3M Brand Fibre-Tran has proven acceptable for use herein as the means **18**.

The fibers generally extend inwardly as shown in FIG. **4** with the majority of the fibers preferably extending inwardly from the mouth and being at an angle θ of 20° – 60° with respect to the flat vertical surface of the inner side wall from which it extends, and most preferably at an angle θ of 30° to 50°.

The fibers **18***a* are of the type which are resilient and will preferably bend upwardly about the point at which they are coupled to the backing **18***b* and then snap back to support the ticket after the ticket has been pushed into the stacker as shown in FIG. **4**.

As the snaping back of the fibers **18***a* occurs, the tickets are effectively prevented from falling downwardly and out of the stacker by the force of gravity after the pushing force provided by the pushers **16***a* and **16***b* is withdrawn.

The ticket holding means **18** preferably extends from the beginning of the bottom or mouth of the stacker and rises one to two inches above on the walls **10***a*, **10***d* and **10***e*. In addition, the pusher **16** preferably operates to push the tickets above the initial fibers so that a sufficient number of fibers will snap back into position to support the weight of the tickets. In practice, about ⅛ inch of ticket penetration from the beginning of the fibers has proven sufficient naturally depending upon the weight of the ticket and the number to be stacked one on top of the other.

In FIGS. **4–7** there is shown a weight **20** which may be placed as shown in FIG. **4** to insure that the initial tickets forced into the fibers **18***a* are properly oriented. The weight includes a pad (e.g. of rubber) as a part thereof for resting on the tickets **11**. The weight **20** also includes cutouts **22** and **23** corresponding to members **18***a* and **18***b* so that the weight **20** may be positioned as shown in FIG. **4**. The stacker wall **10***e* is provided with a stop member or pin **18***c* as shown for engaging a stop member or pin **24** of the weight **20**. In this manner the weight is initially located within the stacker walls. The weight is used to insure that the first few tickets pushed into the stacker are prevented from skewing and/or misorienting themselves with respect to the fibers **18***a*. As shown in FIG. **4** the weight moves upwardly as tickets are fed into the stacker.

We claim:

1. A ticket stacker system comprising a plurality of guide wall means open at the bottom, means for receiving tickets between the guide wall means entering through the open bottom, a plurality of pieces of fibers positioned about the inside of portions of at least two opposing sections of the guide wall means beginning at the bottom thereof and extending at least partially up towards the top of the guide wall means, each of said

pieces containing a plurality of one way fibers, said fibers extending inwardly from said guide wall means with the majority thereof extending upwardly towards said top, and said fibers permitting tickets to be pushed through the fibers but also preventing tickets after capturing by the fibers from falling downwardly out of the bottom of the stacker, a weight disposed within the confines of the guide wall means and having cut out portions and shaped to permit now cut out portions thereof to extend to said guide wall means and between said pieces of fibers and initially be positioned closely adjacent the bottom and straddle the pieces of fibers to insure that the first few tickets pushed into and received between the opposing pieces of fibers are prevented from skewing and/or misorienting themselves with respect to the fibers, first stop means supported on the inside of said guide wall means, second stop means supported by said weight for engaging said first stop means to initially position said weight adjacent the bottom prior to receipt of any tickets between said pieces of fibers, and pusher means for placing tickets between said fibers.

2. A stacker according to claim **1** in which the weight includes a rubber pad as a part for resting on a ticket.

* * * * *