May 5, 1953

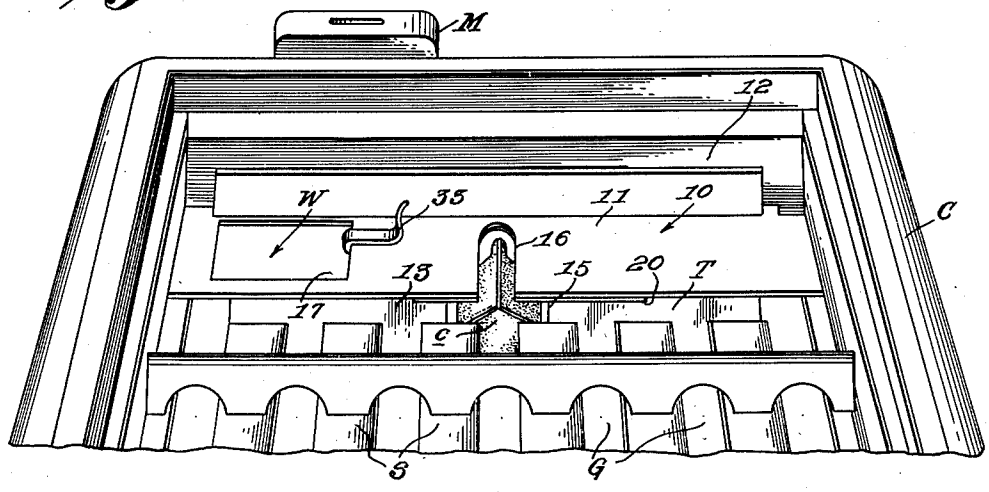
R. WARNER ET AL
RELEASING MECHANISM FOR USE IN
PAPER CARTON VENDING APPARATUS

2,637,612

Filed June 3, 1949

3 Sheets-Sheet 1

Fig. 1.



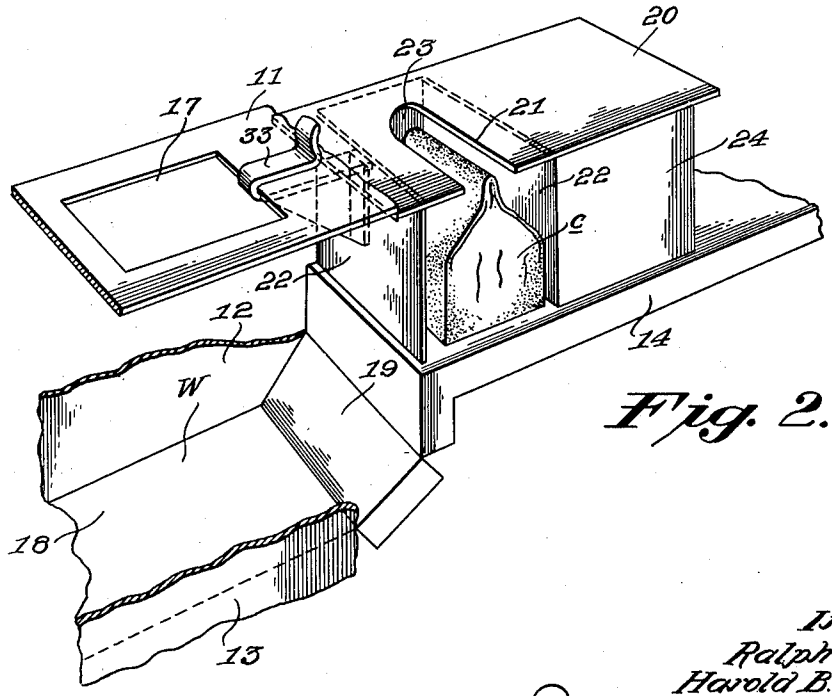


Fig. 2.

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RELEASING MECHANISM FOR USE IN PAPER CARTON VENDING APPARATUS

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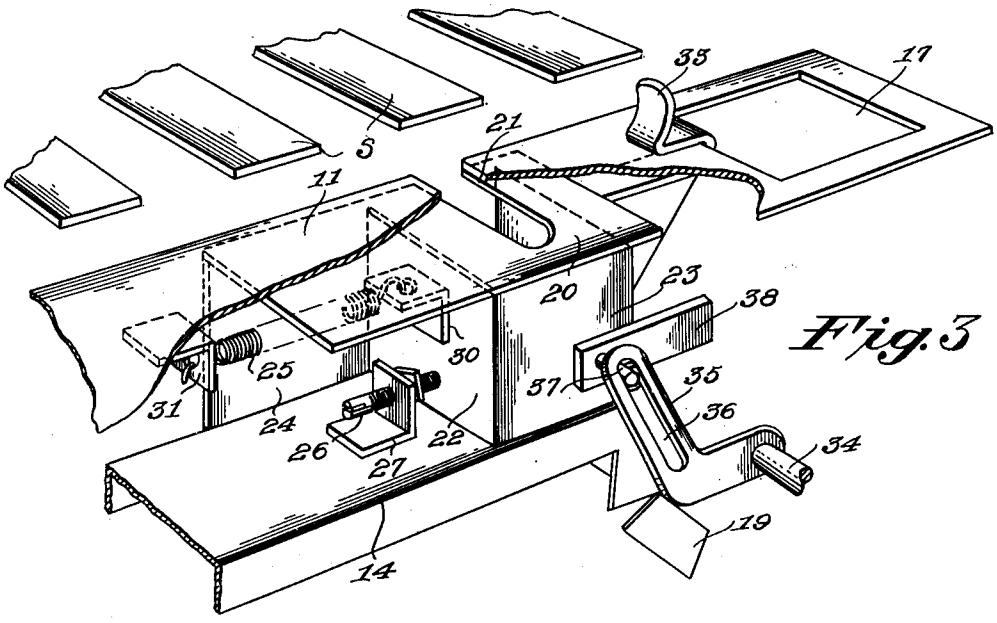


Fig. 3

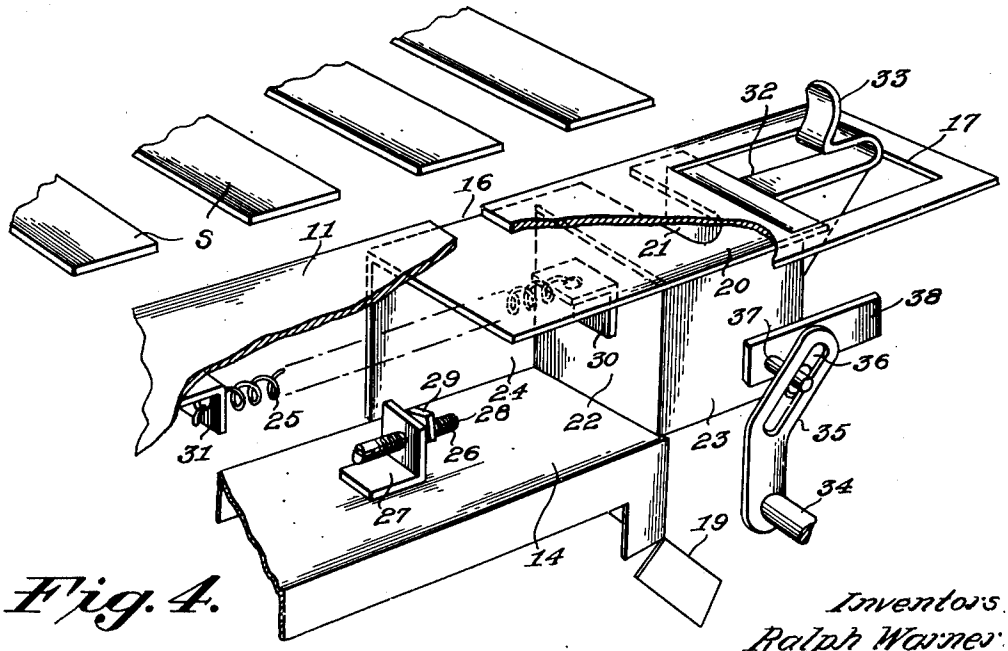


Fig. 4.

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RELEASING MECHANISM FOR USE IN PAPER CARTON VENDING APPARATUS

Filed June 3, 1949 3 Sheets-Sheet 3

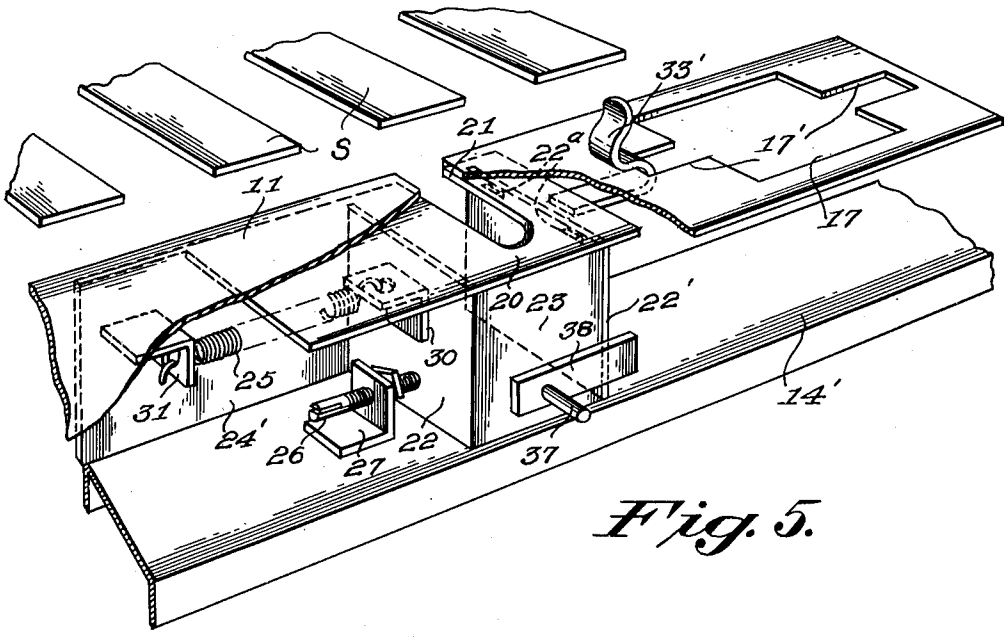


Fig. 5.

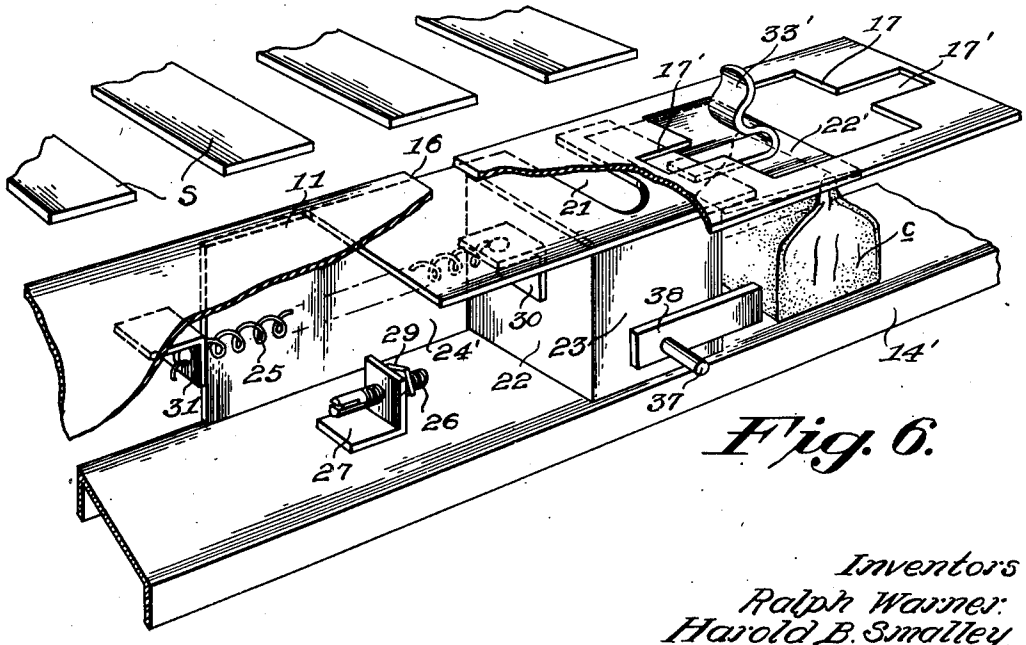


Fig. 6.

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2,637,612

UNITED STATES PATENT OFFICE

2,637,612

RELEASING MECHANISM FOR USE IN PAPER CARTON VENDING APPARATUS

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Application June 3, 1949, Serial No. 96,944

7 Claims. (Cl. 312—92)

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This invention relates to releasing mechanism for use in paper carton vending apparatus.

Apparatus of this general character embodies a plurality of spaced parallel guideways in which paper cartons containing milk, beverage or the like are slidably supported, and these guideways communicate at corresponding ends thereof with a guideway transverse thereto. In such apparatus, the guideways are so formed as to permit movement of the cartons therealong but not withdrawal therefrom, and a coin-controlled releasing mechanism is provided for release of successive cartons after having been moved to a selected position accessible from the transverse guideway.

Various forms of such releasing mechanism have heretofore been provided or proposed, and which, while being effective in the release of cartons subsequent to the deposit of coins, failed to meet the maximum requirements of devices of this kind.

It is accordingly a primary object of this invention to provide releasing mechanism for a paper carton vending apparatus of the above noted character which is simple in structure, efficient in operation, and capable of construction and assembly at relatively low cost, thereby substantially fulfilling the maximum requirements of structures of this kind.

A further and more specific object of the invention is the provision of paper carton release mechanism whereby successive cartons are manually moved in a horizontal direction from a point of initial deposit thereof to a position located beneath an opening in a housing for the mechanism for withdrawal of the cartons therethrough.

A still further object of the invention is to provide a release mechanism for paper cartons embodying a box-like transfer means movably supported on a horizontal track leading to a chute which communicates with a well, the transfer means being provided for manual movement along the track to the chute for discharging a carton thereinto, and the transfer means being automatically returned by spring means to its normal carton-receiving position, and being operatively connected with a coin-controlled mechanism for automatic locking thereof when in said normal position.

Further objects and advantages of the invention will become apparent in the course of the following detailed description, taken in connection with the accompanying drawings, wherein:

Figure 1 is a top perspective view of the release end of a paper carton dispensing apparatus

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with the improved release mechanism of the present invention embodied therein.

Fig. 2 is a fragmental broken perspective view illustrating the carton-transfer means in its normal carton-receiving position.

Fig. 3 is a fragmental broken perspective view as observed from the rear of the transfer means and disclosing in particular the connection thereof with the control shaft of a coin-controlled mechanism.

Fig. 4 is a perspective view similar to Fig. 3, but showing the transfer means as having been manually moved to a position for the automatic discharge of a carton therefrom.

Figs. 5 and 6 are views respectively corresponding with Figs. 4 and 5, and wherein a modified embodiment of the invention is disclosed.

This application is a continuation-in-part of our application Serial No. 14,314, filed March 11, 1948, now abandoned.

Referring now in detail to the drawings, C designates the casing of a carton-vending apparatus, and which in general embodies a plurality of parallel carton guideways G defined by slats S, and the guideways G communicate at corresponding ends thereof with a transverse guideway T into which a carton may be moved from any one of the guideways G and thence moved along the guideway T to the releasing mechanism.

The releasing mechanism comprises a suitable housing 10 provided by a top wall 11, a rear wall 12, a front wall 13 and a bottom wall in the form of a track 14 for slidable movement of the cartons therealong.

As this point, it is to be noted that in Figs. 2, 3 and 4 the side walls are omitted for greater clarity of illustration.

The housing 10 is provided with an opening 15 in the front wall 13 and a transverse slot 16 in the top wall 11 which opens through the front edge of the top wall above and centrally of the opening 15, the opening 15 being adapted to receive the body portion of a carton c and the slot 16 adapted to provide for finger engagement with the narrow top portion thereof.

The top wall 11 of the housing 10 is further provided with a relatively large rectangular opening 17 disposed above a well W in the housing 10 defined by the side walls thereof, together with a base 18, and a chute 19 is disposed between the discharge end of track 14 and the well base 18, for a purpose which will be described hereafter.

The releasing mechanism proper comprises a box-like transfer member which includes a top

wall 20 having a slot 21 for alinement with slot 16 in the normal position of the member, side walls 22 which are spaced apart equal to the width of opening 15 in the housing, a rear wall 23, and a vertical gate wall 24, the bottom of the member being open for direct seating of the cartons *c* on the track 14.

The transfer member is normally positioned as in Fig. 3 with the slots 16 and 21 alined as well as the walls 22 being positioned adjacent the opposite sides of housing opening 15, whereby a carton *c* may be moved from the guideway T into the transfer member and in direct seating engagement with the track 14.

In this normal position of the transfer member, a wall 22 thereof is maintained against an adjustable stop by means of a tension spring 25. The adjustable stop comprises a screw 26 threaded through a bracket 27 suitably secured to track 14, the screw having a wall-engaging free end 28 and being provided with a lock nut 29 for retaining the screw in any adjusted position.

The spring 25 is connected at one end to a bracket 30 suitably secured to said wall 22, and is connected at its opposite end to a bracket 31 suitably secured to housing wall 11.

A handle member is provided for moving the transfer member from the normal carton-receiving position of Figs. 2 and 3 to the discharging position of Fig. 4, and such handle member preferably comprises an elongated bar 32 having one end thereof suitably secured to the lower face of the top wall 20 of the transfer member and the other end of the bar is formed to provide a finger grip 33, the bar being disposed beneath the housing wall 11 and normally bending around one edge of the opening 17 in the provision of the finger grip 33.

The transfer member is operatively connected to the control shaft 34 of a coin-controlled mechanism M for rotation of the shaft upon longitudinal sliding movement of the transfer member. Such operative connection comprises an angular lever 35 having one arm thereof rigidly connected to the shaft. The other arm of the lever is provided with an elongated slot 36 into which projects a pin 37 extending from a bar 38 suitably secured to the rear wall 23 of the transfer member.

Having described the release mechanism structure in accordance with a preferred embodiment thereof, the operation is as follows:

With the transfer member in the position of Figs. 2 and 3, a desired carton *c* is moved from a guideway G into guideway T and thence through opening 15 in the wall 13 of the housing 10 with the carton resting on the track 14 and between the walls 22 of the transfer member. At this point, it is to be observed that the purpose of the normally alined slots 16 and 21 is to provide finger space when gripping the top of the carton and moving it into releasing position.

With the carton thus positioned, a coin is deposited in control mechanism M which effects, in the well known manner, release of shaft 34 for rotation. The purchaser then grasps the grip 33 and pulls the transfer member to the position of Fig. 4 in which the track no longer supports the carton, with the result that it drops onto chute 19 and into the well in the housing which is directly beneath the housing opening 17.

In this position of the transfer member the gate wall 24 closes the carton-receiving opening 15 to prevent admission of a carton therethrough during the releasing operation.

Upon release of grip 33, spring 25 will return the transfer member to normal position and the purchaser may then readily reach in and withdraw the carton through the opening 17. When the transfer member returns to normal position, the shaft 34 will be automatically locked by the coin-controlled mechanism.

In Figs. 5 and 6 is illustrated a modified embodiment of the invention, wherein the well W is eliminated and the track 14' extends beneath and throughout the longitudinal extent of the carton-retrieving opening 17.

The modified structure of Figs. 5 and 6, for the most part, corresponds with Figs. 3 and 4, and the corresponding elements have been designated by the same reference characters and a description of such corresponding elements will not be repeated.

In this modified embodiment, the cartons *c* are manually transported along the horizontal track 14' by the transfer member from a position opposite the carton-admission opening 15 to a position directly beneath the retrieving opening 17.

It is to be noted that in the first and preferred embodiment of the invention, the side walls 22 of the transfer member are rigid with the top wall 20, since the cartons are discharged from the lower open end of the member. In the modified embodiment, however, the cartons are not discharged from the lower end of the transfer member, but are left on the track 14' directly beneath the retrieving opening 17.

To provide for discharge of the carton from the transfer member upon return movement of the member to normal or carton-receiving position, one side wall 22' thereof is hinged to the top wall 20, as at 22^a, with such hinged wall preferably normally abutting the adjacent vertical edge of wall 23.

In operation of this modified embodiment, a substantially longer stroke of the transfer member is required in order that the hinged side wall 22' may move upwardly and clear the deposited carton prior to the transfer member reaching its normal carton-receiving position.

Due to this required longer range of movement of the transfer member in transporting a carton from opening 15 to a position below the retrieving opening 17, slots 17' are provided at opposite ends of the opening to provide for movement of the finger grip 33' and the gate wall 24' is substantially longer than in the first embodiment.

In Fig. 6, the transfer member is shown in its return movement with the hinged wall 22' riding over a carton *c* which has been deposited on the track 14' below the retrieving opening 17.

From the above, it will be seen the invention, in its generic form, embodies an elongated casing having a carton-admission opening in a side wall thereof, a top wall of the casing having a carton-retrieving opening at a position spaced from the admission opening, and a coin-controlled manually operable member for moving the carton from the first to the second opening.

While the invention is disclosed in accordance with certain specific embodiments thereof, such are to be considered as illustrative only, and not restrictive, the scope of the invention being defined in the following claims.

What we claim and desire to secure by U. S. Letters Patent is:

1. A paper carton releasing means comprising an elongated housing including a rear wall, a

front wall and a top wall, a well in said housing adjacent one end thereof and including a base wall for receiving a released carton, a carton retrieving opening in said top wall above the well, a track in said housing having one end thereof terminating above said base wall, a carton-receiving opening in said front wall, a carton-transfer member supported on said track for longitudinal sliding movement thereon and having a carton-receiving chamber normally alined with said opening in the front wall, yieldable means retaining said member in normal position, and a handle on said member for manual sliding thereof along said track from its normal carton-receiving position to a point adjacent said end of the track for discharge of the carton into said well.

2. The structure according to claim 1, together with an adjustable stop on said track and engageable with said transfer member in opposition to said yieldable means.

3. The structure according to claim 1, wherein said transfer member comprises opposite side walls, a rear wall and a top wall defining said chamber, and a gate wall movable with the transfer member for closing said carton-receiving opening when the transfer member is moved to carton-discharging position.

4. In a paper carton vending apparatus, an elongated housing including front, rear and top walls, a carton-receiving opening in the front wall, a carton-transfer member longitudinally slidably supported in the housing, said member being of box-like form having an open front end normally alined with said receiving opening and having an open bottom, a carton receiving well in said housing adjacent one end thereof, a carton-retrieving opening in said top wall above said well, a track in said housing terminating short of said well and closing the bottom of said transfer member in its normal carton-receiving position, and a handle on said member for manual sliding thereof along said track from its normal carton-receiving position to a point in overhanging relation to the end of the track for discharge of the carton through its open bottom into said well.

5. The structure according to claim 4, wherein said transfer member includes a top wall, and there are cooperating slots in the housing top wall and member top wall which aline in normal position of the member for providing finger space in moving a carton into said member.

6. In a structure of the character described, a housing including side walls, a top wall and a bottom wall defining a rectilinear guideway rectangular in cross-section, an article receiving opening in one side wall, an article retrieving opening in the top wall in spaced relation to the receiving opening, a manually operable transfer member slidably supported on the bottom wall of the housing for transferring an article from the receiving opening to the retrieving opening, and a transfer member-operating finger-grip extending through said retrieving opening.

7. A releasing means for use in a carton-vending apparatus comprising an elongated housing having side walls, a top wall and a bottom wall providing a track, a carton-receiving opening in one side wall of the housing, a coin-controlled box-like transfer member slidably supported on said track in the housing and normally disposed opposite said receiving opening, a carton-retrieving opening in the top wall of said housing in spaced relation to said receiving opening, said transfer member being open at a side thereof opposite said receiving opening, and a finger grip supported by the transfer member and extending through said top wall normally adjacent an edge of said retrieving opening for manually moving same along the track from a position adjacent the receiving opening to a position beneath the retrieving opening, said transfer member including opposite side walls disposed transversely of said housing and a top wall, and one of said side walls being hingedly connected to said top wall and swingable away from the member for clearing a carton upon return movement of the member from its discharge position adjacent the retrieving opening.

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HAROLD B. SMALLEY.

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