United States Patent

Taylor

[15] **3,702,920**

[45] **Nov. 14, 1972**

[54] **TRADING STAMP INVALIDATING APPARATUS AND METHOD OF USING**

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[22] Filed: **May 24, 1971**

[21] Appl. No.: **146,093**

[52] **U.S. Cl.** **219/406,** 219/412, 219/521

[51] **Int. Cl.**.....**F27d 11/02**

[58] **Field of Search**.....219/260, 406, 411, 412, 521, 219/523

[56] **References Cited**

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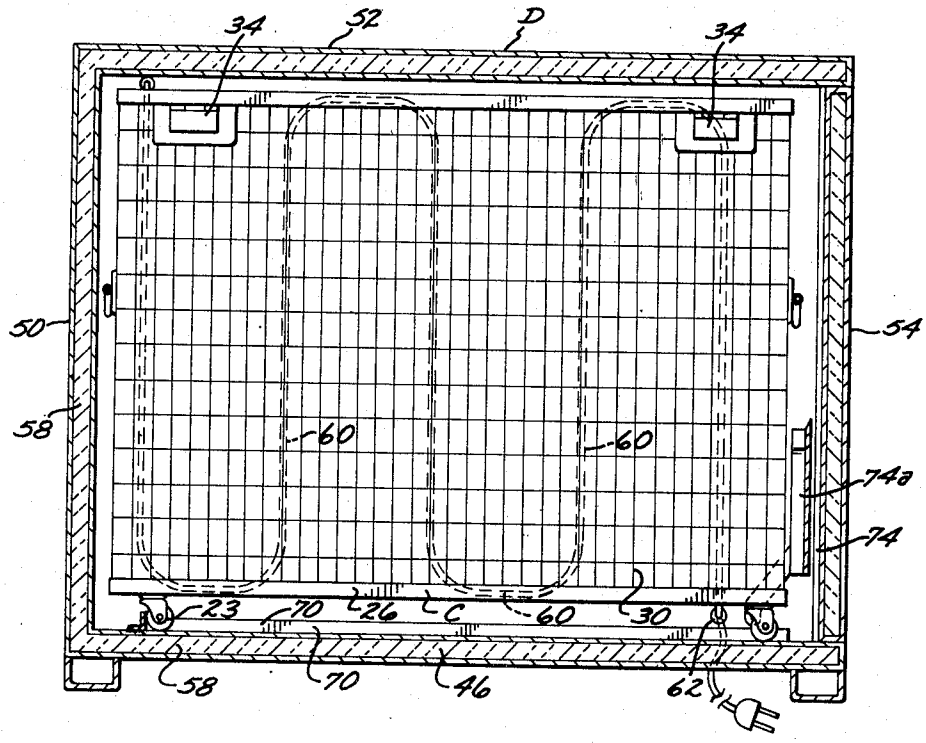
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[57] **ABSTRACT**

An apparatus for invalidating trading stamps of the type that are placed in disposable paper books for redemption, and the stamps prior to distribution to customers having an insignia defined on the printed surface thereof by a temperature sensitive ink. The apparatus is equally adapted for use in invalidating certificates having redemption value, when the certificates have insignias defined thereon in temperature sensitive ink. The books of stamps or certificates of the above description are received at a customer servicing structure in a redemption center, which structure has a movable locked redeemed stamp book and certificate receiver associated therewith. The receiver when filled with redeemed stamp books or certificates is moved to an electrically operated device, where the stamps or certificates therein are subjected to a predetermined temperature substantially different from that of the ambient temperature for not less than a predetermined length of time, to permanently change the temperature sensitive ink that defines said insignias from a first color to a second color. The second color is one that has a fixed meaning to personnel in the redemption center and indicates that the stamps or certificates have been redeemed. After the stamp containing books or certificates have been so temperature treated they are valueless, and may be freely transported to an area remote from the redemption service center for subsequent delivery as raw stock to a paper mill.

4 Claims, 9 Drawing Figures



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SHEET 1 OF 2

FIG. 1

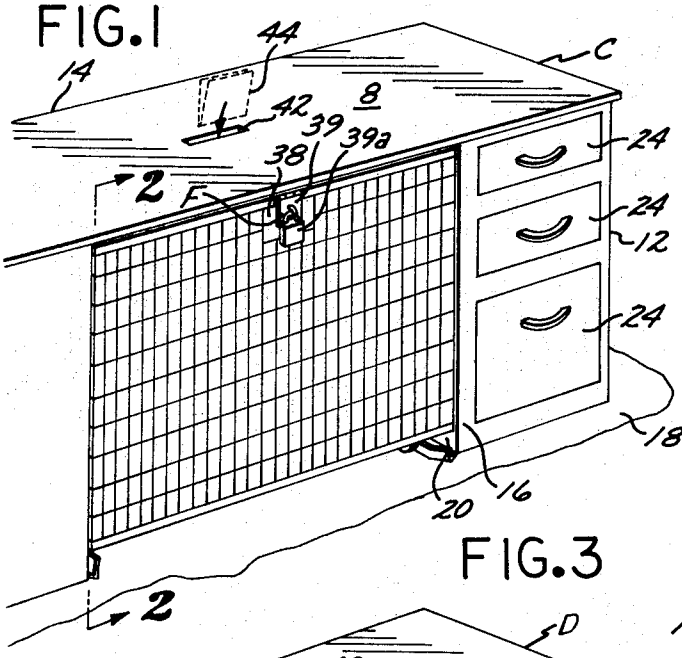


FIG. 2

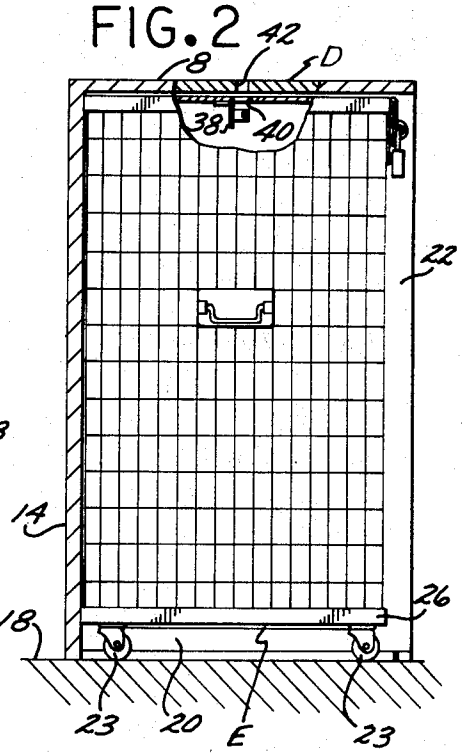
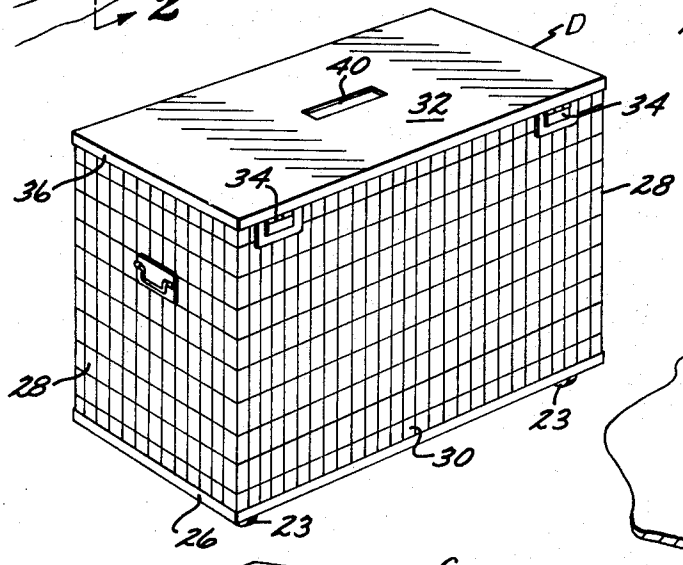


FIG. 3



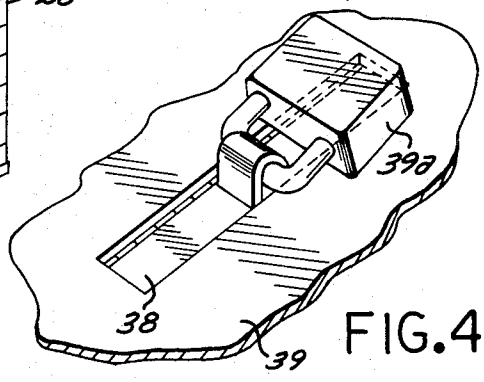


FIG. 4

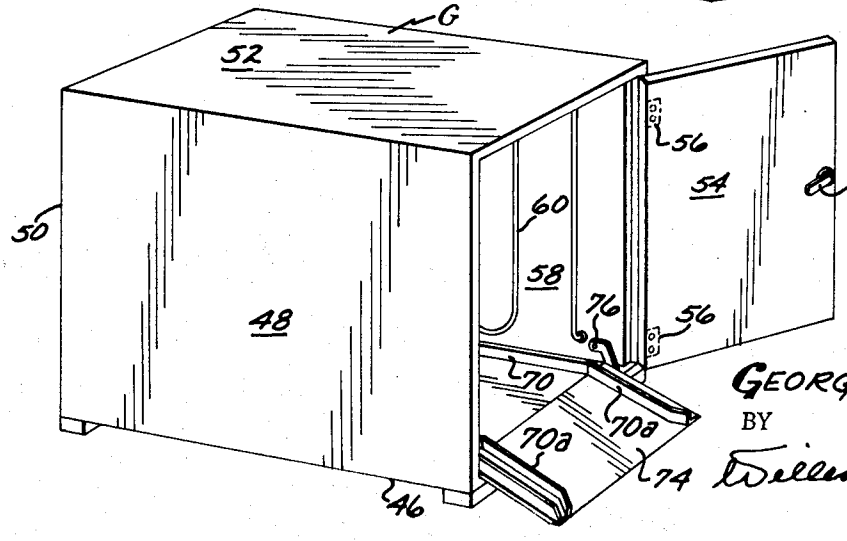
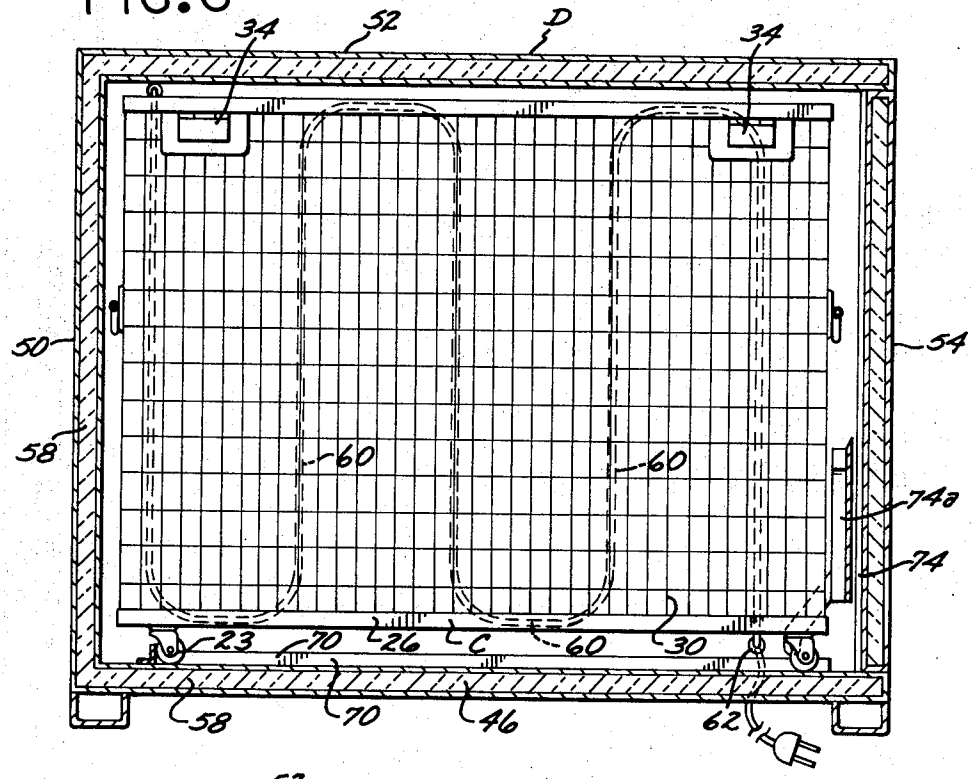


FIG. 5

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FIG.6



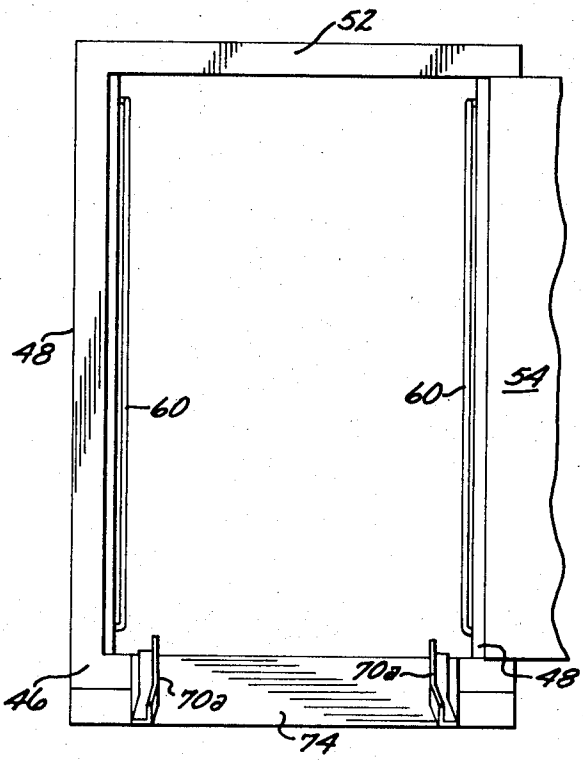


FIG.7

FIG.8

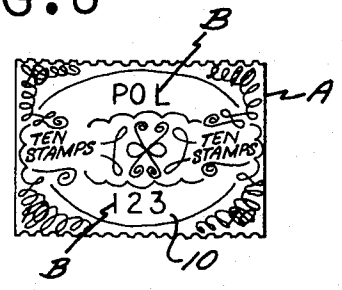
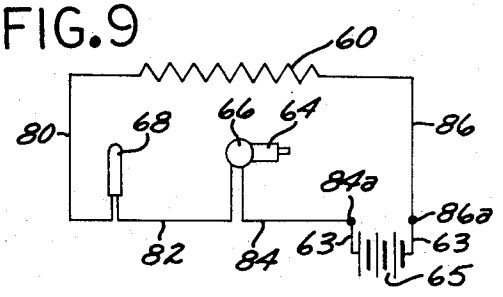


FIG.9



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TRADING STAMP INVALIDATING APPARATUS AND METHOD OF USING

BACKGROUND OF THE INVENTION

1. Field of the Invention

A trading stamp invalidating apparatus and method of using same.

2. Description of the Prior Art

In the United States numerous businesses give trading stamps and certificates to customers with the purchase of merchandise. Such stamps as is well known are normally adhered to the paper pages of disposable books, and the filled books then taken by the customer to a redemption center where the books may be exchanged for merchandise of the customers choice. Certificates are handled in a like manner but are not normally pasted in books.

A serious problem has prevailed for a number of years as to the handling of the stamp books and certificates after they have been redeemed, and primarily to prevent the unauthorized taking of such books and certificates and again using these previously redeemed books and certificates a second or third time to obtain merchandise. The unauthorized taking of books and certificates normally occurs after they have been redeemed at a redemption center, and prior to the redeemed books and certificates being transported to an area remote from the redemption center for subsequent transportation to a paper mill where they are used as raw stock for paper. The problem is augmented in that even if the books are shredded, pieces and sections of the pages will pass through the shredding apparatus that are of a size that portions of the stamps thereon are not mutilated. From experience, it has been found that even these partial portions of pages with stamps adhering thereto are taken by unauthorized persons with the non-mutilated stamps being removed therefrom and again placed in a book for redemption purposes.

The primary purpose in devising the present invention is to provide a trading stamp or certificate that prior to distribution to customers has been treated to have temperature sensitive ink insignias printed thereon, which insignias at a first ambient temperature are of a first color, but said insignias when exposed to a predetermined second temperature for not less than a predetermined length of time changing permanently to a second color. The second color instantly indicates to personnel in stamp redemption centers that the stamps have been previously redeemed.

Another object of the invention is to supply an apparatus assembly at a redemption center for receiving certificates and books of trading stamps of the type above described, and so temperature treating the books after redemption that said insignias are transformed to the second color to visually indicate that the books are now valueless.

SUMMARY OF THE INVENTION

A trading stamp invalidating apparatus that is particularly adapted for use with trading stamps and certificates that have an insignia defined on the printed surface thereof in a temperature sensitive ink, which ink at ambient temperature is a first color, but said ink when subjected to a predetermined second temperature for not less than a predetermined length of time

being permanently transformed to a second color to instantly indicate that the stamps have previously been redeemed. The apparatus will normally be housed at a redemption center, and will include a customer servicing structure at which books of stamps are presented for redemption purposes, with the book and certificates when redeemed being placed in a movably locked receiver. The receiver when filled with redeemed stamp books or certificates is removed to a temperature treating structure in which it is disposed, and the structure thereafter subjecting the receiver and books of stamps or certificates therein to said predetermined second temperature for not less than said predetermined length of time. The structure is preferably so designed that after a receiver containing books of the redeemed stamps or certificates has been placed therein and the structure electrically energized, the receiver and books cannot be removed therefrom until after the stamps or certificates have been subjected to the second temperature for not less than the predetermined length of time.

After this temperature treatment the insignia on the stamps has permanently transformed to the second color, and the stamps and certificates are valueless, as the second color indicates the stamps or certificates have been redeemed. The certificates and stamp books may now be transported without guards or other precautions to an area remote from the redemption center where the stamp books and certificates are preferably baled prior to being sequentially shipped to a paper mill for raw paper stock.

A major object of the present invention is to supply an apparatus for invalidating trading stamps or certificates of the type that have an insignia defined on the printed surface thereof in a temperature sensitive ink, which ink will remain at a first color indefinitely when subjected to ambient temperature, but which ink is permanently altered to a second color when subjected to a predetermined second temperature for not less than a predetermined length of time. The second temperature may be one that is substantially above or below the ambient temperature.

A further object of the invention is to supply an apparatus for handling certificates and books of stamps of the above description at a redemption center, and this apparatus when used assuring that certificates and books of stamps that have once been redeemed will pass through a sequence of steps in which stealing or unauthorized removal of certificates and redeemable books from the redemption center is virtually impossible, and the sequence terminating by the certificates and stamps being subjected to a temperature heating operation to render the certificates and stamps valueless for future redemption purposes.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is perspective view of a customer servicing structure in a certificate or trading stamp redemption center;

FIG. 2 is an end elevational view of a redeemed certificate or stamp book receiver disposed in the structure;

FIG. 3 is a perspective view of the receiver;

FIG. 4 is a perspective view of the lock used in maintaining the hinged top of the receiver in a closed position;

FIG. 5 is a perspective view of the electric oven used in heat treating a load of redeemed certificates or stamp books in a receiver;

FIG. 6 is a longitudinal cross sectional view of the oven;

FIG. 7 is a front elevational view of the oven;

FIG. 8 is a plan view of a conventional trading stamp that has an indicia in temperature sensitive ink defined thereon; and

FIG. 9 is a schematic electrical wiring diagram of the oven.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The stamps A used with the present invention may be of conventional design, but are distinguished from previously available stamps of this nature by all or a portion of an insignia B on the printed surface **10** of the stamp being defined by a temperature sensitive ink or coating material. The ink or coating material that defines the insignia B may for example be an alcohol based product such as "Tempilink" 410 C manufactured by Temperature Indicating Products, a division of Big 3 Industries, Inc. South Plainfield, N. J. This ink normally is of a pink color when imprinted on sheet material, but turns to purple color upon exposure to heat of 300° F for 30 minutes. This ink is merely an example of inks or coating materials that may be used for this purpose.

The apparatus as shown on the drawings that is used in invalidating trading stamps will normally be located at a redemption center (not shown). The apparatus will be described in handling trading stamps, but substantially the same procedure is used on certificates, with the exception that the certificates are normally not pasted in books. The apparatus will include a customer servicing structure C as shown in FIG. **1**, which may be of counter or desk-like configuration, and will normally have an attendant (not shown) standing or sitting in a position adjacent thereto. The customer servicing structure C as illustrated in the drawing is in the form of a counter that includes the flat horizontal upper top **8** that has end walls **12**, front wall **14**, and rear wall **16** extending downwardly therefrom to the floor surface **18**. The top **10**, forward wall **14**, and a pair of longitudinally spaced transversely extending walls **20** serve to define a confined space **22**, that is open at the rear thereof. The rearward walls **16** may have openings formed therein in which drawers **24** are mounted as is conventional with counter structures of the type illustrated.

A redeemed trading stamp book receiver D is shown in FIGS. **2** and **3**, which is of such size as to be removably insertable into the confined space **22** when the receiver is mounted on a dolly E. The dolly E is provided with a number of casters **23**. The receiver D includes a rectangular base **26** that has end walls **28** and side walls **30** extending upwardly therefrom. The end walls **28** and side walls **30** are preferably formed from a heavy wire screen or other aperture defining sheet material that is sufficiently stiff as to be dimensionally stable when formed into the shape as shown in the drawing. A cover **32** is provided that is supported by hinges **34** mounted on one of the side walls **30** of the receiver D. The cover **32** has flanges **36** that extend downwardly from the ends and rearward side thereof as viewed in the drawing. Lock means F are provided for removably holding the top **32** in a closed position as shown in FIG. **1**. The lock means F includes a hasp plate assembly **38** secured to the upper part of the rearwardly disposed side wall **28**, and is removably engaged by a pivoted lock plate **39** secured to the cover **32**. The hasp plate assembly may be removably engaged by a padlock **39*a*** as shown in FIGS. **1** and **4** to hold the cover **32** in a locked position. The receiver D is of such size as to be easily insertable in the confined space **22** for the bottom **26** thereof to rest on two horizontal rails **20*a*** secured to walls **20**. cover **32** has an elongate slot **40** formed therein that may be vertically aligned with a like slot **42** formed in the top **8**, with the two slots when so aligned permitting a book of redeemed stamps **44** to be passed downwardly therethrough into the confines of the receiver D.

Temperature generating means G are provided, that are of such size and shape as to permit one of the receivers D filled with the redeemed certificates (not shown) or stamp books **44** to be disposed within the confines thereof. If the insignia B is defined by a heat sensitive ink the means G will be of oven-like structure. Should the insignia B be cold sensitive the means G will be a structure that may be refrigerated by conventional equipment to a desired low temperature. The temperature generating means G as illustrated is preferably rectangular in shape, and is defined by a bottom **46**, side walls **48**, back wall **50**, a top **52** and a door **54** that is pivotally supported from one of the side walls **48** by hinges **56** or other movable door supporting means. The temperature generating means G has a continuous layer **58** of a heat insulating material on the interior thereof. Heating coils **60** overlie the layer **58**. The coils **60** are supplied with electrical energy from a plug **62**, which plug may have a cord **63** that extends to a domestic source of electric power **65**.

The door **54** may be placed in a closed position and held therein by a handle actuated lock **64** that has an electrical timer **66** associated therewith, which timer permits said handle to be moved to a position to permit door **54** to be opened only after the heating coils **60** have been energized for not less than a predetermined length of time. The heating coils **60** have a thermostat **68** operatively associated therewith, which thermostat is exposed to the interior of the oven, and automatically shuts off power to the heating coils when the temperature within the oven exceeds a predetermined temperature. The bottom **46** of the oven G above the layer of insulating material **58** has two laterally spaced rails **70** on which the receiver D rests. The receiver D is shown in FIG. **6** as supported on the rails **70** by caster **23**. The rails **70** are desirable inasmuch as they are secured to the bottom **46** or side walls **48** by conventional means (not shown), and accordingly the weight of the receiver D and redeemed books **44** therein does not rest on the layer of insulating material **58** covering the bottom of the oven.

AFter the temperature generating means G has been electrically energized for a predetermined length of time, the timer **66** permits the door **54** to be opened, and the container D with the heat treated books of stamps **44** or certificates (not shown) therein may now be withdrawn from the oven. The receiver D is now opened, and the temperature treated books or cer-

tificates which are now valueless due to the insignia B having been transformed to a color to indicate that the stamps or certificates have been redeemed is now placed in a suitable container (not shown). The filled containers will subsequently be hauled to an area remote from that of the redemption center where the redeemed temperature treated stamp books or certificates are baled or otherwise treated prior to shipment to a paper mill for use as pulp.

If desired, the temperature generating means G may have a ramp **74** pivotally supported by conventional means **76** therefrom. The ramp **74** when disposed as shown in FIG. **5** supports rail extensions **70***a* on which casters **23** may travel, or the extensions **70***a* may be used to slidably support bottom **46** as the receiver D is moved into the oven.

The resistance coils **60** of the temperature generating means G as may best be seen in FIG. **8** have one terminal thereof connected by a conductor **80** to a first terminal of thermostat **68**. The second terminal of thermostat **68** is connected by a conductor **82** to a first terminal of timer **66**. Second terminal of timer **66** is connected by a conductor **84** to a junction point **84***a*. Resistance coil **60** also has a conductor **86** extending therefrom to a junction point **86***a*. Junction points **84***a* and **86***a* form a part of plug **62**, which plug may be removably engaged by the coils **63** that extend to source of power **65**.

The use and operation of the invention has been described previously in detail and need not be repeated.

I claim:

1. An apparatus for invalidating certificates and trading stamps at a redemption center after the latter have been affixed to paper pages of disposable books, each of said trading stamps when affixed to said pages having a visable external surface on which an insignia is defined by a temperature sensitive material that remains a first color at ambient temperature but which changes permanently to a second color that is distinct from said first color when said stamps are subjected to a predetermined second temperature for not less than a predetermined length of time, said certificates of substantially the same structure as said stamps, with said predetermined second temperature being such as to not appreciably damage the paper defining said pages, stamps and certificates, said apparatus including:

a. a portable redeemed certificate and trading stamp book receiver that includes a rectangular bottom that has a pair of apertured side pieces and end pieces extending upwardly therefrom;

b. a cover operatively associated with the upper edges of said end pieces and side pieces, said cover capable of occupying either a first or second position, said cover when in said first position closing the top of said receiver, and said cover when in said second position permitting access to the interior of said receiver to remove said trading stamps and certificates therefrom;

c. first means for locking said cover in said first position;

d. second means for introducing redeemed certificates and books of stamps into the confines of said receiver when said cover is in said first position;

e. an electric oven structure that includes a bottom;

f. a first end wall extending upwardly from said bottom;

g. two laterally spaced side walls extending upwardly from said bottom;

h. a top connecting the upper portion of said side walls and end wall;

i. a vertically positioned door hingedly supported from the free end of one of said side walls;

j. rail means disposed inside said structure and supported therefrom and on which rail means said receiver may rest;

k. a layer of heat insulating material covering substantially the entire interior surface of said oven structure;

l. electrical resistance heating means disposed inside said oven structure interiorly from said heat insulating layer;

m. an electrically operated lock mounted on said door, for holding said door in a closed position;

n. an electrically operated timer that permits said electrically operated lock to be moved from a door locking position only after said door has remained in said position for a predetermined length of time;

o. a normally closed, electrically operated thermostat that opens when a predetermined temperature is reached, said thermostat being in communication with the interior of said oven; and

p. electric circuit means for supplying electrical energy to said resistance element, timer and thermostat, for heating the interior of said oven to not greater than a predetermined temperature for not less than a predetermined length of time b. assure that the heat sensitive ink insignias on said stamps in said books in said receiver are permanently transformed to said second color, prior to said timer permitting said lock to assume a position where said door may be opened and said receiver and redeemed stamp books removed from said oven.

2. An apparatus as defined in claim **1** which in addition includes:

q. third means for preventing redeemed certificates and books of stamps being removed from said receiver through said second means when said cover is in said first position.

3. An apparatus as defined in claim **1** in which said oven structure further includes:

s. a pivotally supported ramp that permits one of said receivers containing said redeemed book of stamps to be moved into said oven as well as removed therefrom with a minimum of effort.

4. An apparatus as defined in claim **3** in which said ramp has rail extensions thereon, and said receiver being supported on transversely aligned pairs of casters, and said rail extensions and rails in said oven being axially aligned, to permit said casters to travel thereover and position said receiver inside said oven, as well as to remove said receiver therefrom.

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