July 14, 1936. M. C. REGAN 2,047,707

SAFE

Filed May 6, 1935 2 Sheets-Sheet 1

Fig. 1.

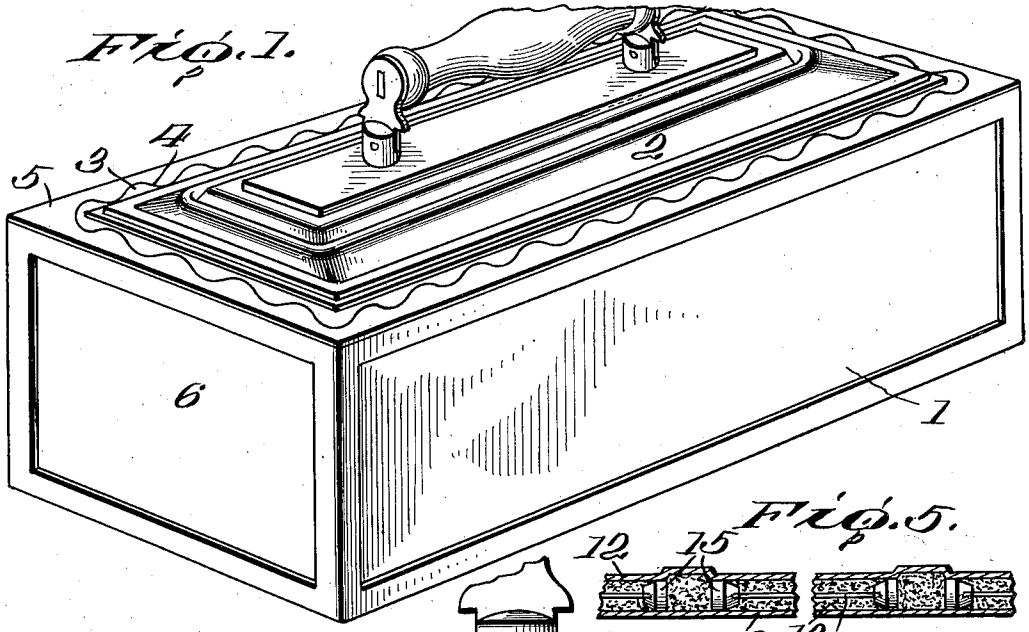
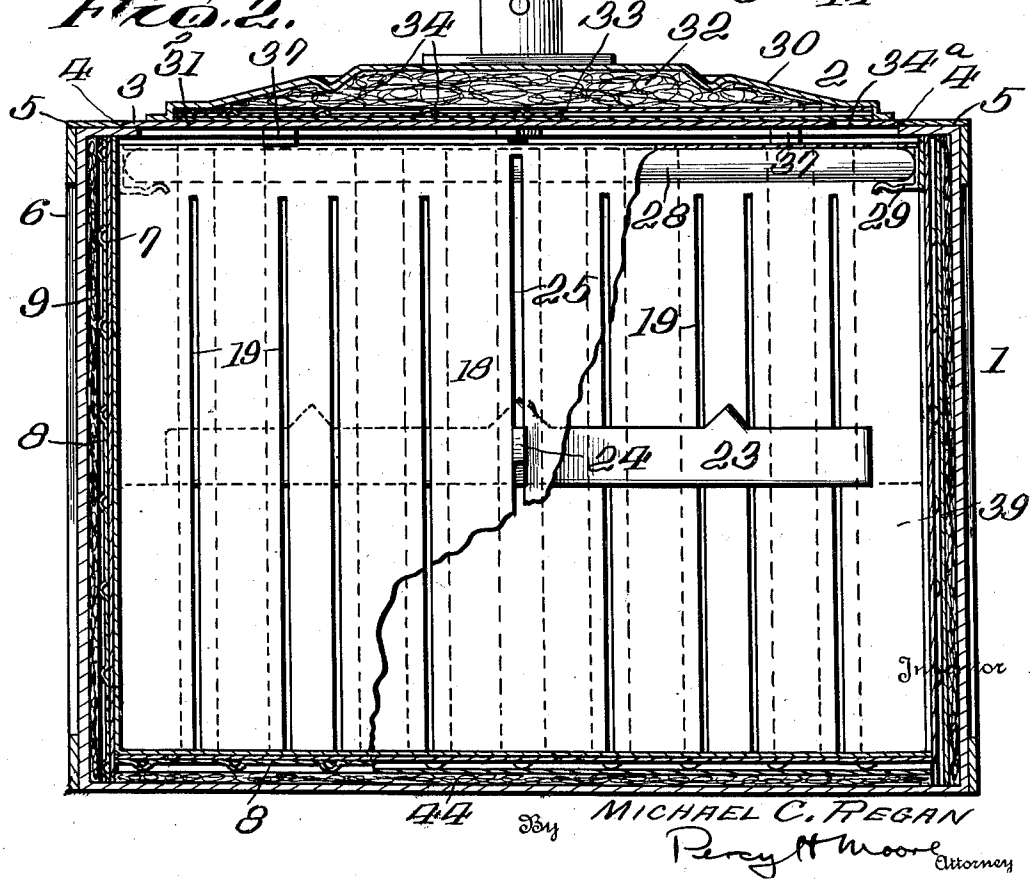



Fig. 5.




Fig. 2.




Inventor

By MICHAEL C. REGAN

Percy H. Moore Attorney

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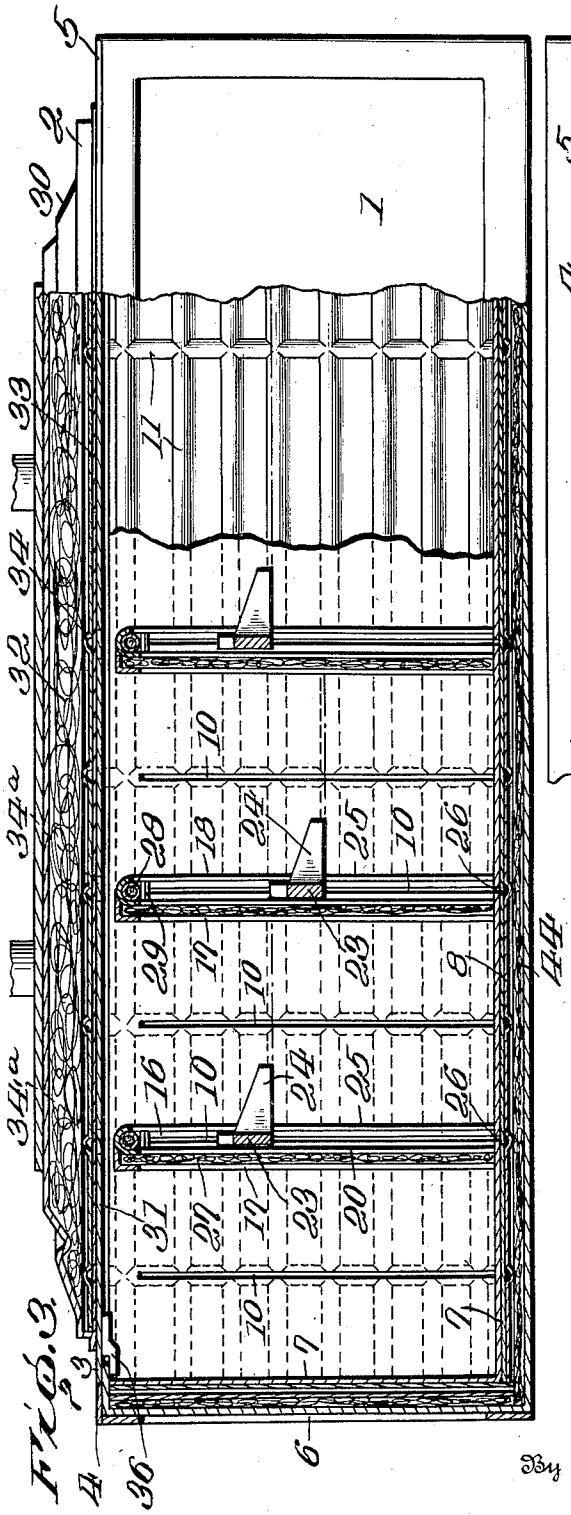



Fig. 3.

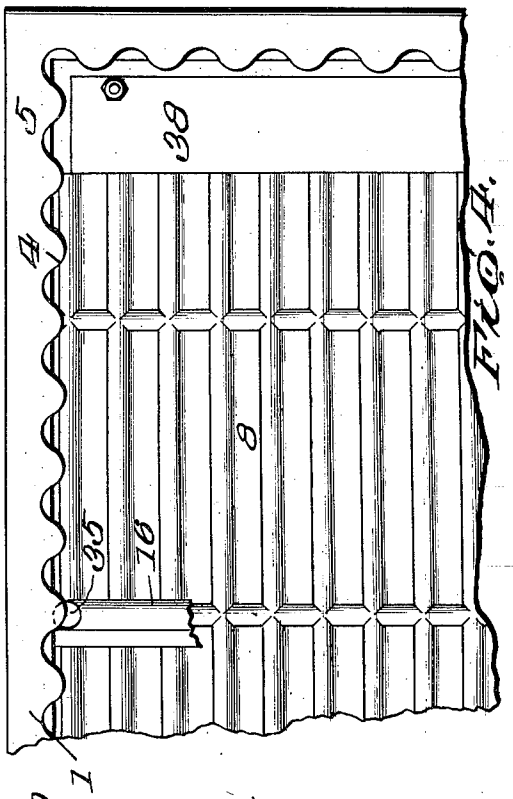



Fig. 4.

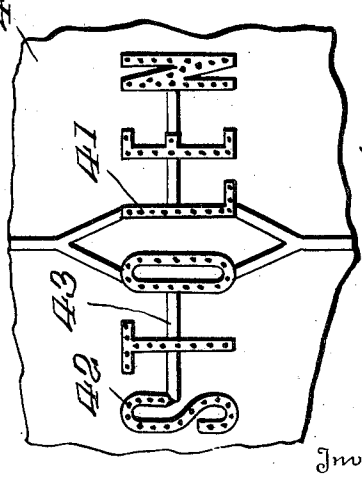



Fig. 6.

Inventor

MICHAEL C. REGAN

By Percy H. Moore

Attorney

Patented July 14, 1936 2,047,707

# UNITED STATES PATENT OFFICE

2,047,707

## SAFE

Michael C. Regan, Califon, N. J.

Application May 6, 1935, Serial No. 20,066

10 Claims. (Cl. 109—6)

My invention relates to means for rendering safes and the like burglar-proof.

Heretofore various means have been practiced in an attempt to render safes and vaults inaccessible to unauthorized persons. It has been the practice to employ manganese and other hard steels which will resist the action of drilling or cutting tools. However, this practice has proved unsatisfactory because such metals fail to resist the action of heat produced by an acetylene torch which is commonly employed by modern burglars. Attempts have also been made to employ various explosive chemicals within safes in order to destroy the safe or contents when the former is tampered with. Obviously, these and other practices have proved dangerous, impracticable and highly undesirable.

The object of my invention is to provide means whereby upon the unauthorized opening of or tampering with a safe, the contents will be automatically marked in such a manner as to render them non-negotiable or make it apparent that the same have been tampered with.

Another object is to provide a steel safe or the like, having a removable lining in which a chemical is arranged, whereby upon the application of force to or tampering with the safe the chemical will be exploded in such a manner that the contents will be adequately marked by scorching or discoloration.

Another object is to provide a removable mecolite lining or insulation for safes and the like having a combustible chemical arranged in channels therein, which channels will be spasmodically exploded thereby giving off a gas when the safe is subjected to any force or burning action.

Another object is to provide means whereby a simultaneous explosion of the chemical with the resulting destruction of the container and contents will be prevented.

A further object is to provide means which will assure the marking of the contents should the container be immersed in water or in the event the chemicals fail to explode.

A further object is to provide an inexpensive lining or insulating material which may readily be applied to safes and the like now in use and which will preserve the chemicals indefinitely and be unaffected by humidity.

These and other objects and advantages will be apparent as the specification is considered with the accompanying drawings, in which:

Figure 1 is a perspective view of a portable safe;

Figure 2 is a vertical section through the safe showing one of the partitions partly broken away;

Figure 3 is a lengthwise cross-section through the safe showing the insulation therefor;

Figure 4 is a plan view of a portion of the safe with the cover removed;

Figure 5 is a section through a portion of the mecolite lining material; and

Figure 6 is a plan view of a section of one of the stencil markings;

Referring more particularly to the drawings wherein like reference numerals refer to corresponding parts throughout the several views, 1 denotes a double walled portable safe or container for the purposes of illustration, preferably made of sheet steel or equally strong material, the construction of which will be presently described in detail, and having a double walled cover 2 therefor, the edges of which are scallop-shaped as at 3, to be lockingly received in the correspondingly scalloped edges 4 of the inturned upper ends 5 of the container walls. Due to this scallop or dove tailed locking of the edges of the cover and container, any attempt to pry open the cover by means of a chisel or other sharp instrument will be precluded in that it is extremely unlikely that such an instrument can be inserted or forced between said edges due to their curved or waved formation.

The container 1 is rectangular in shape and is formed of outer and inner walls 6 and 7, respectively, having a double walled mecolite sheeting material 8 and a felt or the like matting 9 disposed therebetween. The inner wall 7 of the container is provided with the vertically arranged slots 10, whereby the mecolite sheeting will be open to the inside of the container. The mecolite sheeting material 8 is provided with a network of laterally and transversely arranged communicating channels 11 formed by grooving or preforming the inner sheet 12 thereof, which channels are filled with a suitable explosive chemical 13, having the property of fulminite or mercury or friction match-head paste which will be ignited by friction. A relatively fine hard steel wire or the like 14 is imbedded in the chemical 13 in each of the transverse communicating channels, whereupon ignition of the chemical a fuse-like sizzling action is obtained. A communicating groove or channel is adapted to be located along the marginal edges of said sheeting. Beveled felt plugs or the like 15, positioned at the ends $10^b$ of each transverse channel, serve to close said channels at the point where they open into the main lateral or marking channels. Consequently, the explosive charge will be localized in each individual channel or groove whereby

only that communicating channel which is tampered with will be exploded and the remaining communicating or transverse channels will be left intact or unexploded.

The container is preferably divided into a series of compartments by means of hollow metal partition members 16, suitably connected to the side walls of the container by solder or the like. These partition members comprise the spaced apart walls 17 and 18, slotted as at 19, having an intermediate slotted wall 20 spaced therebetween, which walls are suitably joined at their upper ends, as at 21, thereby forming two separate compartments therein. A clamping element 22 comprising a plunger or rack bar 23 positioned between the walls 18 and 20, is provided with a clamping arm 24 extending through a centrally disposed slot 25, which arm serves to securely retain the documents or other contents in stacked relation in their respective compartments. The partition members are arranged so their open ends will be positioned approximately over the side wall slots 10 and the open bottoms thereof are adapted to be positioned approximately over slots 26 arranged in the inner floor wall 7 of the container. The space between the walls 17 and 20 of the partition members is preferably filled with an ink impregnated felt or wool material 27, and, if desirable, this felt may be arranged in separate strips and suitably adhered to the partition wall 17. A relatively thin glass vial or the like 28, containing a suitable liquid solvent such as water, is positioned in upper portion of the compartment between the partition walls 18 and 20, and is retained in position therein by suitable wall brackets 29. Should the walls of the container be jarred or sufficiently moved by a heavy tool or the like, the brackets will be forced inwardly, whereby the ends of the vial 28 will be jarred and broken, thereby allowing the solvent therein to dissolve the ink compound imbedded in the matting 27, which will necessarily mark the contents. The application of extreme or excessive heat to the container will also be sufficient to crack the glass vial whereby the marking of the contents will be assured.

The double walled cover 2 is similarly constructed—that is, comprises upper and lower plates 30 and 31, suitably bolted together, and, if desired, having an insulation of ink impregnated felt or wool 32. A mecolite sheeting 33, provided with a network of laterally and transversely arranged communicating channels 34, and filled with the explosive chemical, is disposed between said plates. The lower plate 31 thereof is provided with a plurality of communicating holes or apertures 34a arranged along and adjacent to the side edges of said plates, which apertures are positioned approximately over the upper ends of said chemically filled lateral marking channels 11 of the mecolite sheeting 8. The apertures 34a are also adapted to be positioned over holes or openings 35 formed in the outer upper corners of the partition members 16, whereby contact between the mecolite sheeting in the cover and walls of the container may be had. The underside of inner plate 31 is preferably provided with two fixed lugs or pins 36, suitably affixed to and positioned at one end thereof, and two spring-pressed lugs or pins 37 positioned on the other end thereof, which pins are adapted to fit beneath the inturned upper ends 5 of the end container walls whereby the cover will be lockingly positioned on the container.

The locking and unlocking operation of the cover is effected by any suitable locking mechanism not shown, which may be contained in a suitable compartment 38 at one end of the container. This locking mechanism may be controlled by any desired predetermined combination, for example, by tilting the container in different directions or angles.

The bonds or other documents 39 are placed in the container compartments with the clamping arms 24 holding them in stacked relation in the following manner. First, a paper such as a bond, currency, or the like, 39, is inserted in place on the bottom lining plate 7 of a compartment, a marking or stenciling plate 40 is superimposed thereon and then two bonds or papers placed upon the marking plate, and so on until the compartment is filled to the desired capacity, it being understood that there may be at least two bonds to each marking plate. These marking or stenciling plates are made up of two sheets of mecolite material or the like, suitably adhered together, having preformed letters or words stamped therein forming grooves or channels 41, in which the explosive chemical compound is placed. A plurality of relatively fine perforations 42 are provided in the mecolite sheets throughout the formation of the letters or words. The mecolite stenciled sheets are also formed with a laterally and transversely extending communicating groove or channel 43 having the chemical therein, which serves to interconnect the letters, and the ends of which laterally extending channel 43 communicate with the centrally disposed slot 25 in the outer partition wall 18. Therefore, when an explosion occurs anywhere in the container the gases and heat given off therefrom will circulate through the slots 19 in the partition walls which thereby causes the chemical-filled stencil channels to ignite and necessarily marks the contents in an obvious manner.

The floor or bottom of the container is also provided with similarly constructed mecolite sheeting material 8 disposed between the floor lining plate 7 and the felt insulation mat 44, which mat may be dispensed with, if desired. A heavier charge of explosive chemical is preferably packed in the network of communicating channels.

Should an unauthorized attempt be made to open or reach the interior of the container by drilling, cutting or subjecting same to extreme or excessive heat, the drilling tool or the like being used in the attempted opening will frictionally contact a mecolite channel and cause the chemicals to burn in that individual communicating channel and the gases given off therefrom will blow out or slowly burn the valve plugs 15 at the ends of said channels, whereby the fuse-like action of the ignited chemicals will likewise ignite the chemical in the main lateral or marking channels and thereby cause the fire to spread around the marginal edges of the compartment by means of the lateral marking channels and upper and lower marginal communicating channels throughout the container. However, it will be obvious that the remaining transverse communicating channels will remain intact because the valve plugs 15 at the outer ends thereof remain seated which necessarily prevents any sudden explosion and destruction of the container. The flames and gases will pass through the vertical slots 10 in the inner wall of the container thereby burning, scorching, or otherwise discoloring the edges of the stacked papers or documents in their respective compartments.

The lateral marking channels in the mecolite sheeting on the floor of each compartment are in alignment with the lower ends of the main lateral marking channels in each of the side walls of the compartments. Therefore, when the side wall channels are ignited the marginal channels of the mecolite sheeting in the floor, the side channels of which are positioned beneath the open lower ends of the partition members 13, will likewise be ignited and the gases given off therefrom will cause the plunger bar 19 of the clamping element to rise to the top of the partition member and contact with and shatter the vial 28. The liquid solvent contained therein will thereby seep through the slots 19 in the rear walls 17 of the partition members and soak the ink impregnated matting 27 therein. The ink compound will consequently be dissolved by the aforesaid solvent and will necessarily seep through the slotted partition walls 17, 20 and 18, thereby marking the edges of the stacked bonds or papers in their respective compartments.

Should water or other liquids be introduced into the container in an attempt to render the chemical-imbedded mecolite lining ineffective, the ink compound imbedded in the felt or wool insulation matting in the walls, floor and cover thereof, will be dissolved whereby the bonds or other documents will be suitably marked by the ink solution.

It will therefore, be seen that an adequate marking of the contents of the container will be assured regardless of the method employed in opening the container. That is, the contents will be marked by the ink or indelible solution and by the discoloring or scorching action of the hot gases given off by the ignited communicating channel.

While I have in the present instance described and illustrated my invention as applied to portable safes or containers, which in practice will give satisfactory and reliable results, it is to be understood that I do not wish to limit myself to this application as various changes may be made without departing from the spirit and scope of the invention.

Having thus described my invention, what I claim is:

1. A safe comprising spaced walls having sheeting material therebetween, said sheeting material having a plurality of communicating grooves therein, a substance in said grooves adapted to be ignited when said walls are disturbed, whereby said substance will mark the contents of the safe.

2. A safe comprising spaced walls having removable sheet members positioned therebetween, said members having a network of communicating grooves therein, means positioned therein for separating said grooves, a substance in said grooves adapted to be ignited when said walls are tampered with, whereby the substance in one of said separated grooves will mark the contents of the safe.

3. A safe for papers and valuables having partition members therein, said partition members having dissoluble marking means arranged therein, means associated with said members for automatically operating said marking means when the safe is tampered with.

4. A safe for papers and valuables having slotted partition members therein, a marking compound in said members positioned adjacent said slots, a tube positioned in said members having a solvent therein, automatic means associated with said members for breaking said tube whereby said marking compound will dissolve and discolor the contents of the safe.

5. A protective lining material for safes and the like, comprising mecolite sheets having a network of communicating grooves formed therein, a chemical substance in said grooves, said substance being adapted to produce a gas when ignited by friction, whereby the contents of the safe will be marked.

6. A protective lining material for safes and the like, comprising two mecolite sheets, a network of communicating grooves formed in one of said sheets, a chemical substance in said grooves, said substance being adapted to produce a gas when ignited by friction, whereby the contents of the safe will be discolored.

7. A protective lining material for safes and the like, comprising mecolite sheets having a network of communicating grooves formed therein, an explosive substance in said grooves, stop means in said grooves, whereby the explosive substance in one of said grooves is adapted to ignite by friction, whereby the contents of the safe will be discolored.

8. A safe comprising a container, stencil plates for holding papers therebetween, said plates having grooves formed therein, said grooves having a communicating means therebetween, a substance in said grooves adapted to ignite by friction, whereby said substance will mark said papers upon tampering with said container with a mark corresponding to the configuration of said stencil.

9. A safe comprising a container, mecolite plates for holding papers therebetween, said plates having grooves formed therein, said grooves having a communicating groove therebetween, a chemical substance in said grooves adapted to ignite by friction, whereby said substance will mark said papers upon puncturing said container with a mark corresponding to the configuration of said stencil.

10. A safe having compartments therein, a cover for said safe, partition members for said compartments, sheet means arranged in the walls, cover and partition members, said sheet means having separable marking means therein, one of said separable marking means being adapted to mark the contents of said compartments when said separable means is tampered with.

MICHAEL C. REGAN.