March 31, 1936. P. C. NAVIS ET AL 2,035,498

MEANS FOR MARKING BURGLARIZED PAPERS

Filed Dec. 18, 1934 3 Sheets-Sheet 1

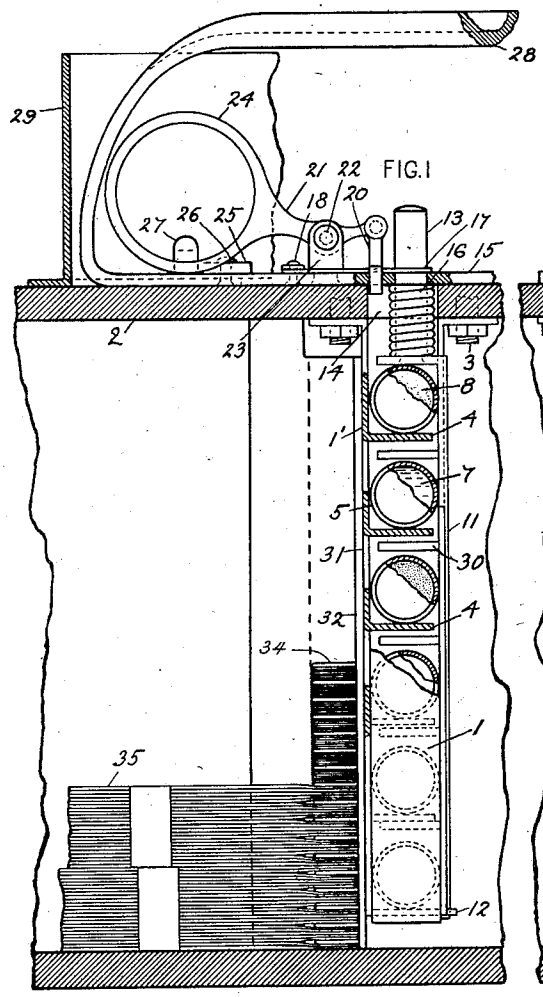


FIG. 1

FIG. 3



FIG. 2

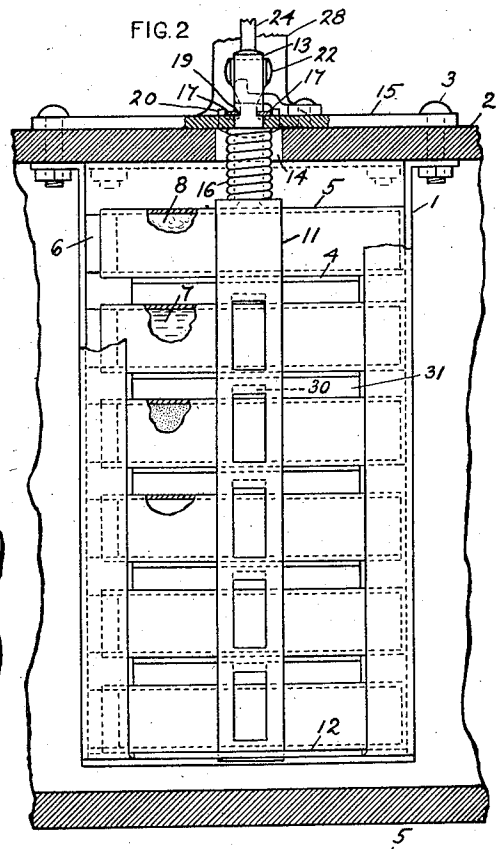


FIG. 4

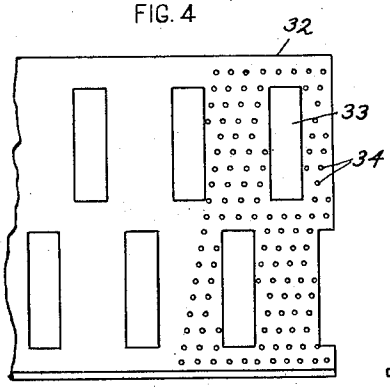


FIG. 5

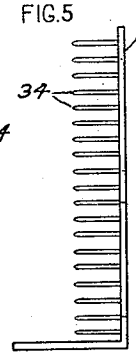
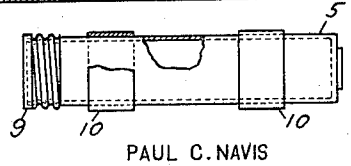


FIG. 6



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FIG. 7

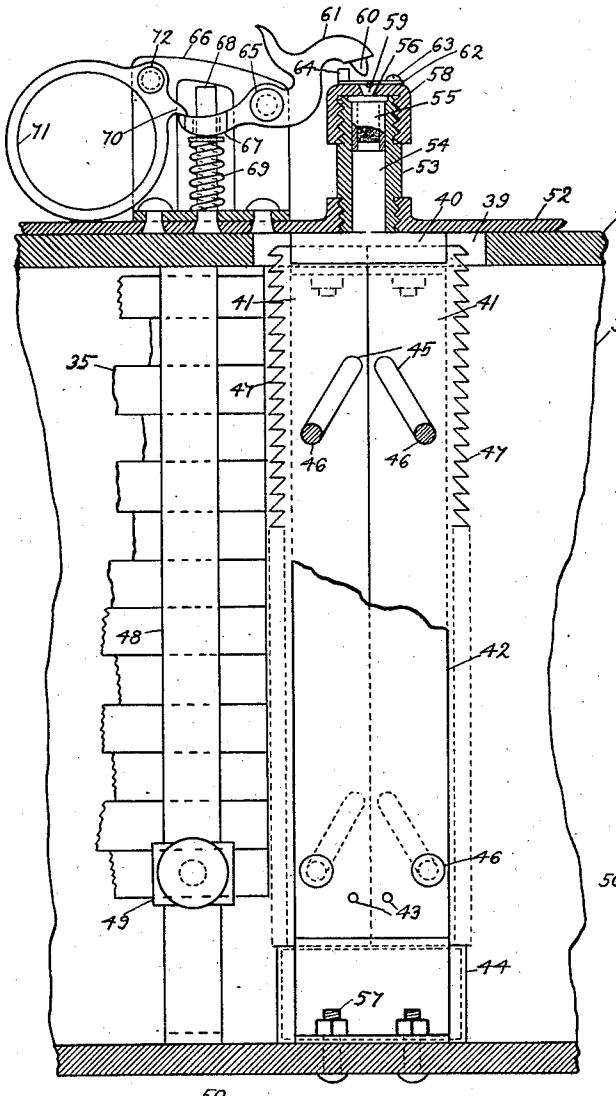


FIG. 8

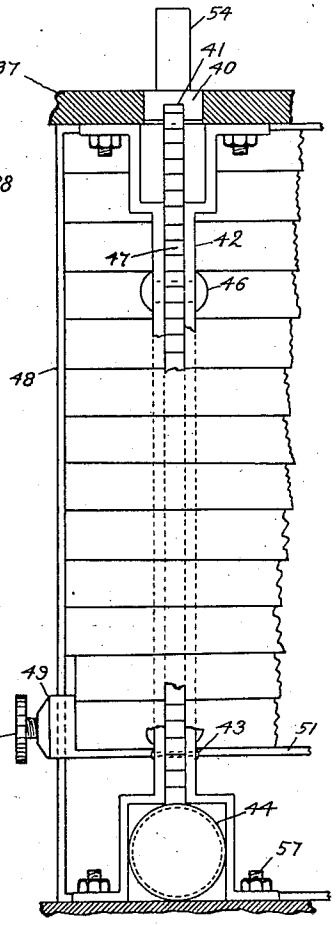
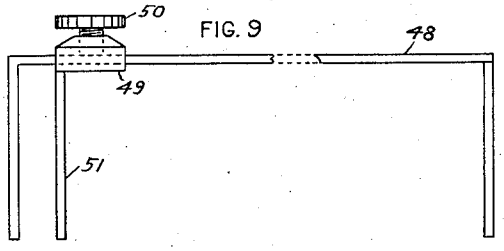


FIG. 9



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FIG. 10

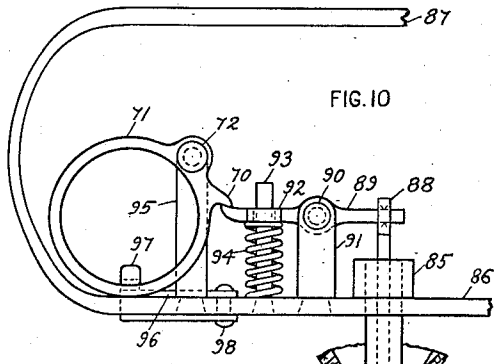


FIG. 11

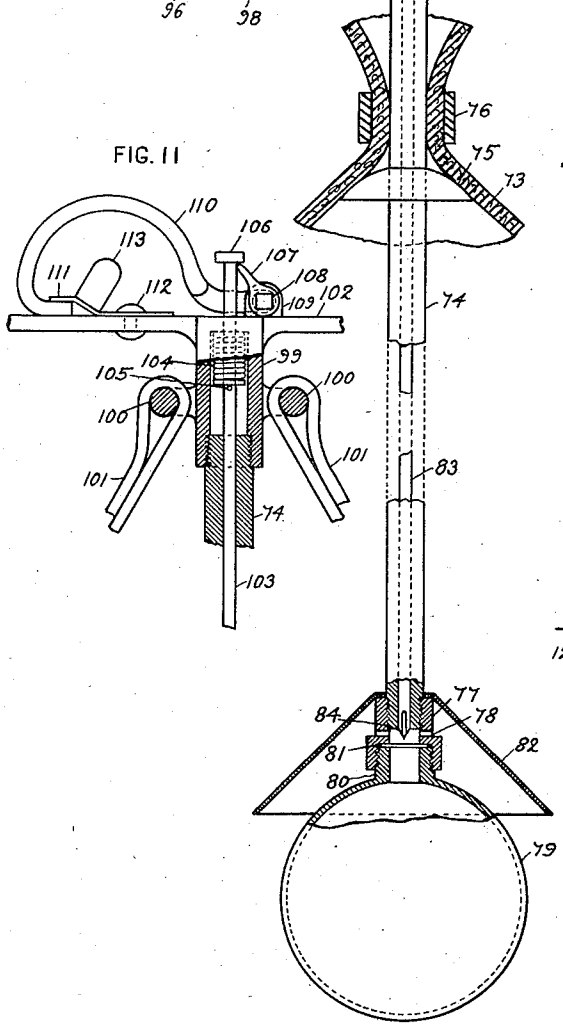


FIG. 12

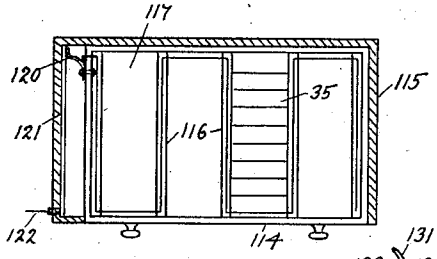


FIG. 13

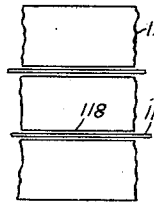


FIG. 14

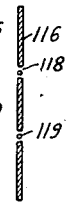


FIG. 16

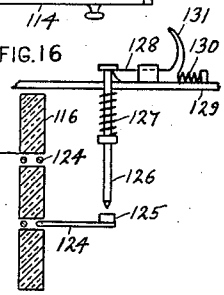
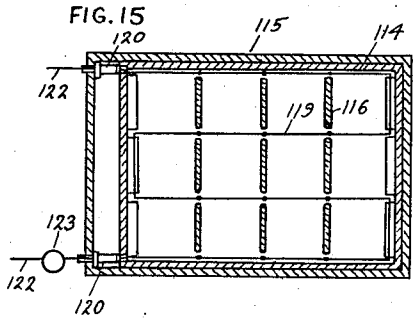


FIG. 15



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UNITED STATES PATENT OFFICE

2,035,498

MEANS FOR MARKING BURGLARIZED PAPERS

Paul C. Navis, William A. Moran, Jr., George E. Von Berg, and Theodore P. Garankin, New York, N. Y.; said Garankin assignor of five per cent to said Navis, five per cent to said Moran, Jr., and five per cent to said Von Berg

Application December 18, 1934, Serial No. 758,078

5 Claims. (Cl. 109—6)

Our invention relates to methods of instantaneous marking of valuable papers for their identification and has particular reference to methods and devices for permanently marking such papers at the moment when they are being surrendered to armed robbers.

The object of our invention is to provide means for leaving permanent and indelible distinguishing or identifying marks on bills, bonds and other negotiable papers at the moment when it becomes known that these papers will be taken by force by unauthorized persons.

It is a well known fact that even armed guards usually do not afford complete protection to valuable paper against bands of armed robbers, especially when such paper are being carried by messengers in bags or other containers, as the robbers often find it possible to cover the guard and the messenger with their guns before the guard has a chance to bring his own gun into action. The messenger who carries the bag has even less opportunity to defend himself and his bag.

The practice has shown, however, that whenever bills or other valuable papers have been marked for identification, as it happened, for instance, in many cases of kidnaping, extortion, etc., such marked paper proved to be a very reliable means for apprehending the robbers.

The importance of such marking is generally recognized, but it can be but seldom used, as in cases of robbery by armed bandits, messengers and their guards have no time nor opportunity to mark the paper in any way by any ordinary methods, especially since these papers are usually transported in closed bags or similar containers.

We discovered, however, that it is possible to provide a mechanism whereby the papers in a bag or similar container can be instantly and indelibly marked for identification, when the messenger or carrier of the bag is confronted and overpowered by the armed bandits and must surrender the bag.

We provide for this purpose a power operated mechanism in the bag in connection with a suitable marking agent, such as ink, fumes, vapors, gases or powders, sealed in small containers. The energy of the operating mechanism is stored and locked by a suitable means, but can be releashed at the moment's notice thereby opening the containers with marking substances. For releasing the energy we prefer to use trigger-like devices supported at the handle of the bag and provided with locks in order to prevent their accidental release.

We found that a spring normally held under compression furnishes a convenient source of power for releasing the marking substances, as such springs can be easily wound or tightened, and can be instantly released by a suitable trigger.

Instead of marking substances we also use mechanical marking means, such as saws or toothed knives, adapted to cut the edges of the papers when moved by suitable springs.

As a source of power for the marking devices we also use powder cartridges exploded by finger triggers, the cartridges acting on pistons, which in turn move mechanical cutting devices or hammers for breaking containers with marking substances.

The cartridges can be also used for igniting explosive cord placed in proximity to the edges of the papers in order to burn the marks on their edges.

Our invention can be used for the protection of papers kept in drawers, safes or vaults. For this purpose containers or capsules with marking substances are placed near the papers together with actuating devices set for action. The triggers are brought outside and placed near the handles of the doors of such storage places.

Our invention is more fully explained in the accompanying specification and drawings in which—

Fig. 1 is a partial sectional elevation of a portable container for papers provided with our marking mechanism, Fig. 2 is a partial sectional end view of the same, Fig. 3 is a detail view of a trigger hook, Fig. 4 is a detail view of a perforated rack for the papers, Fig. 5 is an end view of the same, Fig. 6 is a detail view of a tube or cartridge for a marking substance, Fig. 7 is a partial sectional elevation of a modified device, Fig. 8 is a sectional end view of the same with the trigger and hammer parts removed, Fig. 9 is a detail view of a paper clamp, Fig. 10 is a partial sectional elevation of a modified device, Fig. 11 is a modified detail view of a trigger mechanism, Fig. 12 is a sectional plan view of a safe drawer with our protecting device, Fig. 13 is a detail view of a partition in the drawer, Fig. 14 is an end view of the same in section, Fig. 15 is a sectional plan view of the same, and Fig. 16 is a detail view of a modification.

Our marking device consists of a frame or rack 1 attached by its upper part inside to a cover of

a portable container or box 2 with screws 3. The back wall of the frame 1' has shelves 4 for tubes or cartridges 5 preferably made of a thin brittle material such as glass. They are closed with corks 6 and are supported on the shelves between the end walls of the frame 1. Some or all of these tubes contain a liquid 7 which, when applied to the paper, will leave indelible marks on it. For this purpose strong dye solutions may be used, especially those of the aniline group, or such liquids as will affect the structure of the paper itself, such as acids or alkalis. Vapors 8 of such liquids may be also used preferably under compression, as well as powders or gases such as chlorine. When such substances are kept under compression, the corks 6 are replaced by screw caps 9, Fig. 6, and the body of the cartridge is reinforced by bands or hoops 10. The cartridges are retained in their places by the end walls of the frame 1 as shown in Fig. 2, and by a sliding bar 11 at the front. The lower end of the bar is slidably fitted in a slot in a bottom board 12 of the frame 1', and the upper end is attached to a rod 13 extending through a slot 14 in the cover of the box 2 and slidably fitted in a plate 15 fastened to the cover of the box. A compression spring 16 is placed on the rod 13 between the upper end of the bar 11 and the under side of the plate 15 and tends to push the bar down. Normally the bar is kept in the raised or inoperative position by latches 17 pivoted on pins 18 and drawn together so as to engage slots 19 at the sides of the rod 13. A locking device in the shape of a double hook 20 engages the sides of the latches 17 thereby preventing them from accidentally turning sideways and releasing the rod 13. The hook 20 is pivoted by its upper end to the end of a lever 21. The latter is pivotally mounted on a pin 22 supported in a bracket 23 mounted on the plate 15. The other end of the lever 21 has a ring 24 the lower portion of which is normally held down against the plate 15 by a locking latch 25 pivoted on a pivot 26 and having a lip or lug 27. A handle 28 is provided for the box 2, the ring 24 of the trigger lever 21 being placed inside of this handle and protected by a shield 29.

The bar 11 is provided with lugs 30 extending above the cartridges or capsules 5. These lugs are adapted to break or puncture the cartridges when the bar 11 is released. In order to facilitate the breaking of the cartridges, the lugs 30 are staggered as shown in Fig. 1 so that only one or few lugs come in contact with the corresponding cartridges at first, and after these few cartridges have been broken, next lugs come in contact with their cartridges, and so forth.

The rear wall of the frame 1 has apertures 31 formed by punching out and bending the shelves 4. At the rear of the wall a plate 32 is supported provided with perforations 33 and a plurality of staggered sharp needles 34. Packages 35 of bills or other papers are stacked in the box 2, the papers being forced with their edges against the needles so that the needles are caused to pass between the papers in order to facilitate the penetration of marking fluids into the spaces between the papers near their edges.

The operation of our device is as follows.

The packages 35 are placed in the box 2 impaling the ends of the papers on the needles 34. With the cover of the box open or removed, the rod 13 is inserted in the slot 14 and through the aperture in the plate 15 by compressing the spring 16 and then locked in this position by turning the latches 17 so as to engage the slots in the rod 13 while the ring 24 is raised in order to lower the locking hook 20. With the latches 17 in their operative positions engaging the slots in the rod 13, the ring 24 is lowered thereby locking the latches with the hook 20. The ring 24 is locked in this position by the locking latch 27. The rear wall 1' with the cartridges is then assembled and fastened with the screws or bolts 3, engaging the lower end of the bar 11 with the slot in the bottom bar 12.

A similar rack 32 with the needles 34 may be placed in front of the bar 11 for packages of paper stacked in that portion of the box. With loose papers the rack 32 may be dispensed with as then there will be enough clearance between the papers for the penetration of the marking fluids.

The container 2 with the papers inside can be carried safely by the handle 28. The forefinger of the carrier may be held inserted in the ring 24 above the lug 27 of the lock. The box or bag 2 may be roughly handled without any danger of the mechanism becoming released. The cartridges may be further protected by the hoops 10 which may be made of an elastic material like rubber if the cartridge walls are sufficiently strong to withstand the internal pressure without reinforcing hoops. The rubber hoops will prevent breakage of the cartridges from jar or vibration during transportation of the box.

In emergency, when confronted by armed robbers, the messenger or carrier in surrendering the bag needs only to push the lug 27 sideways and to raise the ring 24. The hook 20 will then release the latches 17 by forcing its cam-shaped portion 36 between them. With the rod 13 released, the string 16 will push the rod with the bar 11 down and the lugs 4 will successively break the cartridges 5 thereby releasing the marking substances. The latter will rapidly spread inside of the box, penetrating between the papers at the needles 34. It is possible, of course, to use different liquids or vapors in different cartridges, these liquids being of such nature that upon mixing they will produce acrid penetrating fumes leaving indelible discoloration on the papers. The marking thus produced will take effect practically instantaneously, especially if the fluids in the cartridges were under sufficient pressure.

A modified arrangement is shown in Figs. 7, 8 and 9. Here the cover 37 of a box or bag 38 is provided with an elongated slot 39 for a slotted bar 40 engaging the upper ends of bars 41. These bars are slidably fitted in a frame 42 but normally are held in the raised position by shearing pins 43 passing through the walls of the frame 42. The lower ends of the bars do not reach the bottom of the box 38 where a housing is formed by the lower portions of the frame 42. A cartridge or capsule 44 is placed in this housing under the ends of the bars 41, this cartridge being filled with a marking fluid, preferably under compression. The bars 41 are provided with inclined slots 45, the sides of the slots engaging guiding pins 46 fastened in the walls of the frame 42. The slots are made so that they force the bars to move apart if these bars are pushed down, bringing them together again when raised, the sides of the slots forming cam surfaces. The outer edges of the bars 41 are provided with sharp teeth 47 adapted to cut the edges of the papers in packages 35 stacked near the bars 41 as shown in Fig. 7. The paper packages are held

firmly by a clamp formed of a yoke 48 with a sliding sleeve 49 which can be fastened in any position on the vertical bar of the yoke by a screw 50. A horizontal bar 51 is attached to the sleeve 49 and is used to clamp the packages against the upper horizontal bar of the yoke. If desired the yoke may be attached to the bottom of the box 38 by suitable clamps or screws (not shown).

A plate 52 is supported on the cover 37 and is provided with a cylinder 53 in which slides a plunger 54 attached to the slotted bar 40. A space is provided at the top of the cylinder for an explosive cartridge 55 with a fulminate 56 on top.

A cap 58 is screwed on top of the cylinder 53 and is provided with an aperture 59 on top over the fulminate for the point 60 of a hammer 61. The aperture 59 is usually closed by a plate or latch 62 hinged on a pivot 63 and provided with a lug 64 for turning it.

The hammer 61 is pivoted on a pivot 65 supported on a bracket 66 mounted on the plate 52. The other end of the hammer has an aperture 67 for a rod 68 the lower end of which is fastened in the bracket 66 and plate 52. A compression spring 69 is placed on the rod 68 and tends to push the end of the hammer up. The hammer is held in the cocked position as shown by a lug 70 on a trigger ring 71. The latter is pivoted on a pivot 72 and is turned down by the pressure of the spring 69 through the end of the hammer and lug 70. The lug 70 is sufficiently short so that when the ring 71 is raised the lug slides off the end of the hammer. A handle (not shown) similar to the handle 28 is mounted over the hammer and trigger mechanism. This mechanism is not shown in Fig. 8.

The box 38 is shown constructed so that the cover 37 remains in place when the packages are placed in their position or removed, there being a side door (not shown) for this purpose. The packages are clamped separately in the yoke 48 and then placed inside as shown near the sawtooth edges of the bars 41. In this position the papers in the bag can be safely handled and the bag or box 38 carried by a messenger, as the hammer cannot strike the fulminate even if the ring 71 is accidentally pulled up, the locking plate 62 preventing the hammer from reaching the fulminate. In order to operate the mechanism, the plate 62 must be turned aside and the ring 71 raised. Its lug 70 slides off the end of the hammer, releasing the latter to be acted upon by the spring 69 and to strike the fulminate thereby exploding the cartridge and pushing the plunger 54 down.

The plunger in moving down will press on the bars 41 breaking the safety pins 43. The bars, guided by the sides of the slots 45 on the pins 46, will move down and apart, approaching the edges of the papers in the packages 35 and cutting through them by the teeth 47. At the same time the lower ends of the bars will break or puncture the cartridge 44 thereby releasing marking fluids. The latter immediately spread over the interior of the box 38 staining the papers.

The cartridge 44 may be omitted if desired, when only cutting action on the paper by the bars 41 is required, or the teeth from the bars may be removed, if only staining of the papers is required by the gases or vapors from the cartridge 44.

Another modification is shown in Fig. 10 specially adapted for a soft bag 73. This device consists of a tube 74 provided with a mushroom-shaped enlargement 75 over which the top of the bag is tied with a belt or ring 76. A nipple 77 is screwed on the lower end of the tube 74 and is provided with small holes 78. A bulb 79, preferably made of metal or similar material, is screwed with its threaded neck 80 into the lower end of the nipple 77. A thin diaphragm 81 seals the opening in the neck 80. This diaphragm may be made of glass or thin sheet metal. The bulb is filled under compression with a suitable marking gas or vapors. A shield or deflector 82 is supported on the upper end of the nipple 77.

A rod 83 is slidably fitted in the tube 74 and has a sharp point 84 at the lower end adapted to puncture the diaphragm 81 when the rod 83 is pushed down.

The upper end of the tube 74 is fitted into a nipple or bushing 85 attached to a plate 86 forming a part of a handle 87.

The upper end of the rod 83 has an eye 88 loosely fitting over one end of a lever 89 mounted on a pivot 90 in a bracket 91 supported on the plate 86. The other end of the lever 89 has an aperture 92 for a rod 93 fastened with its lower end in the plate 86. A compression spring 94 on the rod 93 tends to turn the lever and to push the rod 83 down. The free end of the lever 89 is held by a lug 70 on a trigger ring 71 pivotally supported on a pivot 72 passing through a bracket 95. A latch plate 96 is mounted on the plate 86 and can be turned by a lug 97 on a pivot 98. By pushing sideways on the lug 97 the locking latch 96 is turned away from the ring 71 thereby releasing the latter so that it can be raised until the lug 70 passes beyond the end of the lever 89. The latter is thereby released and is turned over by the spring, causing the pin 84 to puncture the container diaphragm 81.

Another modification, also for a bag, is shown in Fig. 11. Here the tube 74 is screwed with its upper end into a tubular member 99 provided with ears 100. The bag (not shown) is fastened to these ears by straps 101. The bushing 99 is attached to a plate 102 forming part of a handle (not shown) similar to the handle 87. A rod 103 is slidably fitted in the tube 74. A compression spring 104 tends to push the rod down, bearing on a pin 105. The upper end of the rod has a knob 106 engaged by a pawl 107 on one end of a shaft 108 rotatively mounted in a bracket 109 on the plate 102. A curved trigger 110 is fastened to the other end of the shaft 108 and rests against the plate 102. A locking latch 111 is pivoted on a pivot 112 and holds the trigger by its free end. A lug or tongue 113 is provided on the latch for turning it.

Our system can be also applied to the protection of papers kept in drawers of a safe as shown in Figs. 12, 13, 14, 15 and 16. A drawer 114 in a safe 115 is divided by partitions 116 into several compartments 117 into which packages 35 of bills or similar valuable papers are placed. The partitions are preferably made of an insulating material such as glass, fiber, etc. and are provided with slots 118 for thin wires 119. The wires form several complete loops in the drawer as shown in Figs. 12 and 15, their ends being connected to contact brushes 120. The latter slide over contact bars 121. Leads 122 connect the bars 121 with a source of electric current (not shown). A switch 123 is placed on the safe for closing the electric circuit. The wires 119 are made of such thickness that they become incandescent as soon as the current is turned on, burn-

ing the edges of papers while the drawer is being pulled out. In some cases it may be desirable to let the wires completely burn out in order to render their action more rapid.

Explosive cord **124**, Fig. 16, can be also used instead of the wires in the slots **118** between the partitions **116**. One end of the cord is connected with a fulminate **125** under one end of a striking rod **126** held under tension by a spring **127**. The enlarged upper end of the rod is held by one end of a sliding trigger bar **128** on a plate **129**. The bar **128** is pressed against the rod by a spring **130**. A handle **131** is provided on the rod for pushing it away from the rod **126** thereby releasing the latter.

Our device can be arranged either for marking papers, or for damaging them so as to render them unusable. In the latter case, of course, duplicate papers must be issued when the robbery becomes known.

We claim as our invention:

1. In a device for marking papers, the combination of containers adapted to be kept with said papers in a common enclosure, marking fluids under compression in said containers, ducts extending from said containers to the edges of said papers, manual means for releasing said fluids from said containers into said ducts, said ducts being adapted to spray said fluids against the edges of said papers, and means to keep the edges of said papers separated to facilitate the penetration of said fluids between said papers.

2. In a device for marking papers, the combination of containers adapted to contain marking fluids under compression, means to support said containers near the edges of stacks of said papers, means to keep the edges of said papers near said containers separated, and a manual means to release said fluids from said containers against said edges.

3. In a device for marking papers, the combination of sealed containers with marking fluids, means to support said containers near the edges of papers arranged in stacks, means to keep the edges of said papers separated near said containers, and a manually controlled means for releasing said fluids into said stacks of papers.

4. In a device for marking papers, the combination of sealed containers with a marking fluid, means to support said containers near the edges of papers arranged in stacks, a perforated board supported between said containers and said papers, a plurality of needles on said board adapted to be inserted into the edges of said stacks for separating said papers, and a manually controlled means for releasing said fluids from said containers into said stacks through the perforations in said board.

5. In a device for marking papers, the combination of breakable sealed containers with a marking fluid, means to support said containers near the edges of papers arranged in stacks, means to keep the edges of said papers near said containers separated, means to break said containers for releasing said fluid into said stacks, and means to manually control said breaking means.

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