

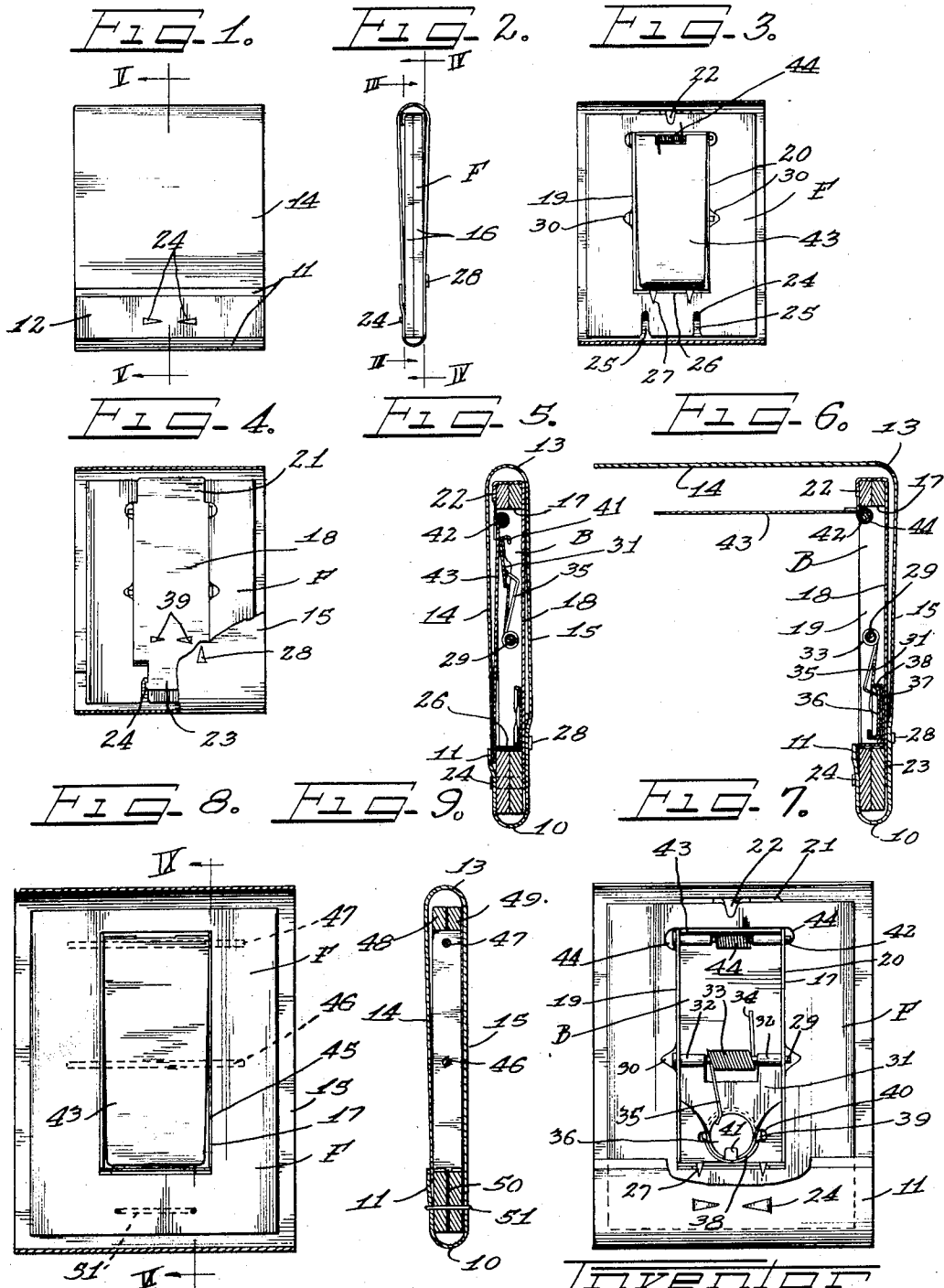
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S. S. ADAMS

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TOY EXPLOSIVE DEVICE

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INVENTOR
SOREN S. ADAMS.

BY *Charles M. Hill* ATTYS.

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TOY EXPLOSIVE DEVICE

Soren S. Adams, Asbury Park, N. J.

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11 Claims. (Cl. 272—27)

My invention relates to explosive joke devices of the type in which the opening of a cover or closure member by an unsuspecting person will result in an explosive report. The invention concerns particularly the application of explosion-producing means within the well-known paper booklet or package for matches so that when the upper or closure flap is withdrawn from underneath the match striking flap, the mechanism will be automatically released to strike a cap for producing the explosive report.

In accordance with my invention the package or cover, which would ordinarily have secured therein the stub from which the matches extend, will instead have secured therein a flat frame preferably of paper which may simulate the appearance of the match stub and matches and within which frame is supported and arranged the explosion producing-mechanism.

In the device of my invention the closure cover of the package or booklet, when frictionally held in closed position by the match striking flap, will serve to hold the spring operated cap striker mechanism in set or tensed position to be released for striking action as soon as the package cover is withdrawn from the striker flap by the person who believes he is opening a match package or booklet.

The various features of my invention are shown incorporated in the structure disclosed on the accompanying drawing in which drawing

Figure 1 is a plan view of the booklet or package;

Figure 2 an edge elevation;

Figure 3 is a section on plane III—III of Figure 2;

Figure 4 is a section on plane IV—IV of Figure 2;

Figure 5 is an enlarged section on plane V—V of Figure 2 showing the package in set and closed position;

Figure 6 is a section similar to Figure 5 but showing the package opened and the striking mechanism in operation.

Figure 7 is a front elevation of the structure shown in Figure 6;

Figure 8 is a view similar to Figure 4 showing a modified arrangement; and

Figure 9 is a section on plane IX—IX of Figure 8.

The package or cover is usually made from a rectangular length or band of paper having the lower reverse bend 10 to form the lower front flap 11 on which match striking substance 12 is applied and the upper bend 13 for forming the

closure or cover flap 14 which, when in closed position, is parallel with the back 15 of the package. Ordinarily, paper stubs with matches extending therefrom are secured between the back 15 and the lower flap 11 with a rivet extending through the stubs and the back and the flap, the end of the closure flap 14 being inserted between and frictionally held in closed position by the stubs and the flap 11. For the purpose of my invention I substitute for the stubs and matches a rectangular frame F preferably of paper and preferably built up of two or more laminations so as to simulate the stubs and matches extending therefrom. The frame F has the rectangular opening 17 cut therein for receiving a shallow box or enclosure B for the operating parts of the explosion producing mechanism. In the arrangement of Figures 1 to 7 the box, which is preferably of comparatively thin sheet metal, comprises the back or bottom 18 with the longitudinal side walls 19 and 20 deflected therefrom. The box is of a depth to fit into the opening 17 with its side walls 19 and 20 engaging against the sides of the opening, and the upper end 21 of the back 18 extends a distance beyond the side walls to engage against the back of the frame F, a clamping ear 22 extending from the end 21 to be clamped around the upper edge of the frame F and against the front thereof above the opening 17 as clearly shown in Figures 4, 5 and 7. The lower end 23 of the back 18 is narrowed and at its lower corners has clamping tongues or ears 24 extending upwardly for projecting through slots 25 in the lower edge of the frame F and to extend also through the match striking flap 11 and to be deflected against the front side of said flap so that the flap is secured to the frame. The lower end of the box B is closed by the lower end wall 26 which has tongues 27 extending from its upper edge and deflected downwardly against the front face of the frame F, tongues 28 extending downwardly from the lower edge of the end wall extending through the back 15 of the package and being deflected against the rear face of the wall to thus secure the frame and box to the rear wall 15. The tongues 24 and 28 thus take the place of the usual rivets or clamps in the ordinary match booklet for securing the match holding stubs to the booklet back and the match striking flap.

Intermediate their ends the side walls 19 and 20 of the box B are apertured to receive a pivot pin 29, the frame F having the recesses 30 for receiving the ends of the pivot pin and to prevent longitudinal displacement thereof. Hinged on

the pin 29 is the striker plate 31, the portions 32 of the plate being bent around the pin for bearing thereon, and between the parts 32 the pin 29 receives the coiled spring 33 whose one end 34 abuts the back 18 of the box B and whose other end 35 abuts the striker plate 31, the spring tending to swing this plate downwardly against the bottom of the box. At its free end the plate has the circular deflection 36 forming a hammer head for engagement with an explosive cap 37 placed in the cap pan 38, this cap pan being circular and being secured to the bottom of the box B by means of tongues 39 extending through openings 40 in the box bottom and deflected against the back of the box. The plate 31 is provided with a lug 41 under which a fingernail may be inserted for swinging the plate back against the force of the spring when the device is to be loaded.

At their upper ends the side walls 19 and 20 are apertured to receive a pivot pin 42 for hinging at its upper edge the holding plate 43, the frame F having the recesses 44 for receiving the pin ends and preventing longitudinal displacement of the pin. When the striker plate 31 is swung upwardly against the force of the spring 33 and into the box, the hammer deflection 36 will be adjacent to the hinged end of the holding plate 43 so that when this plate is swung down to closed position and against the hammer deflection, comparatively slight pressure against the ends of the holding plate will serve to retain the hammer plate in its set or tensed position within the box. When the closure flap 14 of the package is swung down against the holding plate and is inserted between the frame F and the striker flap 11, it will be frictionally held in closed position and against the holding plate to retain the holding plate in closed position and the striker plate set. However, as soon as the cover flap 14 is released from frictional engagement between the frame F and the flap 11, it will no longer retain the holding plate 43 against the force of the spring 34 and the released spring will rapidly snap the striker plate 31 downwardly and holder plate 45 upwardly. When the striker plate is thus snapped downwardly by the spring, its striker or hammer deflection 36 will strike the cap in the cap pan to fire the cap with a loud report.

It will be noted that, when the holding plate 43 is down in set position, it extends substantially entirely across the front of the box B and closes the box. Now, when the holding plate is released when the closure flap 14 is withdrawn, the force of the tensed spring 33 acting against the striker plate to swing and snap this plate downwardly will also rapidly swing the holding plate outwardly, and this plate will strike against the adjacent edge of the frame F at the opening 17 and will be recoiled to rapidly swing back to closing position, such closure movement of the holding plate being sufficiently rapid to reclose the box F to prevent any escape therefrom into the open of sparks or particles of explosive material resulting from explosion of the cap, and the opener of the device will thus be fully protected. To assist the movement of the holding plate to closing position, a comparatively light coil spring 44 could be mounted on the hinge pin 42 to abut at its ends against the frame F and against the outside of the holding plate. Such spring would assist the recoil movement in rapidly restoring the holding plate to box closing position but would not have sufficient strength to interfere with the proper functioning of the spring 33. Thus the device, while affording considerable amusement, is entirely safe.

In Figures 8 and 9 I have shown a modified arrangement which would simplify the construction and reduce the cost of manufacture. In this modified arrangement a plain rectangular sheet metal box 45 is employed without any extensions on its back wall as in the arrangement of Figures 1 to 7 for supporting it to the frame F. Instead the pivot pins 46 and 47 for the striker plate and the holding plate respectively are relied upon to securely hold the box 45 in proper position within the frame opening 17. As shown, the frame is made of two layers 48 and 49 between which the projecting ends of the pins 46 and 47 are applied and the layers then intimately secured together as by means of glue or cement 50. A rivet 51 is then applied through the package back 15, the lower part of the frame F and the striker flap 11. In all other respects the structure may be the same as that in Figures 1 to 7.

I have thus produced a device of the class described which can be economically manufactured, which will afford considerable pleasure and amusement, and which can be operated without injury to the user. Further this device is a single unit and is flat so that it may be readily inserted in or under the desired object or element to be raised, lowered, or otherwise moved by the party on whom the joke is being practiced.

I have shown and described a practical and efficient embodiment of the features of my invention, but I do not desire to be limited to the exact construction, arrangement and operation shown and described, as changes and modifications may be made without departing from the scope of the invention as defined in the appended claims.

I claim as follows:

1. The combination with a paper match book comprising a back wall, a front match striking wall, and a closure flap, of a rectangular frame within said book secured at its lower end to the back wall and front wall, means within said frame for holding a cap, a spring actuated striker plate adapted when released to move to its operative position to explode said cap, a holding plate hinged to said frame and adapted to overlie said striker plate when in its inoperative position to prevent operation thereof, said closure flap being adapted for frictional engagement at its free end between said frame and said front wall to be held in closed position and to overlie said holder plate to prevent movement thereof for release of the striker plate.

2. The combination with a match book cover comprising a back wall, a match striking flap and a closure flap, of a frame within the cover secured to said striking flap, said frame having an opening, a sheet metal box secured within said opening and adapted to support a cap, a spring actuated striker plate hinged on said box and adapted when released to move to its operative position to strike and to explode the cap and to be swung back to an inoperative position within said box, a holding plate in said box adapted to swing to a position to close said box and to overlie said striking plate when in its inoperative position to prevent operation thereof, said cover flap being adapted for frictional engagement between said striker flap and said frame to be thereby held in closed position and to overlie said holding plate to prevent swing thereof to release the striker plate, release the said cover flap releasing said holding plate for swing to release said striker plate for its operative movement.

3. The combination with a match book cover of supporting means secured therein and adapt-

ed to hold a cap, a spring actuated striker plate on said supporting means adapted when released to move to its operative position to strike and explode the cap, and holding means controlled by the closure of the cover closure flap to hold said striker plate in its inoperative position and to release said striker plate when said closure flap is opened.

4. The combination with a match book cover of a frame therein to take the place of the match book ordinarily applied in the cover, means on said frame for holding a cap, a spring actuated striker plate adapted when released to move to its operative position to strike and explode the cap, and a holding plate on said frame adapted to hold said striking plate in inoperative position when said cover is closed and to be released to free said striker plate for operation when said cover is opened.

5. The combination with a match book cover comprising a back wall, a front match striking flap and a closure flap, a rectangular frame secured at its lower end to said back wall and striking flap in place of a match book ordinarily secured in the cover, said frame having a rectangular opening, a sheet metal box secured in said opening, a closure plate hinged at the upper end of said box to swing down to close said box, means at the lower part of said box to support a cap to be exploded, a striker plate hinged in said box above said cap supporting means, a spring tending to swing said striker plate into engagement with said cap for firing thereof, said striking plate being adapted to be swung to the upper part of the box and said cover plate when held closed retaining said striker plate in such inoperative position, said closure flap on said cover being adapted for insertion between said frame and said match striking flap to be frictionally held thereby in closed position and against said closure plate to prevent opening thereof and release of said striker plate, opening of said cover flap permitting opening of said closure plate for release of said striker plate for movement by its spring to cap striking position.

6. The combination with a match book cover comprising a back wall, a front match striking flap and a closure flap, a rectangular frame secured at its lower end to said back wall and striking flap in place of a match book ordinarily secured in the cover, said frame having a rectangular opening, a sheet metal box secured in said opening, a closure plate hinged at the upper end of said box to swing down to close said box, means at the lower part of said box to support a cap to be exploded, a striker plate hinged in said box above said cap supporting means, a spring tending to swing said striker plate into engagement with said cap for firing thereof, said striking plate being adapted to be swung to the upper part of the box and said cover plate when held closed retaining said striker plate in such inoperative position, said closure flap on said cover being adapted for insertion between said frame and said match striking flap to be frictionally held thereby in closed position and against said closure plate to prevent opening thereof and release of said striker plate, opening of said cover flap permitting opening of said closure plate for release of said striker plate for movement by its spring to cap striking position, and a spring lighter than said striker plate spring for moving said cover plate to box closing position after release of said plate from said striker plate.

7. The combination with a match book cover

comprising a back wall, a front match striking flap and closure flap, a rectangular frame secured at its lower end to said back wall and striking flap in place of a match book ordinarily secured in the cover, said frame having a rectangular opening, a sheet metal box secured in said opening, a closure plate hinged at the upper end of said box to swing down to close said box, means at the lower part of said box to support a cap to be exploded, a striker plate hinged in said box above said cap supporting means, a spring tending to swing said striker plate into engagement with said cap for firing thereof, said striking plate being adapted to be swung to the upper part of the box and said cover plate when held closed retaining said striker plate in such inoperative position, said closure flap on said cover being adapted for insertion between said frame and said match striking flap to be frictionally held thereby in closed position and against said closure plate to prevent opening thereof and release of said striker plate, opening of said cover flap permitting opening of said closure plate for release of said striker plate for movement by its spring to cap striking position, said frame having an abutment edge adjacent to the hinged end of said closure plate against which said plate is thrown when said striker plate is swung to striking position, the engagement of said closure plate with said abutment causing recoil of said closure plate toward box closing position whereby to close the box against escape of cap explosion particles.

8. The combination with a match book cover comprising a back wall, a front match striking flap and closure flap, a rectangular frame secured at its lower end to said back wall and striking flap in place of a match book ordinarily secured in the cover, said frame having a rectangular opening, a sheet metal box secured in said opening, a closure plate hinged at the upper end of said box to swing down to close said box, means at the lower part of said box to support a cap to be exploded, a striker plate hinged in said box above said cap supporting means, a spring tending to swing said striker plate into engagement with said cap for firing thereof, said striking plate being adapted to be swung to the upper part of the box and said cover plate when held closed retaining said striker plate in such inoperative position, said closure flap on said cover being adapted for insertion between said frame and said match striking flap to be frictionally held thereby in closed position and against said closure plate to prevent opening thereof and release of said striker plate, opening of said cover flap permitting opening of said closure plate for release of said striker plate for movement by its spring to cap striking position, said frame having an abutment edge adjacent to the hinged end of said closure plate against which said plate is thrown when said striker plate is swung to striking position, the engagement of said closure plate with said abutment causing recoil of said closure plate toward box closing position whereby to close the box against escape of cap explosion particles, and a spring for assisting closure movement of said closure plate.

9. In an article of the character described, a rectangular frame having an opening therein, a metal box within said opening, means within said box to hold a cap to be exploded, a pivot pin within said box projecting through the sides thereof, a spring actuated striker plate hinged

- on said pin and adapted when released to move to its operative position to explode a cap within said box, a second pivot pin at the end of said box projecting through the sides thereof and a closure cover for said box hinged on said pin, said frame being composed of layers between which the projecting ends of said pivot pins extend and said layers being secured together to thereby rigidly support said pins and said box within the frame opening, said striking plate being held in inoperative position by said cover plate when said cover plate is closed, and releasable means for holding said cover plate in closed position.
10. As an article of manufacture a toy cap explosive unit adapted to be inserted under an element to be moved, raised and the like whereby movement of the latter causes the cap and the unit to be exploded, comprising a cap exploding mechanism including a pivotal spring urged hammer plate for striking the cap, a support for an explosive cap, and a hinged trigger plate for holding the hammer plate in a position ready to be urged into striking engagement with the explosive cap upon the removal of any restraining pressure on said trigger plate and a frame for carrying said mechanism having an overall thickness substantially the same as the thickness of said mechanism thus providing the unit with a flat shape whereby it may be inserted under an element or object as aforesaid.
11. As an article of manufacture a toy cap explosive unit adapted to be inserted under an element to be moved, raised and the like whereby movement of the latter causes the cap and the unit to be exploded, comprising a cap exploding mechanism including a pivotal spring urged hammer plate for striking the cap, a support for an explosive cap, and a hinged trigger plate for holding the hammer plate in a position ready to be urged into striking engagement with the explosive cap upon the removal of any restraining pressure on said trigger plate and a frame for carrying said mechanism having an overall thickness substantially the same as the thickness of said mechanism thus providing the unit with a flat shape whereby it may be inserted under an element or object as aforesaid, said frame being laminated and composed of a plurality of layers of cardboard and the like.
- SOREN S. ADAMS.

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