J. E. NEAHR.

MATCH IGNITING DEVICE.

APPLICATION FILED OCT. 16, 1916.

1,330,895.

Patented Feb. 17, 1920.

FIG. 1.

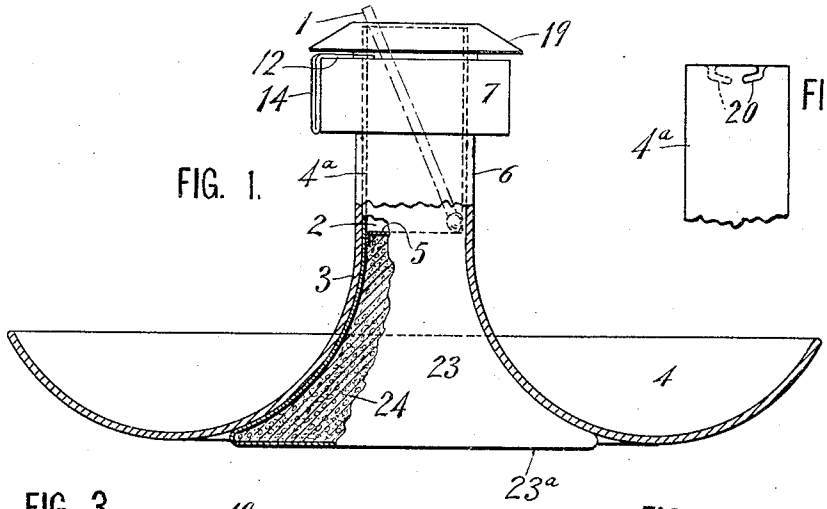


FIG. 2.

FIG. 3.

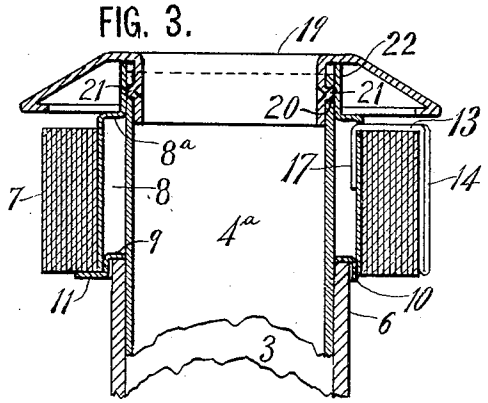


FIG. 4.

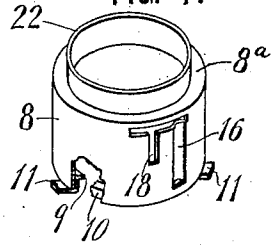


FIG. 5.

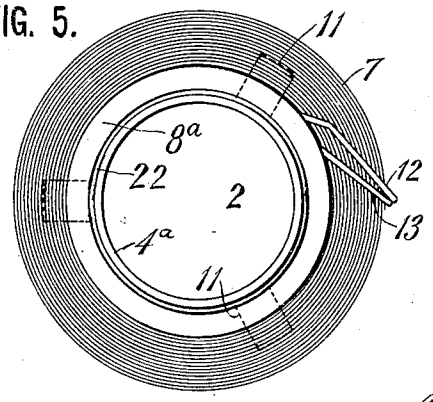


FIG. 6.

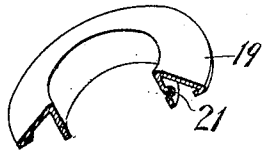


FIG. 7.

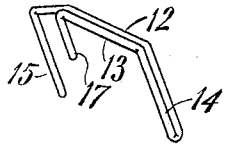
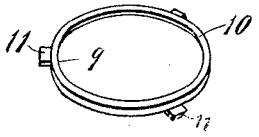


FIG. 8.



WITNESSES:

Julius Ruckstuhl

Leopold Bittiger

INVENTOR:

Jacob E Neahr

BY D. C. Stickney

ATTORNEY

UNITED STATES PATENT OFFICE.

JACOB E. NEAHR, OF NEW YORK, N. Y.

MATCH-IGNITING DEVICE.

1,330,895. Specification of Letters Patent. Patented Feb. 17, 1920.

Application filed October 16, 1916. Serial No. 125,963.

To all whom it may concern:

Be it known that I, JACOB E. NEAHR, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Match-Igniting Devices, of which the following is a specification.

This invention relates to a combined match-safe and match-igniting device, in which the match-igniting device is in the form of a coiled igniting strip wound around the body of the safe. The matches, when deposited in the safe, stand within the hollow of the coil of igniting strip.

For convenience of manufacture and shipment, and particularly for facilitating the supply of fresh coils for replacing coils that have been used up, and for facilitating the placing of the fresh coil in position upon the match-safe, the coil is wound upon a drum or shell which is applied as a collar or casing, mounted upon the match-safe and forming an annular unit inclosing the same, whereby the top of the match-safe is left unobstructed for the insertion and withdrawal of matches, while the shell and safe serve as a support for the igniting strip at the match-striking operation.

After the igniting-strip with its shell is mounted upon the match-safe, a cap is secured upon the top of the safe, surmounting the coil, and preferably of greater diameter than the coil, to protect the same and secure symmetry. The cap is also useful for securing the shell or casing rigidly upon the match-safe.

The drum or shell, with its coil of igniting strip, forms a separate article of manufacture, and may be supplied in quantities to dealers separately or independently of the match-safes themselves. The safes are often of costly and durable design, and may be kept in use for an indefinite length of time, by simply replacing the used-up igniting strips with new ones.

One of the features of the invention is the means for securing protection against the imposition upon the possessor of the match-safe, of spurious coils of igniting strips made up from inferior material; and to this end, I aim to guard against the unwarranted placing of a new coil of strip upon the drum or shell. In manufacturing my device, after the coil of strip is placed upon the collar, where it may be confined against displacement in one direction by means of the same clip that retains in place the outer end of the strip, I force into position a flange or flange portions under the bottom edge of the coil, thereby to confine said coil against displacement in the opposite direction. Hence, the coil can move neither up nor down, nor is it practicable to place a new coil upon the drum or shell. Said drum may be formed inexpensively of thin sheet-metal, and the added convenience in placing the coil of strip upon the match-safe, justifies the slight expense. Moreover, the drum or shell guards against the use of spurious coils, as just explained.

Another feature of the present improvements is the manner of rendering the match-safe stable, so as to reduce the liability of accidental overturning. To this end, the central pedestal portion of the dish-shaped base may contain a receptacle fitted therewithin and filled with sand or other suitable weight.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a part-sectional elevation of a complete safe, stand and igniting coil.

Fig. 2 shows the locking angular slots in the upper end of the match-safe.

Fig. 3 is a vertical section of the match-safe with the igniting coil and shell secured in position as a collar thereon.

Fig. 4 is a perspective view of the shell partly broken away, upon which the igniting strip is to be wound or placed.

Fig. 5 is a plan of the parts seen in Fig. 3, but omitting the cap.

Fig. 6 is a part-sectional perspective view of the cap.

Fig. 7 is a perspective view of the spring clip which retains the outer end of the igniting strip, and also serves as part of the means for confining the igniting strip coil against displacement and preventing the substitution or use of a spurious coil.

Fig. 8 is a perspective view of a ring to be forced permanently upon the shell after the coil is mounted thereon, thereby sealing the coil against removal and serving as a baffle against slipping another coil upon the shell.

The safety-matches 1 are placed in a match-safe 2 supported upon a pedestal 3, rising from base of dish or other shape 4.

The match-safe may be a tubular box 4ª having a bottom 5. This box may be forced tightly into a neck 6, in which the upper end of the pedestal 3 terminates.

For compactness, symmetry and convenience of use, the igniting strip is arranged in the form of a coil 7, wound upon a shell or drum 8, which is made of sheet-metal, the whole constituting a collar surrounding or incasing the tubular match-safe 2. This shell is of tubular form, and has interior upper and lower flanges 8ª and 9 to fit upon the tubular box or match-safe 2; the bottom flange 9 having a seat upon the top of the neck 6 of the pedestal or stand 3.

The upper flange 8ª may be integral with the shell, but the lower flange 9 preferably constitutes part of a narrow ring 10, which is forced permanently into the shell after the coil is mounted thereon, so that it is impossible to remove the ring without serious damage thereto; and upon this ring are formed outwardly flanged portions 11 to extend under the igniting coil, to act as a permanent seal, to prevent downward displacement or removal of the coil, and also to serve as a baffle to prevent another coil from being slipped into place upon the drum or shell, since a new coil would not pass over said projecting portions 11, which may be permanently spread outwardly after the original igniting coil is slipped upon the drum or collar, or the ring 10, with its inner flange and its outward projections, may be first made in final form and then forced permanently into place upon the shell after the latter has received the igniting coil.

To confine the coil against upward displacement, there are mounted upon the shell, arms 12, 13, overlying the coil and terminating in a downwardly-extending finger or clip 14, which yieldingly but firmly presses the outer end of the coil against the body thereof, this clip being yielding to permit the coil to be rotated until the end of the coil, escapes from the clip, so that the outer layer of igniting strip may be released and unwound and torn off adjacent to said finger 14, to expose a fresh igniting layer for use. The parts 12, 13 and 14 may be made of a single piece of spring wire, and the arm 13 may have a pintle portion 15 to be confined within a bearing 16, which may be in the form of a narrow vertical channel formed in the body of the collar 8, and open at its top and bottom to receive the pintle. The other arm 12 may have a short downwardly extending finger 17 to bear against the inner side of the drum at a point adjacent to the bearing 16; the parts being so proportioned and placed that the clip tends to spring to closed position, with the finger 14 against the outer face of the drum 8 or against the strip thereof. For convenience in assembling of parts, a T-shaped slot 18 may be made in the drum, the horizontal portion of the slot permitting the arms 12, 13 to swing in and out, and the vertical portion of the slot accommodating the finger 17 during the assembling of the clip upon the drum.

From the top flange 8ª rises a ferrule or bearing 22, above the top of the match-safe to receive the downward thrust of a cap 19, which fits over the top of the match-box and is locked thereon by open inclined L-slots 20, in which work nipples 21 projecting from the cap outwardly into the slots 20 formed in the sides of the match-box. The cap is thus cammed down upon said ferrule, so that the shell containing the coil of igniting strip is held firmly seated upon the shoulder consisting of the top edge of neck 6, and serves to support the strip during the match-striking operation. The ferrule 22 extends upwardly within the cap to be engaged by the under side of the outwardly projecting portion thereof. The shell being firmly clamped between the cap and the upper end of the neck 6, is held rigidly while the coil is slipped bodily around the shell to withdraw its edge from the clip and permit tearing off the outside winding of the coil.

To give weight and stability to the entire device, a receptacle 23 may be filled with sand or other weight 24. This receptacle may be fixed to the match-safe, preferably by forming a continuation thereof, as shown; the inserted bottom 5 serving to separate the match compartment from the weight compartment. The weight receptacle may flare out at its lower end at 23ª to fit the lower portion of the hollow pedestal into which the receptacle is inserted. The cams 20, used to draw the coil spool or drum down upon the neck of the pedestal, serve at the same time to draw the weight receptacle 23 up tightly within the narrowing pedestal, so that the weight receptacle and match-safe are rigidly supported on the pedestal. The removal of the cap 19 permits the parts to be disassembled.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. An article of manufacture comprising a shell or drum, a coil comprising numerous layers of match-igniting strip wound upon the drum to be supported thereby at the match-striking operation, means upon one end of the drum and projecting therefrom to support said strip against displacement, and a device mounted upon the other end of said drum and projecting over said coil to confine the same against opposite displacement, and also having a finger for retaining said coil; said drum, coil, support-

ing means and confining means forming an annular unit to form a collar for a match-safe.

2. A new article of manufacture, comprising, in combination, a drum in the form of a shell, a coil comprising numerous layers of ignition strip wound upon said drum, and releasable means carried by said drum and movable thereon to engage the outer surface of the igniting strip for clipping the same to the drum; said drum or shell constituting a removable collar to mount upon and surround a match-safe, with said clipping means exterior to the safe.

3. A new article of manufacture, comprising, in combination, a drum in the form of a shell, a coil comprising numerous layers of ignition strip wound upon said drum, devices carried by said drum to extend both over and under the coil to prevent displacement or removal thereof, and means also carried by said drum to press upon the outer face of the coil to confine it against the drum; said drum or shell constituting a collar to mount upon and surround a match-safe.

4. A new article of manufacture, comprising, in combination, a drum in the form of a shell, a coil of igniting strip comprising numerous layers wound thereon, means extending outwardly from said drum to confine the strip, and means extending inwardly from said drum to serve for mounting the shell as a collar upon a match-safe.

5. A new article of manufacture, comprising, in combination, a drum in the form of a shell, a coil of igniting strip comprising numerous layers wound thereon, a yielding device mounted upon the shell to clip the coil to the shell, said yielding device comprising a portion arranged at the interior of the shell, and means projecting inwardly from said shell to engage the exterior of a match-safe surrounded by said shell and serve as means whereby said shell is mounted as a collar upon the match-safe.

6. A new article of manufacture, comprising, in combination, a drum in the form of a shell, a coil of igniting strip comprising numerous layers wound thereon, a yielding device mounted upon the shell to clip the coil to the shell, said yielding device comprising a portion arranged at the interior of the shell, means projecting inwardly from said shell to engage the exterior of a match-safe surrounded by said shell and serve as means whereby said shell is mounted as a collar upon the match-safe, and means projecting outwardly from said shell to coöperate with said clip device to retain the coil; said coil being confined between said outwardly-projecting means and said clip device.

7. A new article of manufacture, comprising a drum in the form of a shell, a coil of igniting strip comprising numerous layers wound thereon, means upon said shell to confine the strip, means extending inwardly from the upper and lower portions of said shell to serve for mounting the shell as a collar upon a match-safe, a ferrule or bearing rising from the upper end of said shell, and a cap to engage said ferrule or bearing for forcing the shell down upon its seat.

8. A new article of manufacture, comprising a drum in the form of a shell, a coil of igniting strip comprising numerous layers wound thereon, means upon said shell for clipping the strip thereto, devices also provided upon said shell for retaining the strip against upward or downward displacement or removal, a bearing also provided upon said shell extending above the coil, and a cap upon the match-safe to engage said bearing for forcing the shell down upon its seat.

9. A new article of manufacture comprising a shell open at top and bottom to incase a match-safe, a coil comprising numerous layers of igniting strip wound upon said shell, means for clipping the coil to the shell and devices for confining the shell against removal therefrom.

10. A new article of manufacture comprising a shell to incase a match-safe, a coil comprising numerous layers of igniting strip wound upon said shell, and permanent devices coöperating to confine the coil to the shell, said confining devices including a member forced into position subsequently to the mounting of the coil upon the shell, to seal the same against removal.

11. A new article of manufacture comprising a shell to incase a match-safe, a coil comprising numerous layers of igniting strip wound upon said shell, and permanent means for confining the coil to the shell, said confining means including a member forced into position subsequently to the mounting of the coil upon the shell, to seal the same against removal, and also including a member projecting from the shell and forming a clip to press the coil against the shell; the coil being confined between said clip member and said forced member.

12. A new article of manufacture comprising a shell to incase a match-safe, a coil comprising numerous layers of igniting strip wound upon said shell, permanent means upon one end of said shell for confining the coil against removal, and an annular confining device forced upon the other end of said shell subsequently to the mounting of the coil thereon and including means for permanently sealing the coil against removal and serving as a baffle to prevent the substitution of another coil.

13. A new article of manufacture comprising a shell to incase a match-safe, a coil comprising numerous layers of igniting

strip wound upon said shell, inwardly-extending means at one end of said shell for serving as a bearing in mounting the shell upon the match-safe, outwardly-extending means at the same end of the shell for confining the coil, and an internal ring permanently forced upon the other end of the shell to form a companion bearing and having also outwardly-extending means to seal the coil upon the shell and serve as a baffle to prevent substitution of a spurious coil.

14. A new article of manufacture comprising a shell to incase a match-safe, a coil comprising numerous layers of igniting strip wound upon said shell, inwardly-extending means at one end of said shell for serving as a bearing in mounting the shell upon the match-safe, outwardly-extending means at the same end of the shell for confining the coil, and an internal ring permanently forced upon the other end of the shell to form a companion bearing and having also outwardly-extending means to seal the coil upon the shell and serve as a baffle to prevent substitution of a spurious coil, said shell also provided with a ferrule or bearing, and a cap upon the match-safe to engage said ferrule or bearing for forcing the shell upon its seat.

15. An article of manufacture comprising a match-safe structure forming a mount adapted to receive an igniting device comprising a shell, said match-safe structure provided with a shoulder to form a seat for the shell and having an annular cap for forcing the shell down against said shoulder.

16. An article of manufacture comprising a match-safe structure forming a mount adapted to receive an igniting device comprising a shell, said match-safe structure provided with a shoulder to form a seat for the shell and having an annular cap for forcing the shell down against said shoulder, said cap revoluble upon the match-safe structure and having an inclined cam device for locking the cap and shell in place.

17. An article of manufacture comprising a base having a pedestal, a match-safe inserted in said pedestal and rising therefrom, the top of said pedestal serving as a shoulder adapted to form a bearing for an ignition-coil shell, and an annular cap having a locking connection with said match-safe and including an inclined cam to enable the cap to force the shell down against said shoulder.

18. An article of manufacture comprising a match-safe structure forming a mount adapted to receive an igniting device comprising a shell, said match-safe structure provided with a shoulder to form a seat for the shell and having an annular cap for forcing the shell down against said shoulder, said cap comprising a rim fitting within the match-safe structure and having a projecting nipple, and the match-safe structure having an angular locking slot in which the nipple works, and said cap comprising a portion projecting without the match-safe structure to engage the upper end of the shell to lock the same down upon its seat.

19. The combination of a match-safe, a shell fitted to and removably incasing said safe, a coil of ignition strip upon said shell, and a separate annular cap removably mounted upon the match-safe, to hold the shell in place upon the safe.

20. The combination of a match-safe, an annular or frame cap therefor, a shell removably mounted upon the match-safe and confined by said cap, a coil comprising numerous layers of ignition strip upon said shell, and means for preventing removal of the coil from the shell.

21. The combination of a pedestal, a weight within said pedestal, a match-safe surmounting the weight and fixed thereto, a shell incasing the match-safe, an igniting coil upon the shell, and a cap having an inclined slot or surface and pin connection to the match-safe, to hold the shell down upon the top of the pedestal and draw the weight up within the pedestal.

22. The combination of a base, a pedestal thereon, a match-safe inserted in the pedestal, a shell incasing the match-safe and resting upon the top of said pedestal, a cap locked upon said match-safe and confining said shell against said pedestal, and a coil comprising layers of match-igniting material wound upon said shell.

23. The combination of a base, a pedestal thereon, a match-safe inserted in the pedestal, a shell incasing the match-safe and resting upon the top of said pedestal, a cap locked upon said match-safe and confining said shell against said pedestal, a coil comprising layers of match-igniting material wound upon said shell, and means upon said shell for confining said coil against removal and serving as means to baffle any attempt to place another coil upon the shell.

24. The combination of a base, a pedestal thereon, a match-safe inserted in the pedestal, a shell incasing the match-safe and resting upon the top of said pedestal, a cap locked upon said match-safe and confining said shell against said pedestal, a coil comprising layers of match-igniting material wound upon said shell, and means for yieldingly clipping the coil to the shell, to permit it to be turned around the shell to release the outer end of the coil from said clipping means.

25. The combination of a base, a pedestal thereon, a match-safe inserted in the pedestal, a shell incasing the match-safe and resting upon the top of said pedestal, a cap locked upon said match-safe and confining said shell against said pedestal, and a coil comprising layers of match-igniting mate-

rial wound upon said shell, said shell of greater diameter than the match-safe and having means projecting inwardly to engage the match-safe and pedestal, and having at its upper end a ferrule or bearing to be engaged by said cap.

26. The combination of a base, a pedestal thereon, a match-safe inserted in the pedestal, a shell incasing the match-safe and resting upon the top of said pedestal, a cap locked upon said match-safe and confining said shell against said pedestal, and a coil comprising layers of match-igniting material wound upon said shell, said shell of greater diameter than the match-safe and having means projecting inwardly to engage the match-safe and pedestal, and having at its upper end a ferrule or bearing to be engaged by said cap, and also having outwardly-extending means for permanently confining or sealing said coil against removal.

27. The combination of a base, a pedestal thereon, a match-safe inserted in the pedestal, a shell incasing the match-safe and resting upon the top of said pedestal, a cap locked upon said match-safe and confining said shell against said pedestal, and a coil comprising layers of match-igniting material wound upon said shell, said shell of greater diameter than the match-safe and having means projecting inwardly to engage the match-safe and pedestal, and having at its upper end a ferrule or bearing to be engaged by said cap, said cap comprising a tubular interior rim introduced within the match-safe and having a projection, and the match-safe having a slot or opening in which the projection is inserted, for locking the cap upon the safe.

28. The combination of a base, a match-safe thereon, a shell removably incasing said match-safe, means to hold said shell in place, a coil of match-igniting strip mounted upon the shell and capable of being revolved thereon, and means for clipping the outer end of the strip, to hold it against accidental movement.

JACOB E. NEAHR.

Witnesses:
CATHERINE A. NEWELL,
EDITH B. LIBBEY.