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PATENT SPECIFICATION

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Complete Accepted, Feb. 20, 1919.

COMPLETE SPECIFICATION.

Improvements in and relating to Cigar, Cigarette and like Lighters.

I, MICHAEL WALKOS, of Detroit, County of Wayne, State of Michigan, United States of America, Gentleman, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to cigar, cigarette and like lighters and has for its object to provide improved means for the aforesaid purpose, said means comprising a receptacle, a continuous strip of matches located therein, said strip comprising a flexible element provided at spaced intervals throughout its length with means for producing a flame, a slide carried by said receptacle, manually displaceable horizontally and adapted to co-operate with the said flame producing means for igniting the same and means located within the receptacle for feeding said element in predetermined lengths to locate the flame producing means in position for said slide.

The invention also includes novel means for feeding the match strip and means for gripping the same at the end of each feeding action, the operating means of the feed also operating to release the gripping means. It has heretofore been proposed in connection with miners' lamps to provide a receptacle in which is contained a flexible element providing a continuous strip of matches designed to be fed from the receptacle in predetermined lengths and in position to be acted on by the ignition member carried by the receptacle.

The invention also includes a novel means of treating the flexible element which may be composed of twisted cord and treated with an inflammable solution, such as kerosene and further treated with paraffin to give the element a certain amount of stiffness, the said element being provided at spaced intervals along its length with a flame producing means in the form of sulphur and saltpetre projections which are designed to be acted upon by the ignition member.

In order that the invention may be clearly understood reference is made to the accompanying drawings, in which:—

Figure 1 is a perspective view of the invention, the receptacle being shown closed.

Figure 2 is a top plan view showing the receptacle in open position;

Figure 3 is a vertical transverse sectional view of the same with the cover closed;

Figure 4 is a section on the line 4—4 of Figure 3;

Figure 5 is an enlarged fragmentary sectional view on the line 5—5 of Figure 3;

Figure 6 is a cross-sectional view on the line 6—6 of Figure 3; and

[*Price* 6*d.*]

Figure 7 is a detail perspective view of the ignition element.

Figure 8 is an enlarged fragmentary plan view of the means for holding the ignition element in position and

Figure 9 is a detail side elevation of the same.

In the practical embodiment of the invention as illustrated in the accompanying drawings, there is shown a receptacle 10, the cross-sectional shape of which is substantially rectangular, the bottom of the receptacle being semi-circular in shape as shown at 11. The receptacle is adapted to be closed by a cover or lid 12, which is hinged to the receptacle as shown at 13, there being provided a spring 14 which acts to force the cover open, and is well known in receptacles of this kind. The cover 12 is held in closed position, by means of a spring latch 15, which engages over a notch or lug 16 provided in the opposite end of the receptacle. One side of the receptacle is formed with an opening 17, which is adapted to be closed by a door 18, which is hinged to the receptacle as shown at 19, there being also provided the spring catch 20 for holding this door closed.

Located within the receptacle near the lower end thereof and concentrically to the semi-circular bottom 11 is a shaft 20^1, which has a bearing at one end in the side of the receptacle 10 and at its other end in the door 18, as shown at 21 and 22 Figure 3 respectively. Mounted upon this shaft and rotating therewith is a reel 23, provided with spaced parallel discs which are connected together by a hub 24, the shaft and reel being rotated by means of a crank 25 located upon the outside of the receptacle.

The reel 23 is designed to receive a flexible element which is preferably formed of a number of strands of cord twisted together and treated with kerosine or other inflammable fluid, one end of this flexible element being secured to the reel between the hub and the spring 26. In order to impart a certain amount of stiffness, the flexible element is further treated with a coating of paraffin. The element just described is designed to provide a continuous strip of matches 27, these matches being formed by providing at spaced intervals along the length of the element, projections 28, preferably composed of sulphur and saltpetre.

Mounted within the receptacle are feed rollers 29 and 30, these rollers rotating on shafts 31 and being provided with meshing gears 32, so that they will revolve in unison.

Positioned between the rollers 29 and 30 and the reel 23 is a guiding roller 33, while above or upon the opposite side of the rollers 29 and 30 is a guiding tube 34. The upper end of this guiding tube has located therein a pair of oppositely disposed gripping members 35, these members being positioned at right angles to the tube 34 and sliding in sleeves 36 carried by the end walls of the receptacle 10. Positioned between one end of one of the gripping members 35 and one of the end walls of the casing is a spring 37, a similar spring 38 being positioned between the opposite end of the other member 35 in a bracket 39 secured within the casing, this means acting to normally force the springs together, so as to grip between them the strip of matches which is fed from the reel 23 over the idler roller 33 and between the feed rollers 29 and 30 and through the guiding tube 34 as shown in Figures 3 and 4 of the drawings.

This is accomplished by providing the roller 30 with a ratchet wheel 40, which is carried by or fast to the roller and is operated by the toggle member 41, this toggle member being provided with dogs 42 adapted to engage the teeth to rotate the ratchet wheel, when the said member is operated, one of the dogs engaging on the down stroke and the other dog on the up stroke of the member so as to provide an increased rotation of the feed rollers by a limited movement of the toggle levers by the toggle member.

The toggle member is operated by means of a rod 43, which is mounted to reciprocate in a bearing 44, secured to one of the side walls and is pivoted at its lower end as shown at 45 to the toggle member, the opposite end of the rod 43

being pivotally connected to a lever 46 suitably pivoted within the casing at one end and carrying at its opposite end a finger piece 47, the rod 43 being pivoted intermediate the ends of the lever 46. In order to bring the dogs 42 in position for operation of the ratchet 41, the rod 43 is spring actuated as shown at 48.

Mounted upon the pivot 49 which supports the lever 46, is a cam 50, the said cam being fast upon this pivot so as to turn therewith. This cam is located adjacent the abutting ends of the gripping members 35 and projecting over each of these gripping members in the path of movement of said cam are pins 51, so that when the cam is rocked, the gripping members 35 will be open to permit of the strip of matches passing between them immediately closing upon the release of the finger piece by the action of the springs 37 and 38.

Mounted within the casing 10 adjacent the open end thereof is a slide-bearing 52, which is adapted to receive the slide 53, which is operated by the finger piece 54. This slide carries at the side adjacent the match strip an ignition member 55, in the form of a serrated projection, which is shown positioned so as to bear upon the projections 28 of the strip of matches to ignite the same when the slide is reciprocated.

The strip of matches is positioned upon the reel 23 through the door 18, the strip being fed between the feed rollers 29 and 30 and through the guide tube 34 as previously explained.

In order to provide a backing so as to hold the head of the match steady when being acted upon by the ignition means there is provided a guide 60, which is carried by the wall of the receptacle. Mounted for movement within this guide is a backing element 61, in the form of a V shaped slide, the outwardly extending wings 62 of which are provided with serrated faces for the purpose of forming a seat 63 for the head of the match. The element 61 is also formed with oppositely disposed flanges 64, which operate in the grooves provided by the guide 60. The backing element 61 is formed with a depending shank 65, which is pivotally connected to the lever 66, the said lever being in turn pivoted to the casing as shown at 67. The opposite end of the lever 66 is pivotally connected to an operating rod 68 movable through a guide 69 secured to the inner face of the casing and operated by means of a finger piece 70. The flange 61 is held in a depressed or retracted position through the medium of the spring 71. When it is desired to ignite the match, the finger piece 70, is depressed and the backing element is mobed into position to hold the match head steady for action by the ignition means.

When pressing downward upon the finger piece 47 the gripping members 35 are moved apart and the strip fed therebetween by the action of the dogs 42 and ratchet 40, the gripping members immediately closing to hold the strip in position upon the release of the finger piece 47. The projection 28 of the strip 27 will then be in position to be acted upon by the ignition element.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A cigar, cigarette and like lighter comprising a receptacle, a continuous strip of matches located therein, said strip comprising a flexible element provided at spaced intervals throughout its length with means for producing a flame, a slide carried by said receptacle, manually displaceable horizontally and adapted to co-operate with the said flame producing means for igniting the same and means located within the receptacle for feeding said element in predetermined lengths to locate the flame producing means in position for said slide.

2. A cigar, cigarette and like lighter in accordance with Claim 1, characterised by spring pressed slides actuated by said flexible element feeding means for gripping said element after each operation of the feeding means.

3. A cigar, cigarette and like lighter in accordance with Claim 1, having

means including cam operated slides for gripping said flexible element after each operation of the flexible element feeding means.

4. In a cigar, cigarette and like lighter in accordance with Claim 3, the provision of means for operating the cam to release the flexible element simultaneously with the operation of the feeding means.

5. In a cigar, cigarette and like lighter in accordance with Claim 1, the provision of a V-shaped backing element for holding the match head in position for action by the ignition means.

6. For use in apparatus in accordance with Claim 1, a flexible element composed of twisted cord treated with an inflammable solution, such as kerosene and further treated with paraffin to give the element a certain amount of stiffness, the said element being provided at spaced intervals along its length with a flame producing means in the form of sulphur and saltpetre projections which are designed to be acted upon by the ignition member.

7. A cigar, cigarette and like lighter constructed substantially as hereinbefore described and illustrated in the accompanying drawings.

Dated this 20th day of February, 1918.

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Agents for the Applicant.

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SHEET 1

Fig. 1.

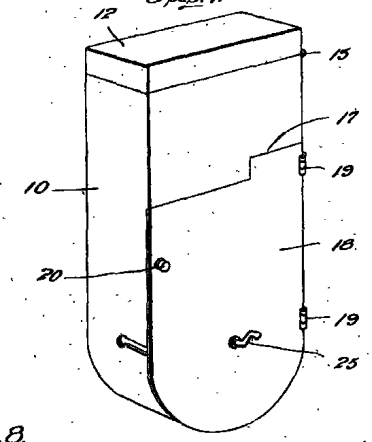


Fig. 8.

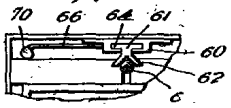


Fig. 9.

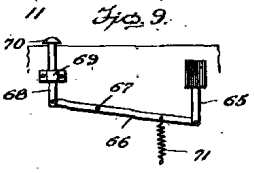
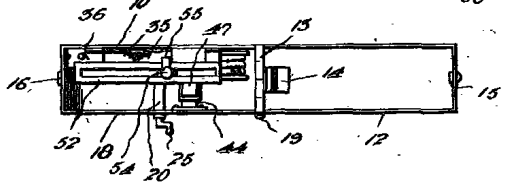
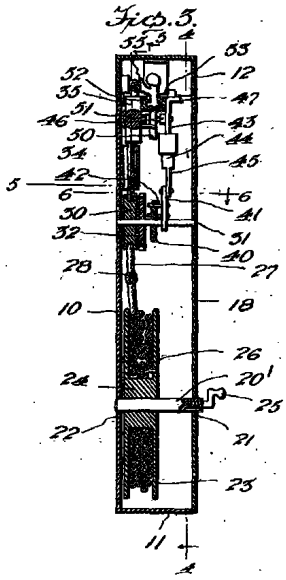


Fig. 2.



SHEET 2

Fig. 5.



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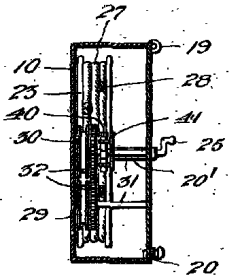

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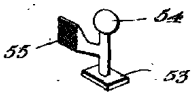

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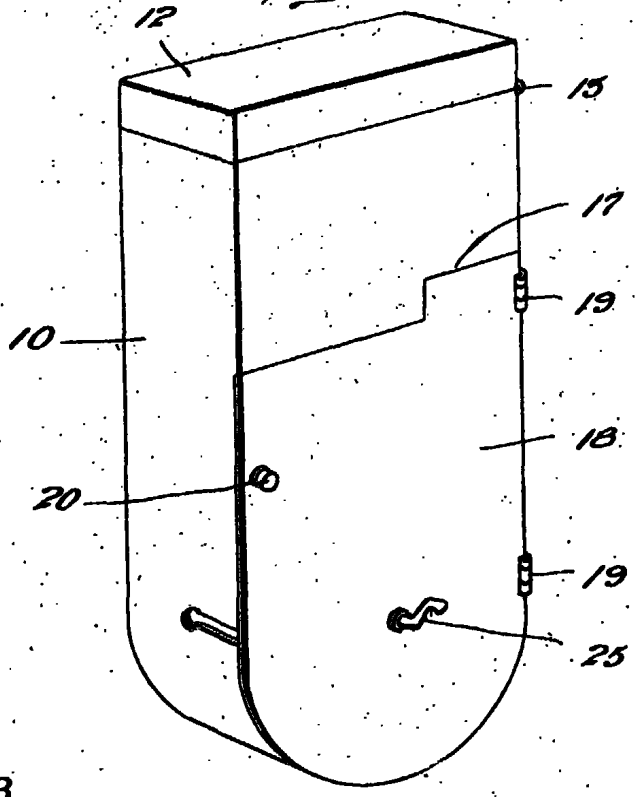
Fig. 1.



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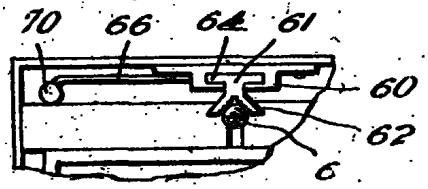

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Fig. 9.

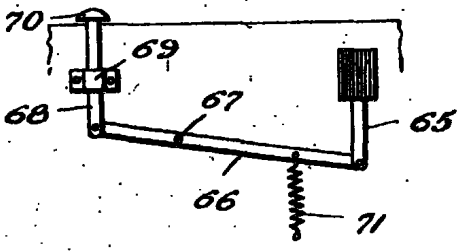


Fig. 2.

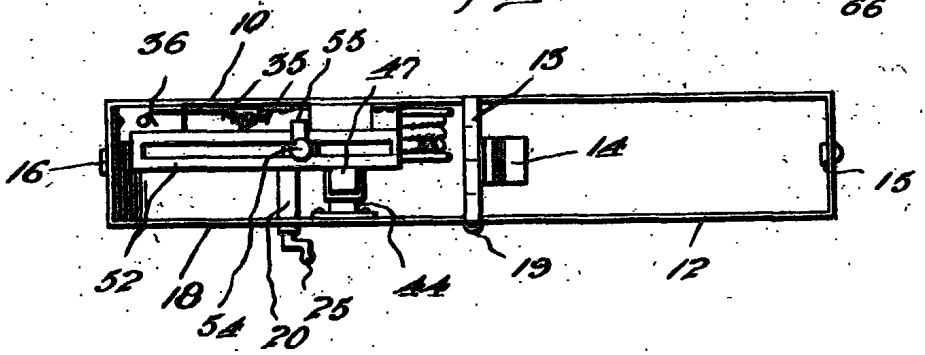


Fig. 5.

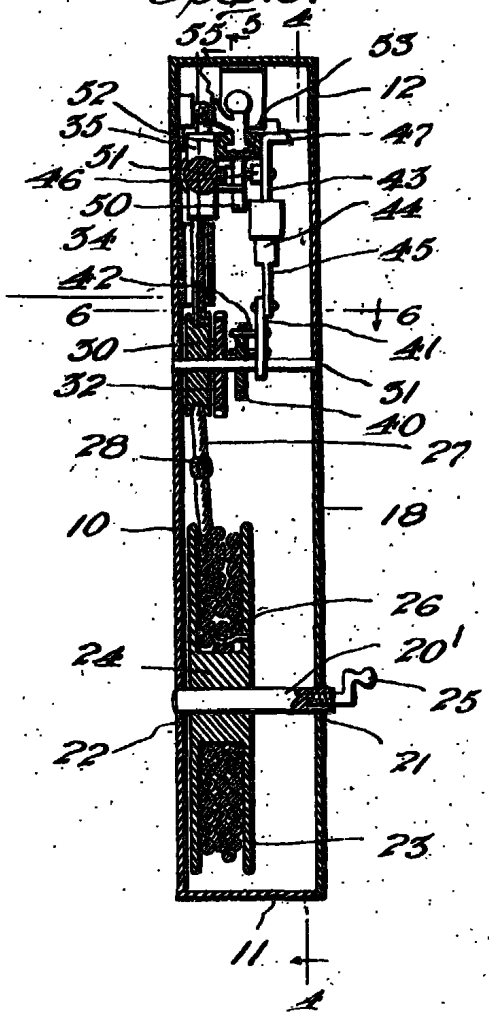


Fig. 6.

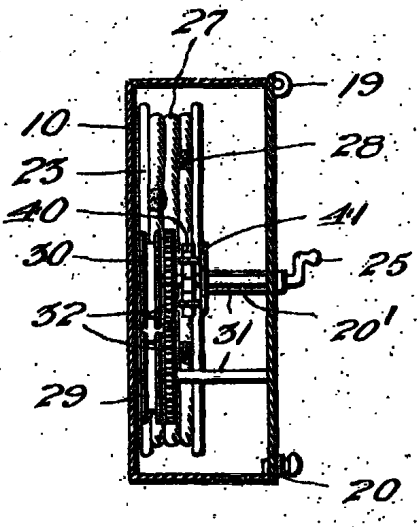
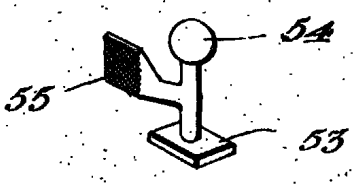


Fig. 7.



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[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 4.

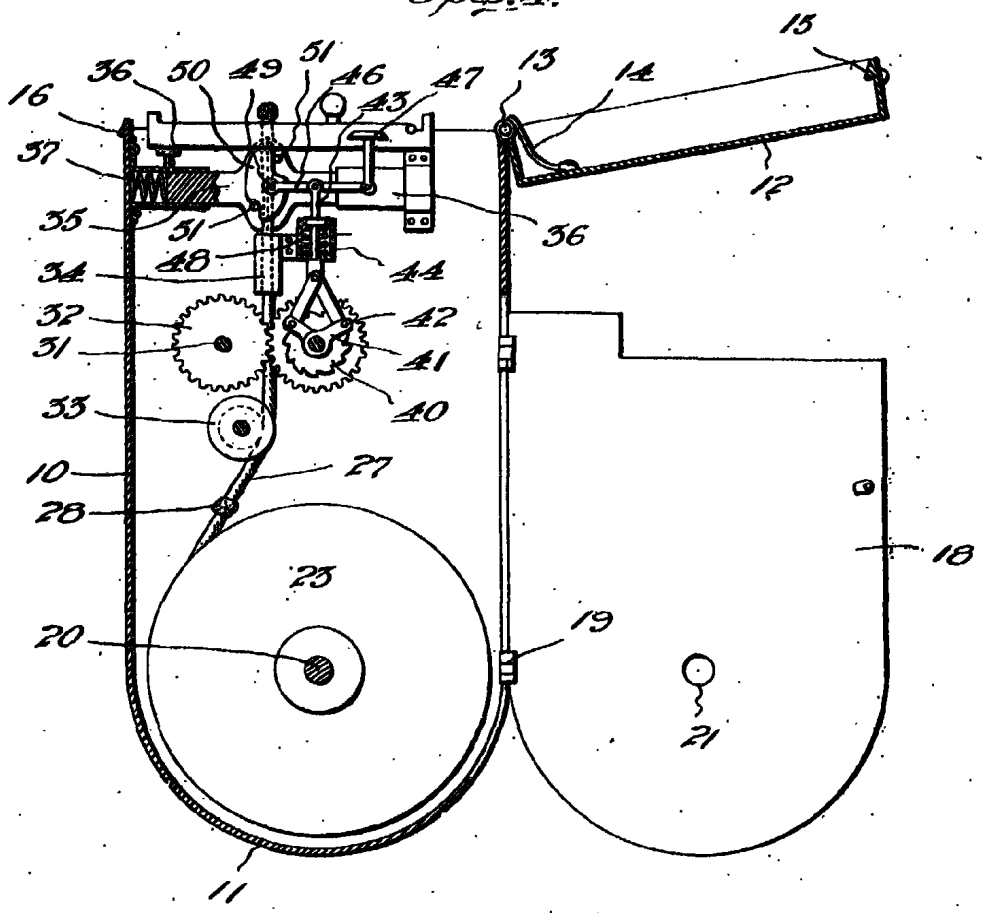
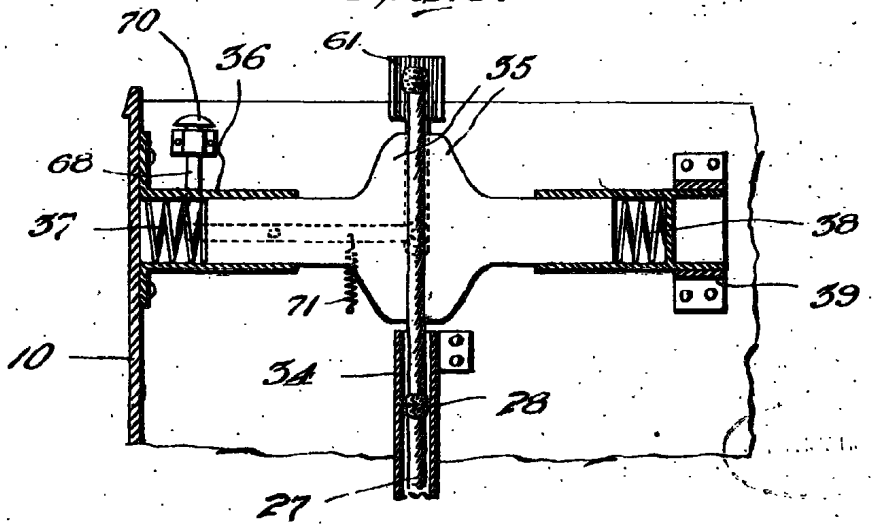


Fig. 5.



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