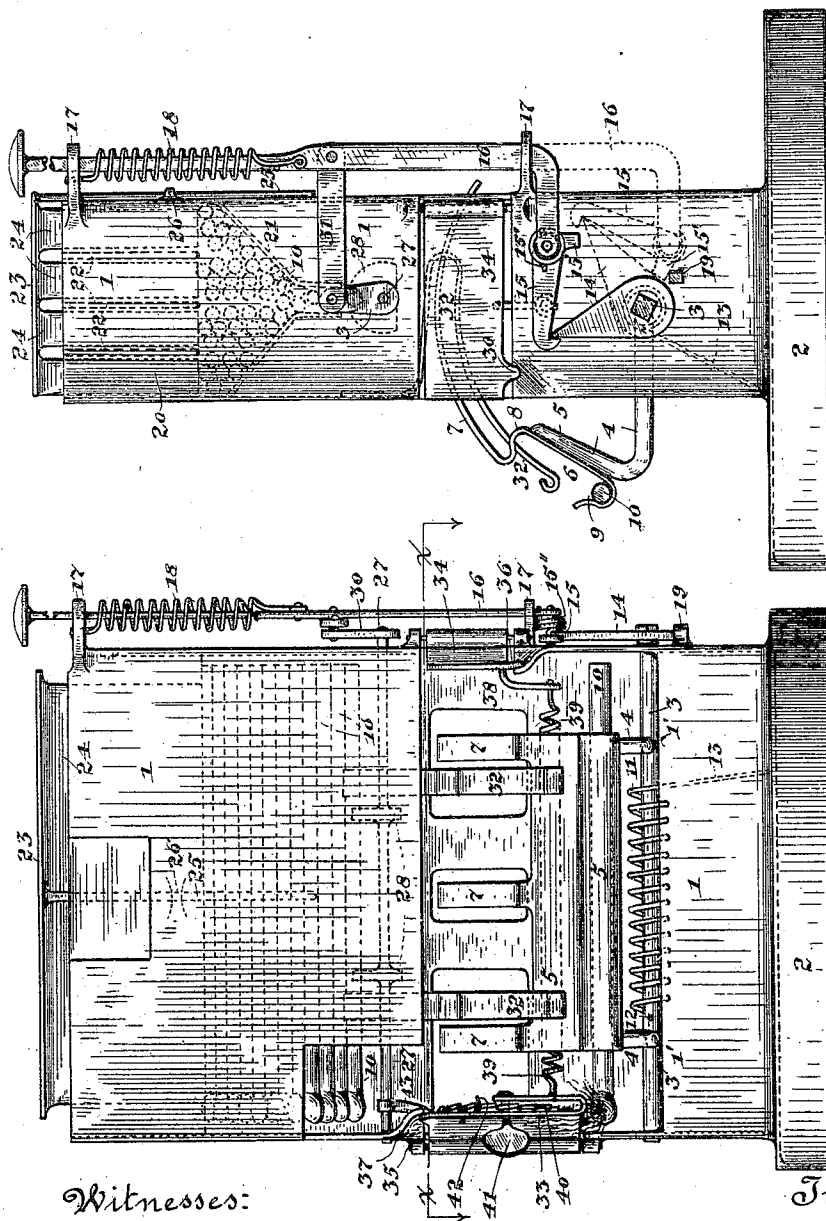


E. ZESCHMAR.
MATCH LIGHTER.
APPLICATION FILED DEC. 13, 1909.

979,632.

Patented Dec. 27, 1910.

2 SHEETS-SHEET 1.



Witnesses:

W. C. Smith
B. G. Richards

Inventor

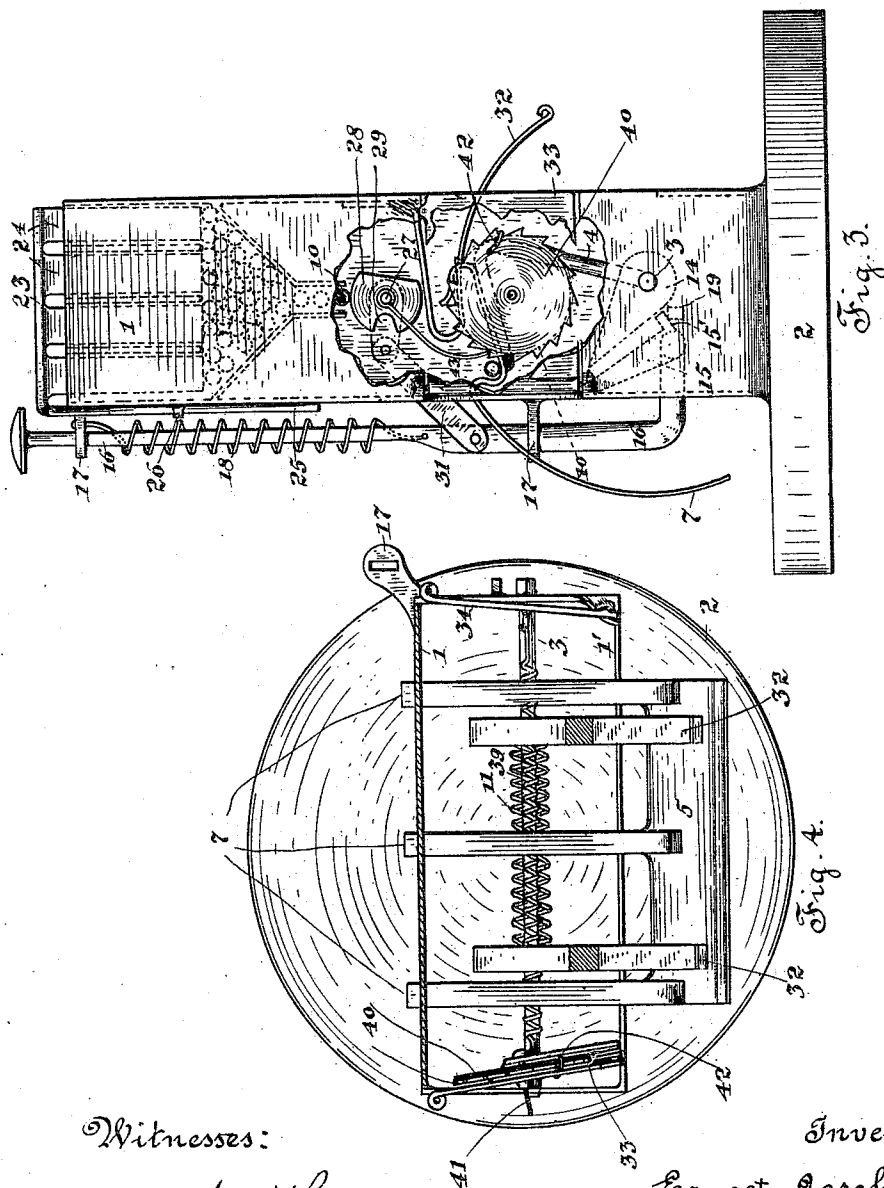
Ernest Zeschmar,
By Joshua H. Stark
his Attorney

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Inventor:
Ernest Zeschmar.
By *Ernest Zeschmar*
his Attorney,

UNITED STATES PATENT OFFICE.

ERNEST ZESCHMAR, OF CHICAGO, ILLINOIS.

MATCH-LIGHTER.

979,632.

Specification of Letters Patent.

Patented Dec. 27, 1910.

Application filed December 13, 1909. Serial No. 532,935.

To all whom it may concern:

Be it known that I, ERNEST ZESCHMAR, a subject of the Emperor of Germany, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Match-Lighters, of which the following is a specification.

My invention relates to improvements in match lighters and has for its object the production of such a device which shall be of improved construction and operation.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

My invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a front elevation of a match lighter embodying my invention, Fig. 2, an end elevation of the same, Fig. 3, an elevation of the opposite end of the lighter with portions broken away, and Fig. 4, a horizontal section on line $x-x$ of Fig. 1.

The preferred form of construction as illustrated in the drawings comprises a suitable metallic frame 1 mounted upon a suitable base 2. In the lower portion of said frame is mounted an oscillatory shaft 3 carrying forwardly and upwardly extending arms 4. To the upwardly extending portions of arms 4 is secured a match carrier 5 having a match receiving depression 6 in its forward end and arms 7 extending rearwardly therefrom and passing through openings provided in the rear wall of said casing. At its rearward end the depression 6 is provided with a match receiving depression 8, and at its forward end with a match holding depression 9 adapted to receive and hold the lighted match as indicated. Shaft 3 is normally held with the carrier 5 in its forward position by means of a helical spring 11 having one end 12 secured to said shaft, and the other end 13 engaging the front wall of casing 1. At one end shaft 3 carries a catch arm 14 adapted to engage with a spring-held trigger 15 carried by the lower end of a vertically reciprocatory slide 16. Trigger 15 is pivoted to the end of slide 16 and provided with a spring 15' arranged to normally hold said trigger to engagement with catch arm 14. The slide 16 is guided in suitable lugs 17 on casing 1 and is normally held in elevated position by means of a helical spring 18.

Trigger 15 is provided with a trip arm 15' adapted to engage a stop 19 upon depression and thus be released from catch arm 14. By this construction it will be seen that upon depression of slide 16 match carrier 5 will be oscillated rearwardly until trigger 15 is released from catch arm 14, whereupon spring 11 will rotate shaft 3 and match carrier 5 forwardly until the under side of arms 4 contact with the upper edge 1' of the lower forward portion of casing 1, the said ledge thus serving as a stop to limit the forward movement of said carrier.

In the upper portion of casing 1 is provided a match receptacle 20 having a delivery hopper 21 at its lower end. The receptacle 20 is preferably divided longitudinally by a number of longitudinal vertical partitions 22, which assist in holding matches 10 in correct position for delivery to and from hopper 21. To assist in the feed of matches from said receptacle I provide a weight 23 having downwardly extending longitudinal flanges 24 adapted to take between partitions 22 and rest upon the top of said matches. The weight 23 is preferably guided by a guide rod 25 passing through a guide eye 26 on the rear of casing 1. Below hopper 21 is mounted an oscillatory shaft 27 carrying circular plates 28 which are provided with alining notches 29 adapted to receive a single match from hopper 21 when said plates are in the position indicated in Fig. 2. At its outer end shaft 27 carries a rocker arm 30 connected with slide 16 by means of a link 31. By this construction it will be seen that upon depression of slide 16 plates 28 will be oscillated to carry a match from hopper 21 and deliver it onto carrier 5, the circular portion of plates 28 in the meantime preventing the escape of another match from hopper 21. Should the match thus delivered fall upon the portions 7 it will be supported thereby and against the rear wall of casing 1 until the rearward end of depression 6 passed thereunder, whereupon the match will fall into depression 8 therein. Upon further depression of slide 16, trigger 15 is caused to release shaft 3 and carrier 5 is rotated forwardly carrying the said match therewith. Circular guides 32 are placed between portions 7 to prevent expulsion of said match by centrifugal force.

Plates 33 and 34 are hinged to the rearward portion of the side walls of casing 1, each of said plates being provided with pro-

jections 35 and 36 adapted to engage suitable recesses 37 and 38 in the walls of said casing 1, thus serving to limit the inward movement of said plates. A spring 39 serves to normally hold said plates in converging position as indicated in Fig. 4. Plate 33 carries a ratchet wheel 40, rotatably and removably secured in position by means of a set screw 41. A stop pawl 42 serves to prevent retrograde movement of said ratchet wheel. The inner face of ratchet wheel 40 is provided with an abrasive disk, and said plates are so arranged that a match passing forwardly in recess 8 will be caused to pass between said abrasive disk and plate 34 and thus ignited. Upon stoppage of the forward movement of carrier 5 the lighted match passes into recess 9 whence it may be readily removed by the user.

20 In order to change the region of application of the match head to the abrasive, the shaft 27 is provided with a spring pawl 43 engaging ratchet wheel 40 and thus serving to impart a partial rotation to said ratchet wheel.

By the construction as above set forth it will be seen that upon each depression of slide 16 a lighted match will be delivered, and that the construction is simple and reliable.

While I have illustrated and described the preferred construction for carrying my invention into effect, this is capable of variation or modification without departing from the spirit of my invention. I, therefore, do not wish to be limited to the exact details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a device of the class described, the combination with a suitable frame, of a match carrier adapted to carry matches transversely of their length; means for operating said carrier; a match receptacle; means for feeding matches singly from said receptacle to said carrier; spring-held pivoted plates converging and located in the path of the ends of said match; a ratchet wheel carried by one of said plates and having abrasive means on its face adapted to contact with the head of a match during its travel in said carrier; and means for automatically rotating said ratchet upon each ignition of a match, substantially as described.

2. In a device of the class described, the combination with a suitable frame; of an oscillatory shaft mounted therein; a match carrier carried by said shaft and provided with a match carrying depression at its forward end and extending rearwardly through

openings in the back of said frame; a catch arm on said shaft; a spring-held vertically reciprocatory slide; a spring-held trigger carried by said slide and adapted to engage said catch arm to rotate said shaft rearwardly; a stop adapted to release said trigger; a spring adapted to rotate said shaft forwardly; a stop adapted to limit the forward movement of said shaft; a match receptacle; automatic means for feeding matches to said carrier singly; a guard adapted to prevent expulsion of said match by centrifugal force; spring-held pivoted plates converging and located in the path of the ends of said match; and abrasive means carried by one of said plates and adapted to contact with the head of a match during its travel in said carrier, substantially as described.

3. In a device of the class described, the combination with a suitable frame, of an oscillatory shaft mounted therein; a match carrier carried by said shaft and provided with a match carrying depression at its forward end and extending rearwardly through openings in the back of said frame; a catch arm on said shaft; a spring-held vertically reciprocatory slide; a spring-held trigger carried by said slide and adapted to engage said catch arm to rotate said shaft rearwardly; a stop adapted to release said trigger; a spring adapted to rotate said shaft forwardly; a stop adapted to limit the forward movement of said shaft; a match receptacle; automatic means for feeding matches to said carrier singly; a guard adapted to prevent expulsion of said match by centrifugal force; spring-held converging plates located in the path of the ends of said match; a ratchet wheel carried by one of said plates and having abrasive means on its face adapted to contact with the head of a match during its travel in said carrier; and means for automatically rotating said ratchet upon each ignition of a match, substantially as described.

4. In a device of the class described, the combination with a suitable frame, of an oscillatory shaft mounted therein; a match carrier carried by said shaft and provided with a match carrying depression at its forward end and extending rearwardly through openings in the back of said frame; a catch arm on said shaft; a spring-held vertically reciprocatory slide; a spring-held trigger carried by said slide and adapted to engage said catch arm to rotate said shaft rearwardly; a stop adapted to release said trigger; a spring adapted to rotate said shaft forwardly; a stop adapted to limit the forward movement of said shaft; a match receptacle provided with a delivery hopper; an oscillatory shaft located under said hopper; notched plates on said shaft and adapted to receive matches singly from said

hopper; a connection between said slide and said last named oscillatory shaft whereby reciprocation of said slide causes oscillation of said plates to deliver a match to said carrier; a guard adapted to prevent expulsion of said match by centrifugal force; and means of ignition adapted to contact with the head of said match during its travel in said carrier, substantially as described.

5. In a device of the class described, the combination with a suitable frame; of an oscillatory shaft mounted therein, a match carrier carried by said shaft and provided with a match carrying depression at its forward end and extending rearwardly through openings in the back of said frame; a catch arm on said shaft; a spring-held vertically reciprocatory slide; a spring-held trigger carried by said slide and adapted to engage said catch arm to rotate said shaft rearwardly; a stop adapted to release said trigger; a spring adapted to rotate said shaft forwardly; a stop adapted to limit the forward movement of said shaft; a match receptacle provided with a delivery hopper;

an oscillatory shaft located under said hopper; notched plates on said shaft and adapted to receive matches singly from said hopper; a connection between said slide and said last named oscillatory shaft whereby reciprocation of said slide causes oscillation of said plates to deliver a match to said carrier; a guard adapted to prevent expulsion of said match by centrifugal force; spring-held pivoted plates converging and located in the path of the ends of said match; a ratchet wheel carried by one of said plates and having abrasive means on its face adapted to contact with the head of a match during its travel in said carrier; and means for automatically rotating said ratchet upon each ignition of a match, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ERNEST ZESCHMAR.

Witnesses:

HELEN F. LILLIS,
JOSHUA R. H. POTTS.