

(No Model.)

W. A. ALEXANDER.
MATCH HOLDER AND CIGAR CUTTER.

No. 513,472.

Patented Jan. 30, 1894.

Fig. 1.

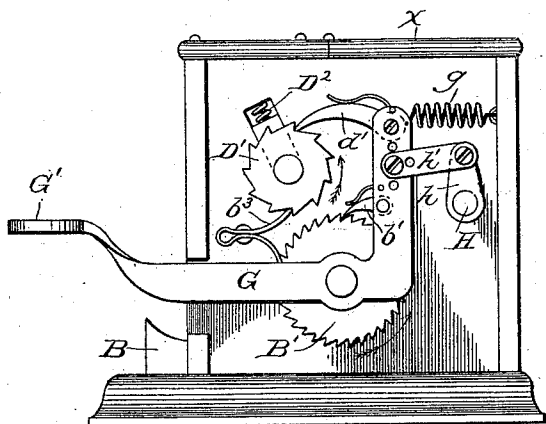


Fig. 2.

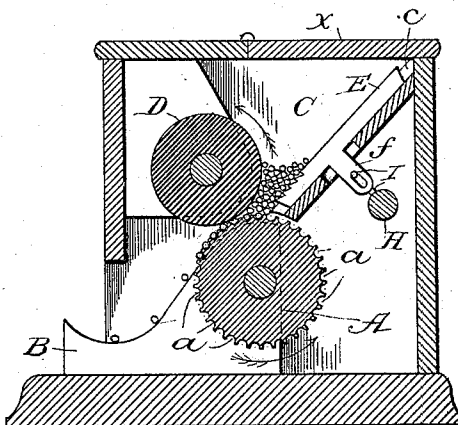


Fig. 3.

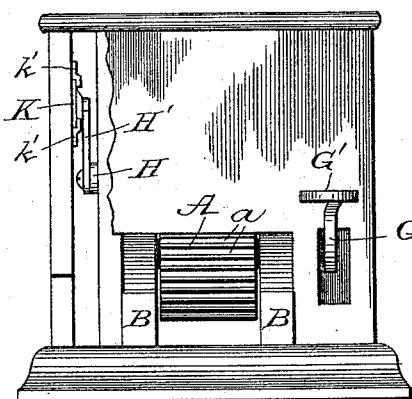


Fig. 4.

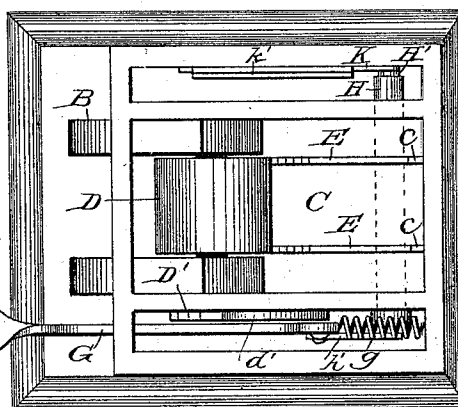
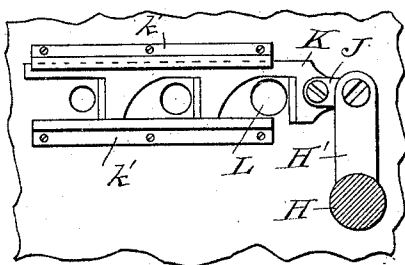


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM A. ALEXANDER, OF MANHATTAN, KANSAS.

MATCH-HOLDER AND CIGAR-CUTTER.

SPECIFICATION forming part of Letters Patent No. 513,472, dated January 30, 1894.

Application filed March 29, 1893. Serial No. 468,099. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. ALEXANDER, of Manhattan, in the county of Riley and State of Kansas, have invented certain
5 new and useful Improvements in Match-Holders and Cigar-Cutters; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the let-
10 ters of reference marked thereon, which form part of this specification.

My invention is an improved match safe, and combined match safe and cigar cutter, and its objects are to provide an improved
15 compact device whereby matches can be delivered singly from a receptacle upon the depression of a lever; and also if desired to combine therewith a cutter whereby the same lever will operate a cigar cutter and simulta-
20 neously cause the discharge of a single match from the holder.

Another object of the invention is to so construct the match-feeding or delivering devices that there will be no danger of ignition
25 of matches in the hopper, or of choking of the machine.

The invention consists in the novel construction and combination of parts of the device as will be hereinafter specifically de-
30 scribed and summarized in the claims.

In the drawings,—Figure 1 is a right hand side elevation of the machine with the side removed showing the main operating mechanism. Fig. 2 is a longitudinal central vertical
35 section through the machine. Fig. 3 is a front elevation thereof. Fig. 4 is a top plan view with the cover removed. Fig. 5 is a detail view of the cutter.

A designates the delivery drum which has
40 a series of longitudinal grooves *a* in its periphery each adapted to receive an ordinary match. The drum however is shorter than the matches so that the heads thereof will not enter the grooves, and the drum shaft is jour-
45 naled in the inner side walls of the casing, which as shown, has double walls at its sides, the spaces between the side walls being utilized respectively to accommodate the actuating devices of the match holder and the cutter. At each side and in front of the drum
50 are two curved flanges or plates B which extend from the drum out of the casing through

a slot in the front wall thereof, their inner ends being about level with the bottoms of the grooves in the drum, and then sloping
55 down toward the front of the casing, their lower outer ends being slightly upturned. As the drum revolves, the matches in the grooves are raised out of the same by the flanges, and slide down in position to be read-
60 ily picked up. Above the drum is a hopper C in which the matches are loosely placed. Above the drum and slightly in front thereof, and occupying a slot in the front wall of the receptacle is a roller D, which is preferably
65 covered with rubber, felt, or other frictional yielding substance, and which revolves in close proximity to the drum. The roller shafts are journaled in proper bearings in the inner walls of the casing, and are pressed
70 down toward drum A by springs D² as indicated in the drawings, or in other suitable manner, so that the roller can rise in its bearings if necessary.

In the rear wall of the hopper are longi-
75 tudinal grooves *c* in which are feed plates or agitators E which may be roughened on their upper edges as shown, and which have slot-
80 ted lugs *f* on their under sides which extend through slots in the bottoms of grooves *c* and are loosely engaged by pins or arms I on a rock shaft H hereinafter described whereby the plates E are longitudinally vibrated so as to agitate and feed the matches in the hopper down toward drum A. The hopper can be
85 filled with matches by opening a door *x* in the top of the casing.

The shafts of drum A and roller D extend through the right hand inner wall of the casing, and upon them are secured ratchet disks
90 B' D' respectively, ratchet B' having one tooth for each groove *b*. Ratchet D' is smaller than ratchet B' so that it can be rotated more rapidly than the latter.

An angular lever G is pivoted at its bend
95 on the shaft of drum A beside ratchet B' or in other convenient manner, and to its inner upright arm are pivotally secured pawls *b'* *d'* respectively adapted to engage ratchets B' D' as shown. Pawl *d'* being much farther
100 from the pivot of lever G than pawl *b'* will have a much longer throw, and consequently roller D will be rotated more rapidly than drum A and also will begin to move before

the latter does; this is very desirable as the office of roller D is to prevent choking, and it will be noted that as it rotates in the same direction as drum A, the peripheries of the drum and roller will move in opposite directions at their nearest point. Consequently roller D will tend to brush the matches away from the drum and thereby prevent the latter choking, and keep any matches except those which lie in grooves *b* from passing out of the hopper. It also assists in aligning the matches above the drum, so that bridging of the matches is prevented. If, as sometimes happens, two matches should be united, or if two matches should happen to engage the same groove so that they are carried between the drum and roller, the latter owing to its spring pressed journals can yield and permit the double match to pass without injury, and without choking the machine, or danger of ignition, as might occur if the roller was in fixed bearings. This roller adapted to operate as described I deem a valuable feature of my invention. The ratchets B' D' may be engaged by spring detents *b*³ to prevent backlash thereof.

The lower arm of lever G extends outside the casing and in front thereof is provided with a finger piece G' by which it can be depressed. A spring *g* attached to the upper end of the vertical arm and to the casing returns the lever to normal position when released.

H designates a rock shaft journaled in the sides of the casing below the hopper and in rear of the drum. It has a crank arm *h* on one end which is pivotally connected by a link *h'* to the upright arm of lever G by which means the shaft H is rocked. The shaft has laterally projecting pins I or other devices which engage the slotted lugs *f* of plates F and thereby vibrate the latter simultaneously with the shifting of the drum and roller. On the opposite end of shaft H is a crank arm H' which is connected by a link J to a cutter plate K mounted in guide strips *k'* attached to one side wall of the casing. This cutter plate lies beside opening L in the outer wall of the casing in which the butt or tip end of cigars can be inserted and cut by the knife as usual. The knife is notched as shown so as to have a cutting edge *k* beside each opening.

From the foregoing description it will be understood that upon depressing lever G, the drum A is moved one notch and cut by the knife as usual. The knife is notched as shown so as to have a cutting edge *k* beside each opening.

From the foregoing description it will be understood that upon depressing lever G, the drum A is moved one notch so as to deliver one match from the hopper onto flanges B. At the same time the matches in the hopper are agitated by plates F, and the roller D brushes obstructing or superfluous matches back out of the way. The cutter knife is simultane-

ously moved so that a person can, while cutting his cigar, produce a match to light it. Only one match will be delivered for each depression of lever G.

Obviously the devices for operating the main parts and the casing may be varied, while the essential combinations of parts are unvaried.

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

1. In a match holder the combination with the grooved feed drum and the hopper, of a friction roll located above the feed drum and at one side of the hopper, substantially as and for the purpose described.

2. In a match holder the combination with the grooved feed drum and the hopper, of a friction roll located above the feed drum and at one side of the hopper, and the agitator plates in the hopper, substantially as described.

3. In a match holder the combination of the grooved drum of less length than a match, the hopper above the same, and the stripping flanges at each side of and extending in front of the drum serving to uphold the ejected match, substantially as specified.

4. In a match holder the combination of the grooved drum, the hopper above the same, and the stripping flanges beside and extending in front of the drum, with the roll located above the drum, and mechanism for operating said roll and drum, all constructed and arranged to operate substantially as described.

5. In a match holder the combination with the grooved feed drum and the hopper, of a friction roll located above the feed drum and at one side of the hopper, and means for intermittently rotating said roll simultaneously with the drum, substantially as described.

6. The combination of the casing, the hopper, the feed drum, the agitators in the hopper, and the rock shafts for actuating the latter; with the oscillating lever and connections for actuating said drum and rock shaft, substantially as specified.

7. The combination of the casing, the grooved drum, the hopper, the agitator roll and the ratchets on the shafts of said roll and drum; with the oscillating lever, and the pawls pivoted thereto engaging both of said ratchets, substantially as and for the purpose described.

8. The combination of the casing, the grooved drum, the hopper, the agitator roll and the ratchets on the shafts of said roll and drum; with the oscillating lever, and the pawls pivoted thereto engaging both of said ratchets, and the stripping flanges beside and extending below and in front of the grooved drum, all constructed and arranged to operate substantially as and for the purpose described.

9. The combination of the casing, the grooved drum, the hopper, the agitator roll and the ratchets on the shafts of said roll and

drum; with the oscillating lever and the pawls
pivoted thereto engaging both of said ratch-
ets, the agitator blades in the hopper, the
rock shaft for actuating the same, and the
5 connections between said rock shaft and le-
ver, all constructed and arranged to operate
substantially as herein described.

In testimony that I claim the foregoing as
my own I affix my signature in presence of two
witnesses.

WILLIAM A. ALEXANDER.

Witnesses:

JAMES R. MANSFIELD,
WM. A. SCHOENBORN.