

No. 715,673.

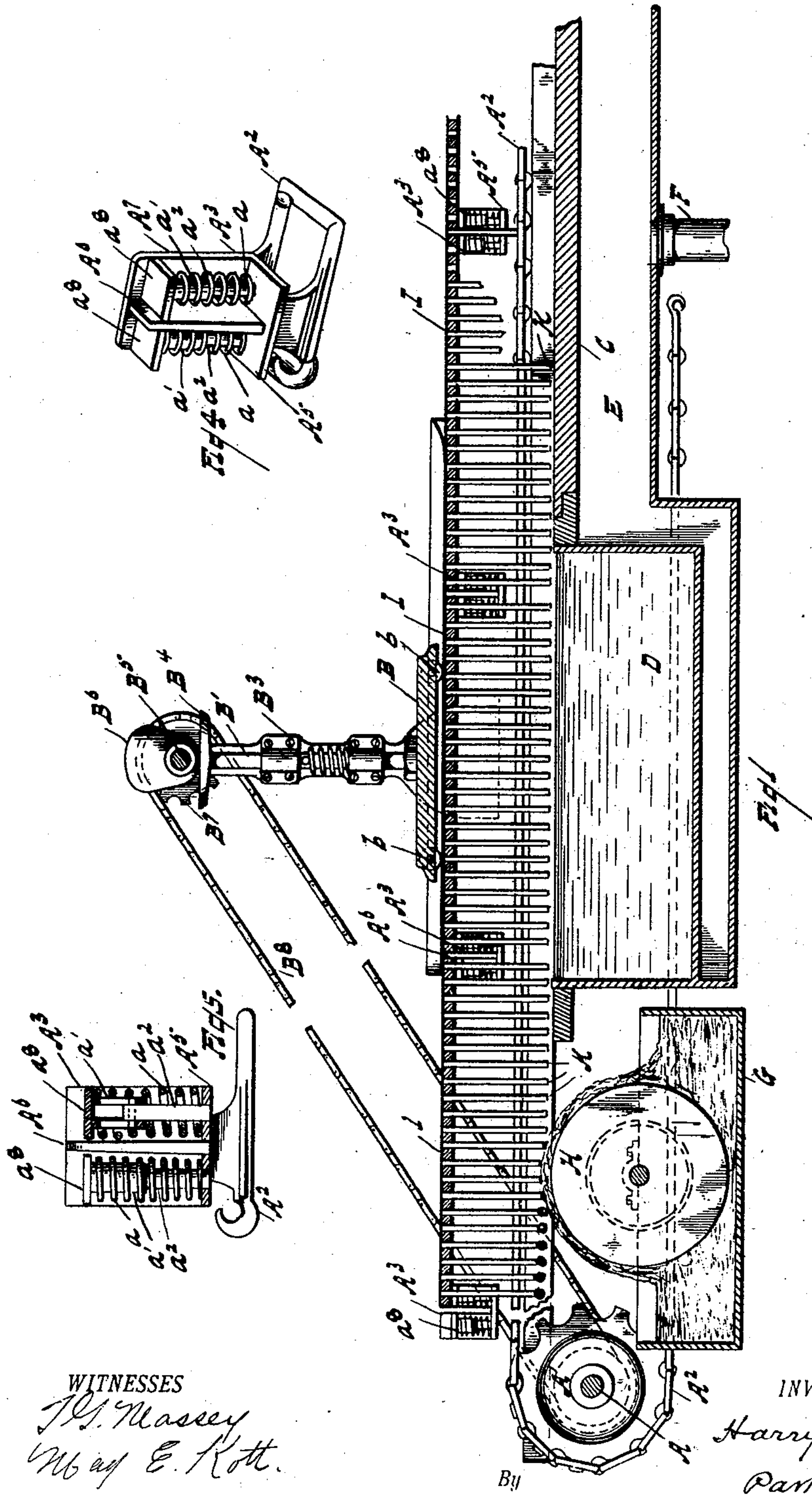
Patented Dec. 9, 1902.

H. C. LA FLAMBOY.
MATCH MAKING MACHINE.

(Application filed Apr. 12, 1902.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES

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MATCH-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 715,673, dated December 9, 1902.

Application filed April 12, 1902. Serial No. 102,502. (No model.)

To all whom it may concern:

Be it known that I, HARRY C. LA FLAMBOY, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Match-Making Machines; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to match-making machines; and the object of my improvement is to provide an improved machine for dipping the match-sticks.

Referring to the accompanying drawings, Figure 1 is a sectional elevation of so much of a match-dipping machine as is necessary to illustrate my invention with my invention embodied therein. Fig. 2 is a plan view of the same. Fig. 3 is a section on the line 3 3, Fig. 2. Fig. 4 is a perspective view of the plate-supporting links. Fig. 5 is a sectional elevation of the same.

A is a shaft supported horizontally in bearings in the frame of the machine at one end thereof.

A' A' are sprocket-wheels upon the shaft A toward the ends thereof. A similar shaft and sprocket-wheels are located at the other end of the frame, but are omitted from the drawings to economize room.

A² A² are sprocket-chains passing over the sprocket-wheels A' A', the strands traveling horizontally. At regular intervals upon the chains A² A² are located links having the construction of the other links in the chain with the additions illustrated in detail in Figs. 4 and 5, in which A³ is a casting attached to or forming a part of the link of the chain, consisting of a horizontal plate A⁵, a vertical plate A⁷, lying in a plane parallel to the length of the chain, and a ridge or fin A⁶, extending at right angles to the plates A⁵ A⁷ from the centers thereof.

a² a² are pintles extending vertically from the plate A⁵.

a' a' are sleeves passing over the pintles a² and provided at their top with horizontal plates a⁸. The sleeves a' are limited in their

motion to a point somewhat below the upper edges of the fin A⁶ and plate A⁷.

a is a pressure-spring adapted to press the sleeves a' upward to the limit of their motion. The castings A³ are located at regular intervals upon each of the chains A², and each of the castings upon one of said chains is directly opposite that on the other of said chains.

I I are the foraminous carrier-plates, into which the match-sticks K have been inserted and in which they are held.

C is a warming-plate located parallel to and somewhat below the upper strands of the chains A².

D is the tank, in which the hot paraffin is held.

E is a steam-chamber bounded in part by the plate C and the tank D.

F is a steam-pipe leading into the chamber E.

G is a tank for containing the igniting material.

H is a roller, the lower portion of which dips into the fluid-lighting material in the tank G and the upper portion of which rubs against the depending ends of the match-sticks in the plates I.

B³ B³ are stationary standards upon the frame of the machine.

B' is one of two rods adapted to reciprocate vertically in guides upon the standards B³.

B is a pressure-plate upon the lower end of the rod B'.

b b are friction-rollers extending below the lower surface of the pressure-plate B.

B⁴ is a cam-face upon the upper end of the rod B'.

B⁵ is a shaft adapted to turn in bearings in the upper ends of the standards B³.

B⁶ B⁶ are cams upon the shaft B⁵.

B⁷ is a sprocket-wheel upon the shaft B⁵.

A⁴ is a sprocket-wheel upon the shaft A.

B⁸ is a sprocket-chain passing over and engaging with the teeth of the sprocket-wheels A⁴ B⁷.

The operation of the above-described device is as follows: The plates I, filled with the match-sticks K, are placed with their four corners resting upon plates a⁸ and held in position by four castings A³. The power is applied to the machine to rotate the shaft

A, causing the sprocket-chain A^2 to travel with the sprocket-wheels A' upon said shaft and causing the plates I upon said chain to travel over the warming-plate C , paraffin-tank B , and roller H , as indicated in Fig. 1. As each of the plates I come above the paraffin-tank D they come beneath the pressure-plate B . The shaft B^5 is so geared to the shaft A that when a filled plate I is directly over the tank D the cam B^6 contacts the cam-face B^4 , depressing the rod B' and pressure-plate B and forcing the carrier-plate down beneath it until the lower end of the match-sticks held by said plate are dipped into the paraffin. The cam B^6 then leaves the cam-plate B^4 , and the plate I is allowed to rise again, impelled by the pressure-springs a acting upon its corners. During the vertical motion of the plate I it is continually moved along with the chain A^2 , the roller b allowing it to pass under the pressure-plate B with but little friction. In the further progress of the plate I it passes over the roller H , and the igniting material is applied to the ends of the sticks depending therefrom in the usual manner.

It will be observed that the ends of the match-sticks are plunged rapidly into the paraffin in the receptacle B immediately after they have passed over the warming-plate C . The quick downward-and-upward motion of the plate I in dipping the ends of the match-sticks causes all the superfluous paraffin to fall off from the sticks, so that only the ends of the sticks have paraffin applied to them, and the paraffin is not in sufficiently thick layers to weaken the adhesion of the igniting material to the ends of the stick, and the paraffin does not extend so far upon the stick that the fire from the igniting compound is carried, in the first instance, up on the stick to a considerable distance from the end; but, on the contrary, the match-stick is ignited at its end and will therefore burn longer. By the use of this apparatus only one-half the amount of paraffin is used as in former methods, the paraffin-tank may be much smaller, and less paraffin is required to be kept heated at one time, and it is not necessary to deflect the line of travel of the chain.

The match-stick-carrying plates follow each other closely, so that the rate at which the match-sticks pass over the roller H is uniform and the igniting material is removed from the roll uniformly and does not accumulate and charge the match-sticks irregularly.

What I claim is—

1. In a match-stick-dipping machine, the combination of a match-stick-holding plate, a paraffin-tank, a carrier for said plate adapted to carry said plate over said tank, a resilient support for said plate upon said carrier, and means for depressing said plate against the action of its resilient support, substantially as and for the purpose described.

2. In a match-stick-dipping machine, the combination of a match-stick-holding plate, a warming-plate, a paraffin-tank adjacent to said warming-plate, a carrier for the match-stick-holding plate adapted to carry said plate successively over the warming-plate and over the paraffin-tank, a resilient support for the match-stick-holding plate, and means for depressing said plate against the action of its resilient support when over said tank, substantially as and for the purpose described.

3. In a match-stick-dipping machine, the combination of a match-stick-holding plate, a paraffin-tank, a carrier for said plate, said plate being adapted to reciprocate vertically on said carrier, and means for reciprocating said plate vertically upon said carrier while said plate is over said tank.

4. In a match-stick-dipping machine, the combination of a match-stick-holding plate, a warming-plate, a paraffin-tank adjacent to said warming-plate, a carrier for the match-stick-holding plate adapted to carry said plate successively over the warming-plate and over the paraffin-tank, said holding-plate being adapted to reciprocate vertically upon said carrier, and means for reciprocating said holder-plate upon said carrier while said holder-plate is over said tank.

5. In a match-stick-dipping machine, the combination of a match-stick-holding plate, sprocket-wheels, a sprocket-chain passing around said wheels, corner-guides for said plates rising at regular intervals from said chain, springs adapted to support said plates upon said corner-guides, a pressure-plate adapted to depress said holding-plates against the action of said springs, and means for reciprocating said pressure-plate at regular intervals relative to the motion of said chains.

6. In a match-stick-dipping machine, the combination of a match-stick-holding plate, sprocket-wheels, a sprocket-chain passing around said wheels, corner-guides for said plates rising at regular intervals from said chain and adapted to hold successive plates with their edges close together, springs upon said corner-guides adapted to support said plates, a pressure-plate adapted to depress said holding-plates against the action of said springs, means for reciprocating said pressure-plate at regular intervals relative to the motion of said chain, a paraffin-tank vertically below the lower ends of said match-sticks at the point where the holder-plates are depressed and a roller for applying the igniting compound to the lower end of the match-sticks in said plate on said chains after they have been paraffined.

In testimony whereof I sign this specification in the presence of two witnesses.

HARRY C. LA FLAMBOY.

Witnesses:

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ELLIOTT J. STODDARD.