



# UNITED STATES PATENT OFFICE.

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## MATCH-MAKING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 776,464, dated November 29, 1904.

Application filed June 11, 1903. Serial No. 161,087. (No model.)

*To all whom it may concern:*

Be it known that I, VALENTINE GERSTENSCHLAGER, a citizen of the United States, residing at Ashland, in the county of Ashland and State of Ohio, have invented certain new and useful Improvements in Match-Making Machinery, of which the following is a specification.

This invention relates to improvements in match-making machines.

The object of the invention is the production of a splint-cutting machine for cutting match-splints from a solid block or blocks of wood and inserting said splints into plates, called "sticking-plates," for the operation of coating with the igniting material. After the splints have been inserted into the plates the subsequent handling of said splints in the further manufacture of the match is greatly simplified.

The invention consists in certain new combinations of parts and novel constructions, as will be hereinafter pointed out and claimed.

The drawing represents a sectional elevation of my machine, shown as cut through the vertical center and one side of the machine being removed.

The main frame of the machine is represented by the letter A. Said frame consists of a wide extending base portion A' and two uprights A<sup>2</sup>. Longitudinal extensions A<sup>3</sup>, designed to form tracks or carriers for the sticking-plates to be described, are provided at the top of the frame.

The cutter-head B is guided in its vertical reciprocating movement by suitable guides or ways in the uprights of the main frame. Said cutting-head is operated from the main shaft C by suitable connection—in this instance a disk on said shaft having a pin therein to which the arms D of the cutting-head B are pivoted by means of a block, as shown—or any other usual construction may be employed. The cutting-head is thus actuated in a vertical direction from the main or driving shaft C through the connecting-rods D.

An abutment-block E, of usual form, is hinged by suitable connections to connecting-rods F and slides or reciprocates in the bearings, as shown. Said rods are in turn hinged

at their opposite ends, at T, to the levers G. Levers G are two-armed levers having a pivot at H, and the second arm I of each lever is pivotally connected to the rods J. Rod J is located at the side of the frame of the machine and is provided with an eccentric-strap K, which strap is acted upon by a cam on the main shaft C in usual manner.

The perforated dipping-plate U travels in ways on the main frame and has an intermittent movement in a lateral direction and in its operation brings successive rows of holes located therein into registering position with the corresponding rows of match-splints held thereunder by the cutters Q, the splints being brought into position for registering by the ascending stroke of the cutting-head through its connections D to the shaft, as above explained. This intermittent motion of the dipping-plate U is produced by the action of pawls L L' L'' through means of the slide-bars M, said slide-bars M being actuated by the bell-crank lever O, link P, levers G, link I, connecting-rod J, and eccentric K through the means of the cam on shaft C actuating the eccentric K, as will be understood from the drawing.

R designates blocks of wood from which the splints for the matches are to be cut by cutters Q in the cutter-head B.

S is a supporting-block for supporting the dipping-plates U against the thrust of the splints as they are inserted in the dipping-plate on the ascending stroke of the cutting mechanism.

The operation of the machine is as follows: Upon the descent of the cutter-head B a row of match-splints is cut from the blocks of wood R by the cutters Q. After being cut from the block the splints are held in said cutters during the next ascending stroke. The eccentric K having been adjusted to a predetermined position, the action produced by the cam on the shaft C on the parts J, I, G, P, O, N, M, and L feeds the perforated dipping-plate U to its correct position above the row of match-splints, which splints have been cut and are held by the cutters Q and are brought up and inserted in the holes in the dipping-plate U. At the same time connecting-rod F



is forced forward by its connection with levers G and T, thereby carrying the abutment-block E to a position under the holes in the bottom of the cutters Q, wherein are held the splints, thus forming a support for the splints while they are being forced into the dipping-plates. As long as the machine is in operation the above-described action is continuous.

While I have described only one form of the embodiment of my invention, I do not thereby intend to limit the invention to said form, inasmuch as alterations and additions may be made within the scope of my claims without constituting a substantial departure from the invention.

What I claim is—

1. In a match-making machine, the combination of a dipping-plate, the vertical reciprocating cutters, a hinged reciprocatory abutment-block, horizontal connecting-rods hinged at one end to said abutment-block, bell-crank levers having one arm pivoted to the other ends of said connecting-rods, connections between the other arms of said levers and an eccentric on the main shaft, bell-crank levers, links connecting one arm thereof with the

pivotal connections between said rods and the first-mentioned levers and means connected with the last-mentioned bell-crank levers for giving an intermittent motion to the dipping-plate.

2. In a match-making machine, the combination of a dipping-plate, a hinged reciprocatory abutment-block, horizontal connecting-rods hinged at one end to said abutment-block, bell-crank levers having one arm pivoted to the other ends of said connecting-rods, connections between the other arms of said levers and an eccentric on the main shaft, said main shaft and eccentric, bell-crank levers, links connecting one arm thereof with the pivotal connections between said rods and the first-mentioned levers, slide-bars, pawls, a vertically-reciprocatory cutting-head, and a block for supporting the dipping-plate against the thrust of the splints.

In testimony whereof I affix my signature in presence of two witnesses.

VALENTINE GERSTENSCHLAGER.

Witnesses:

W. F. WYATT,  
CHARLIE BAUM.