

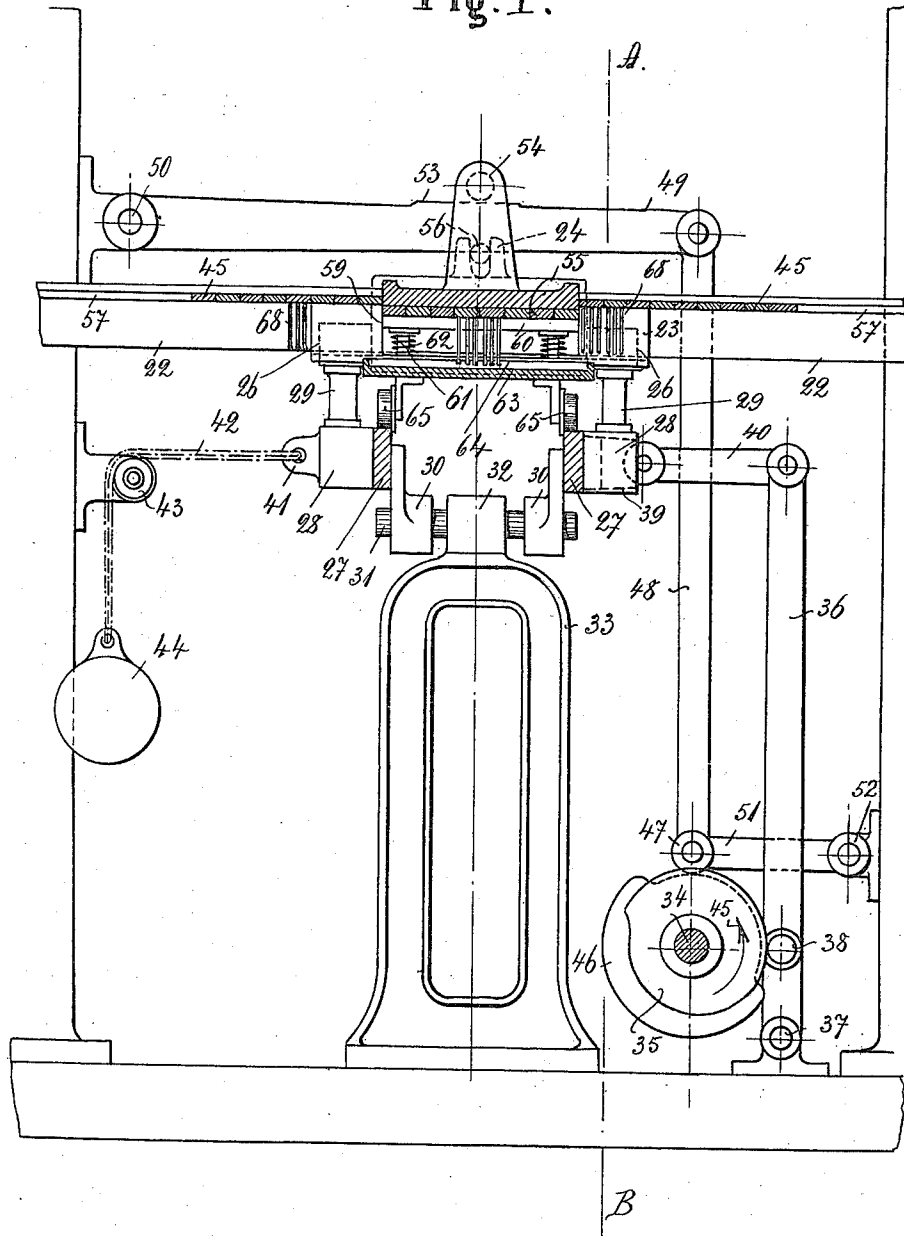
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DIPPING DEVICE FOR MATCH MACHINES.
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1,060,008.

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2 SHEETS—SHEET 1.

Fig. 1.



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DIPPING DEVICE FOR MATCH-MACHINES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PAUL MÖGLING, a subject of the German Emperor, residing at Durlach, in the Grand Duchy of Baden, German Empire, have invented a new and useful Dipping Device for Match-Machines, of which the following is a specification.

As is well known, in certain match-machines carriers are employed for receiving splints, which are cut from timber and are pushed with their ends into holes of the carriers. Guides are provided in the machine frame for guiding the carriers so that during their motion in one direction the splints can be consecutively paraffined, dried, dipped into the viscous igniting material, dried, and ejected from the carriers.

My invention relates generally to match machines of the type thus briefly described, and has particular reference to an improved dipping device adapted for use in such machines, the invention comprising certain new and useful parts and combinations thereof more fully hereinafter described and particularly pointed out in the appended claims.

I will now proceed to describe my invention with reference to the accompanying drawings, in which—

Figure 1 is a vertical cross section through a dipping device suitable for continuously fed carriers, in which the group of carriers above the table is lowered for dipping their splints, Fig. 2 is a vertical section through the line A—B in Fig. 1, in which the splints on the right occupy their normal position and the splints on the left are dipped.

Referring to the drawings, the two guides 22 are not interrupted above the dipping device and carry two slides 23, 23 which are each provided with a fork 24 above, an inwardly projecting ledge 25 below and two eyes 26, 26 on the outside. Two parallel rails 27, 27 beneath the guides 22, 22 are rigidly connected with the two slides 23, 23 by means of their eyes 28, 28 and 26, 26 and studs 29, 29. The two rails 27, 27 are connected together by means of four brackets 30, 30 and two pins 31, 31, which latter are shown to be guided in eyes 32 on two standards 33, 33.

A shaft 34 is driven from the machine in any known manner. Two parallel cam disks 35 are fastened on the shaft 34 and two

parallel levers 36 are mounted on the machine frame to rock at 37 and carry rollers 38, which are adapted to roll on the periphery of the two cam disks 35. The right rail 27 in Fig. 1 has two brackets 39, 39, which are pivotally connected with the upper ends of the two levers 36 by means of links 40, 40. The left rail 27 in Fig. 1 has two projections 41, 41, which are connected with two chains 42, 42 passing over guiding rolls 43 at the machine frame and carrying weights 44, 44. It will be seen, that the weights 44, 44 press the two rails 27, 27 with the two slides 23, 23 to the left in Fig. 1 and the two rollers 38 against the two cam disks 35. During the rotation of the shaft 34 in the direction of the arrow 45 in Fig. 1 the two slides 23, 23 will be slowly moved to the left at the same speed as the continuously fed carriers 45 and rapidly returned to the initial position. Two parallel cam disks 46 are fastened on the shaft 34 and two rollers 47 at the lower end of two rods 48 are made to roll on the periphery of the cam disks 46. Two parallel horizontal levers 49, 49 are mounted on the machine frame to rock at 50 and their free ends are pivotally connected with the upper ends of the rods 48, while the lower ends of the rods 48 are guided by links 51 rocking at 52 in the machine frame. The two levers 49, 49 have horizontal faces 53, on which two rollers 54, 54 at the ends of a cranked slide 55 are made to roll. The vertical portions of the slide 55 carry pins 56, 56, which engage in the forks 24, 24 of the two slides 23, 23. In this manner the slide 55 is obliged to partake in the horizontal motion of the two slides 23, 23, while it can be raised and lowered from the two cam disks 46. The weight of the slide 55 suspended from the two rollers 54, 54 tends to always bring it into the normal position shown.

The two guides 22, 22 have grooves 57 for guiding the ends of the carriers 45, 45 as usual, and the two slides 23, 23 have on their inside slots 58, 58 for permitting the carriers to pass through. The slot 58 of each slide 23 is for a length like the width of the slide 55 downward widened so as to form a rectangular recess 59 (Fig. 1), in which a rail 60 is vertically guided. This rail 60 is shown to have two pins 61, 61 guided in the lower projection 25 of the slide

23 and to be pressed upward by helical springs 62, 62 surrounding the pins 61, 61. The groove 57 in each guide 22 is widened downwardly above the dipping device, as is clearly shown at Fig. 2, and this widening extends over a length equal to a little more than the width of the slide 55 plus the stroke of the slide 23. Then it will be possible for the slide 55 to depress the carriers 45, 45 beneath it together with the two rails 60, 60 while overcoming the tension of the helical springs 62, 62, when the two levers 49, 49 are permitted by the two cam disks 46 to lower.

15 A table 63 constructed as a carriage is made to roll with its wheels 65, 65 on the two rails 27, 27 and is provided with a rectangular recess 64 for the viscous igniting material. Two opposite brackets 66 (Fig. 20 2) are fastened to the two rails 27, 27 and serve for holding a box 67 of any known construction. I do not describe here the manner, in which the table 63 is reciprocated from the machine for receiving a fresh charge of viscous igniting material from the box 67, as this is immaterial to my invention and there are known mechanisms for effecting this motion.

When from the two cam disks 46 the slide 55 is lowered for dipping the splints 68, 68 (Fig. 2 on the left), the slide 55 commences to move to the left in Fig. 1, in other words to follow the continuously fed carriers 45, 45, so as to give the splints 68, 68 time for forming good heads.

It will be seen, that the two longitudinal rims of the table 63 are prevented from coming in contact with the lower ends of any row of splints, when the groups of carriers 45, 45 above the table 63 are lowered. Therefore no spaces need be formed between the slide 55 and the series of carriers on both sides. It is also evident, that during the rapid return of the table 63 with the slide 55 from left to right in Fig. 1 the slide 55 occupies its highest position, so that the group of carriers with the newly dipped splints leaves the slide 55, while a like group of carriers with undipped splints enters the slide 55, whereupon the operation described of the dipping device is repeated. Where so preferred, of course the two cam disks 35 may be so shaped, that only one portion of the group of carriers 68, 68 beneath the slide 55 may be at a time removed from the slide 55 and replaced by a like number of carriers,

so as to insure the formation of good heads on the matches.

The dipping devices illustrated and described can be varied in many respects without departing from the spirit of my invention.

I claim:

1. A dipping device for match machines, embodying therein a carriage adapted to contain viscous igniting material, a support for said carriage, means for advancing said carriage along said support, means whereby said carriage and said support may be moved in a direction at right angles to the advance of the carriage along the support, of stationary grooved guides above and laterally of said carriage and extending in a direction at right angles to the advance of the carriage on the support, a plurality of splint carriers movable in the grooves in said stationary guides, a vertically movable carrier support above said carriage and arranged between said stationary guides, means for actuating said vertically movable carrier support, and means for intermittently feeding said splint carriers in said grooves a distance corresponding to the width of said carriage.

2. A dipping device for match machines, embodying therein a carriage adapted to contain viscous igniting material, a support for said carriage, means for advancing said carriage along said support, means whereby said carriage and said support may be moved in a direction at right angles to the advance of the carriage along the support, of stationary grooved guides above and laterally of said carriage and extending in a direction at right angles to the advance of the carriage on the support, a plurality of splint carriers movable in the grooves in said stationary guides, a vertically movable carrier support above said carriage and arranged between said stationary guides, upwardly extending arms upon said carrier support, lateral projections carried by said arms, levers adapted to engage said projections to reciprocate said carrier support, means for oscillating said levers, and means for intermittently feeding said splint carriers in said grooves a distance corresponding to the width of said carriage.

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