H. KELLEY.

FEED BOX FOR MATCH MAKING MACHINES.

APPLICATION FILED APR. 14, 1917.

1,266,815.

Patented May 21, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

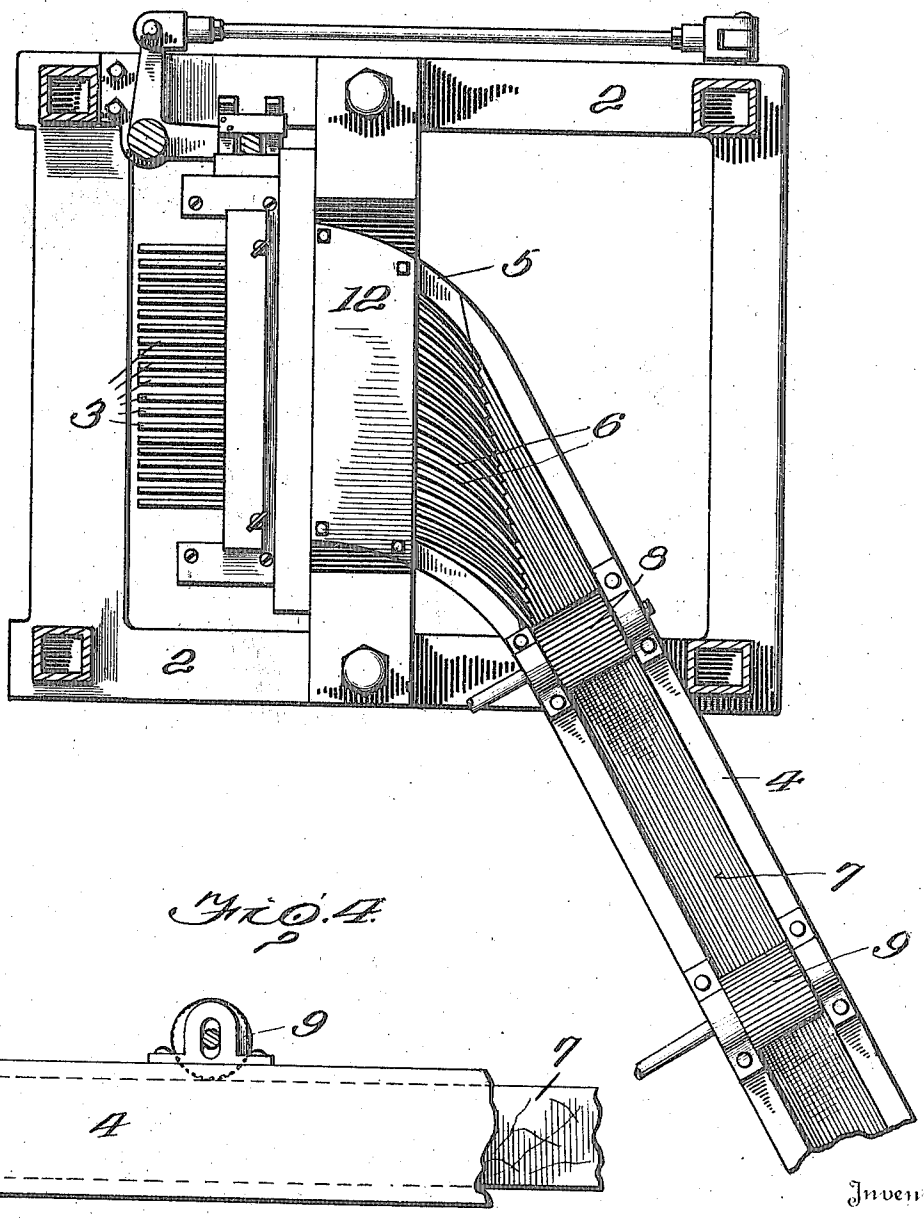


Fig. 4.

Witness

Floyd P. Cornwall.

Inventor

Harry Kelley.

By E. B. Stocking

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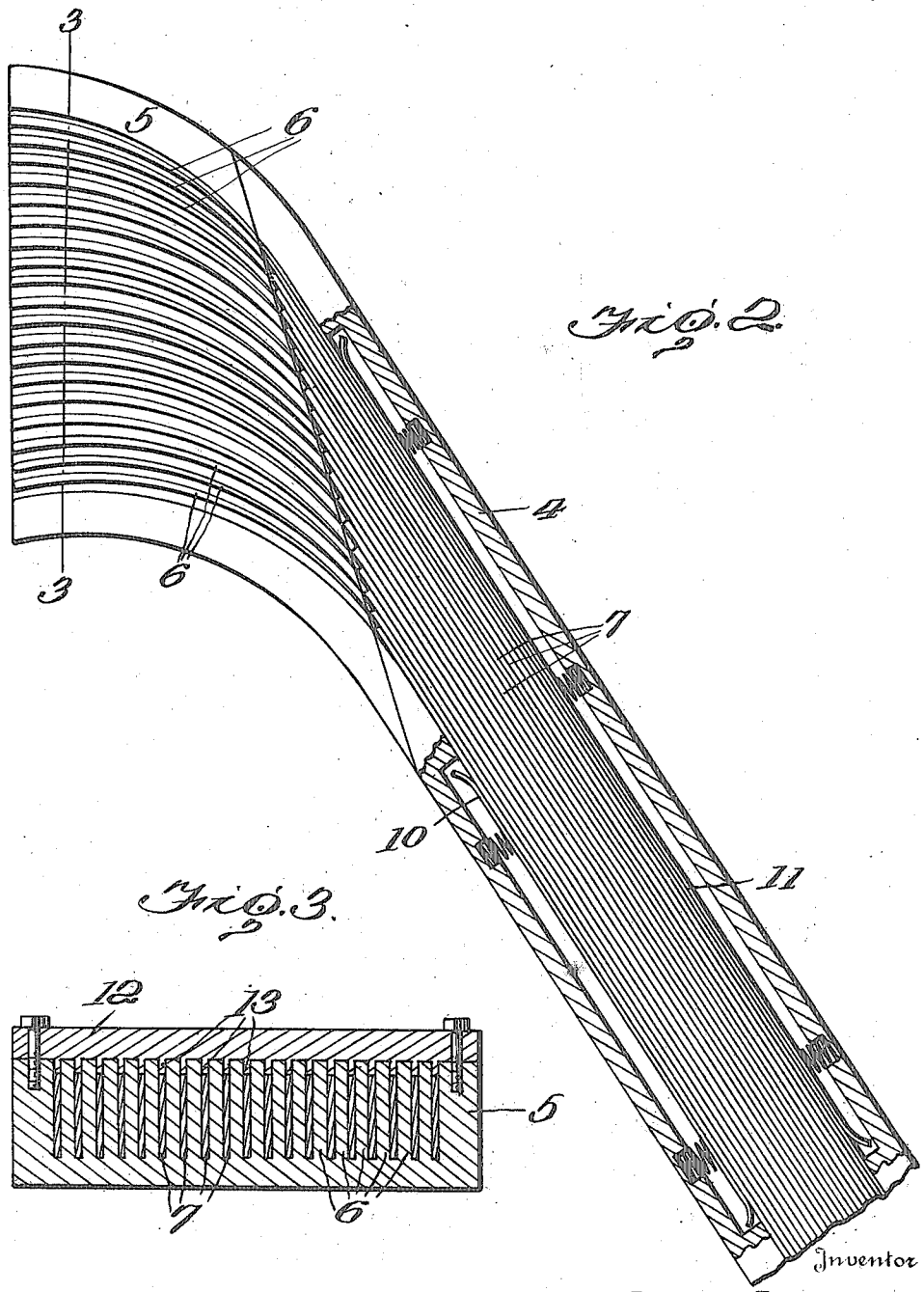


Fig. 2.

Fig. 3.

Witness
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[illegible]

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UNITED STATES PATENT OFFICE.

HARRY KELLEY, OF WILMINGTON, DELAWARE.

FEED-BOX FOR MATCH-MAKING MACHINES.

1,266,815. Specification of Letters Patent. Patented May 21, 1918.

Application filed April 14, 1917. Serial No. 162,052.

To all whom it may concern:

Be it known that I, HARRY KELLEY, a citizen of the United States, residing at Wilmington, in the county of New Castle and State of Delaware, have invented certain new and useful Improvements in Feed-Boxes for Match-Making Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to certain new and useful improvements in match making machines, and more particularly to mechanisms for forming the match sticks or splints out of strips of veneer in order to produce a square or round match stick with very little waste.

Another object of my invention is to provide a match making machine with a feed trough or box in which the strips of veneer are placed having operating fingers for separating and guiding the strips of veneer into position to be cut into splints by the cutters of the cutter head.

Another object of my invention is to provide novel means for holding the strips of separated veneer in the feed box adjacent the cutter head by interchangeable plates in order to allow match sticks of different lengths to be formed.

I am aware that I am not the first in the art to form match sticks or splints out of veneer, but in prior devices it was necessary to provide splitting knives to produce the sticks, while with my device any number of strips of veneer can be placed in the feed box or trough and intermittently fed in position to be cut by the cutters into match splints whereby I am able to form square or round match sticks with very little waste.

It has been found in practice that it is impossible to separate strips of veneer by separating fingers unless the line of separating fingers extends obliquely across the feed box or at an angle to the line of feed as these strips are held in contact with one another in the feed box under pressure, and unless these strips are brought into engagement with the space fingers in stepping relation with one another, the fingers will not separate the strips as it is impossible to arrange the fingers to register with the space between the strips on account of the various thicknesses of the veneer strips as the variation of one hundredth of an inch in the thickness of any one of the strips will throw the entire series of sticks being fed in the box out of alinement with the spacing fingers which at once causes the strips to jam in the box.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawings,

Figure 1 is a top plan view of my improved construction of feeding mechanism for a match making machine showing the same arranged on one of the well-known types of machine of this character now in use;

Fig. 2 is a top plan view on a large scale showing the pressure plates for holding the veneer strips tightly in contact with one another;

Fig. 3 is a section taken on line 3—3 of Fig. 2; and

Fig. 4 is a detail side elevation of a portion of a trough showing the manner of mounting the corrugated feed rollers.

Like numerals of reference refer to like parts in the several figures of the drawing.

My invention is capable of being applied to any of the well-known forms of match making machines now in use, and in the drawing I have shown the application of the same to a Beecher type of match making machine in which 1 indicates a frame, 2 the cutter head, and 3 a series of cutters employed for forming the splints. My invention differs from the Beecher construction thus far described by the application of cutting knives having square cutting holes with a single cutting edge as it is only necessary to cut the veneer vertically as three sides are already formed. This particular construction of cutter knife, however, forms the subject matter of a companion application filed even date herewith.

My invention consists of substituting for the ordinary trough or box used for feeding the blocks to the cutting head in the Beecher type of machine, a trough 4 which terminates at the delivery end therein in a curved portion 5 which is provided with a plurality of curved spacing fingers 6 terminating on

a line oblique or on an angle to the line of feed, said fingers forming intermediate guide grooves 7 through which the strips pass and are fed into the path of travel of the cutters 3 of the cutter head which cutters are operated intermittently so as to sever from the strips of veneer fed thereto splints which are operated on and delivered to the splint-engaging members of the endless conveyer in the ordinary manner the setter pins loosening the sticks so as to allow the sticks to be readily drawn out of the cutters when engaged by the splint engaging member of the endless conveyer.

Disposed above the feed trough are spaced corrugated feeding rolls 8 and 9 which are adapted to be driven intermittently in unison so as to feed the strips to the cutters, and these rollers are preferably adjustably mounted so as to accommodate different widths of veneer strips and are adapted to be driven and timed with the cutter head so that as the cutter head is raised vertically to deliver the splints cut to the endless conveyer, the strips of veneer will be advanced outwardly beyond the ends of the grooves 7 in the position to be operated on by the cutters of the cutter heads as the same descends.

In order to provide means for holding the strips of veneer tightly in contact with one another in the feed box or trough 4, I provide the opposing walls of the feed box with spring-pressed plates 10 and 11 so as to compensate for any variation in the thickness of the strips of veneer.

Arranged over the spacing fingers at the delivery end of the trough is a pressure plate 12 which is provided with a series of ribs 13 adapted to extend into the grooves 7 so as to hold the strips of veneer in position to be operated on by the cutter head, and by providing plates with ribs of different lengths match sticks of different lengths can be formed on the same machine without changing the construction in any way, as it is only necessary to have interchangeable plates for holding the strips of veneer in position to be operated on by the cutters.

By referring to Figs. 1 and 2 of the drawing it will be seen that the spacing fingers terminate on a line drawn obliquely through the trough, and as the strips of veneer have a rectilinear movement in the feed box before they reach the spacing fingers they will assume at their ends a stepped relation so that the spacing fingers can readily pick up the strips and separate the same so as to guide the strips into the curved grooves, and as the feed of the strips is continued they will be brought into position to be operated on by the cutter head. When the strips of veneer are placed in the portion 4 of the feed trough or box, the ends are in transverse alinement, and as they are advanced intermittently by the feed rollers, the strip lying adjacent the plate 10 will be picked up first or separated from the remaining strips by the spacing fingers which are lying adjacent that wall, and on the next movement of the strips the next strip will be picked up and guided into the proper groove, this being continued until all of the strips have been guided into the grooves. As the strips are drawn by the continuous movement the strip lying adjacent the plate 10, of course, will be advanced in position to be operated on by the cutter head before the strip lying adjacent the plate 11, but after the machine has operated a short time the strips of veneer assume a line parallel with the line of the cutter head so that all of the strips will be operated on simultaneously by the cutter heads so as to provide match splints corresponding in number to the strips or veneer arranged within the feed box.

By constructing the square match sticks or splints out of strips of veneer which are fed to the cutting head when in vertical position I am able to dispense with the use of blowers, trimming knives, or any other means for finishing the splint and square match sticks which are produced with cutting knives having only one cutting edge, as when the stock from which the splints are formed advances into the position to be cut by the cutting knives of the cutting head by forming the stock of strips of veneer three sides have been previously cut. This enables match sticks to be formed very cheaply as any waste is entirely eliminated and the match stick or splint is produced without refinishing the same.

I claim:

1. A feed trough for a match making machine having a curved delivery end provided with separating fingers projecting to different distances opposite to the direction of feed.

2. In a match making machine, the combination with splint cutting means, of a feed trough having a curved delivery end, and a series of separating fingers disposed within said trough having their ends terminating on a line at an angle to the line of feed.

3. In a match making machine, the combination with a cutting mechanism, of a feed trough having a curved delivery end, and a series of separating fingers conforming to the curvature of said trough, said fingers terminating on a line at an angle to the line of feed.

4. In a match making machine, the combination with a cutting mechanism thereof, of a feed trough for delivering strips of veneer to said cutting mechanism, means for feeding said strips of veneer in stepped relation in said trough, and means for sepa-

rating said strips of veneer when in stepped position.

5. A feed trough for a match making machine having a discharge end provided with curved separating fingers projecting to different distances opposite to the direction of feed forming spaced guide grooves, said separating fingers terminating on a line extending obliquely across the line of feed.

6. A feed trough for a match making machine having a curved delivery end provided with separating fingers of different lengths projecting to different distances opposite to the direction of feed.

7. A feed trough for a match making machine having a straight portion terminating in a curved delivery portion, a plurality of curved separating fingers arranged in said delivery portion, the ends of said curved separating fingers terminating on a line extending obliquely through said trough.

8. In a match making machine, the combination with a cutting mechanism, of a feed trough having feed rollers and provided with a curved portion, and a plurality of separating fingers arranged in the curved portion of said trough projecting to different distances opposite to the direction of feed and terminating on a line extending obliquely through said trough.

9. In a match making machine, the combination with a cutting mechanism, of a feed trough adapted to receive a plurality of strips of veneer arranged on edge having a curved delivery end, separating fingers disposed within the discharged end of said trough projecting to different distances opposite to the direction of feed for separating said strips of veneer at the delivery end thereof.

10. In a match making machine, the combination with a cutting mechanism, of a feed trough for feeding strips of veneer in position to be operated on by said cutting mechanism, and means disposed in said trough for separating said strips of veneer when in stepped relation with one another.

11. In a match making machine, the combination with a cutting mechanism, of a feed trough disposed to deliver stock to be operated on by said mechanism, pressure plates mounted in the opposing walls of said trough, and a plurality of separating fingers disposed in the delivery end of said trough, said separating fingers terminating on a line extending obliquely through said trough.

12. A feed trough for a match making machine having a plurality of curved separating fingers of different lengths.

13. In a match making machine, the combination with a cutting mechanism, of a feed trough for delivering strips of veneer to said cutting mechanism, and a plurality of curved separating fingers disposed within said trough and terminating on a line extending obliquely through said trough.

14. In a match making machine, the combination with a feed trough adapted to receive strips of veneer, said trough having a curved delivery end, means for intermittently advancing said strips of veneer in said trough, and separating fingers disposed within the delivery end of said trough forming spaced guide grooves, said separating fingers terminating on a line at an angle to the line of feed of the strips within said trough.

15. A feed trough for a match making machine, comprising a body portion having a curved delivery end, a series of curved separating fingers disposed in said delivery end forming spaced guide grooves, and a plate mounted over the delivery end of said trough having ribs extending into the guide grooves thereof.

16. In a match making machine, the combination with the cutting mechanism thereof, of a feed trough for delivering strips of veneer in a position to be operated on by said cutting mechanism, said feed trough having curved separating fingers terminating on a line extending obliquely through said trough, and an interchangeable plate having spaced ribs mounted over the delivery end of said trough.

17. In a match making machine, the combination with a feed trough adapted to receive a series of strips of veneer arranged on edge, means for advancing said strips for positioning the ends thereof in stepped relation with one another, and separating fingers disposed within said trough for separating said strips of veneer when in stepped relation with one another.

18. In a match making machine, a feed trough having a curved delivery end adapted to receive a plurality of strips of veneer arranged on edge in contact with one another, means for feeding said strips, and curved separating fingers arranged within the curved delivery end of said trough terminating in stepped relation with one another.

19. In a match making machine, the combination with a cutting mechanism comprising a series of cutting knives, a feed trough for delivering strips of veneer in position to be operated on by the knives of said cutting mechanism, said feed trough having curved separating fingers disposed in the delivery end thereof terminating on a line at an angle to the line of feed.

20. In a match making machine, the combination with a cutting mechanism thereof, of a feed trough having a curved delivery end terminating in a straight portion arranged parallel with the cutting head of the machine, said feed trough having pressure plates in the opposing walls thereof, feed

rollers disposed within said trough, and a series of curved separating fingers disposed in the delivery end of said trough forming spaced guiding grooves adapted to receive strips of veneer, said spaced fingers terminating on a line at an angle to the line of feed.

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

HARRY KELLEY.

Witnesses:
GEORGE C. STRADLEY,
SHERMAN H. STRADLEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."