M. PARIDON.

ASSEMBLING MACHINE FOR MATCHES AND SPLINTS.

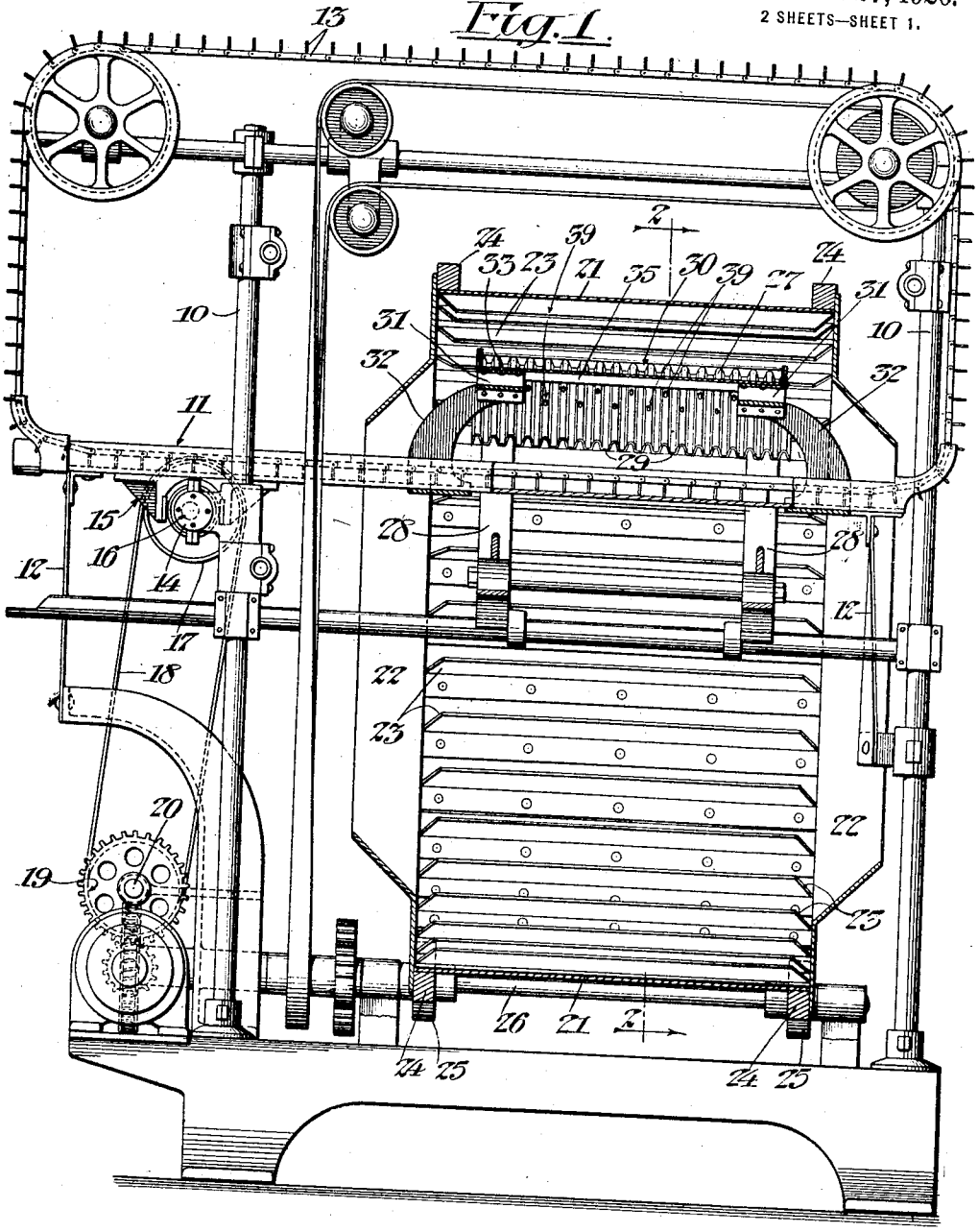
APPLICATION FILED MAY 19, 1919.

1,329,061.

Patented Jan. 27, 1920.

2 SHEETS—SHEET 1.

Fig. 1.



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Fig. 2.

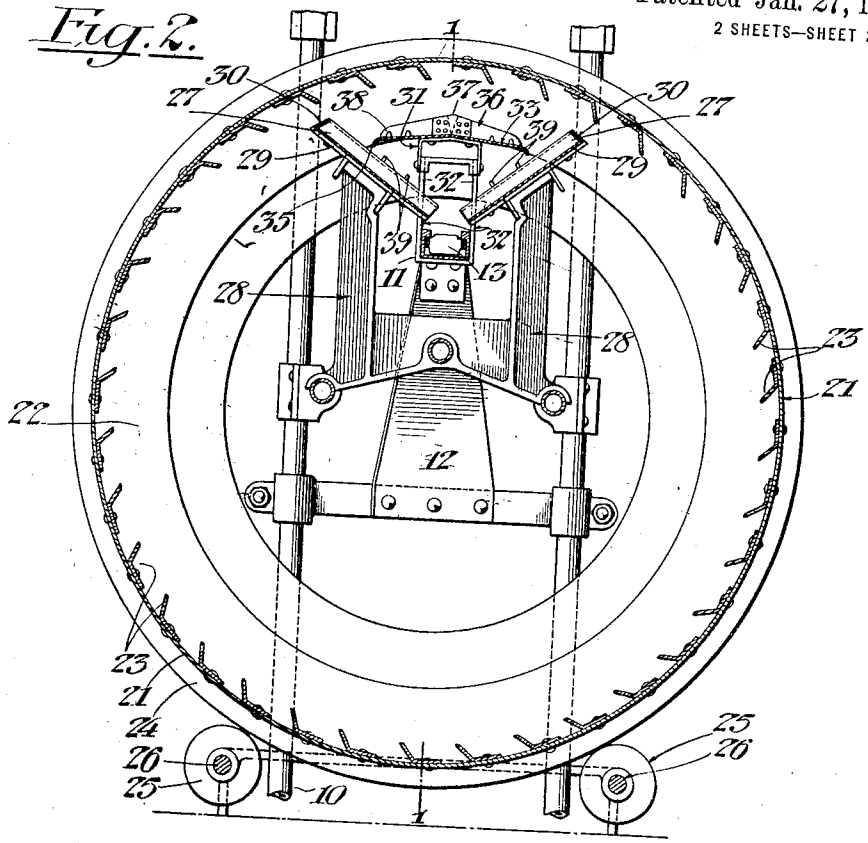
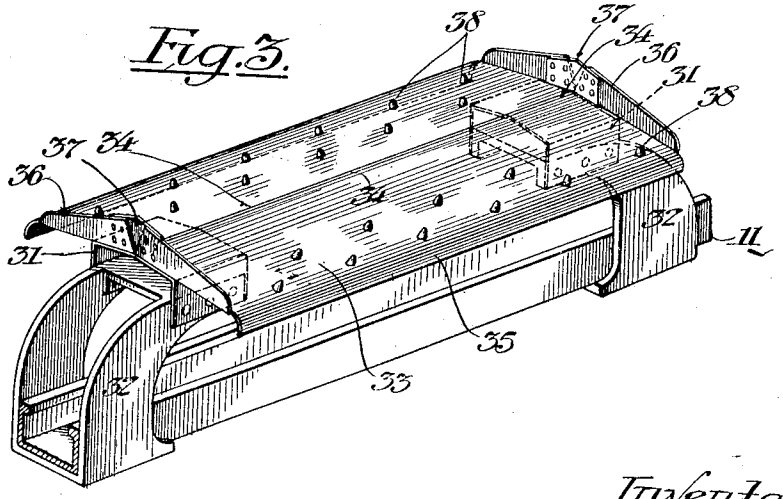


Fig. 3.



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UNITED STATES PATENT OFFICE.

MICHAEL PARIDON, OF BARBERTON, OHIO, ASSIGNOR TO THE DIAMOND MATCH COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ASSEMBLING-MACHINE FOR MATCHES AND SPLINTS.

1,329,061. Specification of Letters Patent. **Patented Jan. 27, 1920.**

Application filed May 19, 1919. Serial No. 298,053.

To all whom it may concern:

Be it known that I, MICHAEL PARIDON, a citizen of the United States, and resident of Barberton, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Assembling-Machines for Matches and Splints, of which the following is a specification.

This invention relates to machines for assembling matches or splints, having reference more particularly to the assembling machine forming the subject of an application for Letters Patent of the United States filed by me March 29, 1919, under Serial No. 286,184.

The machine described in said pending application comprises a rotary drum constructed and arranged to receive the matches or splints in bulk and transfer them progressively in groups to a channeled guide structure leading to and overhanging an elongated feed trough through which travels a partitioning-blade conveyer, said guide structure being inclined and positioned to direct the matches or splints to and in substantial parallelism within and transversely of the trough, and said trough having a rapid jarring action imparted thereto in order to insure the compact settling of the matches or splints therein.

The object of the present invention is to provide a simple and efficient construction whereby the groups of matches or splints which are discharged progressively from the drum are delivered in a more orderly and uniform manner to the feed trough than formerly, and whereby a more rapid operation of the machine, with consequent increased output, is attained.

Accordingly my invention, generally stated, consists in the provision of two channeled guide structures, which are inclined toward and arranged to overhang the respective sides of the trough, in combination with a vibratory match or splint receiving and distributing frame which is arranged to overhang the respective channeled structures in such a manner as to intercept the matches or splints as rapidly as they are discharged from the rotating drum, and direct them thence in an orderly manner to said structures preparatory to the delivery of the matches or splints to the trough. Preferably the inclined floor of the vibrating frame is provided with spaced studs or projections which are so positioned as to direct the descending matches or splints lengthwise of their direction of travel to the respective guide structures; and the apices of the channel walls of said guide structures are provided with spaced studs or pins which tend to deflect awry matches or splints into and lengthwise of the channels.

The embodiment of my invention illustrated in the annexed drawings will be hereinafter fully described and the scope of the invention then be defined in the appended claims.

In the drawings—

Figure 1 is a side elevation, partly in section, of an apparatus embodying my invention, the section being taken on the line 1—1 of Fig. 2.

Fig. 2 is a partial transverse vertical section through the drum and adjuncts, as on the line 2—2 of Fig. 1.

Fig. 3 is a perspective view of the splint distributing frame and a portion of the vibratory trough upon which it is supported.

Referring to the drawings, 10 designates a frame; 11 a horizontal trough resiliently supported at its ends by two upstanding springs 12 affixed to the frame, and 13 an endless blade-conveyer arranged to travel longitudinally of and through the trough, which conveyer by its spaced blades partitions the trough into a succession of traveling compartments, each of which is of less width than the length of a match or splint. Matches or splints deposited within and adjacent to one end of the trough are transported by the conveyer in an orderly manner to the other or discharging end of the trough. The trough is longitudinally vibrated to insure the compact settling of the matches or splints in parallelism throughout substantially the length of the trough; the vibrating mechanism including an eccentric 14 which co-acts with the limbs of a bifurcated bracket 15 secured to the under side of the trough, the shaft 16 for the eccentric being equipped with a pulley 17 which is connected by means of a belt 18 with a pulley 19 on a lower power driven shaft 20.

A rotating drum 21, which encircles the trough, has open end heads 22 through one of which the matches or splints may be thrown in bulk into the lower interior of the drum. The cylindrical body of the drum is provided with a succession of an-

gular internal vanes 23, which, being arranged in spaced relation to each other, convey groups of splints or matches progressively upward and discharge them above the trough. The drum is equipped with spaced circumferential rings 24 which bear upon pairs of supporting rollers 25 on suitably-disposed shafts, 26, one of which latter is driven from a suitable source of power, thereby effecting the bodily rotation of the drum.

In the mechanism illustrated in my copending application Serial No. 286,184, the matches or splints are discharged from the drum directly upon an inclined channeled structure the lower end whereof overhangs the receiving portion of the trough and delivers thereto in substantial parallelism the matches or splints which are seated in and guided lengthwise of the channels. The matches or splints which span the channels and are supported upon the tops of the adjacent channel walls are deflected over and beyond the trough so as to fall into the mass of matches or splints in the lower portion of the drum.

According to my present invention I provide two oppositely-inclined channeled structures 27 the lower ends of which lead to and overhang the respective sides of the trough. These structures are rigidly supported by up-standing brackets 28 on the main frame. Each structure comprises a body of sheet metal corrugated to provide a series of parallel guide channels each of less width than the length of a match or splint, such body being preferably provided with reinforcing bottom and upper end plates 29, 30, respectively.

Overhanging the two structures 27 is a distributing frame including a depending basal bracket 31 which is supported by spaced standards 32 rising from the trough, whereby said frame partakes of the rapid vibration of the trough. This frame, which is substantially the same width as each of the channel structures, comprises a bottom 33 inclined downwardly in opposite directions from its median portion 34 to its longitudinal edges, which latter overhang the respective guide structures 27 and are preferably provided with downwardly curved portions 35 extending adjacent to the tops of the respective structures. The bottom 33 is provided with up-standing end walls 36 preferably integral therewith, each of such walls being medially split to permit the requisite flexure of the frame to provide the two inclinations, and the gap thus formed being closed by a plate 37.

The drum 21 is arranged to encircle the frame as well as the channel structures and trough, and the angularity of the internal vanes of the drum is such that the groups of matches or splints are progressively carried up and delivered to the frame and the channel structures, the rapid vibratory action of which frame effectually distributes the matches or splints throughout the interior of the frame and insures their descent, by gravity, upon the respective inclined portions thereof. Divided quantities of the matches or splints are thus discharged from the distributing frame upon the respective channeled structures, the major portion of which matches or splints enter and extend lengthwise of the guide channels, whence they descend by gravity to the trough and are deposited therein in substantial parallelism.

In order to contribute to the lengthwise disposition and movement of the matches or splints within the frame, I provide the floor of the latter with a plurality of up-standing conical-studs 38 which are spaced-apart to obstruct temporarily the descent of awry matches or splints and thus deflect them into lengthwise position. Also similarly to deflect into the channels descending matches or splints that may lie upon and crosswise of the channel walls, I provide the tops of said walls with spaced upstanding studs 39.

By the construction above described the groups of matches or splints as rapidly as they are deposited upon the vibrating frame by the rotating drum, are well distributed throughout the width of said frame, and at the same time are shaken down and delivered to the respective channel structures, wherein they are guided in divided quantities toward the respective sides of the trough and thence in substantial parallelism within and transversely of the latter, preparatory to their advancement along the trough by the traveling conveyer.

I do not limit myself to the exact details of construction herein disclosed, as the same may be modified within the principle of my invention and the scope of the appended claims.

I claim—

1. The combination with a trough, of two inclined splint-feeding structures extending downwardly to the respective sides of the trough and having parallel splint guiding channels, a distributing frame having two inclined portions leading to and overhanging the respective structures, means for agitating said trough and frame, and means for supplying splints to said frame.

2. The combination with a trough, of two inclined splint-feeding structures extending downwardly to the respective sides of the trough and having parallel splint guiding channels, a distributing frame having two oppositely inclined portions leading to and overhanging the respective structures, means for agitating said trough and frame, and a rotary drum encircling the said trough and frame and having internal vanes adapted to

convey the contents of the drum to the said frame.

3. The combination with a trough, of an inclined splint-feeding structure having parallel splint guiding channels leading to the top of said trough, and having spaced-apart upstanding studs on the channel walls, means for vibrating said trough, and means for supplying splints to said structure.

4. The combination with a trough, of two inclined splint-feeding structures extending downwardly to the respective sides of said trough and having parallel splint guiding channels, a frame having two inclined portions leading to and overhanging the respective structures, the bottoms of said frame having spaced-apart upstanding studs, and means for vibrating said trough and frame.

Signed at Barberton, in the county of Summit and State of Ohio this 15th day of May A. D. 1919.

MICHAEL PARIDON.