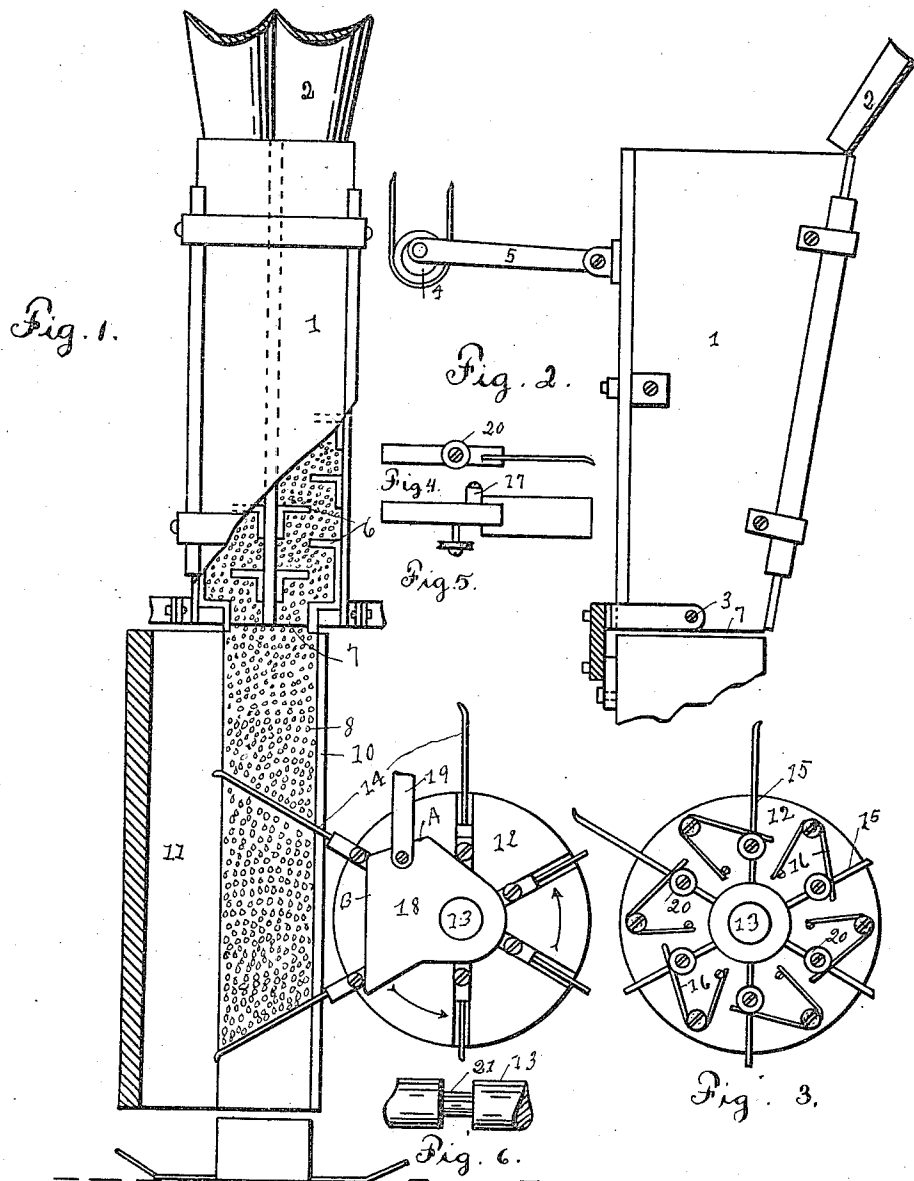


C. P. RICKER & W. L. GUILD.
 DEVICE FOR MEASURING AND PACKAGING MATCHES, TOOTHPICKS, AND SIMILAR ARTICLES.
 APPLICATION FILED AUG. 5, 1912.

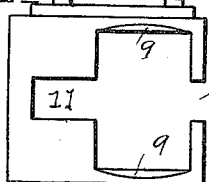
1,063,387.

Patented June 3, 1913.



WITNESSES -

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Fig. 7. by Clifford Donnell Clifford
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UNITED STATES PATENT OFFICE.

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DIXFIELD TOOTHPICK COMPANY, OF DIXFIELD, MAINE, A CORPORATION OF MAINE.

DEVICE FOR MEASURING AND PACKAGING MATCHES, TOOTHPICKS, AND SIMILAR
ARTICLES.

1,063,387.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed August 5, 1912. Serial No. 713,228.

To all whom it may concern:

Be it known that we, CHARLES P. RICKER and WINTHROP L. GUILD, citizens of the United States, residing at Dixfield, in the
5 county of Oxford and State of Maine, have invented certain new and useful Improvements in Devices for Measuring and Packaging Matches, Toothpicks, and Similar Articles, of which the following is a specification.

10 Toothpicks, matches and many similar articles are packaged for sale in small boxes arranged to lie in the same direction, the ends of each article in close proximity to
15 the ends of the box so as to closely fill the box.

The object of our invention is to provide mechanical means for rapidly measuring and delivering a specified quantity of the articles automatically and at regular intervals
20 to containers placed to receive them. In order to do this, it is necessary, first, that the articles be arranged parallel and with the ends in the same vertical planes. The articles may be thus arranged by hand or
25 by any suitable machinery, and for convenience we have shown our device in connection with a device of our invention adapted to assemble the articles in the position above described, but do not limit its
30 use to any particular method of so arranging the articles.

In the drawing herewith accompanying and making a part of this application, Figure 1 is a front view of our assembling device and side view of the measuring and
35 packaging device, partly in section; Fig. 2 is a side view of the assembling device; Fig. 3 is an elevation of the reverse side of the measuring wheel shown in Fig. 1; Figs. 4 and 5 are edge and plan views respectively
40 of the measuring arms; Fig. 6 is an elevation of a portion of the axle of the measuring wheel and Fig. 7 is a top plan view of the measuring reservoir.

45 Same reference characters indicate like parts in the several figures.

The assembling device may be briefly described as follows: 1 is an assembling hopper open at the top to receive the articles

which may be delivered thereto, in any convenient manner, for example, by gravity from trough 2. The articles are usually delivered to the hopper end-on and into the end of the hopper, but not necessarily so.
55 The hopper is pivotally mounted preferably near the bottom, as at 3. It is adapted to have a short, quick, rocking motion imparted to it in the direction of the length of the articles. This may be done in any
60 convenient manner. We have shown for this purpose an eccentric 4, which is connected to the hopper by a connecting rod 5. The interior of the hopper is provided preferably with a series of staggered shelves 6.
65 The hopper may have a plurality of apartments. In the bottom of the hopper is a discharge opening 7 through which the articles are discharged. The length of this opening is equal to the length of the articles being
70 treated. The interior of the hopper gradually tapers downwardly from the top.

Our improved measuring and packaging device consists of a chute 8 open at the top to receive the articles. The interior of the
75 chute forms an article receiving channel and is substantially equal to that of the interior of the box to be filled and at the extreme top preferably flares a little, as seen at 9. It is provided with a vertical measuring arm receiving opening 10 in the vertical wall and with an interior vertical arm receiving recess 11 opposite said opening.
80 Mounted on a wheel 12 adapted to rotate on a shaft 13 is a series of measuring arms 14. These arms are set radially in sockets 15 in the edge of the wheel and are normally held yieldingly in retracted position in said sockets by means of suitable springs 16.

Attached to the arms are antifriction rolls 90 17 which travel around a fixed cam 18 positioned at one side of wheel 12 and supported by a bracket 19 attached to a fixed part of the frame, not shown. The periphery of the cam has faces A and B, the
95 face A nearly horizontal and the face B substantially vertical so that, as the wheel revolves, an arm actuated by a roll traveling over the face A of the cam, is thrust outwardly into the opening in the chute pro- 100

jecting through the picks contained therein. As the wheel revolves, the roll travels along the face B of the cam until it reaches the lower end thereof and until another arm has passed to the outer edge of the face A, the position of the two arms at this point being shown in Fig. 1, in which position they contain between the two arms a specified quantity of the articles. As the wheel revolves, the first mentioned arm passes beyond the edge of the cam, and by its spring is immediately withdrawn from the opening in the chute, allowing the quantity of articles between the two arms to fall through the opening in the bottom of the chute into the container placed underneath said opening to receive them. The springs may be V-shaped, one end being free, and the arms may carry grooved wheels 20 against which the free ends of the springs rest, the tendency of the springs being to return and hold the arms in the sockets. The shaft on which the wheel is mounted may be recessed, as at 21, to receive the ends of the arms when they are returned by the springs.

We make no claim in this application for the assembling machine above described, the same being claimed in our application for patent therefor bearing even date herewith.

Having thus described our invention and its use, we claim:

1. In a device of the character described, a chute provided with an article holding channel adapted to contain a quantity of articles in mass and having a measuring arm receiving opening in the vertical wall thereof, in combination with a rotatable wheel located outside of said chute and adjacent said opening and provided with radially disposed measuring arms adapted to pass through said opening into and out of said chute as the wheel rotates.

2. In a device of the character described, a chute provided with an article receiving channel and a measuring arm receiving opening in the vertical wall thereof, in combination with a rotatable wheel provided with radially movable measuring arms, and means for causing said arms to move into said opening and across said channel.

3. In a device of the character described, a chute provided with an article receiving channel, a measuring arm receiving opening in the vertical wall thereof, and a recess in said channel opposite said opening, in combination with a rotatable wheel provided with radially movable measuring arms, and means for causing said arms to move into said opening and across said channel.

4. In a device of the character described, a chute provided with an article receiving channel and a vertical measuring arm receiving opening in the front wall thereof, a

rotatable wheel provided with radially movable measuring arms, means for causing said wheel to rotate, means for causing said arms successively to move into said opening and across said channel, and means for successively withdrawing said arms.

5. In a device of the character described, a chute provided with an article receiving channel, an opening in the vertical wall of said chute, a rotatable wheel provided with a series of radially moving measuring arms, means for causing said arms to move into said opening and across said channel, said arms being spaced apart so that any two arms during rotation shall intercept and include a measured quantity of articles contained in the chute, and means for quickly withdrawing the lower arm before the next upper arm is withdrawn.

6. In a device of the character described, a chute provided with an article receiving channel and a vertical measuring arm receiving opening in the front wall thereof, a rotatable wheel provided with radially movable measuring arms, means for causing said wheel to rotate, means for causing said arms to move outwardly relative to said wheel into said opening in the chute and across said channel, and means for quickly withdrawing the lower arm while the upper one is still in the channel, whereby a measured quantity of articles is delivered through the bottom of the chute.

7. In a device of the character described, a chute provided with an article receiving channel and a measuring arm receiving opening in the front wall thereof, a rotatable wheel provided with radially movable arms, means for holding said arms yieldingly in retracted position, means for rotating said wheel, and means for temporarily causing said arms to move into the opening and across the channel in said chute.

8. In a device of the character described, a chute provided with an article receiving channel and a measuring arm receiving vertical opening in the front wall thereof, in combination with a rotatable wheel provided with radially movable measuring arms, a stationary cam provided with two cam faces angularly disposed to each other, cam rolls on the measuring arms adapted to travel over said cam faces and move said measuring arms successively into said opening and across said channel, and means for quickly withdrawing the lower of said arms.

9. In a device of the character described, a chute provided with an article receiving channel and a vertical measuring arm receiving opening in the front wall thereof, a rotatable wheel provided with radially disposed sockets, measuring arms mounted in said sockets and radially movable, means for holding said arms yieldingly in retracted position, means for causing said arms to

move into said opening and across said
channel as said wheel rotates, whereby each
two arms, as said wheel rotates, incloses a
measured quantity of articles in said chan-
5 nel, and means for withdrawing the lower
arm, while the upper arm remains extended
across the channel, whereby a measured

quantity of articles is delivered from the
chute.

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