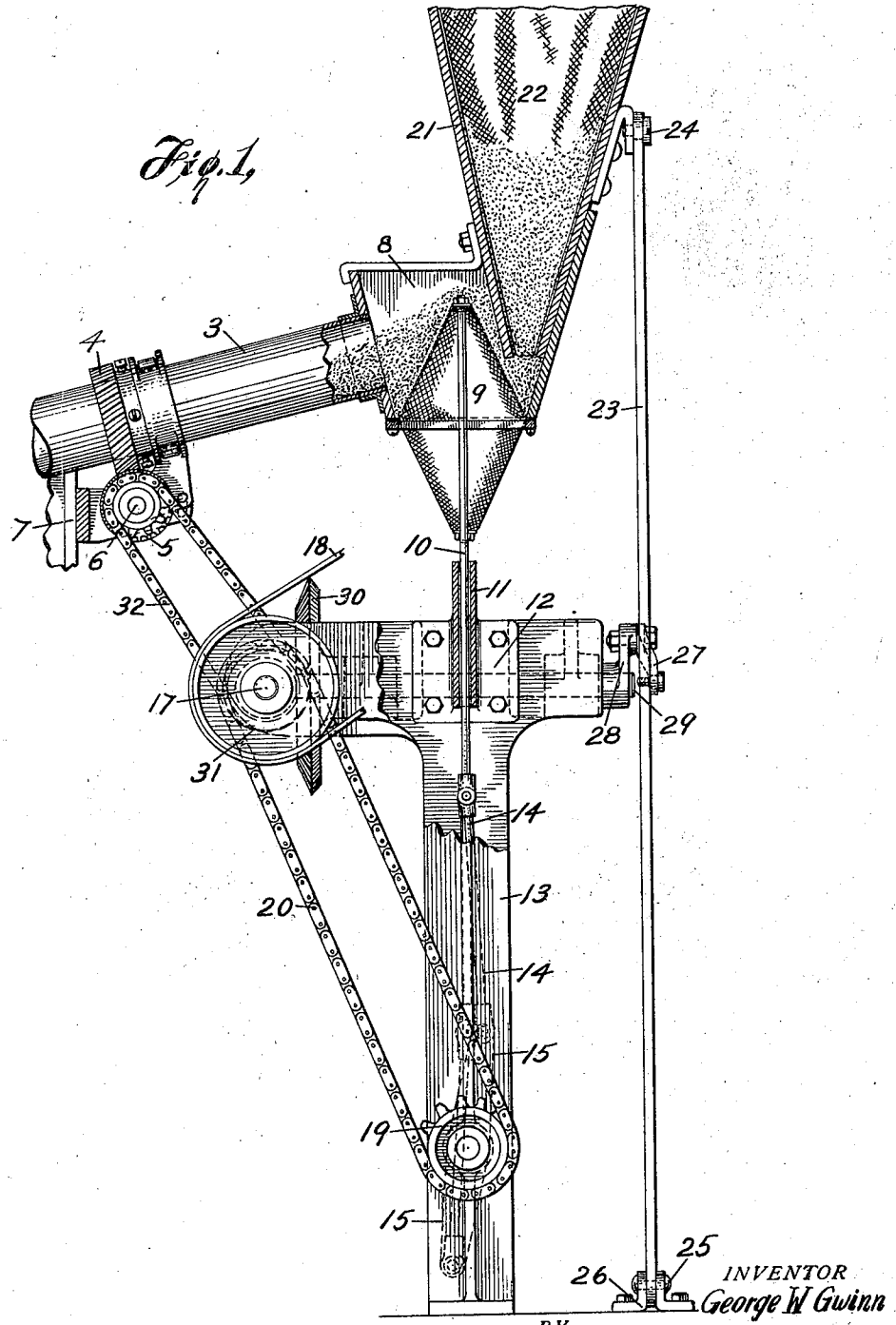
March 18, 1924. 1,487,058

G. W. GWINN

TOBACCO FEED

Filed Aug. 13, 1921 2 Sheets-Sheet 1

Fig. 1.



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March 18, 1924. 1,487,058

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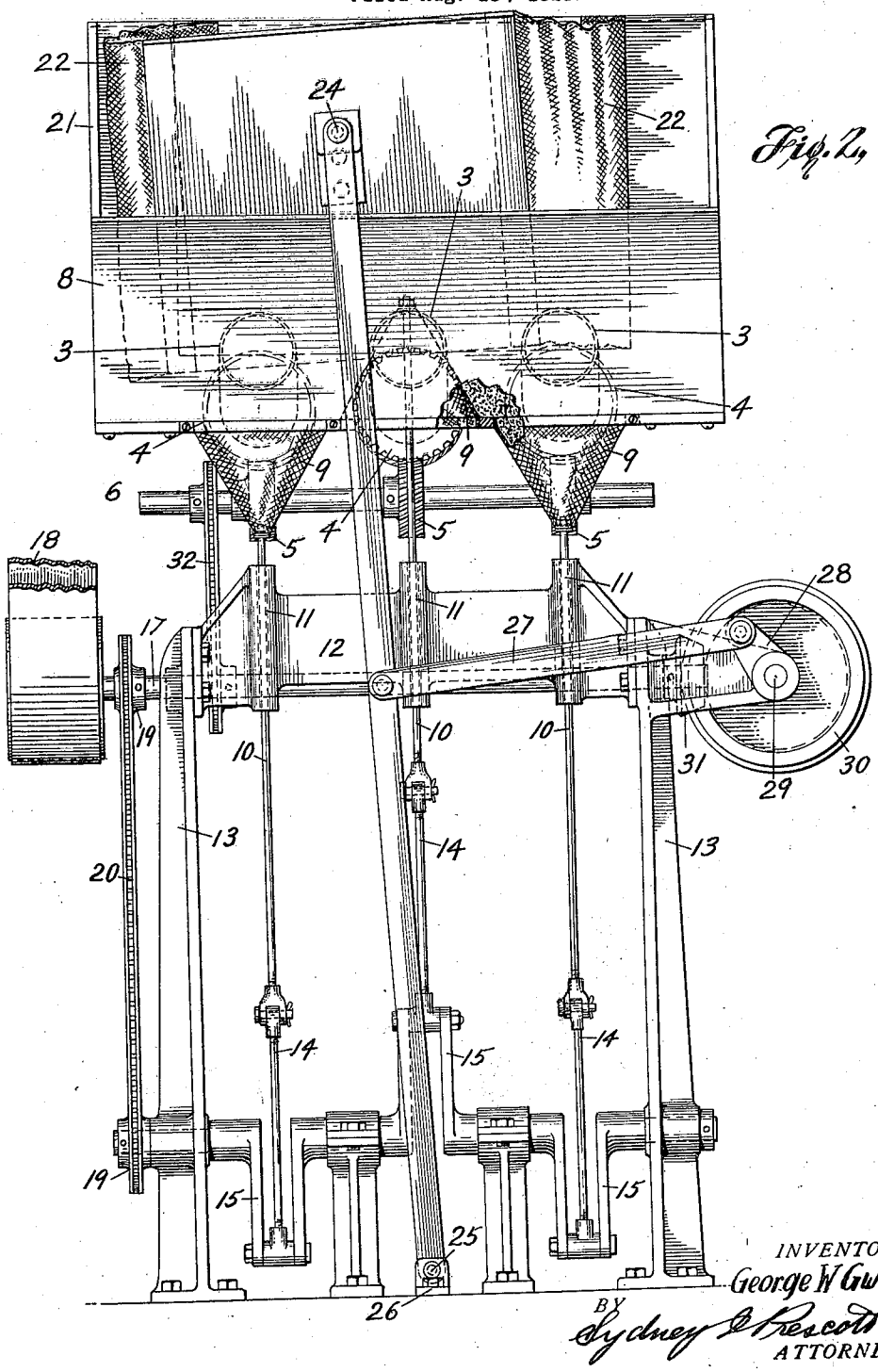


Fig. 2.

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Patented Mar. 18, 1924. 1,487,058

UNITED STATES PATENT OFFICE.

GEORGE W. GWINN, OF BROOKLYN, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO AMERICAN MACHINE & FOUNDRY COMPANY, A CORPORATION OF NEW JERSEY.

TOBACCO FEED.

Application filed August 13, 1921. Serial No. 492,208.

To all whom it may concern:

Be it known that I, GEORGE W. GWINN, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Tobacco Feed, of which the following is a specification.

This invention relates to an improvement in tobacco feeds and is particularly adapted for use in connection with tobacco weighing and packing machines which handle chopped or what is known as "scrap" tobacco, the ultimate end sought being a more uniform delivery of tobacco to a weighing machine, or a more uniform receipt of tobacco by a weighing machine in order to increase the accuracy of the latter. The invention consists in certain constructions and combinations which will be hereinafter fully described and then specifically pointed out in the claims hereunto appended.

In the accompanying drawings, which form a part of this specification and in which like characters of reference indicate the same or like parts, Fig. 1 is a side elevation of a structure built in accordance with the invention, and shown partly in section, and Fig. 2 is a front elevation of the structure shown in Fig. 1 and also shown partly in section.

In carrying the invention into effect, there is provided a source of tobacco supply, a delivery chute leading therefrom, and means acting on the tobacco within said source to toss or throw violently up the tobacco into said chute, as distinguished from the action of the agitators employed in tobacco feeds heretofore known. It has been discovered that tossing the tobacco into a delivery chute results in a more uniform stream or "feed" of the tobacco than is attainable by the use of machines heretofore known. In the best constructions, there is also provided means for maintaining a substantially constant supply of tobacco with the range of action of the tossing means. It has been further discovered that the use of such means still further aids uniform tobacco feed. All of the various means and devices of this tobacco feed may be widely varied in construction within the scope of the claims, the particular structure selected to illustrate the invention being but one of many possible concrete embodiments thereof. The invention, therefore, is not to be restricted to the precise details of the structure shown and described.

Referring to the drawings, 3 indicates delivery chutes, three in number, which form a part of a well known tobacco weighing and packing machine. Each of these chutes is provided with a worm wheel 4 driven by a worm 5 fast on a common shaft 6 suitable mounted in journals in the weighing machine frame not shown, but indicated at 7. The structure so far described is old and well known in the art and further description thereof is deemed unnecessary and is therefore omitted in the interest of clearness and brevity. It will of course be understood that the delivery chutes 3 rotate constantly when in operation.

The chutes 3 are mounted in one side of and lead from a source of tobacco supply which includes a tossing chamber 8 supported by a suitable frame not shown but extending from the main frame of the weighing machine in connection with which the feed is used. Mounted in the bottom of the chamber 8 are a plurality of conical and flexible devices 9 constructed of an enduring fabric suitable for the purpose, such as cloth, leather, or rubber the apex of each device being secured to the upper end of a plunger 10 arranged to reciprocate in bearings 11 formed in a bridge 12 supported by two uprights or standards 13. The lower end of each plunger is pivoted to a connecting rod 14 connected with and actuated by a crank 15 formed on a common crank-shaft 16 suitably journaled in the uprights 13. This crank-shaft 16 derives its motion from a power shaft 17 driven by a belt 18, through the agency of sprockets 19 and chain 20 connecting the two shafts. By an inspection of Fig. 1, it will be seen that the conical and flexible devices 9 are operative in a direction across the intake of the chute or chutes 3. The upward throw of the cranks 15 forces the devices 9 intermittently and more or less violently into the chamber 8 and thereby tosses the tobacco contained therein laterally about in front of and into the chute or chutes 3. It has been found that by positioning two of the cranks 15 diametrically

opposite the third crank, a better tossing result is obtained than when they move in the same direction at the same time.

The scrap tobacco as fed into the source of tobacco supply is in damp and matted condition, but as it is violently tossed up and about in front of the rotating chutes of the weighing machine, the scraps of which it is composed are separated and some of them fall individually and gently into the chutes and by the latter are conveyed to the weighing pans of the weighing machine and gently dropped thereon.

Means are provided for maintaining a substantially constant supply of tobacco within the tossing chamber 8 in order that the tossing action of the devices 9 will be uniform. This means, in the structure shown, includes a hopper 21 having rigid side walls and flexible end walls 22 constructed of an enduring fabric suitable for the purpose, such as cloth, leather, or rubber. The outlet of this hopper is positioned to deliver tobacco to one side of the chamber 8 and clear of the tossing devices 9 but within their range of action. It has been found that by producing a to and fro movement of one of the rigid walls of this hopper the tobacco contained within the hopper is worked down into the tossing chamber until a definite quantity is contained therein, without forcing any excess tobacco into the tossing chamber; in other words, the action of the hopper results in maintaining a substantially constant supply of tobacco in the tossing chamber. The to and fro movement of one hopper wall just described is attained by means of a lever 23 the upper end of which is pivoted to the front rigid wall of the hopper at 24, and the lower end of which is fulcrumed at 25 to a bracket 26 bolted to the floor. Between its ends, the lever 23 is pivoted to one end of a connecting rod 27, the other end of this rod being pivoted to a crank 28 fast on a shaft 29 journaled in bearings formed on the upright 13 to the right in Fig. 2. This shaft is driven by means of a bevel gear 30 fast thereon, the gear 30 being driven by a bevel pinion 31 fast on the shaft 17 before referred to. The shafts 6 and 17 are connected by a chain and sprocket device of ordinary construction and indicated by the reference character 32, this connection, however, not being necessary to the operation of the structure as a whole, since the relative speeds of the tossing devices and the chutes may be varied, and may in fact be independently controlled.

What is claimed is:

1. In a tobacco feed, the combination with a source of tobacco supply, of a delivery chute leading therefrom, and means acting on the tobacco in said source to toss it into said chute.

2. In a tobacco feed, the combination with a source of tobacco supply, of a delivery chute leading therefrom, and means operative in a direction across the intake of said chute and acting on the tobacco in said source to toss it into said chute.

3. In a tobacco feed, the combination with a source of tobacco supply, of a delivery chute leading from one side thereof, a conical and flexible device mounted in the bottom of said source, and means for intermittently projecting said device into said source to toss tobacco therefrom into said chute.

4 In a tobacco feed, the combination with a source of tobacco supply, of a delivery chute leading from one side thereof, a conical and flexible device mounted in the bottom of said source, a plunger secured to said device, and crank-actuated means for reciprocating said plunger to intermittently project said device into said source to toss tobacco therefrom into said chute.

5. In a tobacco feed, the combination with a source of tobacco supply, of a plurality of delivery chutes leading therefrom, and means acting on the tobacco in said source to toss it laterally about in front of and into said chutes.

6. In a tobacco feed, the combination with a source of tobacco supply, of a plurality of delivery chutes leading from one side thereof, a corresponding number of conical and flexible devices mounted in the bottom of said source, and means for projecting a part of said devices into said source at one time and another part of said devices at another time to toss the tobacco laterally about in front of and into said chutes.

7. In a tobacco feed, the combination with a source of tobacco supply, of a delivery chute leading therefrom, means acting on the tobacco in said source to toss said tobacco into said chute, and means for maintaining a substantially constant supply of tobacco within the range of action of said tossing means.

8. In a tobacco feed, the combination with a source of tobacco supply, of a delivery chute leading therefrom, means acting on the tobacco within said source to toss said tobacco into said chute, a hopper having flexible end walls, and means for producing a to and fro movement of one of the hopper walls to work the tobacco through said hopper and maintain a substantially constant supply of tobacco within the range of action of said tossing means.

9. In a tobacco feed, the combination with a source of tobacco supply, of a delivery chute leading therefrom, means acting on the tobacco within said source to toss the tobacco into said chute, a hopper having flexible end walls, a lever secured to one wall of said hopper, and crank-actuated means for oscillating said lever to produce a to and fro

movement of said wall in its own plane to work the tobacco through said hopper and maintain a substantially constant supply of tobacco within the range of action of said tossing means.

10. In a tobacco feed, the combination with a hopper having inflexible side walls and flexible end walls, of means for producing a to and fro movement of one of the side walls in its own plane to work the tobacco through it.

11. In a tobacco feed, the combination with a hopper having inflexible side walls and flexible end walls, of a lever secured to a side wall of said hopper, and crank-actuated means for oscillating said lever to produce a to and fro movement of said wall in its own plane to work the tobacco through said hopper.

12. In a tobacco feed, the combination with a source of tobacco supply, of a delivery chute leading therefrom, and reciprocating means acting on the tobacco in said source for tossing it upwardly and outwardly into said chute.

13. In a tobacco feed, the combination with a source of tobacco supply, of a delivery chute leading therefrom, and reciprocating means operative in a direction across the intake of said chute and acting on the tobacco in said source for tossing it upwardly and outwardly into said chute.

14. In a tobacco feed, the combination with a source of tobacco supply, of a plurality of delivery chutes leading therefrom, and reciprocating means acting on the tobacco in said source for tossing it laterally about in front of and upwardly and outwardly into said chutes.

15. In a tobacco feed, the combination with a source of tobacco supply, of a rotating weighing-machine tobacco-receiving chute leading therefrom, and means acting on the tobacco in said source to toss it into said chute.

16. In a tobacco feed, the combination with a source of tobacco supply, of a rotating weighing-machine tobacco-receiving chute leading therefrom, and means operative in a direction across the intake of said chute and acting on the tobacco in said source to toss it into said chute.

17. In a tobacco feed, the combination with a source of tobacco supply, of a plurality of rotating weighing-machine tobacco-receiving chutes leading therefrom, and means acting on the tobacco in said source to toss it laterally about in front of and into said chutes.

18. In a tobacco feed, the combination with a source of tobacco supply, of a rotating weighing-machine tobacco-receiving chute leading therefrom, means acting on the tobacco in said source to toss said tobacco into said chute, and means for maintaining a substantially constant supply of tobacco within the range of action of said tossing means.

19. In a tobacco feed, the combination with a source of tobacco supply, of a rotating weighing-machine tobacco-receiving chute leading therefrom, means acting in the tobacco within said source to toss said tobacco into said chute, a hopper having flexible end walls, and means for producing a to and fro movement of one of the hopper walls to work the tobacco through said hopper and maintain a substantially constant supply of tobacco within the range of action of said tossing means.

20. In a tobacco feed, the combination with a source of tobacco supply, of means associated with said source of supply for receiving tobacco therefrom, and means acting on the tobacco in said source to toss it into said receiving means.

21. In a tobacco feed, the combination with a source of tobacco supply, of means associated with said source of supply for receiving tobacco therefrom, means acting on the tobacco in said source to toss it into said receiving means, and means for maintaining a substantially constant supply of tobacco within the range of action of said tossing means.

In testimony whereof, I have signed my name to this specification.

GEORGE W. GWINN.