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 APPARATUS FOR SLICING MATERIAL IN PLUG FORM.
 APPLICATION FILED MAY 10, 1909.

951,636.

Patented Mar. 8, 1910.

Fig. 1.

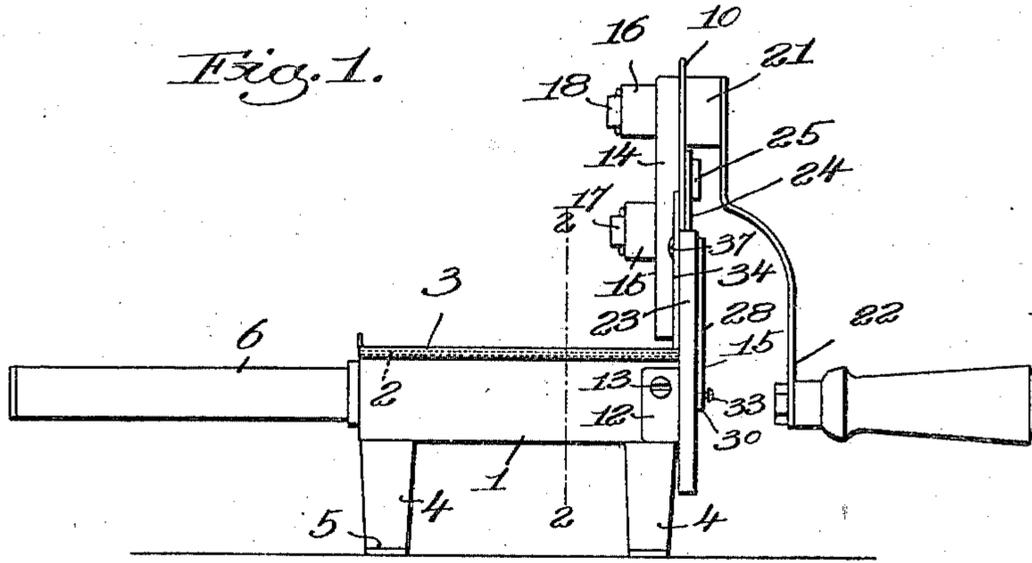


Fig. 3.

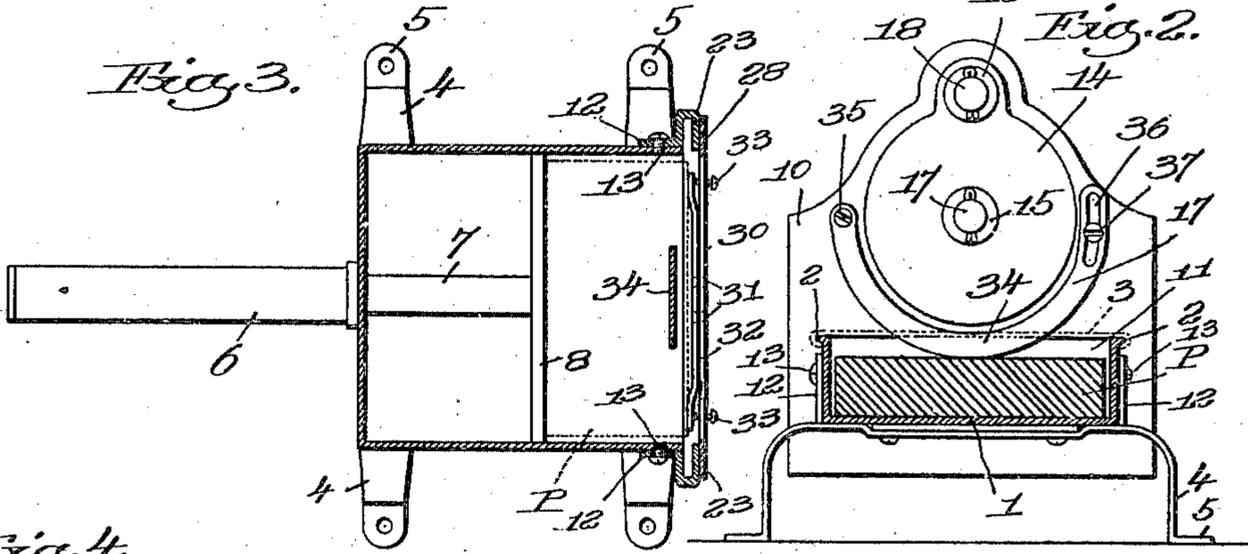


Fig. 2.

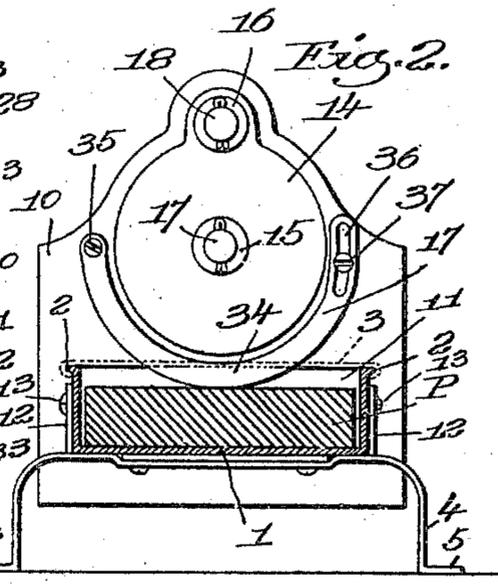


Fig. 4.

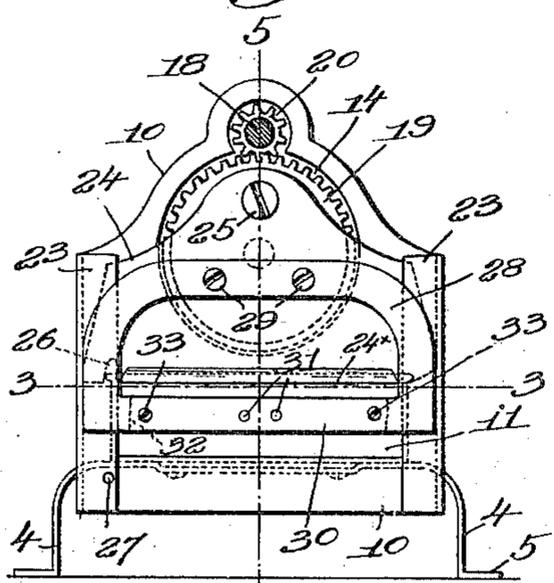


Fig. 5.

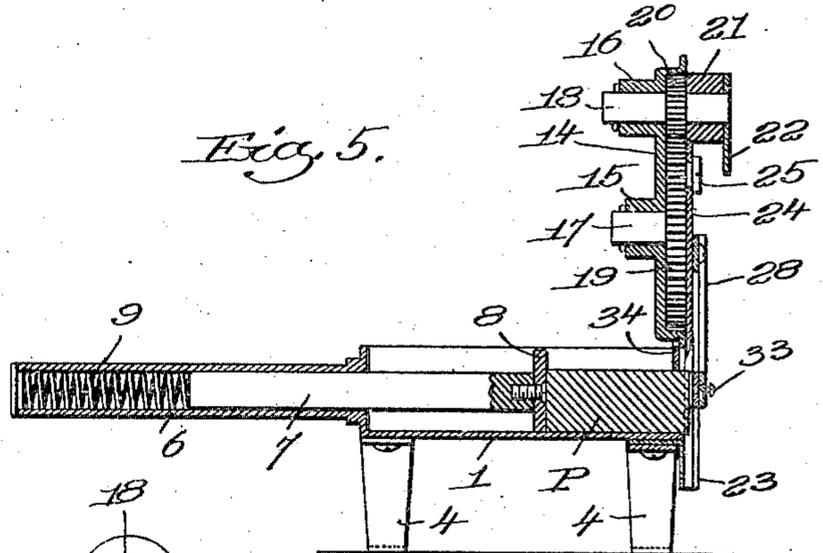
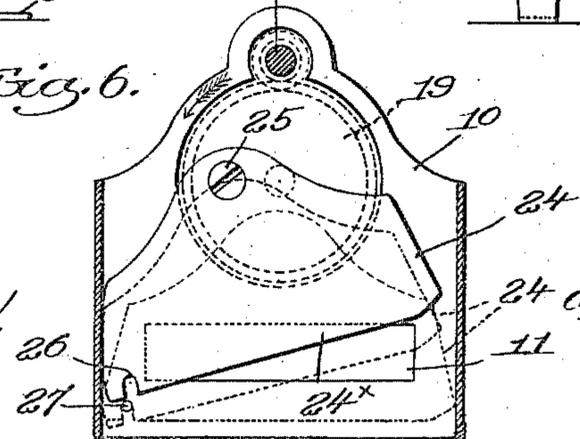


Fig. 6.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR SLICING MATERIAL IN PLUG FORM.

951,636.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed May 10, 1909. Serial No. 495,197.

To all whom it may concern:

Be it known that I, ALANSON W. FARRINGTON, a citizen of the United States, and resident of Salem, county of Essex, State of Massachusetts, have invented an Improvement in Apparatus for Slicing Material in Plug Form, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to apparatus for dividing material into thin slices, and it has for its object the production of a simple, compact and durable apparatus particularly adapted for slicing plug tobacco in such form that the slices may be readily broken up for use in a pipe.

Many pipe smokers use plug tobacco as a matter of preference over granulated, shredded or other divided forms of tobacco, and sometimes the plug can be sliced at the tobacconists, but in such case the tobacco tends to dry out very rapidly. As a result the use of a pocket knife is resorted to very frequently, to cut off from the plug enough tobacco for one or two fillings of the pipe, the operation being quite slow and not always satisfactory.

My present invention enables a pipe smoker to use plug tobacco and to slice it from time to time as required, the apparatus being small and compact and of relatively low cost, though it is to be understood that the apparatus is well adapted for commercial use in tobacco stores.

The various novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is a side elevation of a slicing apparatus embodying one form of my invention; Fig. 2 is a transverse section thereof on the line 2—2, Fig. 1, looking toward the right; Fig. 3 is a horizontal sectional detail taken on the line 3—3, Fig. 4; Fig. 4 is a front elevation of the apparatus shown in Fig. 1, but with the operating handle omitted, the cutting or slicing blade being shown in its highest position; Fig. 5 is a longitudinal section on the line 5—5, Fig. 4; Fig. 6 is a transverse section taken on the line 6—6, Fig. 3, showing the cutting blade as part way down, the plug stop or gage being omitted.

Referring to the drawings I have shown a rectangular receptacle 1 for the plug P of

tobacco or other material, Figs. 2 and 5, and indicated by dotted lines in Fig. 3, the receptacle being conveniently made of heavy sheet or plate metal pressed into shape and having lateral lips 2 on its side edges at the top, for engagement with a sliding cover 3.

The receptacle is supported on legs 4, fixedly attached in any suitable manner to the bottom thereof, and I have shown said legs as bent to form horizontal feet 5, apertured as shown in Fig. 3 for the reception of screws by which to secure the apparatus on a table or other fixed object if desired. At its rear end the receptacle has an attached tubular extension 6 for the reception of a stem 7 passing into the receptacle and having affixed to its inner end a transverse plate 8 constituting a follower, which is longitudinally movable in the receptacle and is pushed forward toward the front or open end thereof by a coiled spring 9 within the extension 6, see Fig. 5. As shown in Fig. 5 the follower is adapted to bear against the plug P and push it forward to be acted upon by the cutting member, to be referred to hereinafter.

The front of the apparatus is formed by an upright plate 10 of stiff sheet metal, having a rectangular opening 11 which registers with the open front end of the receptacle 1 and of sufficient size for the passage through it of the leading end of the plug. Ears 12 bent rearward from and integral with the plate 10 bear against the outer faces of the sides of the receptacle and are rigidly attached thereto by suitable fastenings 13, said ears being conveniently formed from a part of the metal cut out to form the opening 11. Said plate 10 is stamped or shaped in its upper part to form on its rear face a housing 14 having tubular, rearwardly extended bosses 15, 16, Figs. 1, 2 and 5, which form bearings respectively for the short shafts 17, 18 of a large gear 19 and a meshing pinion 20, the shafts being held in place by cotter-pins or other suitable means. The shaft 18 is extended frontward beyond the face of the plate 10 and has attached to it the hub 21 of a suitable handle 22 by means of which the pinion and gear are rotated.

As shown best in Figs. 1, 3 and 4 the parallel upright sides of the plate 10 are bent over at 23 to form open and parallel vertical guides which inclose and direct the movement of the knife or cutter 24, made as a steel plate shaped as shown clearly in Fig.

6 and pivotally connected to the gear 19 by a wrist-pin 25. The wrist-pin passes through the cutter midway between its side edges and at its upper part, and by virtue of the eccentric connection with the gear the cutter will be reciprocated vertically by rotation of the gear and it will also have a rocking or oscillating movement, as best shown by the full and dotted lines in Fig. 6. The lower transverse edge 24^x of the cutter is sharpened to form the cutting edge proper, and at one end of said edge I form a notch 26 to cooperate with a stop 27 crossing one of the guides, see Figs. 5 and 6. Said guides frictionally engage the faces of the cutter 24, and when the gear 19 is rotated in the direction of the arrow in Fig. 6 the cutter will be forced downward and rocked, so that the cutting edge 24^x descends at an angle, to make a shear cut, beginning its cutting action at one side of the plug, and gradually working across the width thereof, as will be manifest. As the descent of the cutter continues after its edge enters the plug the stop 27 will enter the notch 26 and at first there will be a slight longitudinal movement of the edge 24^x from full line position, Fig. 6, to the first dotted line position, from right to left, until the upper end of the notch strikes the stop, whereupon the latter acts as a fixed fulcrum on which the cutter rocks at its left hand lower corner as the rotation of the gear 19 continues until the wrist-pin 25 is in its lowest position, and then the cutting edge 24^x will have reached its extreme low position and will have completed the cut, such position being shown by the lowermost dotted lines in Fig. 6. This cooperation of the stop and notch insures a firm and powerful shear cut as the cutter traverses the plug, and provides for a clean cut, obviating any irregular movement of the cutter as it traverses the body of the plug.

After the slice has been cut the wrist-pin rises at the right of the center, Fig. 6, and the left hand side of the cutter will lift and the cutter will rock or oscillate until it reaches its highest point, Fig. 4, when its edge 24^x will again be substantially horizontal and in readiness to begin its next descent. It will be remembered that the follower 8 is constantly acting to press forward the plug P through the opening 11 in the front plate 10, and were not some means provided to stop the plug it would be forced out of the receptacle 1 whenever the cutter was raised to its highest position. To prevent this action and also to provide for regulating the thickness of the slice to be cut I have provided an adjustable gage, and herein I have shown an open frame 28 fixedly attached at 29 to the front of the cutter, the sides of the frame moving therewith and resting upon the outer faces of the guide-forming portions 23 of plate 10.

The transverse bottom bar 30 of the frame extends below the cutting edge and across the opening 11 of the front plate, so that if all slices were to be of uniform thickness the leading end of the plug would press directly against such bar and would be held during the descent of the cutter until the edge 24^x thereof had bitten into the plug. Inasmuch, however, as it is desirable to provide for slices of different thickness I have attached at 31 to the rear face of the bar 30 a strip 32 of resilient metal, forming a gage, the free ends thereof being acted upon by screws 33 in the bar 30. If the slice is to be thin the screws are set up to press the ends of the gage 32 backward, so that the plug can move forward a less distance, while a thicker slice is secured by turning back the screws to permit the ends of the gage to move forward nearer the back of the bar 30, and thereby a greater feed movement of the plug is permitted.

As the gage and the frame on which it is adjustably mounted are fixedly attached to the cutter 24 it will be manifest that said parts move in unison, and when the cutter has passed through the plug and cut off the slice the gage will be down out of the way of the severed slice, but it will rise again to operative position before the cutter is elevated clear of the end of the plug, and so will be in readiness to stop feed of the plug when the latter is released by the cutter. Thus the cutter and gage act alternately upon the leading end of the plug to prevent undue forward movement thereof due to the spring-actuated follower. As a plug may be considerably less in thickness than the depth of the receptacle 1 there would in that case be a tendency to lift the leading end of the plug as the cutter rises, so that the plug would be improperly positioned for the next cut. To obviate this I provide a downhold, made as a segmental bar 34, pivoted at 35 on the back of plate 10 and extending under and part way around the housing 14, Fig. 2, the free end of the downhold having a slot 36 for the reception of a set-screw 37. The downhold projects into the receptacle 1, the cover 3 being cut out for the purpose, and bears against the top of the plug, as in Figs. 2 and 5, so that the latter is held from lifting as the cutter rises. By means of the slot 36 and set-screw 37 the downhold can be adjusted to cooperate properly with the plug, as will be obvious.

The operation of the apparatus is obvious, for by pulling back the cover 3 the follower 8 is retracted far enough for the admission of the plug, which at its leading end will be held against the gage 32, and after the downhold 34 is adjusted the cover is slid back into place. The handle 22 is now turned and through the pinion 20 the gear

19 is revolved and the operation of the cutter is effected as has been previously explained, the slices as cut falling out through the open gage carrier or frame above the bar 30 thereof.

The construction of the apparatus is compact, it is strong and durable, and by causing the edge of the cutter to act with a diagonal shear cut the slicing is effected with a much less expenditure of power than would be necessary were the entire edge of the cutter to engage initially the plug.

While my invention is particularly adapted for slicing plug tobacco, and reference throughout the specification has been made to the material as a plug it is to be understood that by such term I mean any material in the form of a plug, so called, and my invention is not restricted merely to slicing tobacco. Any material capable of being sliced, and in the form of a cake, bar or plug, may be acted upon with equal facility.

Various changes and modifications in details of construction and arrangement may be made by those skilled in the art without departing from the spirit and scope of my invention as set forth in the annexed claims.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In apparatus of the class described, a receptacle for the material, having an open end, a follower to effect automatically feed of the material through the open end of the receptacle, a cutter movable in a path across such open end, means to reciprocate and rock the cutter and cause it to pass through the material with a shear cut, and a gage fixedly connected with the cutter and movable therewith to limit feed movement of the material when the cutter is retracted from engagement therewith.

2. In apparatus of the class described, a receptacle for the material, having an open end, a spring-actuated follower to feed the material through the open end of the receptacle, a cutter movable in a path across such open end, means to actuate the cutter and cause it to pass through the material with a shear cut, an open frame fixedly attached to said cutter and having a transverse portion below the cutting edge of the cutter, a gage to stop feed movement of the material when the cutter is retracted, and means to adjustably connect the gage with the transverse portion of the open frame.

3. In apparatus of the class described, a cutter, means to reciprocate and also to rock the same to effect a shear cut, means to feed the material into position to be engaged and sliced by the cutter, and a gage extended transversely below the cutting edge of the cutter and fixedly connected therewith to move in unison with it, said gage engaging the leading end of the material and limiting

feed movement thereof when the cutter is retracted therefrom.

4. In apparatus of the class described, parallel guides, a cutter cooperating therewith, means connected with the cutter to reciprocate and oscillate it between the guides and effect a shearing cut on the active stroke, and means to present automatically the material to the action of the cutter.

5. In apparatus of the class described, a cutter movable in a vertical path, means to reciprocate the cutter and also to rock the same to effect a shear cut, means to feed the material automatically into position to be sliced, and an adjustable gage fixedly connected with the cutter to cooperate with the material and regulate the thickness of the slice to be cut therefrom.

6. In apparatus of the class described, a cutter, means to reciprocate and also to rock it to effect a shear cut, spring-actuated means to feed the material, and a gage fixedly connected with the cutter and movable in unison therewith at a constant distance below its cutting edge and adapted to engage the material and limit its feed movement when the cutter is retracted therefrom.

7. In apparatus of the class described, upright parallel guides, a cutter movable between them and having an elongated cutting edge, a rotating member eccentrically connected with the cutter, to effect by its continuous rotation reciprocation and rocking of the cutter in the guides, whereby the cutting edge acts with a shearing cut, means to feed the material into the cutter path, and a gage to limit such feed movement.

8. In apparatus of the class described, upright parallel guides, a cutter movable between them and having an elongated cutting edge, a rotating member eccentrically connected with the cutter, to effect reciprocation and rocking of the cutter in the guides, whereby the cutting edge acts with a shearing cut, a device to temporarily engage and act as a fulcrum for the lower corner of the descending cutter, means to feed the material into the cutter path, and an adjustable gage fixedly connected with the cutter to limit such feed movement and regulate the thickness of the slice to be cut.

9. In apparatus of the class described, a receptacle for the material, having an open end, an upright plate rigidly attached to said receptacle and having an opening for the passage of the material, means to feed the material through the opening, guides on the plate, a gear rotatably mounted on the latter, a cutter movable between the guides and pivotally connected with the gear eccentric to its center, means to rotate the gear thereby effect by its continuous rotation a reciprocating and rocking movement of the cutter, and a gage to limit feed movement of the material.

10. In apparatus of the class described, a receptacle for the material, having an open end, an upright plate rigidly attached to said receptacle and having an opening for the passage of the material, means to feed the material through the opening, guides on the plate, a gear rotatably mounted on the latter, a cutter movable between the guides and pivotally connected with the gear eccentric to its center, means to rotate the gear to thereby effect a reciprocating and rocking movement of the cutter, an open carrier attached to the cutter, and an adjustable gage mounted on the carrier and located below the edge of the cutter, said gage limiting feed of the material when the cutter is retracted and moving out of engagement with the material as the cutter traverses the same.

20 11. In apparatus of the class described, a receptacle for the material, having an open end, a follower to effect automatically feed of the material through the open end of the receptacle, a cutter movable in a path across such open end, means to reciprocate and

rock the cutter and cause it to pass through the material with a shear cut, an open frame fixedly attached to the cutter, and a gage mounted on the frame and adapted to engage and limit feed movement of the material.

12. In apparatus of the class described, means to support and feed the material to be sliced, a cutter movable in a path at right angles to feed movement of the material, means to reciprocate and also rock the cutter to present its cutting edge diagonally to the material, and means to temporarily engage the lower corner of the descending cutter and cause the latter to rock upon said means as a fulcrum as the cutting edge passes through the material.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

ALANSON W. FARRINGTON.

Witnesses:

BERTHA F. HEUSER,
THOMAS J. DRUMMOND.