Sept. 5, 1933. G. L. MATTHEWS 1,925,841

GUT STRING SPLITTING PEG

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Fig. 1.

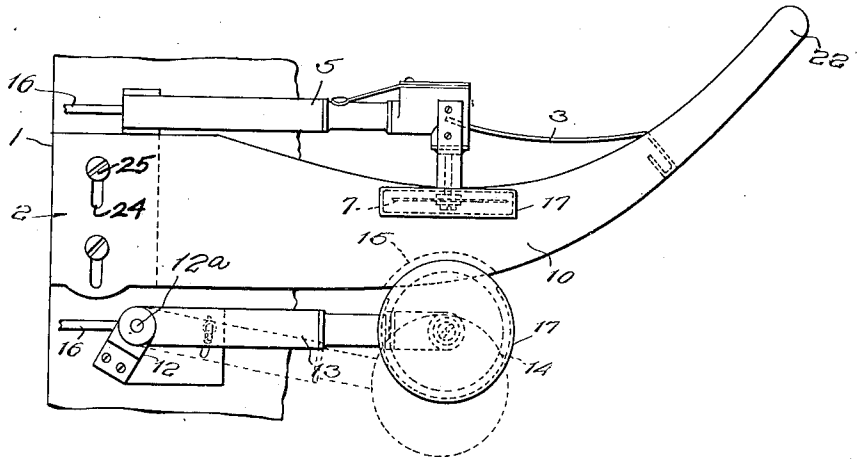


Fig. 2.

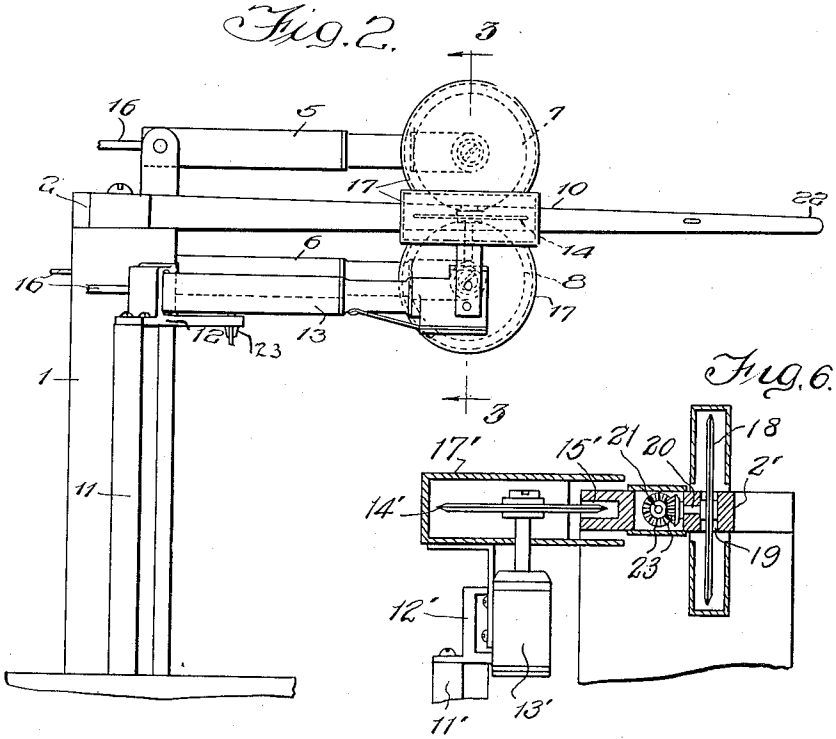


Fig. 6.

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Fig. 3.

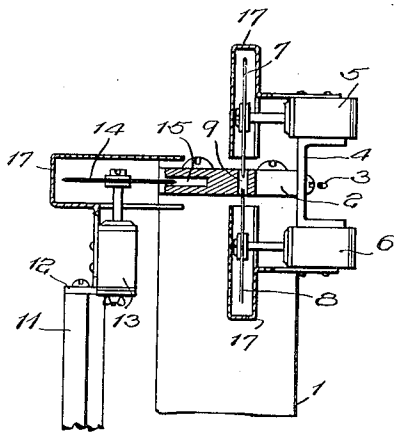


Fig. 4.

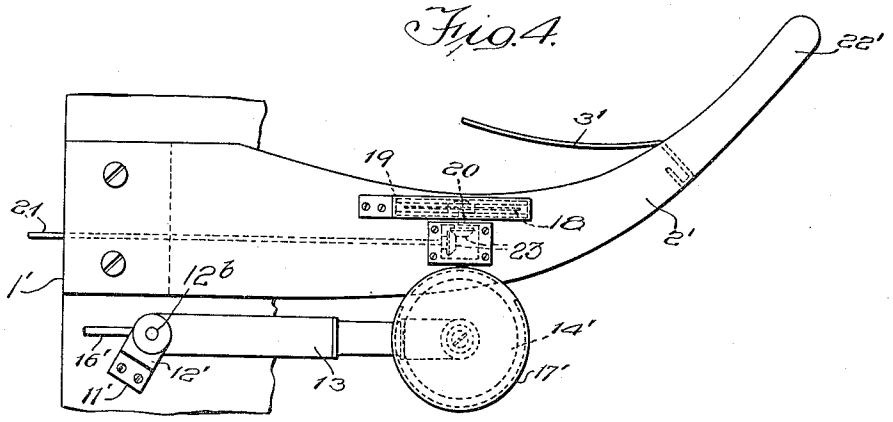
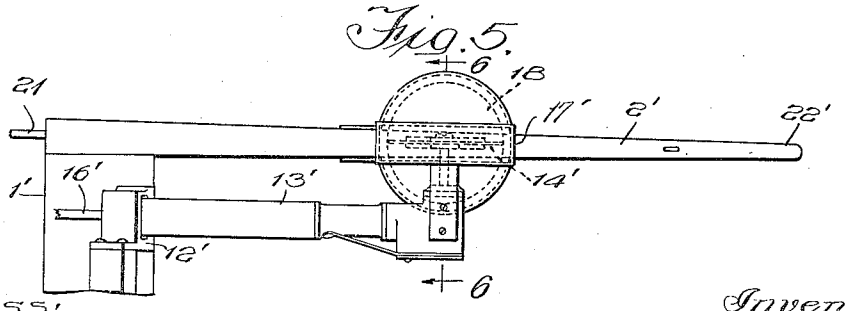


Fig. 5.



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UNITED STATES PATENT OFFICE

1,925,841

GUT STRING SPLITTING PEG

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Application November 5, 1928. Serial No. 317,462

15 Claims. (Cl. 164—60)

This invention pertains to the general class of devices used in making gut strings and particularly to a device for splitting the guts in the preparation of the strings.

Devices of this character, as far as I am aware, existing in the art before my invention have several objectionable features, among which is breaking of the material when same is being split. The latter is very often caused by the cutting resistance of a stationary knife. A further objection is the fact that the splitting knives become dull within a relatively short length of time, necessitating a change of same, thus causing a loss due to replacements and delays. Furthermore, should the knife become slightly dull, the probability of the material breaking up into short lengths when passing over the knives is increased. The changing of knives before same is actually needed also unnecessarily increases the expense, there being no way to determine whether or not a change is necessary. When devices of this character are operated by unskilled persons, the probability of unsatisfactory results is greatly increased.

An object of the present invention, therefore, is the production of a device of this character which may be operated by relatively unskilled persons. A further object of the invention is the production of cutting means which will remain effective for its intended purpose over a long period of time. A further object of the invention is the production of a device of this character wherein the liability of the material becoming broken up into short lengths is reduced to a minimum. A further object of the invention is the production of a peg that will not become corroded due to acids adhering to the material or by cleansing solutions. A further object of the invention is the production of a device of this character which is of a small number of parts, easily operated, of low cost, efficient and highly satisfactory for its intended purpose. Many other objects and advantages of the construction herein shown and described will be obvious to those skilled in the art from the disclosure herein given.

To this end my invention consists in the novel construction, arrangement and combination of parts herein shown and described, or uses mentioned.

In the drawings, wherein like reference characters indicate like or corresponding parts:

Fig. 1 is a top plan view of the device;

Fig. 2 is an elevation of the same;

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

Fig. 4 is a top plan view of a modification of the invention;

Fig. 5 is an elevation of the modification shown in Fig. 4; and

Fig. 6 is an enlarged sectional elevation taken on line 6—6 of Fig. 5.

Referring to the drawings, at 1 is shown a standard upon which is mounted a peg 2. The peg 2 is of a conventional design over which the material moves in advancing toward the cutters. A spring 3 extends from the inner side of the curved peg as shown in Fig. 1. The purpose of this spring is well known in the art, being that of positioning the material upon the peg. As is well known, the shorter side of the curved gut is generally of an inferior character and the spring 3 on the peg 2 holds the inner or shorter side of the material at its side of the peg. A bracket 4 mounted upon the standard 1 supports cutter drive housings 5 and 6. The housings 5 and 6 are preferably positioned along side of the peg 2, the housing 5 above and the housing 6 below same. The housings may be pivoted to their supports if desired. The drive mechanisms within the housings 5 and 6 drive the rotary cutters 7 and 8 respectively. Rotary cutters 7 and 8 are respectively positioned above and below the peg 2 and portions thereof extend into a slot 9 intermediate the ends of the peg and preferably approximately positioned at the beginning of the curved portion 10 of the peg. It is of course understood that the slot 9 may be positioned with respect to the peg 2 whereever desired to suit practice.

A bracket 12, carried by a standard 11, provides a pivoted support by means of a pin 12a for a drive housing 13, which acuates a rotary cutter 14. Rotary cutter 14 extends into an aperture 15 on the longer edge of the peg 2 and is adjustable relative to the peg by rotating the drive housing 13. A latch 23 serves as a lock to fasten the housing 13 in the full line position of the housing and the cutter 14 or in their dotted line positions, and in any intermediate positions of the same. Further adjustability of the housing 13 relative to the peg 2 and to the housings 5 and 6 is provided by supplying slotted holes 24 for the screws 25, thereby permitting the peg to be shifted laterally relative to the block 1, on which the peg is mounted. The aperture 15 is preferably positioned opposite the aperture 9. Shafts 16, which are preferably flexible and may be driven by any suitable means, lead into the housings 5, 6 and 13. Each of the rotary cutters 7, 8 and 14 are provided with shields 17 to prevent injury to the operator.

The operation of the device is as follows: The material is pulled over the tip 22 of peg 2 and upon engaging the spring 3, the shorter side of the material is forced to the inside of the peg such that same will pass the cutters 7 and 8 on the right hand side when viewing Fig. 3. The superior quality of material is thus held to the left of the cutters 7 and 8 when viewing Fig. 3. The better portion of the material in the embodiment shown is to be cut in two strips. The rotary cutters 7 and 8 remove the superior from the inferior portion of the material, whereas the rotary cutter 14 splits or cuts the superior or better portion into two strips. The operator starts the material through the cutters, swinging the cutter housings on their pivots if desired or more convenient and then after replacing the cutters pulls the material over the peg, generally with one swing of the arms. Cutters heretofore have been stationary, and I, by means of my novel rotary cutters, have greatly increased the efficiency of a device of this character.

In the form shown in Figs. 4, 5 and 6, the housing 13' and rotary cutter 14' are shown in substantially the same position and operable in substantially the same manner as the housing 13 and rotary cutter 14 are shown in Figs. 1, 2 and 3. In Figs. 4, 5 and 6, a rotary cutter 18 is substituted for the cutters 7 and 8 and is mounted in an aperture 19 in the peg 2', the axis of the cutter 18 being positioned substantially in the horizontal plane of the peg and operatively connected through bevel gears 23 to a shaft 21 which may be connected to any suitable source of power for driving the cutter 18.

As pointed out with reference to the structure shown in Figs. 1, 2 and 3, the housing 13' is pivotally mounted on a pin 12b positioned in a bracket 12' supported on a standard 11', the cutter 14' being operatively connected to a flexible drive shaft 16' by which the cutter 14' may be driven. The rotary cutter 14' is positioned on the longer side or edge of the peg 2' and extends into a recess 15' formed in the peg and is covered by a shield 17' mounted on the housing 13' and adapted to overlie the upper and lower sides of the peg 2' as clearly shown in Fig. 6. It will be understood that in the arrangement shown in Figs. 4, 5 and 6, the cutting edge of the cutter 18 engages the material on both the upper and lower sides of the peg.

The form shown in Figs. 4, 5 and 6 operates in substantially the same manner as that shown in Figs. 1 to 3, inclusive, except that the cutter 18 has been substituted for the cutters 7 and 8, and in the operation of the structure shown in Figs. 4, 5 and 6, the material is pulled over the tip 22' of the peg 2' and upon engaging a spring 3', the shorter side of the material is forced to the inside or concave edge of the peg in such a manner that the shorter side of the material will pass the cutter 18 on the right-hand side thereof as viewed in Fig. 6. The superior quality of the material is thus held to the left of the cutter 18 as viewed in Fig. 6. As previously described with reference to the structure shown in Figs. 1, 2 and 3, the better portion of the material is cut in two strips, the cutter 18 separating the inferior from the superior or better portion of the material while the rotary cutter 14' splits the superior or better portion into two strips. In starting the material through the device, the operator may, if desired, swing the cutter 14' and housing 13' on its pivot 12b until a small portion of the material has been drawn over the peg 2' and past the cutter 18 and then by replacing the cutter 14' in the recess 15' may continue to draw the material past the cutters 18 and 14', thereby separating the material into three strips, the cutter 18 separating the inferior portion of the material from the better portion thereof, and the cutter 14' dividing the better portion of the material into two strips of substantially equal width. It will be understood that the cutters in either embodiment will operate efficiently when permitted to rotate without being driven, but in the embodiment shown, I prefer to drive the cutters at relatively high speed.

The rotary cutting edge operating at relatively high speed, severs the material readily and evenly even though the edge of the cutter may be slightly dull. The rotary cutters are preferably rotatable in the direction that the material travels and thus the material is assisted in travelling over the peg and past the cutters. The material is not broken up into short lengths nor is it necessary to replace the cutters frequently. I prefer to employ a peg of a nickel copper alloy of high nickel content such as Monel metal. Same does not corrode and remains highly polished at all times. Metal ordinarily used for this purpose readily corrodes due to acids and other corrosive substances on the inside of the guts and various cleansing compounds, particularly sal soda. Rubber or so-called rubber composition when used for this purpose has a tendency to break particularly when knives are installed. It is obvious that the device is not limited in its use to the splitting of guts, but may be used to split other materials or adapted for similar or analogous uses.

Having thus described my invention, it is obvious that various immaterial modifications may be made in the same without departing from the spirit of my invention; hence I do not wish to be understood as limiting myself to the exact form, construction, arrangement and combination of parts herein shown and described, or uses mentioned.

What I claim as new and desire to secure by Letters Patent is:

1. In a device of the kind described, a peg, means for splitting gut traveling over said peg, said means including a plurality of rotary cutters projecting through the surfaces of said peg, one of said cutters being adjustable relative to the others to facilitate the positioning of the gut over said peg and past said cutters.

2. In a device of the kind described, a peg, a plurality of rotary cutters arranged to project through the surface of the peg, separate drive mechanisms to which said cutters are connected, said peg and one of said cutters being movable relative to each other, and separate means for fastening the peg and said last mentioned cutter in any desired relative position.

3. In a device of the kind described, a peg having an aperture extending through the sides thereof, and a rotary cutter in said aperture and having a portion disposed on each side of said peg.

4. In a device of the kind described, a peg having an aperture extending through the sides thereof, and a rotary cutter in said aperture and having a portion disposed on each side of said peg, and a shield for said cutter on each side of said peg and spaced from said aperture.

5. In a device of the kind described, a peg having a slot extending through the sides thereof, a

rotary cutter mounted in said slot and having portions on each side of said peg, said peg having a second slot in its edge and a second rotary cutter having a portion extending into said last mentioned slot.

6. In a device of the kind described, a peg, a support therefor, a rotary cutter carried by said peg, a second rotary cutter in operative relation with said peg and mounted to rotate on an axis extending transversely to the axis of rotation of said first mentioned cutter, and means for supporting said second cutter in a manner to permit movement thereof toward and from said peg.

7. In a device of the kind described, a peg, a support therefor, a rotary cutter carried by said peg and having portions extending on opposite sides thereof, and a second rotary cutter in operative relation to said peg and having an axis of rotation extending transversely to the axis of rotation of said first mentioned cutter.

8. In a device of the kind described, a peg having a slot extending therethrough, a rotary cutter carried by said peg and extending through said slot, a second rotary cutter operatively related to said peg and mounted on an axis extending substantially transversely to the axis of rotation of said first mentioned cutter, and means for driving said cutters.

9. In a device of the kind described, a peg having an aperture formed therein adjacent one side thereof, a cutter mounted to rotate in said aperture and having portions extending on each side of said peg, and a second rotary cutter operatively related to said peg at the side thereof opposite to said aperture and having an axis of rotation extending substantially transversely to the axis of rotation of said first mentioned cutter.

10. In a device of the kind described, a peg having an aperture extending through its sides, a rotary cutter on each side of said peg and extending into said aperture, said peg having an aperture on its edge, and a third rotary cutter extending into said last mentioned aperture.

11. In a device of the kind described, a peg having a slot through its sides, a rotary cutter on each side of said peg, each cutter extending into said slot, said peg having a slot on its edge, a third rotary cutter extending into said last mentioned slot, and a plurality of pivoted housings supporting said rotary cutters.

12. In a device of the kind described, a frame, a peg mounted in said frame and having an aperture extending through its sides, a rotary cutter on each side of said peg, and extending into said aperture, said peg having a second aperture on its edge, a third rotary cutter extending into said last mentioned aperture, each of said rotary cutters supported by a housing pivoted on said frame, and means extending through said housings for operating said cutters.

13. In a device of the kind described, a peg having an aperture on each side, a rotary cutter mounted on each side of the peg and extending into the adjacent aperture, said peg having an aperture in one of its edges, a third rotary cutter adjacent said edge aperture, mounting means for said third rotary cutter whereby said cutter can be moved into and out of said edge aperture, and means for fastening said third rotary cutter in adjacent position relative to the peg.

14. In a device of the kind described, a peg having an aperture on each side, a rotary cutter mounted on each side of the peg and extending into the adjacent aperture, said peg having an aperture in one of its edges, a third rotary cutter adjacent said edge aperture, and means for adjusting the relative positions of the peg and one of said rotary cutters.

15. In a device of the kind described, a peg, a support for said peg, a pair of rotary cutters carried by the peg, a third rotary cutter in operative relation with said peg and mounted independently of the peg mounting means for said third rotary cutter which adapts the cutter to be moved to and from the peg, means adapted to fasten said third rotary cutter in any desired position relative to the peg, and means for adjustably mounting said peg on its support whereby said peg can be moved relative to said third rotary cutter.

GUY L. MATTHEWS.