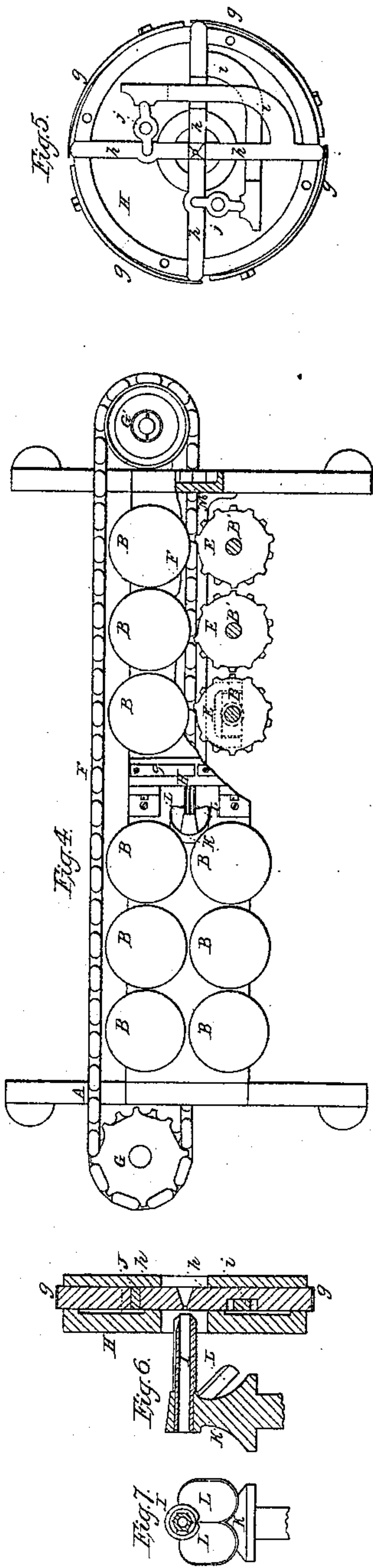
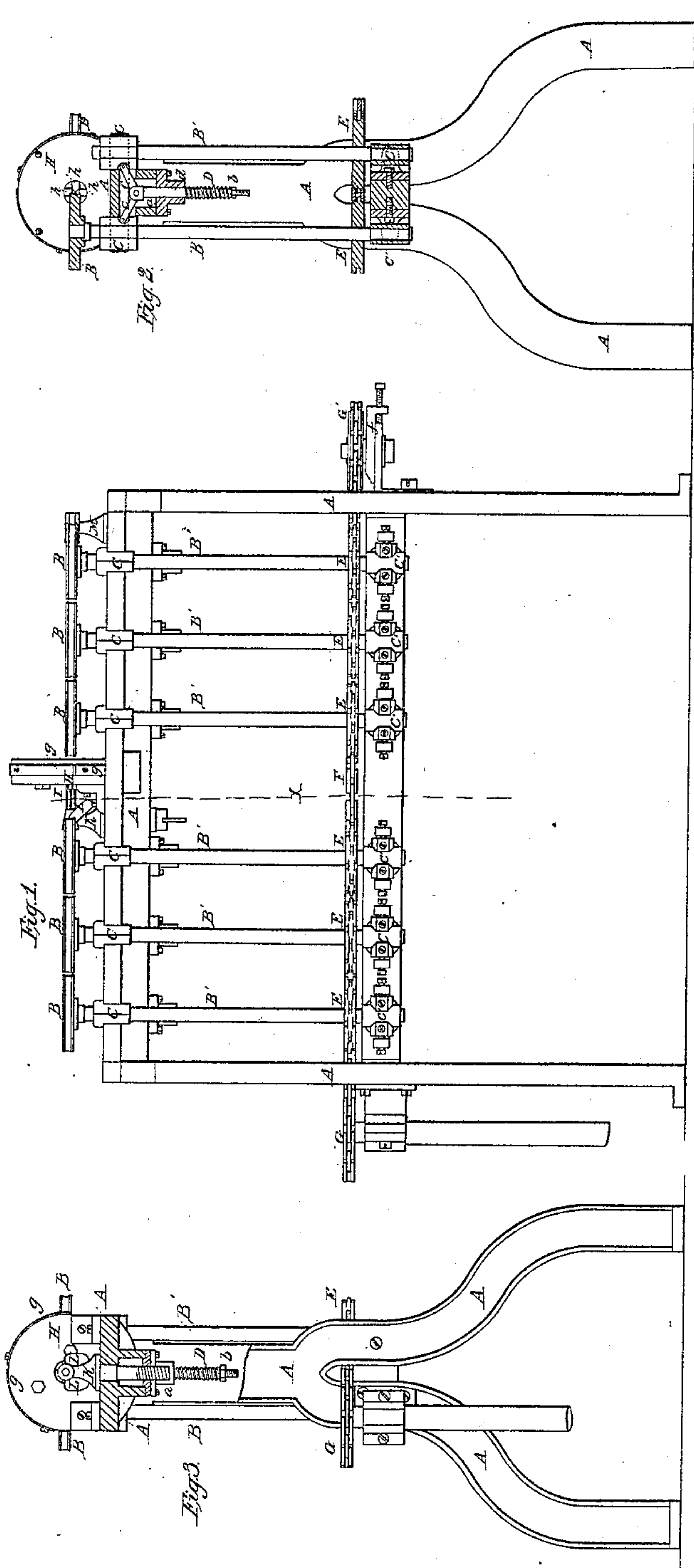


*A. M. Sawyer*  
*Rattan Splitter*

*N<sup>o</sup> 10,614.*

*Patented Mar. 7, 1854.*





# UNITED STATES PATENT OFFICE.

ADDISON M. SAWYER, OF TEMPLETON, MASSACHUSETTS.

## MACHINE FOR SPLITTING RATAN.

Specification of Letters Patent No. 10,614, dated March 7, 1854.

*To all whom it may concern:*

Be it known that I, ADDISON M. SAWYER, of Templeton, in the county of Worcester and State of Massachusetts, have invented a new and useful Machine for Splitting Canes or Ratans in the Manufacture of Cane for the Purpose of Seating Chairs and other Similar Uses; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation thereof, taken in connection with the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation; Fig. 2, an end elevation, part in section; Fig. 3, a transverse sectional elevation on the line X of Fig. 1; Fig. 4 is a plan and Figs. 5, 6 and 7 are details of some of the parts drawn to a larger scale in order to show more clearly their construction.

The letters of reference indicate like parts in all the figures.

The subject matter of my invention is a new and useful machine for the purpose of splitting canes or ratans into separate parts or strands; which, by subsequent operations are to be dressed into finished strands of the proper form to be used in seating chairs, and for other similar purposes.

The most essential characteristic of my invention consists in the employment of a tubular cutter of a peculiar form and operation, the cutting edge of which is made annular, and the outer surface of which is provided with a series of spurs arranged around it; in connection with a guide by means of which the strip of ratan is presented centrally to the cutter; so that when the stick is carried forward longitudinally by any appropriate means, its circumference is split off and divided into separate portions by the action of the spurs while the central part of the stick passes through the interior of the cutter.

In the drawings A represents the frame of the machine upon which the several parts are arranged.

B, B, &c., are feeding rollers, arranged in pairs as shown, by which the ratans are carried forward through the machine. These feeding rollers are fixed upon the shafts B' which run in boxes attached to the frame as is shown. The upper boxes C are made movable to allow the feeding rollers to approach and recede from each other to accommodate the varying size of the ratan

and at the same time to retain it in a central position in the machine. The boxes C and, with them, the feeding rollers B are drawn together by the helical springs D which are coiled around the rods *d* and press upon the nuts *b* upon the same forcing the rod downward. To the upper end of the rod the links *c* are attached which are also respectively attached to the movable boxes C of each pair of feeding rollers. The rod *d* slides through the guide *a* and as it is forced down by the spring D the feeding rollers will be drawn together with an equal movement in a perfectly obvious manner. The lower ends of the shafts B' run in boxes C' which are hung upon pivots to permit the upper ends of the shafts to vibrate. Near the lower ends of the shafts B' are a series of pitch wheels E which take into the endless pitch chain F as is shown, which gives to all the feeding rollers an equal and corresponding motion. The pitch chain receives its motion from the pitch wheel G through which the power is applied to actuate the machine. G' is a corresponding pitch wheel at the other bight of the chain which is provided with a tightening apparatus *f*, as shown to take up the slack of the chain.

H is a guide stock, by which the ratan is guided to the cutter I, and is confined in the operation of splitting; it is placed close in front of the cutter and concentric with it. The guide stock and cutter are shown on a larger scale in Figs. 5, 6, and 7. Fig. 5 is a side elevation, with the cover plate removed to show its internal construction; Fig. 6 is a section through the center; and Fig. 7 is a transverse section of the cutter.

The guide stock is made with four movable dies *h, h, h, h*, which are pressed against the stick by the leaf springs *g* arranged around the periphery of the stock. The faces of the dies on the side opposite to the cutter are beveled off to permit the entrance of the stick. These dies are made to work in pairs so that those upon opposite sides of the stick shall have the same amount of movement to and from the center and for this purpose one of each pair is made with an arm *i* which extends to the opposite side of the stock, as is shown, and engages with one end of a small balance lever *j*, the other end of which engages with the opposite die in a manner clearly shown in the drawing.

The cutter I is made of a tubular form,



with an annular edge, as is shown in Figs. 6 and 7; and its outer surface is made with a series of ribs, the forward ends of which are made sharp and act as spurs to divide the circumference of the ratan into a definite number of parts, according to the size of the finished strand to be afterward formed therefrom. It is fixed by one end into the standard K, which is firmly fixed to the frame A as shown; and is set central to the guide H. The orifice in the cutter is made a little smaller at the edge than at the back end where it is attached to the standard K, in order to enable the central part or core of the stick to pass through it freely.

L is a guide or finder attached to the standard K, to direct the strands from the under side of the stick upward, so that they shall be discharged clear of the feeding rollers.

M is a guide to direct the stick to the feeding rollers as it is put into the machine.

In operating the machine, the ratan is entered through the guide M, and caught by the feeding rollers, by the united action of which, the stick is carried forward and forced through the guide H, the dies *h* of which recede to permit its passage; and on to the cutter I, the annular edge of which splits off the circumference from the central portion, and the spurs divide the same into the requisite number of parts to form strands of the size required. The central portion of the stick is discharged through the orifice of the cutter in a round form and finished state, proper to be used in the making of willow work, or for any other similar purpose. In the operation of this machine it is an important requisite to keep all parts of the stick from being bent so far as is possible and for this purpose the edge of the cutter is made very thin and the angle of the bevel which forms the cutting edge is made to approach the central line as near

as possible. The strands when split off, are much thicker than when finished and are unequal both in thickness and width according to the varying size of the ratan from which they are made; but the central portion is gaged to a uniform size by the cutter. By this means the enamel of the ratan is preserved from being cracked or split by the operation of dividing the stick. After the stick has passed the cutters, the central portion or pith is caught by the after feeding rollers which assist to draw it through, and the strands are by the action of the guide L discharged upward, above the feeding rollers, from the machine.

It is obvious that the several parts of the machine may be much modified, and still embody the essential features of my invention; as for instance, the spurs, instead of being formed upon the surface of the cutter might be made separate and set at the proper places around the stick, to divide its circumference into the requisite number of parts; and the guide H also might be made much different in form and still guide the stick centrally to the cutter and hold it firm under the operation of splitting. The means of carrying the stick through the machine may also be changed as I do not consider any particular mode essential to the operation of my invention.

What I claim as my invention and desire to secure by Letters Patent is, this:

In a machine for splitting ratans or other similar substances as described, I claim the employment of a tubular spurred cutter or its equivalent in combination with a guide for holding and guiding the stick thereto, substantially as is hereinbefore described.

January 4th 1854.

ADDISON M. SAWYER.

Witnesses:

WM. C. HIBBARD,  
H. A. PEELER.