

(No Model.)

F. B. ALEXANDER.
RATTAN MACHINE.

No. 405,293.

Patented June 18, 1889.

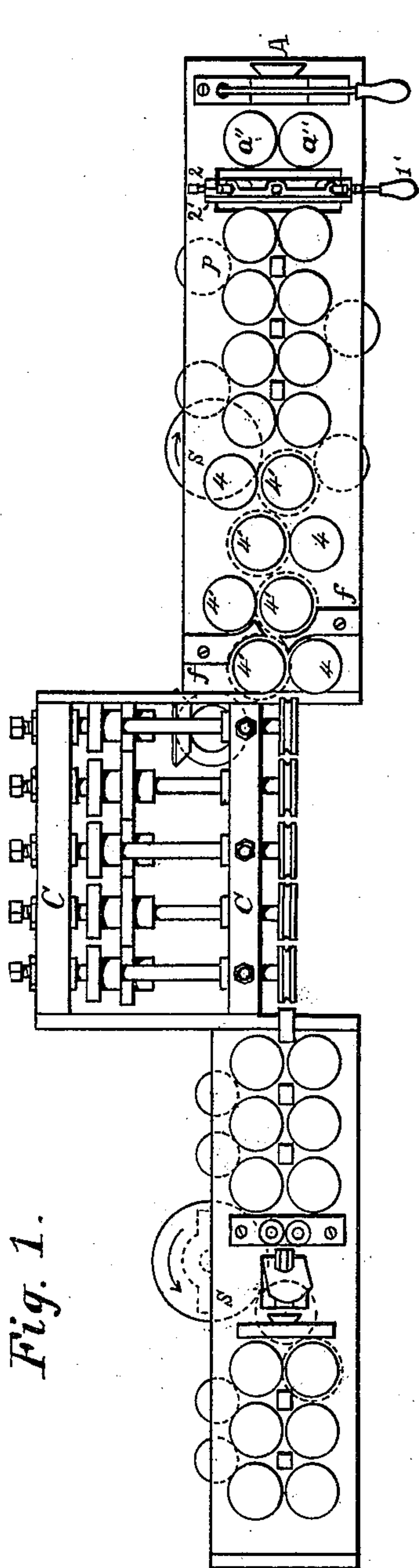
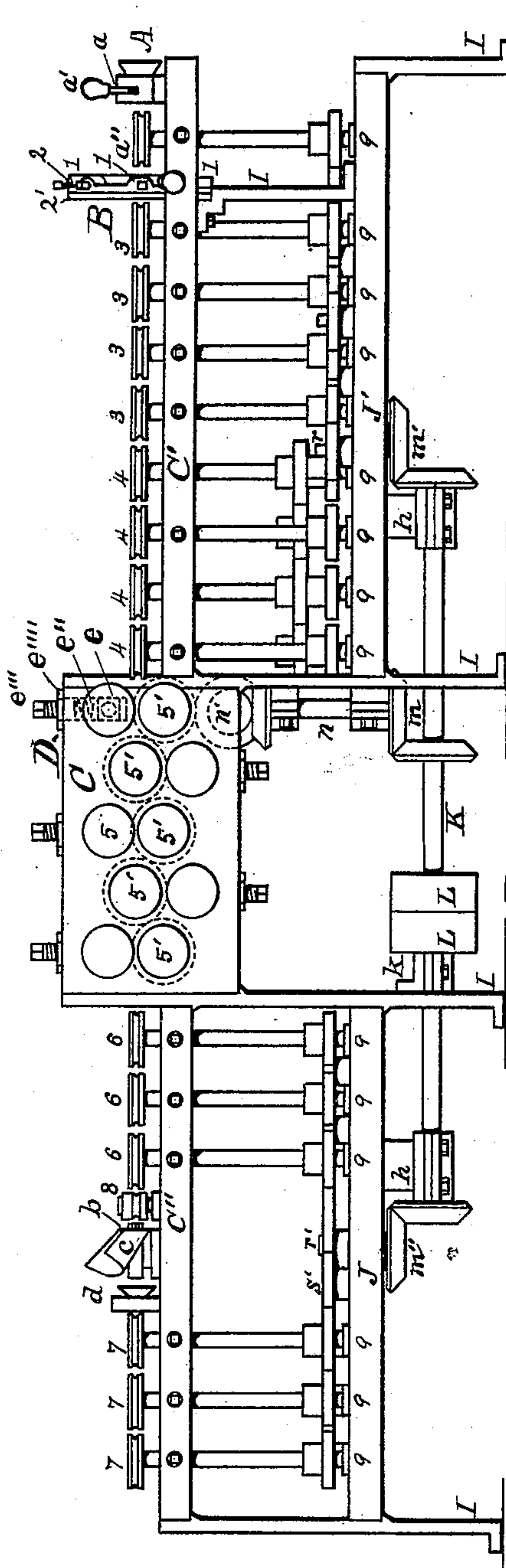


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

FRED B. ALEXANDER, OF BROOKLYN, NEW YORK.

RATTAN-MACHINE.

SPECIFICATION forming part of Letters Patent No. 405,293, dated June 18, 1889.

Application filed March 23, 1885. Serial No. 159,755. (No model.)

To all whom it may concern:

Be it known that I, FRED B. ALEXANDER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Rattan-Machines, of which the following is a specification.

The object of my improvement is to combine in one machine the processes of scraping, of removing the enamel, and of splitting the rattan. The means to be employed, some of which are old and some new, are fully set forth below. I already have before the Department an application for Letters Patent for the particular method of removing the enamel herein described.

Reference being made to the accompanying drawings, it will be seen that Figure 1 represents a top view of my machine, and Fig. 2 a front elevation of the same.

Similar letters refer to similar parts. The word "cane" will be used as having reference to rattan or similar growths.

A indicates a funnel-shaped feeding-tube for introducing the canes into the machine, the cane passing between the rollers from left to right. The hole in this tube is adapted to the size of the largest canes it is desired to pass through the machine. Just inside the tube knife *a* is used to sever a cane that may from oversize become lodged in the tube, and is indispensable, as large butts are often found on the ends of canes that may be quite small the greater part of their length. A spring keeps the knife elevated from the path of the cane, and a blow of the hand upon handle *a'* serves to reject the butt and to allow the free passage of the rest of the cane through the machine.

The pair of rollers marked *a''* start the cane into the scraping-knives in the frame B. I claim no particular construction for these scrapers. Usually they consist of bars sliding in radial grooves in a circular plate, as at 2, one end of the bars passing freely through the hubs 1. Toward the center of the plate the bars are provided with pins or collars, and springs are placed between said pins or collars and the hub 1, so as to thrust the bars toward a common center; but cam-like stops are provided on the back plate 2, so that when

handle 1' is depressed, turning plate 2, these bars are drawn from the center by the action of the cams, and as the handle is lifted the bars are thrown toward the center by the action of the springs. As the inner ends of these bars form segments of a circle, the result of their convergence about a cane is to surround it with a tubular scraper, the parts of which adapt themselves to the varying thickness of the canes, but do not yield to the sudden increased thickness of the joints in the canes, which are in consequence reduced by scraping to the diameter of the canes.

Rollers 3 serve to pull the cane through the scrapers and force it between the bending-rollers 4. These rollers are set in the zig-zag position shown for the purpose of bending the cane back and forth horizontally, which has the effect of peeling the enamel from the sides of the cane.

Passing from rollers 4 the cane is at once seized by the vertically-arranged rollers 5, which bend the cane up and down in directions opposite to those of the first bending, which effectually removes the enamel left after the first bending. From these bending-rollers rollers 6 carry the cane against the splitting-knife *b*, which is a circular cutter provided with radial blades on its periphery. The circular cutter allows of the passage through it of the center or "pith" of the cane, while the radial knives cut strips from the outside. The pith is conducted to a suitable receptacle by rollers 7, while the strips are thrown out to one side of the machine by the apron *c*. The small rollers 8 are centering-rollers that serve to keep the cane central in its movement against the cutter *b*. *d* represents a tube with funnel-shaped mouth to guide the pith into the delivery-rollers 7.

To adapt the pressure of the rollers to the varying thickness of canes, as well as to facilitate an adjustment of the pressure, the journal-bearings of the spindles next the rollers are provided with a spring-adjustment, as shown at D, Fig. 2. *e* represents the roller-bearing, which plays in a slot or plate C; *e'''*, an adjusting-screw; *e''*, a spring occupying a position between the screw *e'''* and bearing *e*, and *e''''* is a check-nut to re-

tain screw e''' in a desired position. The mode of operation of this combination will be apparent. All the rollers have these adjustable bearings, excepting a portion of the bending-rollers. On those over which the cane is bent, marked 5' and 4', I prefer to use fixed bearings to insure uniformity in bending and also to obtain the advantages thereby afforded for the disposition of the driving-gear, to be yet described.

In some instances the adjustable bearings may be found of advantage on these bearings when I would apply a stop to limit the outward movement of the roller. A reversal of the application of the adjustment, as described, may in some cases give favorable results. Between each pair of rollers suitable tubular guides are placed to direct the cane in its path from one pair to a succeeding pair. $f f$, Fig. 1, show the form of guides placed between the bending-rollers, one on each side of the path traversed by the canes, one to direct the cane from a pair of rollers, and the other to guide the cane into the following pair. It is desirable to provide these guides with grooves to correspond with the grooves in the rollers. But little explanation will be needed by the mechanician to make the construction of the frame of my machine perfectly clear, reference being had to the drawings. The standards I support the plates $C C' C''$ and $J J'$.

At the right end of the machine the outer standard is divided, one portion supporting J' from its extreme end and the other portion resting on J' and supporting C' at a point back of the scraping-knives. This arrangement gives free access to these scrapers. Underneath J and J' hangers h are provided to support the main driving-shaft K . This shaft finds an additional support in bracket k , which is secured to one of the middle standards.

$L L$ are driving-pulleys, one tight on the shaft and one loose. A bevel-wheel may be substituted for these pulleys, and another shaft be set at right angles to this one should it be desirable to belt to the machine from another direction. Miter-gears $m m' m''$ transmit motion to the trains of wheels connecting the rollers m' to the scraping and part of the cleaning or bending rollers m through the vertical shaft n and miter-gear n' to the vertical cleaning-rollers and m'' to the splitting-rollers.

Dotted lines in Figs. 1 and 2 show how I arrange gear-wheels to drive successive spindles. The stationary spindles are provided with wheels that gear into each other, (see 4' and 5',) making a continuous train, while each of such spindles is geared to its companion spindle. In this manner I secure the running of the trains without additional studs for intermediates, as at p , Fig. 1.

It will now be obvious that if a piece of native

rattan be passed through this machine it will have all leafy growth scraped from it, the joints smoothed off, the natural enamel removed, and the cane will be delivered in the form of strips and a finished pith of uniform size, and the entire operation will require only one handling.

The joints of canes are naturally stiffer and more difficult to bend than other parts of the stalk, and by passing the cane through a scraper before sending it through the bending-rollers I expect to obtain the advantage of more thoroughly-cleaned joints by the double operation.

I do not wish to be confined, in constructing a combined machine, as described, to the particular arrangement of enamel-removing rollers herein shown and described, but claim the right to use any arrangement of rollers or their equivalents that will effect the desired object of removing the enamel.

Bevel-wheels properly proportioned may be substituted for the miter-gears m, m', m'' , and n' .

Automatically-operative scraping-knives may be substituted for hand-adjustable scrapers, as indicated.

I make no claim in this application to the particular method of removing the enamel from rattan herein shown and described; neither do I claim the feeding, scraping, or splitting devices.

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

For performing the operations of scraping, removing the enamel from and splitting rattan with one handling, the combination, as herein set forth, of the following elements, to wit: a machine comprising three divisions, the first including a scraping device with rollers for feeding cane to the same, and rollers following the scraping device on the same plane with said feeding-rollers, but arranged in a zigzag line for the purpose of removing the enamel from two sides of the cane, the second division consisting of rollers set in a vertical plane but in a zigzag line to complete the removal of enamel from the cane, the third division comprising feeding-rollers and devices for splitting and delivering the cane, as described, and two pairs of standards supporting the whole, the middle pair joining the first and third divisions to the second, so that the path of the cane through the machine is in a direct line, all the rollers being driven by means of gearing from a main driving-shaft supported, substantially as shown, upon the standards of the machine, all substantially as herein shown and described.

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Witnesses:

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