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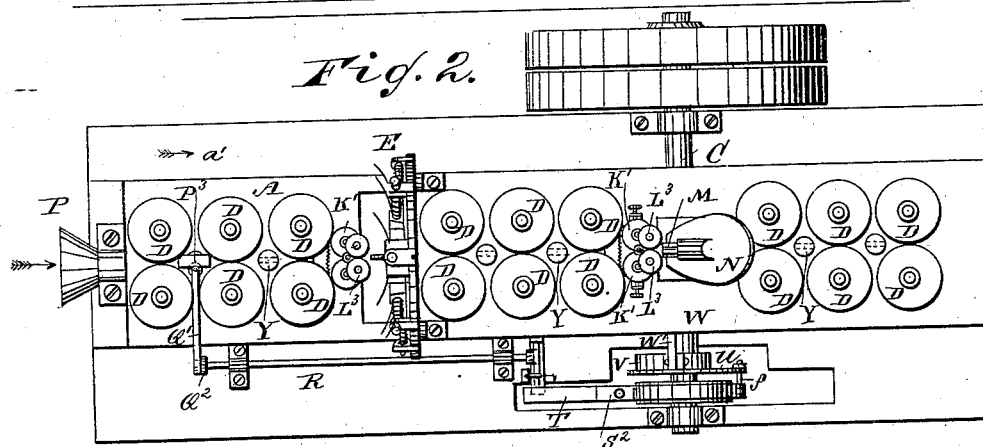
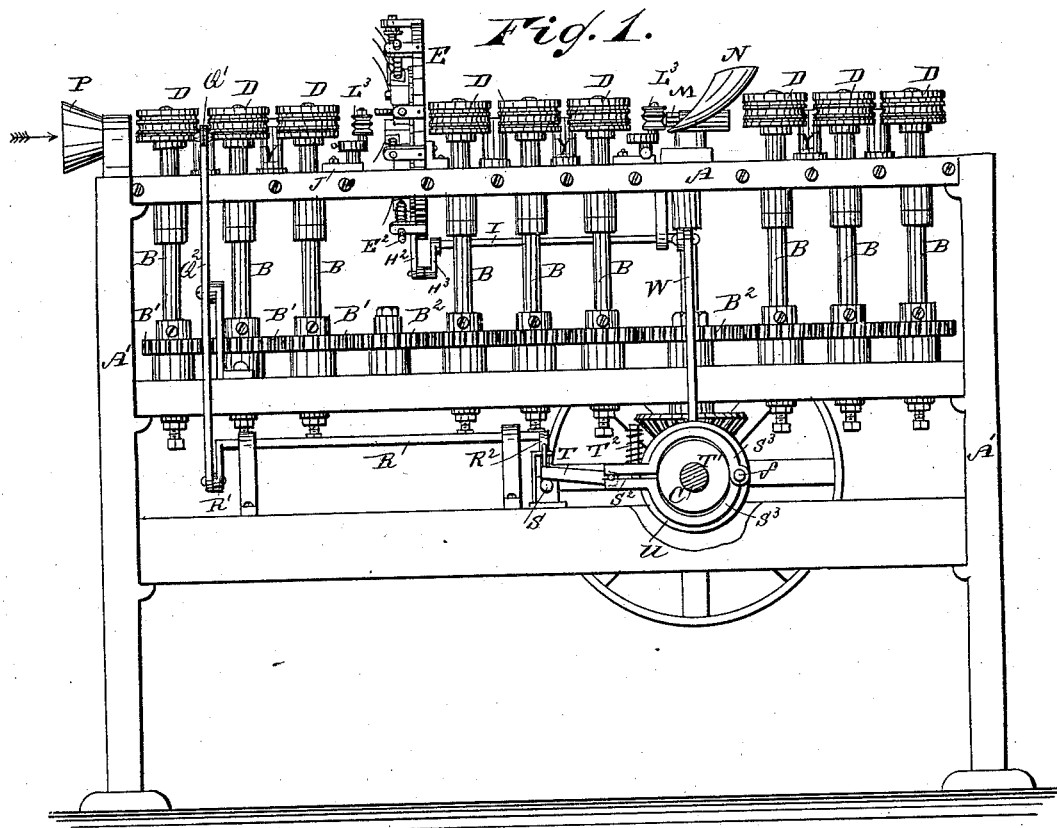
4 Sheets—Sheet 1.

E. M. ELLIS.

MACHINE FOR SCRAPING AND SPLITTING CANE.

No. 307,276.

Patented Oct. 28, 1884.



WITNESSES:

WITNESSES:
Theo. G. Boston.
L. Sedgwick

INVENTOR:

E. M. Ellis

BY

ATTORNEYS.

(Model.)

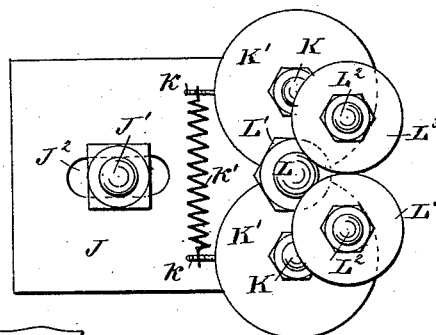
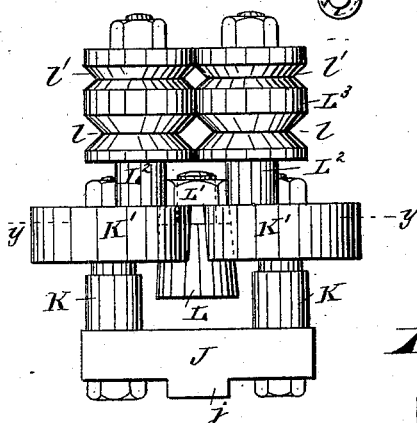
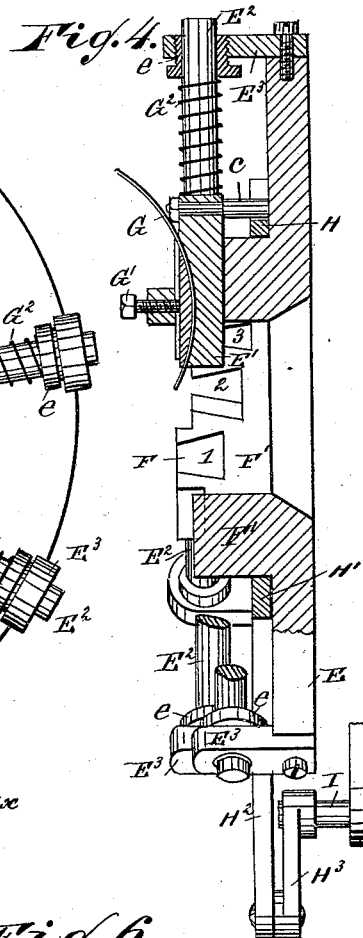
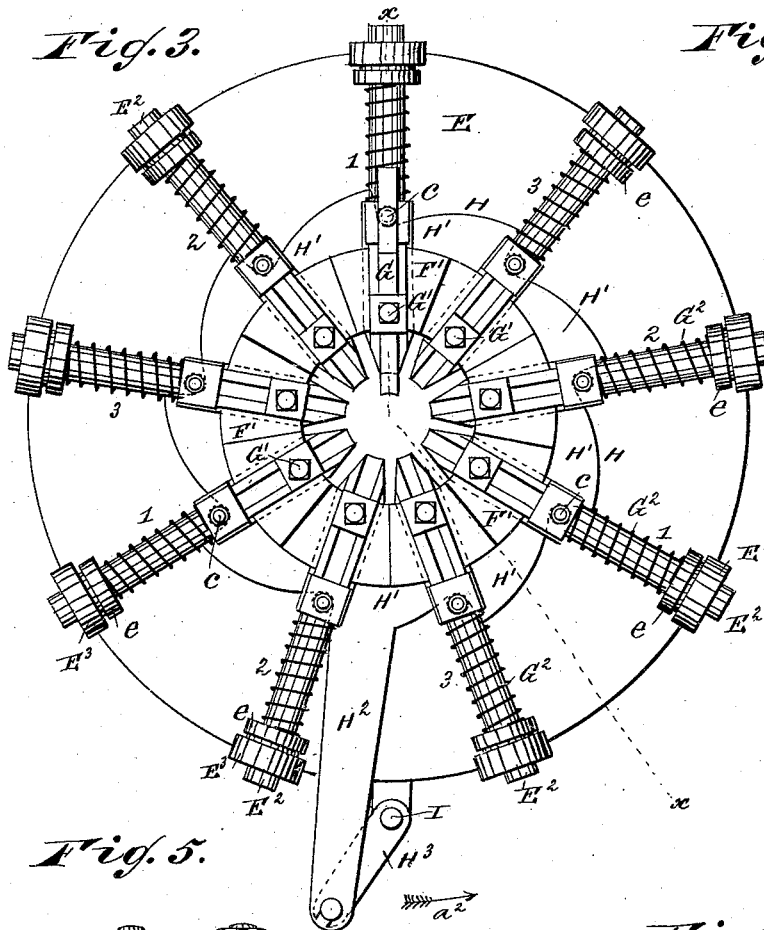
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E. M. ELLIS.

MACHINE FOR SCRAPING AND SPLITTING CANE.

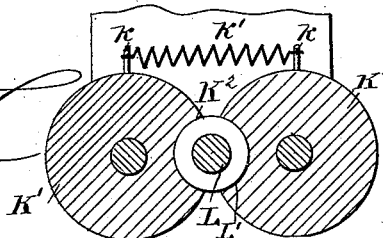
No. 307,276.

Patented Oct. 28, 1884.



WITNESSES :

WITNESSES:
Theo. G. Foster.
C. Sedgwick



INVENTOR:

E. M. Ellis

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Munn & Co
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(Model.)

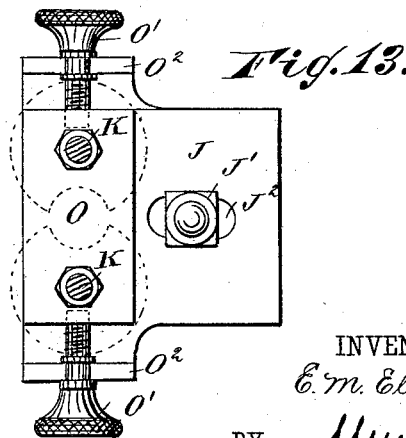
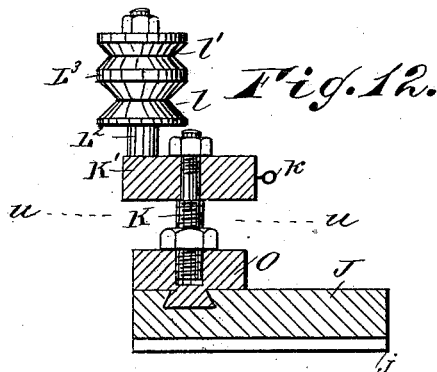
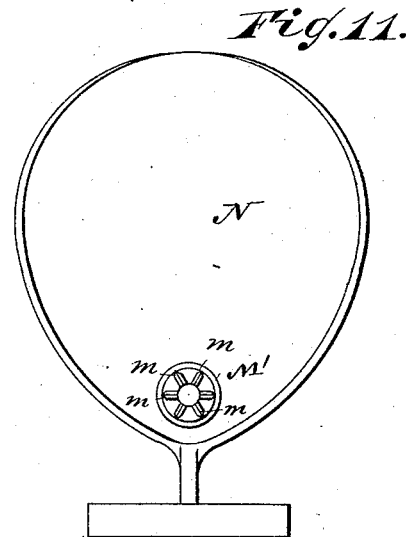
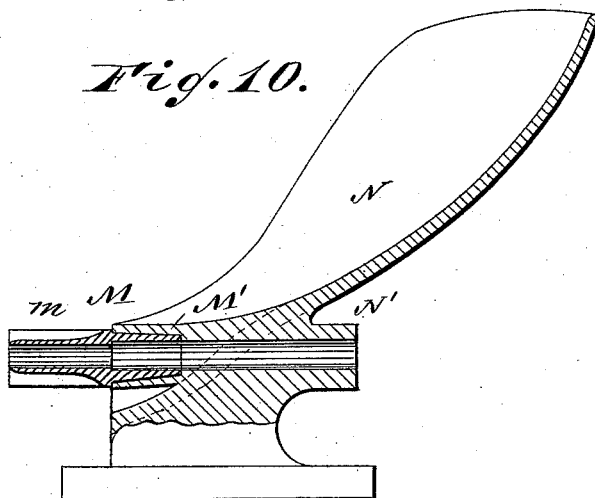
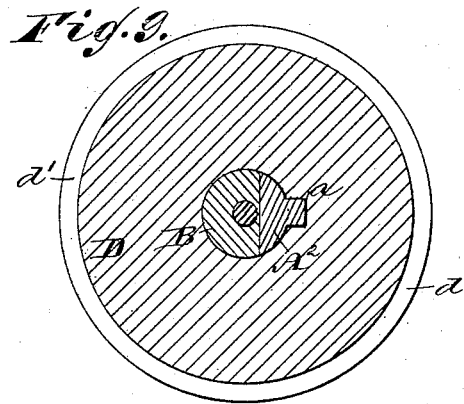
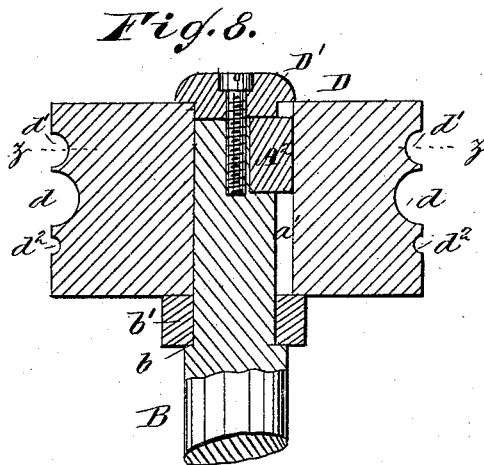
4 Sheets—Sheet 3.

E. M. ELLIS.

MACHINE FOR SCRAPING AND SPLITTING CANE.

No. 307,276.

Patented Oct. 28, 1884.



WITNESSES:

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(Model.)

4 Sheets—Sheet 4.

E. M. ELLIS.

MACHINE FOR SCRAPING AND SPLITTING CANE.

No. 307,276.

Patented Oct. 28, 1884.

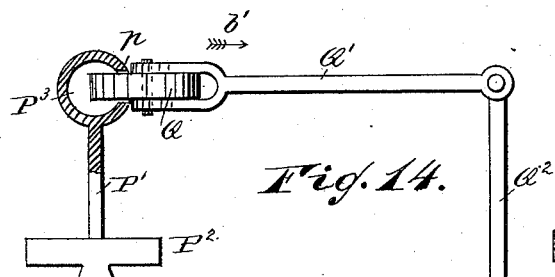


Fig. 14.

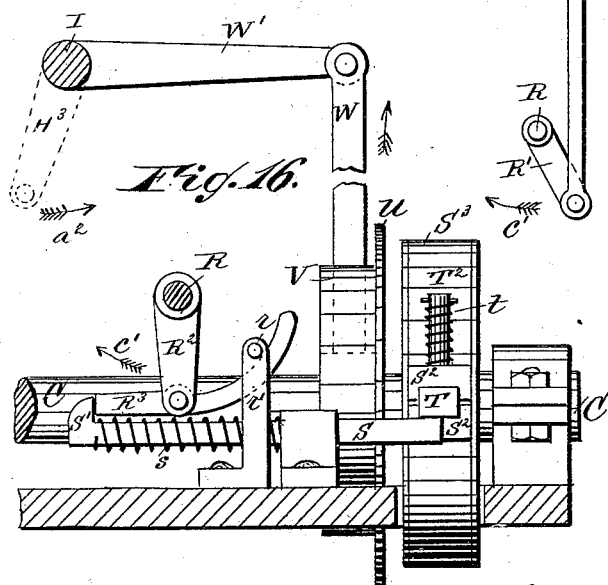


Fig. 16.

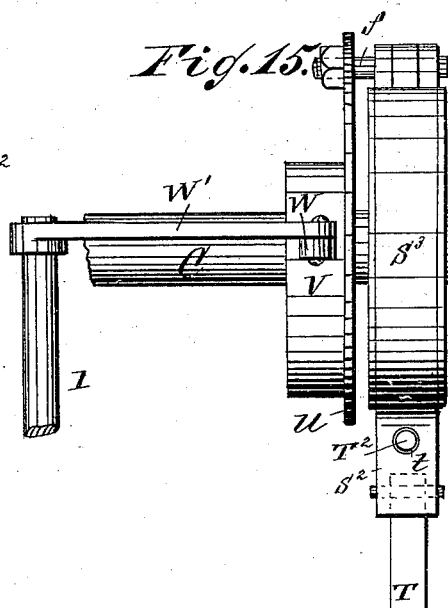


Fig. 15.

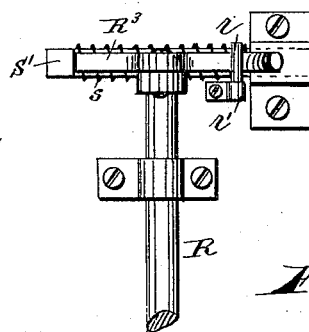


Fig. 18.

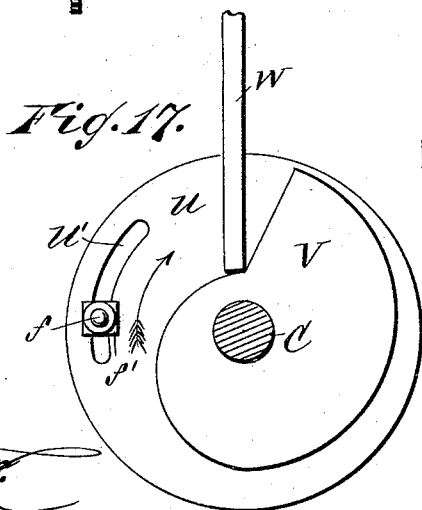


Fig. 17.

WITNESSES:

Thos. G. Norton
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INVENTOR:

E. M. Ellis

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UNITED STATES PATENT OFFICE.

EDWARD M. ELLIS, OF GARDNER, MASSACHUSETTS.

MACHINE FOR SCRAPING AND SPLITTING CANE.

SPECIFICATION forming part of Letters Patent No. 307,276, dated October 28, 1884.

Application filed April 20, 1883. (Model.)

To all whom it may concern:

Be it known that I, EDWARD M. ELLIS, of Gardner, in the county of Worcester and State of Massachusetts, have invented a new and Improved Machine for Scraping and Splitting Cane, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved machine for scraping cane so that it will have a uniform smooth surface throughout, and then splitting the cane longitudinally into a number of pieces of precisely the same size.

A further object of my invention is to provide new and improved devices for automatically separating the blades of the scraping mechanism of the machine in such a manner that the cane can be passed in between the inner ends of the said blades, and then closing the blades on the cane that has been inserted.

The invention consists in a machine constructed with a series of feed-rollers, with a mechanism for scraping the cane or rattan, and with a splitting-knife for splitting the cane into a number of parts, in front of which scraping devices and splitting-knife suitable centering devices are provided, which conduct and guide the cane in such a manner that it passes precisely centrally through the scraping and splitting devices.

The invention further consists in the combination, with the feed-rollers and the scraping devices, of a series of levers, latches, and other mechanism so combined and arranged as to automatically separate the cutting ends of the blades to admit the cane between them, and then to automatically press the cutting ends of the said blade on the cane.

The invention further consists in feed-rollers which can be adjusted according to the thickness of the cane or rattan, which feed-rollers are adjustably mounted on the upper ends of vertical shafts.

The invention also consists in various parts and details and numerous combinations of the same, as will be fully described and claimed hereinafter.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal elevation of my improved machine for scraping and splitting cane. Fig. 2 is a plan view of the same. Fig. 3 is a face view of the disk carrying the scraping-knives. Fig. 4 is a cross-sectional elevation of the same on the line *xx*, Fig. 3. Fig. 5 is a front elevation of the guide-rollers for feeding the cane to the scraper-knives. Fig. 6 is a plan view of the same. Fig. 7 is a sectional plan view of the same on the line *yy*, Fig. 5. Fig. 8 is a longitudinal sectional elevation of the guide-rollers for guiding the cane through the machine. Fig. 9 is a sectional plan view of the same on the line *zz*, Fig. 8. Fig. 10 is a longitudinal sectional elevation of the cane-splitting knife, and the guide for guiding the split cane upward. Fig. 11 is a front end elevation of the same. Fig. 12 is a cross-sectional elevation of the guide for conducting the scraped cane to the splitting-knife. Fig. 13 is a plan view of the same on the line *uu*, Fig. 12. Fig. 14 is a side view of the lever for operating the mechanism for adjusting the blades of the scraper, parts being shown in section. Fig. 15 is a plan view of the mechanism for locking the cam on the shaft for operating the devices for adjusting the blades of the scraper. Fig. 16 is a side view of the said mechanism, parts being shown in section. Fig. 17 is a side view of the cam and the disk on which it is mounted. Fig. 18 is a longitudinal sectional elevation of part of the clamping half-rings and the disk on which they are held.

In a horizontal platform, A, supported by a frame, A', a series of vertical shafts, B, are journaled, the two longitudinal parallel rows of shafts being divided into three sections, each containing an equal number of shafts—in the case shown six. Below the platform A a cog-wheel, B', is mounted on each shaft B, the several cog-wheels B' engaging with each other, and cog-wheels B² are interposed between those cog-wheels, B', which are separated too far to engage with each other. The driving-shaft C of the machine, provided with fixed and loose driving-pulleys, is journaled in the frame A', and is provided with a beveled cog-wheel, which engages with another beveled cog-wheel mounted on the same shaft with one of the wheels B², so that if the said

cog-wheel B² is rotated the entire train of the cog-wheels B' and B² will be rotated and will rotate the shafts B. The cog-wheels are to be so arranged that the shafts B of each row will
 5 revolve in the same direction, and the shafts of the opposite row will all revolve in the reverse direction, so that if a piece of cane or rattan is passed in between the feed-rollers D, mounted on the upper ends of the shafts B,
 10 the said feed-rollers will draw the cane or rattan through the space between the rollers. Each shaft B is provided a short distance below its upper end with an annular shoulder, b, and on the said shoulder a loose collar, b',
 15 rests, on which collar a roller or pulley, D, rests, which is held fixed on the shaft B by a key, A², provided with a spline or feather, a, passing into a vertical groove, a', in the vertical aperture of the roller, which key fits
 20 into a recess in the upper end of the shaft B. A cap, D', held by a screw on the upper end of the shaft, holds the pulley or roller D in place. The pulley or roller D is provided with a central circumferential groove, d, above
 25 which a smaller circumferential groove, d', is provided, and below the groove d a still smaller circumferential groove, d², is provided. The pulleys or feed-rollers D are above the platform A, and when the feed-rollers D rest
 30 on the collars b' the grooves d² will be such a distance above the platform A that a piece of cane or rattan held in the grooves d² of two adjoining rollers will be such a height above the platform A that it will be in the proper
 35 position for being fed centrally to the scraping and splitting knives or cutters. If a larger cane is to be scraped and split, the pulleys D are inverted, so that the grooves d' will be at the desired height above the platform A. If
 40 a still larger or thicker cane or rattan is to be passed through the machine, the same must be held in the grooves d, and to bring them to the proper height above the platform A the collars b' are removed, so that the feed-rollers
 45 D will rest directly on the shoulders b. It is natural that all the feed-rollers D on the platform A must be adjusted in the same manner.

Between the first set of six feed-rollers and the second set of six feed-rollers a disk, E, is
 50 held transversely and vertically on the platform A in such a manner that the center of the said disk will coincide with the intersection of the vertical plane between the feed-rollers and the horizontal plane of the centers
 55 of the lowest guide-grooves in the feed-rollers—that is, the center of the disk E is to be on a line with the center of the rattan or cane held between the feed rollers.

On the disk E a series of radially-sliding
 60 scraping-blade holders, E', are mounted—in the case shown nine—which are divided into groups of three each. The outer ends, E², of the scraper-blade holders E' are made cylindrical, and passed through sleeves c, held in
 65 the outer ends of the arms E³ on the disk E. The inner ends of the scraper-blade holders E' pass through wedge-shaped recesses F, formed

in an annular ridge or collar, F', formed around the central aperture of the disk E, the scraper-blade holders thus being adapted to slide radially in the sleeves c and in the dovetailed
 70 grooves F. The bottoms or under ends of the dovetailed grooves F are not all the same distance from the surface of the disk E, for, as stated above, the scraper-blade holders are divided into three groups of three each. The
 75 bottoms of the dovetailed grooves or recesses F' of the first group, marked 1, in Figs. 3 and 4, are a greater distance from the surface of the disk E than the bottoms of the recesses
 80 of any of the other scraper-blade holders. The bottoms of the grooves or recesses F of the second group of scraper-blade holders, marked 2, are nearer the surface of the disk E, and the bottoms of the grooves F of the
 85 third set of scraper-blade holders, marked 3, are nearest to the surface of the disk E, so that the ends of the scraper-blade holders will be arranged in three short spiral lines, extending from the front to the rear; or, in
 90 other words, the scraper-blades attack the surface of the cane in three different vertical planes, one behind the other. Curved scraper-blades G are held in the scraper-blade
 95 holders E' and the cutting-edges project from the ends of the blade-holders, which blades are held in place by means of binding-screws G'. A spiral spring, G², surrounding the rounded part of each scraper-blade holder,
 100 presses the said holder toward the center of the disk, and presses a stud or pintle, c, projecting toward the surface of the disk E, upon the edge of the cam-tooth H of a cam-wheel, H', surrounding the annular ridge F' and resting
 105 on the surface of the disk E, which cam-wheel is provided with one cam-tooth for each scraper-blade holder. The cam-wheel H' is provided with a downwardly-projecting arm, H², to the lower end of which an arm, H³, is pivoted, which is mounted rigidly on the end
 110 of a rocking shaft, I. Directly in front of the disk E a plate, J, rests upon the platform A, which plate J is provided in its bottom with a longitudinal ridge, j, which passes into a corresponding groove in the platform A, thus
 115 guiding the plate J when the same is moved longitudinally. The plate J is held on the platform A by a screw, J', passing through a longitudinal slot, J², in the plate J, thus permitting of a longitudinal adjustment of the
 120 said plate.

On that end of the plate J toward the disk E two standards, K K, are provided, on the upper end of each of which a horizontal disk or wheel, K', is journaled, the edges of which
 125 disks are in contact. The disks are each provided with a semicircular or almost semicircular recess, K², in which recesses, when they are opposite each other, a beveled plug, L, is held, which causes the guide-rollers to swing
 130 together, so that one guide-roller cannot swing in advance of the other, and is provided with a head, L', to prevent it from dropping.

On the upper surface of each disk K' a

standard, L^2 , is provided at that side of the recess K^2 toward the disk E , and on each standard L^2 a guide-pulley, L^3 , is loosely mounted, which guide-pulleys are provided with two circumferential grooves, l and l' , of which the former is larger than the latter.

From the rear parts of the edges of the disks K' studs k project, to which a spiral spring, k' , is attached, which pushes them from each other; or the spring can be attached to the opposite sides, and then can be arranged as a tension-spring. By the action of the spring the rollers L^3 are pressed toward each other so that their edges will be in contact.

The splitting-knife M consists of a tube having its end sharpened, which tube is provided with as many radial longitudinal ribs m as the cane or rattan is to be split into pieces or parts, which ribs have their outer ends sharpened, the inner ends of the grooves formed between the ribs being tapered toward the rear end of the tubular knife. The tubular knife M is secured in the front end of the tubular projection M' , projecting outward from the lower part of a scoop-shaped upwardly-curved guide, M , the tubular projection M' extending entirely through to the rear side of the scoop or guide N , and forming a guide-tube, N' , through which the center or pith of the split rattan is conducted. Directly in front of the end of the splitting-knife M a guide is located, which is constructed like the guide in front of the scraper-blade disk E ; but in this case the standards K are secured on a plate, O , held by a dovetailed ridge in its bottom, to slide transversely on the adjustable plate J . The plate O can be adjusted and locked in the desired position by means of the screws O' , passing into the end of the plate O , and held to turn on upwardly-projecting flanges O^2 on the ends of the plate J . The standards K can be adjusted vertically, so that the central axis of the opening between the grooves, through which opening the scraped rattan passes, will coincide precisely with the longitudinal central axis of the cane-splitting knife M .

At its front end the platform A is provided with a funnel-shaped or conical horizontal mouth-piece, P , into which the cane passes, which mouth-piece conducts it in between the feed-rollers D . Between the first and second pair of feed-rollers a standard, P' , is held on a plate, P^2 , dovetailed in the platform A , in the upper end of which standard P' a tube, P^3 , is held horizontally and parallel with the plane between the two rows of feed-rollers D , which tube P^3 is located at such a height above the platform A that the cane passed between the first two feed-rollers D will be conducted into the said tube. In one side the tube P^3 is provided with a longitudinal slot, p , into which a pulley, Q , projects, which is journaled in the forked end of a rod, Q' , in such a manner that the said pulley Q can revolve in the horizontal plane. The other end of the rod Q' is pivoted to the upper end of a lever, Q^2 , adapted to

swing in the vertical plane, and pivoted to an arm of the machine-frame A' , the lower end of which lever Q^2 is pivoted to a crank-arm, R' , on the end of a shaft, R , journaled on the machine-frame A' , which shaft R is provided at its opposite end with a downwardly-projecting arm, R^2 , in the lower end of which arm a latch-lever, R^3 , is pivoted, which has one end made horizontal and the other end curved upwardly, the upwardly-curved end passing under a pintle, r , on a standard, r' , so that when the arm R^2 swings the curved end of the latch-lever R^3 will strike against the cross-pintle r , whereby the opposite end of the latch will be raised. A bar, S , adapted to slide in the horizontal plane transversely of and below the shaft R , is provided at the inner end with a hook-head, S' , and is surrounded by a spiral spring, s , which draws the hook-head S' against the end of the latch-lever R^3 . The outer end of the sliding bar S projects from the frame of the machine sufficiently to permit the end of a bar, T , to rest on the same, which bar T is pivoted between the outer ends of arms S^2 of two clamping half-rings S^3 , pivoted to each other diametrically opposite to the inner ends of their arms S^2 , which clamping half-rings surround a disk, T' , rigidly mounted on the driving-shaft C of the machine. A rod, T^2 , fastened on the lower arm S^2 , passes loosely through an aperture in the upper arm S^2 , and is surrounded by a spiral spring, t , the upper end of which is held on the rod T^2 , and the lower end of which spring presses on the upper arm S^2 , and thus presses the two arms S^2 together. The hinge of the half-rings S^3 is connected by means of a pintle, f , with a disk, u , mounted loosely on the driving-shaft C , with which disk u a cam, V , is made integral or to which disk the cam is attached, so that the cam and disk are mounted loosely on the shaft C . The pintle f passes through a curved segmental slot, u' , in the disk u , and is fastened in the desired position in the said slot by means of a nut, f' . The position of the cam in relation to the half-rings S^3 can thus be adjusted by means of the pintle f and the nut f' .

On the edge of the cam V a rod, W , rests, the upper end of which is pivoted to an arm, W' , of the horizontal shaft I , which is provided at its opposite end with the arm H^3 , pivoted to the lower end of the arm H^2 of the cam-wheel H on the disk E . The arms H^3 and W' form an obtuse angle.

Between the feed-rollers D standards Y are held, which are provided with apertures parallel with the longitudinal axis of the platform A , through which apertures the pieces of rattan pass, and are thus guided.

Since it is necessary that a number of feed-rollers be employed to obtain sufficient friction to maintain the required velocity of the stick and guide the same to the knives, and since it is likewise necessary that the guide-tubes be arranged a sufficient distance from the scraping-knives to allow their automatic

operating mechanism sufficient time to open and close them while the stick is passing the distance occupied by the said rollers, in order to do this, and at the same time insure the feeding of the cane in a straight line to the knives, I arrange some of the feed-rollers between the guide-tube and knives.

The operation is as follows: The cane or rattan to be split has its ends cut off square, is passed through the mouth-piece P, passes in between the groove d , d' , or d'' of the first pair of feed-rollers and is drawn inward—that is, in the direction of the arrow a' —by the same, and is passed into the tube P³, and, pressing against the edge of the pulley Q, presses the same sideways—that is, in the direction of the arrow b' of Fig. 14—more or less, according to the thickness of the cane or rattan, and, after passing through the tube P³, the cane is seized by the other feed-rollers D, and is drawn in the direction of the arrow a' until its end strikes against the guide-rollers L³ in front of the disk E and passes in between the same, separating the rollers more or less, according to the thickness of the rattan. Both rollers will be pushed apart or separated equally, and the center of the rattan or cane will always coincide with the central line between the two rollers. If the end of the rattan or cane does not pass directly into the space between the rollers, but strikes the surface of one of the rollers, it will be guided by the said roller to the space between the two rollers, and then will be guided straight to the center of the cutting-disk E, the cutter-blades of which plane off or scrape and shave the joints of the rattan. From the disk E the rattan or cane is carried by the other feed-rollers D to the centering-rollers L³ in front of the splitting-knife M, and is guided by the said centering device in such a manner that the center of the rod will coincide exactly with the center of the knife M. The feed-rollers press the end of the cane or rattan against the cutting end of the knife M, whereby the cane will be split into as many equal parts as there are radial wings on the knife M, and the pith or remaining center of the rattan passes through the tube N', and is seized by the rear rollers D and carried off. The strips into which the rattan has been split slide up the inclined scoop N and are carried off. As the knife M projects from the curved surface of the scoop N, those strips which pass over the upper part of the knife M, as well as those which pass under the lower part of the knife M, will be guided upward by the said scoop. The ends of the scraper knives or blades are to be separated automatically to admit the cane between them. This is accomplished in the following manner, as stated above. The cane, passing through the tube P³, presses the rod Q' in the direction of the arrow b' , thereby turning the lower end of the lever Q², the arm R', and the shaft R in the direction of the arrow c' . By this movement the arm R³ of the shaft R is also moved in the direction of the arrow c' , and the end of the latch-lever R³,

pressing against the head S', presses the sliding bar S horizontally in the direction of the arrow c' , thereby withdrawing the end of the bar S from under the end of the bar T, held between the clamping half-rings S³; but if the latch-lever R³ moves in the direction of the arrow c' its curved end strikes against the bar T, and thereby that end of the latch-lever R³ resting against the head S' of the sliding bar S will be released, and the bar S will immediately be drawn back in the inverse direction of the arrow c' by the spring s . As long as the bar T rests on the sliding bar S the clamping half-rings S³ cannot be locked on the disk T', for the moment they become locked they exert a downward pressure on the pivoted end of the bar T, and as the opposite end of the bar T rests on the sliding bar S the pivoted end of the bar T will separate the arms S² of the clamping half-rings S³ sufficiently to release the clamping half-rings from the disk T' and prevent the revolving of the half-rings; but as soon as the sliding bar S is withdrawn for a moment by the latch-lever R³ the outer end of the bar T will be released, and the spring t , surrounding the standard T², presses the two arms S² together, and thus clamps the half-rings S³ on the disks T', thereby causing the said half-rings S³ to be revolved with the disk T'. As the pintle f connects the joint or hinge of the half-rings S³ with the loose disk u , the said disk will be revolved, as will also the cam V, secured on the said disk, whereby the rod W will be moved upward and will move upward the outer end of the arm W' of the shaft I, whereby the arm H³ at the other end of the shaft I will be moved in the direction of the arrow a' ; but the free end of the said arm H³ is connected with the lower end of the arm H² of the cam-wheel H, provided with the several cams H'. The said cams will all be moved in the direction of the arrow a' —that is, they may be forced against the pintle c of their respective blade-holders E'—and will move the several blade-holders toward the periphery of the disk E such a distance that the end of the cane can be passed in between the inner ends of the cutter-blades. The blades G are moved outward until the end of the rod W slips over the cam V, when the springs G² force the blades inward and against the surface of the cane that has been passed in between the separated inner ends of the blades. The blades will then all rest on the surface of the cane, and as the cane is moved in the direction of the length of the machine they will scrape the surface of the same. The cane acts on the lever Q as soon as it is introduced into the tube P³; but some time is required for the transmission of the motion, and the scraper-blades of the scraper will be separated the required distance to admit the end of the cane just at the time that the end of the cane arrives at the scraper. The length of the movement of the rod Q' must always be the same for a thick or for a thin cane. If the cane is very thick, the wheel Q, held in the

end of the arm Q', must be made smaller than if the cane is thin—that is to say, the diameter of the wheel Q must increase as the diameter of the cane increases, and the machine must be adjusted for each size of cane. The knives and the cutting mechanism must also be adjusted for each size of cane, as must also the splitting device.

This machine does not automatically adjust the knives according to the thickness of the cane; but it separates the knives automatically and closes them on the surface of the cane automatically.

I am aware that in a rattan scraping and splitting machine feed-rollers have been arranged in front of the radially-moving scraping-knives, with a stationary guide between said feed-rollers and a spring-pressed guide between the rollers and scraping-knives, and I therefore do not claim such invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a machine for scraping and splitting rattan or cane, the combination, with a series of radially-movable scraper-blades, of mechanism for automatically separating the said blades to admit the cane between the ends of the said blades, a guide for the cane, which guide is held in front of the knives or knife-holders, a lever connected with the mechanism for adjusting the blades, which lever extends to said guide, and is adapted to be acted upon by the cane passing through the guides, and feed-rollers arranged between the said guide and the disk on which the cutter-blades are held, whereby the mechanism for adjusting the cutter-blades is acted upon by the cane before the cane enters the disk carrying the blades, and whereby the cane is fed and carried toward the disk from the time that it has acted upon the blade-regulating mechanism to the time that it is acted on by the scrapers, substantially as herein shown and described.

2. In a machine for scraping and splitting cane or rattan, the combination, with radially-movable scraper-blades, of mechanism for automatically separating the said blades to admit the cane between the ends of the said blades, a guide for the cane, which guide is held in front of the scraper-blades, feed-rollers arranged between the said guide and scraper-blades, and a lever projecting into the said guide and connected with the mechanism for operating the scraper-blades, substantially as herein shown and described, whereby the cane will be fed to the scraper-blades, and the blades adjusted by the passage of the cane through the guide, as set forth.

3. In a machine for scraping and splitting cane or rattan, the combination, with feed-rollers for drawing the cane into the machine and carrying it between the scraping-blades, which scraping-blades are held in a disk, of means for separating the blades of the scraping mechanism to admit the cane in between the ends of the said blades, a tube held between the feed-rollers in such a manner that

the cane must pass through the said feed-rollers to be carried to the scraping mechanism, a lever projecting into the tube, levers for transmitting the motion from the lever in the tube to the blades of the scraping mechanism, and a series of feed-rollers interposed between the said tube and scraping mechanism, substantially as herein shown and described.

4. In a machine for scraping and splitting cane, the combination, with the feed-rollers D, of the tube P², arranged in the line of the feed, the rod Q', the roller Q, pivoted in the forked end of the rod Q' and projecting into the tube P², the lever Q², operated by the said rod Q' and operating the shaft R, which is provided at one end with an arm, R², carrying a latch-lever for releasing a sliding bolt, and of the clamping half-rings S³, held open by the said sliding bolt, which clamping half-rings are united with a cam mounted on a shaft and adapted to operate a device for separating the knives of the scraping mechanism to admit of passing the cane between the inner ends of the said blades, substantially as herein shown and described, and for the purpose set forth.

5. In a machine for scraping and splitting cane, the combination, with the shaft R, of the latch-lever R², pivoted to an arm of the said shaft, provided with an upturned end, the standard r', supporting the pintle r in the path of said upturned end, the sliding bar S, retracted by said latch-lever, the spring s, bearing against said bar, devices for rocking the shaft R by the introduction of a piece of cane into the machine, clamping half-rings mounted on the shaft and held open by the sliding bar S, a cam mounted loosely on the shaft and connected with the clamping half-rings, and devices for separating and closing the blades of the scraping mechanism, which devices are operated from the cam on the shaft, substantially as herein shown and described, and for the purpose set forth.

6. In a machine for scraping and splitting cane, the combination, with the rocking shaft R, of the latch-lever R² on an arm thereof, the sliding bolt S, tripped by said latch-lever, the disk T', mounted on the shaft, the half-rings S³, surrounding the disk T', and provided with arms S², the bar T, pivoted in the arms S², a spring for pressing the arms S² together, and a cam connected with the half-rings S³ and adapted to operate devices for separating and closing the blades of the scraping mechanism, substantially as herein shown and described, and for the purpose set forth.

7. In a machine for scraping and splitting cane, the combination, with the rocking shaft R, of the latch-lever R² on an arm thereof, the sliding bar S, tripped by said latch-lever, the disk T', mounted on the shaft, the half-rings S³, surrounding the disk T', and provided with the arms S², the bar T, pivoted in the arms S², the standard T², the spring t, surrounding it and pressing the arms S² together, and a cam connected with the half-rings S³ and adapted

to operate devices for separating and closing the blades of the scraping mechanism in the machine, substantially as herein shown and described, and for the purpose set forth.

5 8. In a machine for scraping and splitting cane, the combination, with the rocking shaft R, of the latch-lever R³ on an arm thereof, the sliding bar S, tripped by said latch-lever, the disk T' on the driving-shaft, the clamping
10 half-rings S³, provided with the arms S², the bar T, the disk u, mounted on the shaft, and provided with a cam, V, the pintle f, uniting the joint of the half-rings S³ with the disk u, the rod W, and devices for separating and
15 closing the blades of the scraper, which devices are operated by the rod W, substantially as herein shown and described, and for the purpose set forth.

9. In a machine for scraping and splitting
20 cane, the combination, with a series of feed-rollers and scraping and splitting devices, of a centering device consisting of two guide-rollers, L³, mounted on standards L², secured on rollers K', mounted on standards K, which
25 rollers K' are provided in their peripheries with notches adapted to receive a slightly-conical plug, L, half of which is contained in the recess of each disk K', substantially as herein shown and described, and for the purpose set
30 forth.

10. In a machine for scraping and splitting

cane, the combination, with a series of feed-rollers and scraping and splitting devices, of rollers K', the spring k', connecting said rollers, the rollers L³, journaled in rollers K', and the plug L, held in notches in the edges of the rollers or disks K', substantially as herein shown and described, and for the purpose set forth. 35

11. In a machine for scraping and splitting
40 cane, the combination, with a series of feed-rollers and scrapers and splitting devices, of the plate J, the plate O, sliding transversely on plate J, the side screws, O', for adjusting said plate O, the disks or rollers K', provided
45 with the notches K² in their edges, the rollers L³, journaled on rollers K', and the plug L, fitting in the notches K² in the disk K', substantially as herein shown and described, and for the purpose set forth. 50

12. In a machine for scraping and splitting
cane, the combination, with the shaft B, of the feed-roller D, provided with circumferential
55 grooves d d' d², of different sizes, the removable collar b', the key A², and the cap D', substantially as herein shown and described, and for the purpose set forth.

EDWARD M. ELLIS.

Witnesses:

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