

(No Model.)

M. E. MOORE.

MACHINE FOR SPLITTING RATTAN OR OTHER STOCK.

No. 500,813.

Patented July 4, 1893.

Fig. 1.

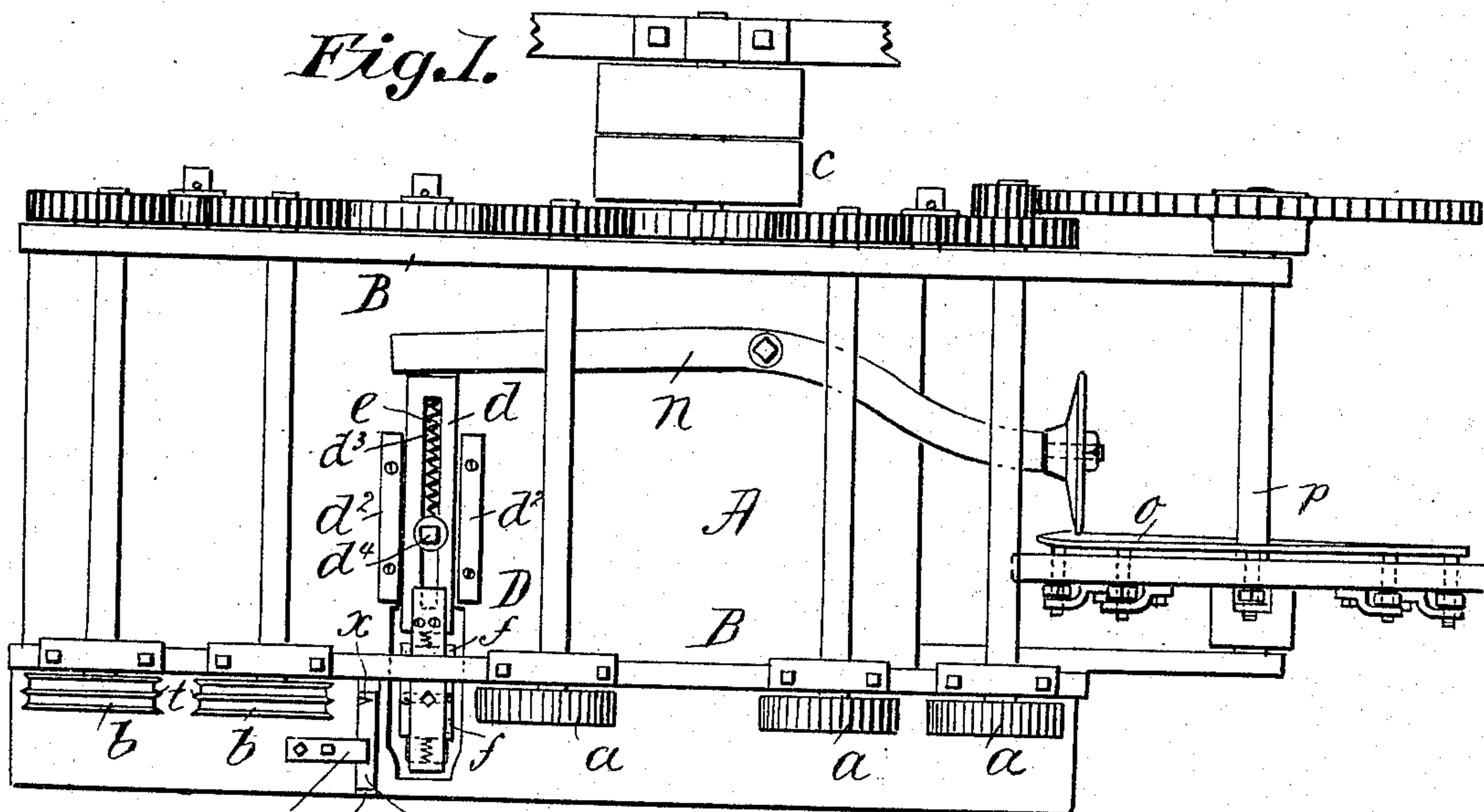


Fig. 2.

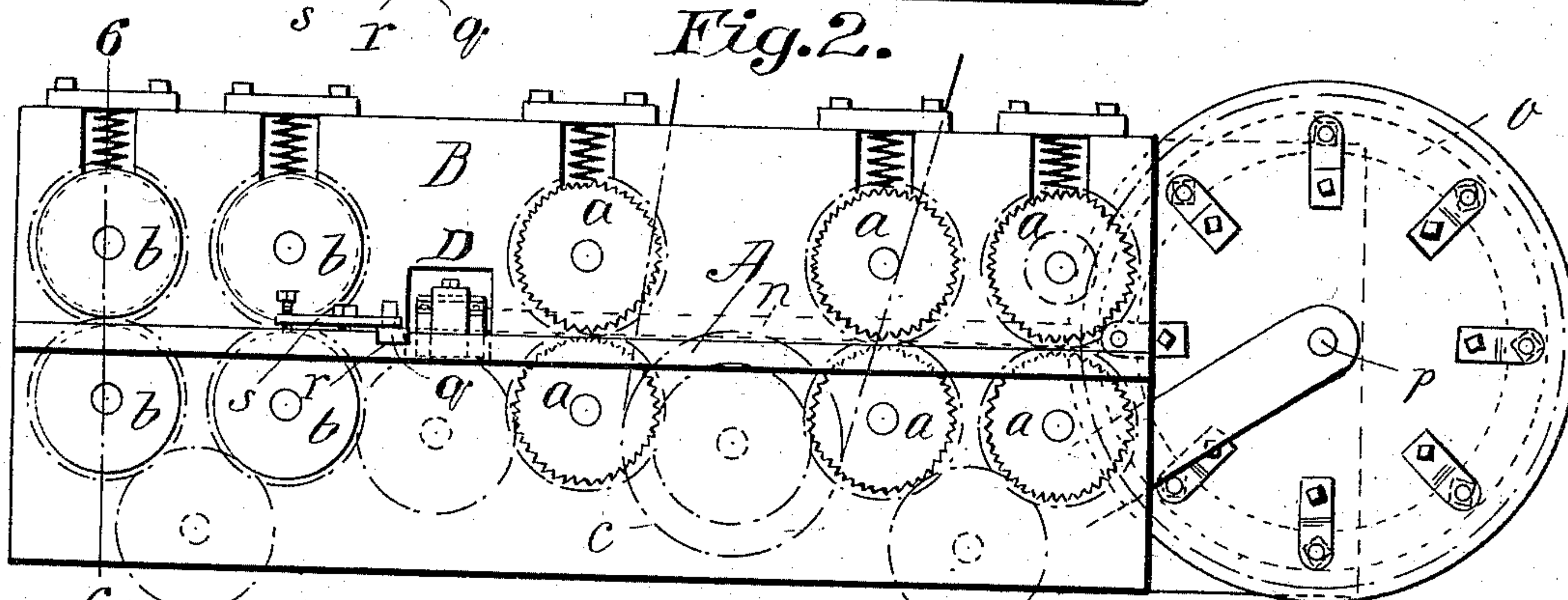


Fig. 3.

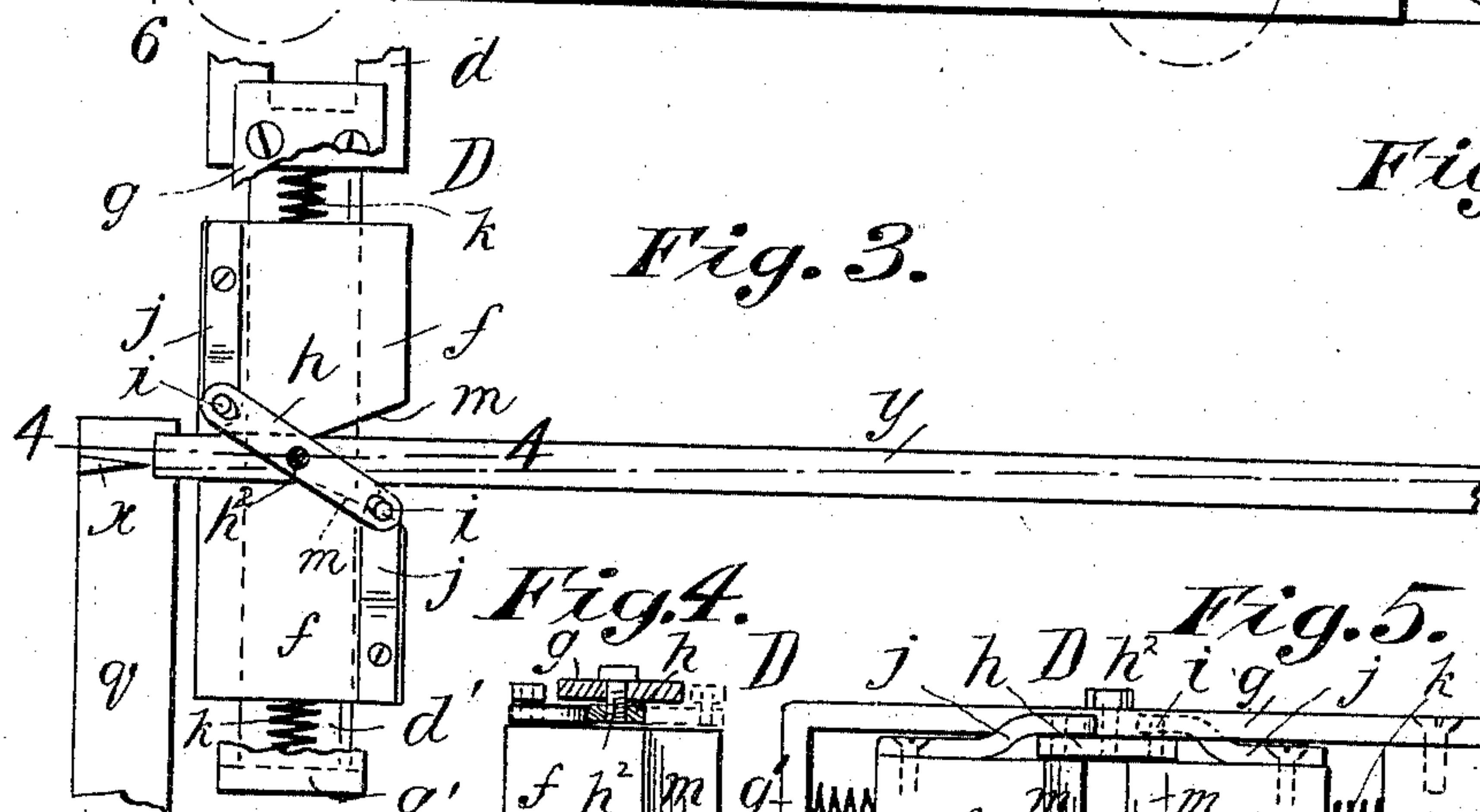


Fig. 6.

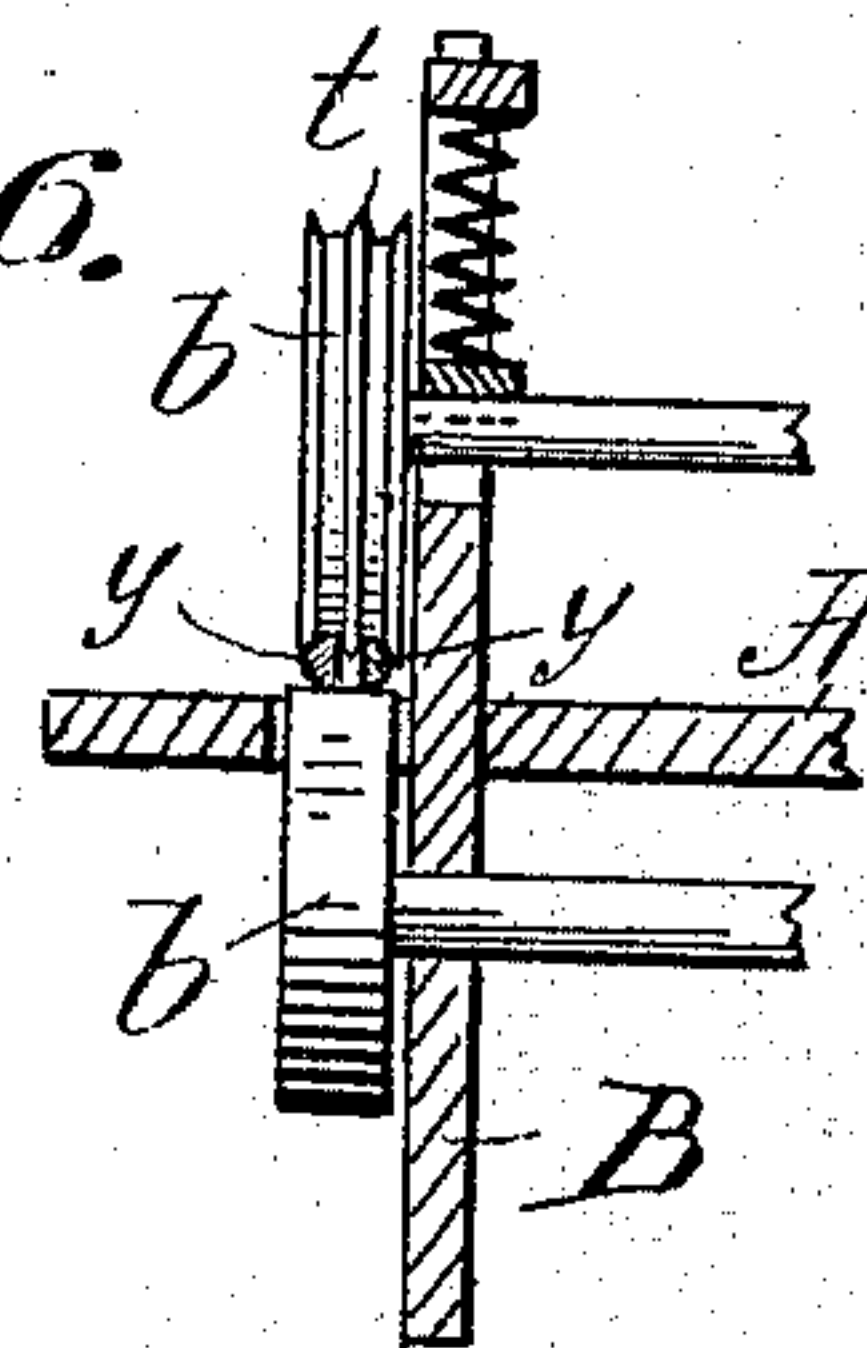


Fig. 4.

Fig. 5.

Witnesses:

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UNITED STATES PATENT OFFICE.

MOSES E. MOORE, OF WESTFIELD, MASSACHUSETTS.

MACHINE FOR SPLITTING RATTAN OR OTHER STOCK.

SPECIFICATION forming part of Letters Patent No. 500,813, dated July 4, 1893.

Application filed June 27, 1892. Serial No. 438,170. (No model.)

To all whom it may concern:

Be it known that I, MOSES E. MOORE, a citizen of the United States, residing at Westfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Machines for Splitting Rattan or other Stock, of which the following is a specification.

This invention relates to improvements in machines for splitting whole rattan, or analogous material, for the production of whip-sidings.

The object of the invention is to provide feeding and guiding or controlling devices in conjunction with the splitting knife whereby, as the rattan is fed through the machine, subject to the splitting operation by the knife from end to end, it is given a slight transverse motion so that the line of split is slightly angular to the axis of the rattan and so that by the splitting of each length of rattan two similar tapered slabs are produced suitable for being further shaved at the edges to make the sidings.

Another object of the invention is to provide improved means for the guiding of the split-side portions.

The invention consists in the combination with a cutter, and devices for carrying the stock longitudinally forward to the cutter, of a part located adjacent the cutter which is movable transversely of the direction of feed, and which carries two bearing members, and means for imparting stress for normally insuring the approach of said members but which means is adapted to permit yielding movements of said members, each away from the other, and mechanism for imparting the transverse reciprocatory movements to the part carrying said members.

The invention consists, otherwise, in constructions and combinations of parts all substantially as will hereinafter be more fully described and explained and set forth in the claims.

In the accompanying drawings a machine embodying the present invention is illustrated, Figure 1 being a plan, and Fig. 2 a side elevation. Fig. 3 is a plan view on a larger scale, showing the knife and a portion of the device which imparts the transverse motion to the rattan, the end of which latter is indi-

cated as just being carried onto the knife. Fig. 4 is a cross section vertically on line 4—4, Fig. 3. Fig. 5 is a side view of the said device taken at right angles to Fig. 3. Fig. 6 is a sectional view in detail taken on the vertical plane indicated by the line 6—6, Fig. 2.

In the drawings A represents the bed or table of the machine having the vertical side pieces, B, B, in which are formed suitable bearings for the shafts carrying the upper and lower sets of feed-rolls, *a, a, a*, and the upper and lower sets of guide rolls, *b, b*; these several shafts are geared together to have uniform rotary movements as driven by the driving pulley, *c*.

x represents a knife which is vertically and rigidly supported with its edge toward the front end of the machine, between the feed-rolls and guide-rolls.

D represents, generally, the device carrier or guiding which embraces the rattan which is being fed by the feed-rolls, *a*, imparting to such stock the movement transversely of the length of feed. This device comprises separated or separable sections or jaws, *f, f*, between which the rattan, *y*, or other stock, may be passed and which yieldingly impinges against the sides of the rattan, said sections being carried by a slide-bar, to which a positive motion within predetermined limits is imparted angularly to the length of the feed of the rattan by efficient means. In this description it will be assumed that the normal position of the said device, D, is that which it occupies just at the time the forward end of the rattan is passed through the separable sections and brought to the knife, the relations of the separated portions, *f, f*, to the knife, then being substantially as indicated in Fig. 3: that is to say, the median vertical plane of the knife-blade passes through the space between said members, *f, f*, somewhat nearer to the rear face of the outer member, than to the outer face of the inner member. The said separable members, *f, f*, are constrained to move in their separation equally to recede from the said plane of the knife so that as rattan, or other stock, of different diameters is forced through and between the said members, *f, f*, while the device, D, is in its normal position, the stock, of whatever diameter, will be, by said members, held in pres-

entation with its end to the knife always at the same distance from its axis. I will now more particularly describe the said device, D, which comprises the slide, *d*, and separable members, or jaws *f, f*. Said slide, *d*, is movable, transversely of the table, between the guides, *d*², *d*², and is longitudinally slotted as at *d*³. The headed bolt, *d*⁴, passes loosely through the slot into the table, and a spring, *e*, is applied between the fixed stop constituted by said bolt and the end portion of the slide, *d*, the reaction of which is to maintain the slide rearwardly toward or in its normal position. The said slide, *d*, has, at its forward end, the extension, or rib *d'* extending transversely to the direction of feed of the machine. This rib *d'* is of dove-tailed form, upon different portions of the length of which the said members, *f, f*, are fitted for sliding movements.

g indicates a rigid bar or strap which overlaps the extremity of the slide, *d*, and extends horizontally in the longitudinal line of the slide, above, and slightly separated from the members *f, f*, to a point above the end of the dove-tailed slide extension having thereat a downward turn, as at *g'*, by which it is united to the end of the said slide extension. The lever, *h*, is intermediately thereof pivoted to and under the said bar, *g*, and has its extremities engage the studs, *i*, of the offset bars, *j, j*, which are respectfully secured to said separable members, *f, f*. Springs, *k, k*, are interposed, one between the outer end of the part, *d*, and the rear side of the inner member, *f*, and the other between the outer side of the outer member, *f*, and the inner face of the angularly turned portion, *g'*. The said springs tend to force the members, *f, f*, together so that when the device, D, as a whole, is in the aforesaid normal position and no rattan is thrust between the members, *f, f*, their proximate faces will be closely approached or in contact, the plane of contact being coincident with the pivot *h*², for the lever, *h*, and slightly to the rear of the median plane of the knife-blade.

As the forward extremity of the rattan is, by the feed-rolls, *a, a*, forced between the members, *f, f*, (which have portions of their facing sides beveled as at *m*,) the said members necessarily, by the positive constraining means constituted by the equalizing lever which is pivotally mounted on a fixture of the said slide *d*, and connected to both of the said members, as aforesaid, separate equally, either more or less according to the thickness of the stock, and the relation between the center line, or axis, of the stock and the cutting plane of the blade, desired at the beginning of the cutting operation, will be insured.

The device, D, has its movement transversely of the table, in an extent equal only to a fraction of the diameter of the stock to be split, and in the present illustration the movement is imparted by the lever, *n*, to which the slight and gradual swinging movement is imparted by the cam, *o*, which is on

shaft, *p*. Said cam-shaft is so connected to the driving shaft by reducing gears that its movement is slow compared with the movements of the feed and guide-rolls, *a, a*, and *b, b*. Therefore while the feed-rolls are running to carry a rattan which is long enough for a siding, entirely through and past the knife, the slide has only one forward transverse movement.

The knife, *x*, is mounted upon a bar, *q*, which is adjustable in the groove *r*, transversely of the table. The knife-bar is confined in the said groove by the clamp-bar, *s*, to which the confining pressure is imparted by the one or more screws.

The upper roll of each or both pairs of the guide-rolls has a peripheral rib, *t*, in the plane of the knife, and also preferably has edge flanges. The mid-rib insures such separation of the rattan splits as to overcome any tendency which said splits might have to bind or cause unnecessary friction. The guide-rolls, *b*, also, necessarily, have the function of feed-rolls, when the after end of the rattan has passed the rolls, *a, a*, and is passing between the separable members, *f*, and to the action of the knife.

In the operation of forming two similar slabs from a single piece of rattan of suitable length for whip sidings, the length of rattan is nearly run through the feed-rolls, *a, a*, its forward end being forcibly brought within the inclines *m, m*, of the separable sections, *f, f*, whereby the latter are opened to permit the passage of the rattan through them; as the rattan is passed throughout its length to the splitting action of the knife the traverse side device, D, as determined by the cam, *o*, carries the rattan crosswise so that its after end passes the knife in the cutting plane which is as far to the rear of the true axis of the rattan as the cutting was commenced, at the forward end, in front of or outside of said axis.

By the proper adjustment of the knife and the adjustment or substitution of the cam, *o*, by another for imparting the desired extent of traverse movement to the slide device, D, the machine may be adapted to work upon rattan of a great or a comparatively small average size, diametrically, at the same time having the split beginning at one end as near the side of the rattan as desired, and terminating at the other end in any suitable extent from the other side of the piece.

I claim—

1. In a machine for splitting rattan or other stock, the combination with a cutter, and devices for carrying the stock longitudinally forward to the cutter, of a part located adjacent the cutter which is movable transversely of the direction of feed, and which carries two bearing members, and means for imparting stress for normally insuring the approach of said members but which means is adapted to permit yielding movements of said members, each away from the other, and mechan-

ism for imparting the transverse reciprocal movements to the part carrying said members, for the purpose set forth.

2. In a machine for splitting rattan, or other stock, the combination with a fixed knife and feed-rolls for longitudinally feeding the stock, of a transversely movable slide having thereon a pair of separable members or jaws, and springs for forcing said jaws, each toward the other, and means for imparting the transverse movement to the slide.

3. In a machine for splitting rattan, or other stock, the combination with a fixed knife, and means for longitudinally feeding the stock to the splitting action of the knife, of the slide-bar, *d*, having the fixed lower extension, *d'*, and the fixed, rigid strap or bar, *g*, above and separated from said extension, the blocks or members, *f*, *f*, having sliding engagements with said extension, *d'*, the springs, *k*, *k*, for forcing said members toward each other, the equalizing lever, *h*, intermediately pivoted on said bar, *g*, and the arms, *j*, of said members, *f*, having connections with said lever, and means for imparting movements to the slide transversely of the line of feed, substantially as described.

4. In a machine for splitting rattan, &c., the combination with a suitable table having a transverse groove, *r*, of the knife-bar, with a knife, fitted in said groove, and the clamp-bar, *s*, the feed-rolls and slide device having the separable jaws and equalizing lever, substantially as and for the purpose set forth.

5. In a machine for splitting rattan or similar material, a fixed knife, separable sections or jaws for supporting the stock, and means connected to the driving mechanism for shifting the supporting jaws laterally with reference to the knife, during the movement of the work, whereby the material is split or cut in an oblique direction, all combined substantially as described.

6. In a machine of the character described, the fixed splitting knife, the supporting jaws and means for traversing them laterally with reference to the knife, and a link connecting the supporting jaws to compel their relative movement in opposite directions, all combined substantially as described.

7. In a machine of the character described, the fixed splitting knife, the supporting jaws held in and moving with a carrier, means for traversing said carrier while the work is progressing, and a link connected to each jaw and pivoted to the carrier, all combined substantially as described.

8. In a machine of the character described, the fixed knife, the transversely moving carrier provided with separated jaws, the link connecting said jaws to each other and to the carrier, and a lever and operating cam for traversing the carrier, all combined substantially as described.

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Witnesses:

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