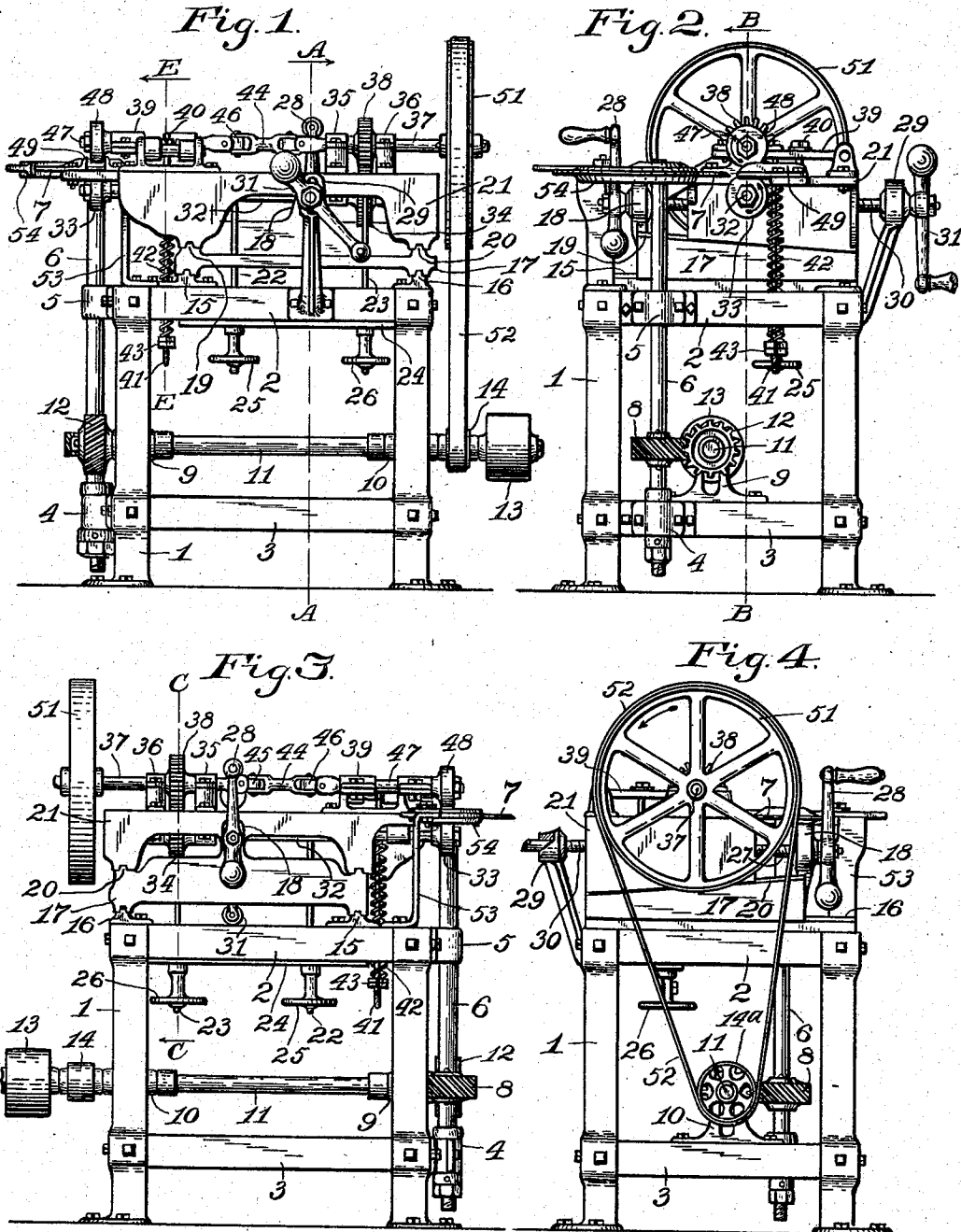


No. 866,975.

PATENTED SEPT. 24, 1907.

H. L. STALEY.
BARK SPLITTING MACHINE.
APPLICATION FILED APR. 26, 1907.

3 SHEETS—SHEET 1.



WITNESSES

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M. W. Beatty.

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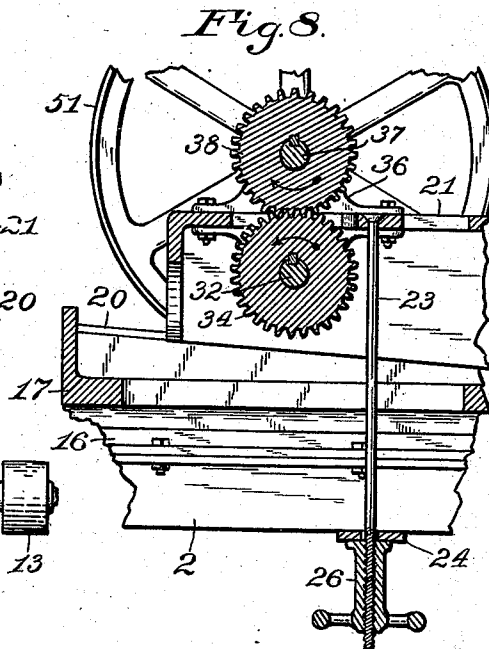
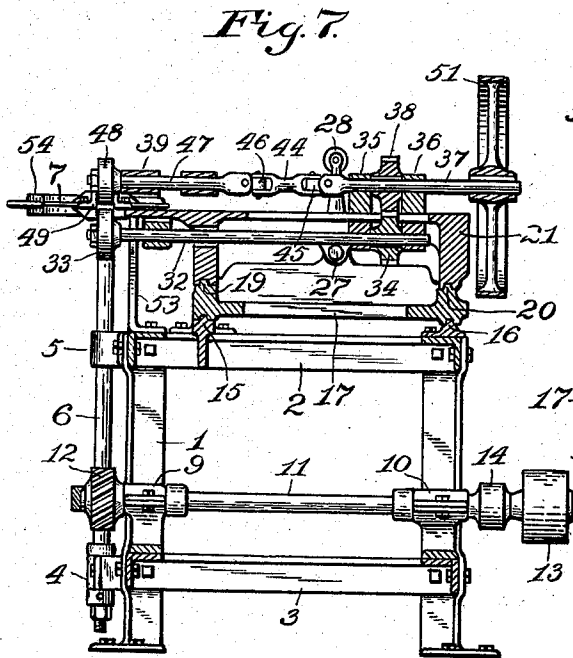
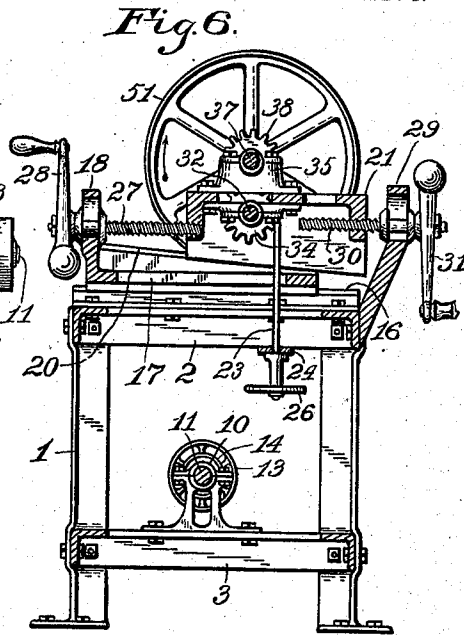
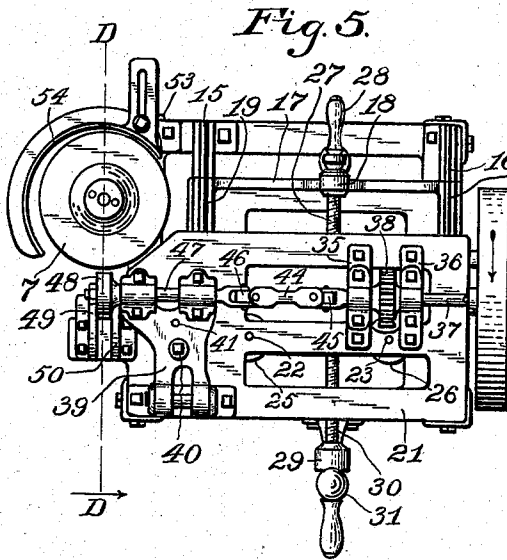
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 9.

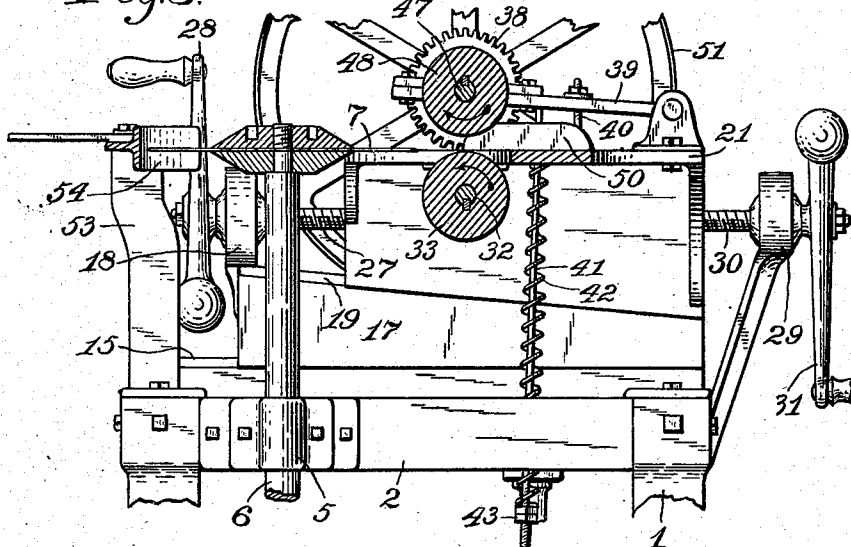


Fig. 10.

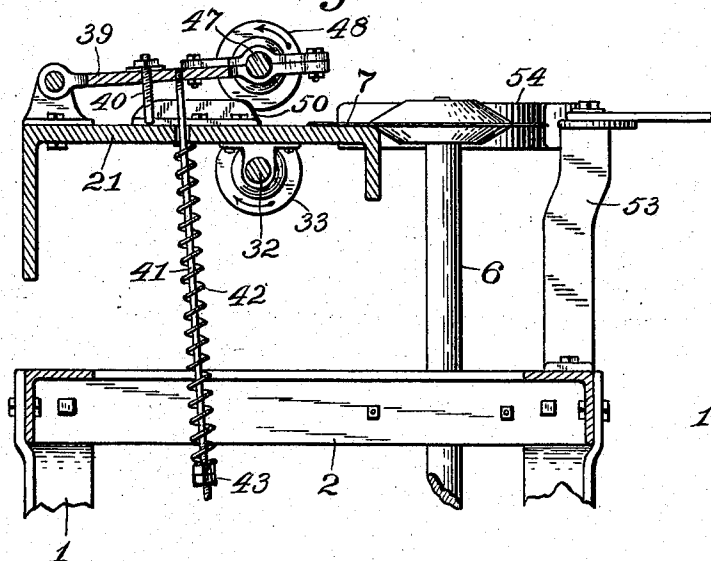
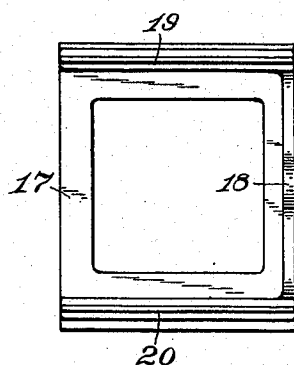


Fig. 11.



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UNITED STATES PATENT OFFICE.

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BARK-SPLITTING MACHINE.

No. 866,975.

Specification of Letters Patent.

Patented Sept. 24, 1907.

Application filed April 26, 1907. Serial No. 370,445.

To all whom it may concern:

Be it known that I, HARRISON L. STALEY, a citizen of the United States, residing at Martinsville, in the county of Morgan and State of Indiana, have invented certain new and useful Improvements in Bark-Splitting Machines; and I do declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to the class of machines that are adapted to be used for splitting narrow strips of bark into thin ribbon-like strips or splints to be used in making rustic chair backs or seats or for use in similar articles, the invention having reference particularly to a machine for splitting bark strips that is adapted to be quickly adjusted so as to produce splints of the desired thickness, the machine being also adapted to be adjusted with respect to different cutting disks having different diameters whereby the feeding apparatus may be moved towards the cutting disk when the latter becomes reduced in diameter through wear and repeated grinding.

The objects of the invention are to provide an improved bark splitting machine of stiff construction so as to be adapted to operate accurately and uniformly to produce thin strips or splints of uniform thickness, and to provide a machine of this character which may be readily and accurately adjusted when the cutting disk has been changed or resharpened; a further object being to provide a machine of the above-mentioned character whereby the operations may be performed expeditiously and economically, a particular object being to provide improved feeding apparatus for forcing the stock strips to the cutter reliably at all times regardless of the varying thickness of the strips, and to provide reliable adjusting mechanism that will not be liable to become inaccurate through wear and consequent lost motion.

The invention consists in a bark splitting machine comprising a shaft carrying a cutting disk and journaled in stationary bearings. A table supporting feeding apparatus and adjustable with respect to the cutting disk in two directions preferably horizontally and also vertically, and gearing between the cutting disk shaft and the feeding apparatus; and the invention consists further in the novel parts or elements and the combinations and arrangements of parts as hereinafter particularly described and referred to in the accompanying claims.

Referring to the drawings Figure 1 is a front elevation of the complete machine constructed substantially in accordance with the invention; Fig. 2, an end elevation of the machine omitting the belt for

connecting the cutting disk shaft and the feeding apparatus; Fig. 3, an elevation of the rear side of the machine omitting the belt; the guard for the cutting disk being broken away; Fig. 4, an end elevation of the machine in which a portion of the adjusting apparatus is broken away; Fig. 5, a top plan view of the machine; Fig. 6, a vertical transverse sectional view on the line A A in Fig. 1; Fig. 7, a vertical sectional view on the line B B in Fig. 2; Fig. 8, a fragmentary transverse sectional view on the line C C in Fig. 3; Fig. 9, a fragmentary transverse sectional view on the plane of the line D D in Fig. 5; Fig. 10, a fragmentary transverse sectional view on the line E E in Fig. 1; and, Fig. 11, a top plan of a base member of the table of the machine, the base member being movable with respect to the main portion of the table.

Similar reference characters in the different figures of the drawings designate corresponding elements or features of construction.

In construction an upright main frame is provided which comprises a suitable number of posts 1 to the tops of which are attached horizontal rails 2 connecting the posts together, and horizontal rails 3 connect the lower portions of the posts together. A journal bearing 4 is secured to one of the lower rails and a similar bearing 5 is secured to one of the upper rails in vertical alignment with the bearing 4, and a cutting disk shaft 6 is mounted rotatively in the two bearings extending some distance above the uppermost bearing 5, a suitable cutting disk 7 being secured rigidly to the top of the shaft. A worm gear 8 is secured to the shaft somewhat above the bearing 4 for driving the shaft and the disk. Two bearings 9 and 10 are mounted on two of the lowermost rails 3 at opposite sides of the machine frame and support a rotative drive shaft 11 to which is secured a worm gear 12 that engages the gear 8, the shaft having also a pulley 13 secured thereto for transmitting motion and power to the shaft for operating all of the mechanism of the machine. A pulley 14 (or a relatively larger pulley 14^a as in Fig. 4, in which pulley 13 is omitted) is secured also to the shaft 11 for actuating the feeding apparatus.

A pair of guide rails 15 and 16 are mounted fixedly on the top of the main frame extending from the front to the rear of the machine, both being at one side of the shaft 6 for supporting the table. The base member 17 of the table comprises an open rectangular frame and the under side thereof is suitably fitted on and guided by the rails 15 and 16, the top of the member at one end thereof being provided with a slotted head 18 in which an adjusting screw may operate. The top of the member 17 is provided with two guide rails 19 and 20 that extend along opposite edge portions, and the tops of the rails are inclined with the more elevated ends of the

rails at the rear part of the machine where the head 18 is situated. The main part 21 of the table has its under side fitted to and guided by the rails 19 and 20 so that the main part 21 may slide on its base member 17 and ascend or descend thereon, the under side of the main part being inclined to the same degree as the inclination of the tops of the guide rails 19 and 20. In order to prevent movement of the table after having been adjusted, two clamp bolts 22 and 23 are connected to the main part 21 of the table and extend downwardly through the openings in the main frame and table and through a clamp bar 24, the lower ends of the bolts being provided with hand nuts 25 and 26 that engage the under side of the clamp bar, the clamp bar engaging suitable fixed parts of the main frame, as the rails 2 or one rail 2 and the under side of the rail 15. An adjusting screw 27 is mounted in the head 18 and is screwed into the part 21 of the table and provided with an operating handle 28, the screw being suitably adapted to rotate in the head 18 without moving longitudinally therein, the slot in the head permitting lateral movement of the screw. The screw therefore normally prevents movement as between the main part 21 and the base member 17 of the table in case the clamping nuts 25 and 26 are loosened. A slotted head 29 is suitably secured by means of an arm to the front of the main frame to a rail 2 thereof, and has a screw 30 mounted therein which is screwed into the main part 21 of the table opposite to the screw 27, the screw 30 being provided with an operating handle 31, so that when the clamping nuts 25 and 26 are loose, if the handle 31 be operated the part 21 and the member 17 of the table may together be moved adjustably on the main frame.

A shaft 32 is suitably journaled in the main part 21 of the table under the top thereof and has a feed roll 33 secured thereto on one end thereof opposite to the shaft 6, a gear wheel 34 being also secured to the shaft. An opposing feed roll shaft which is flexible is mounted upon the top of the table and comprises several parts. Two journal bearings 35 and 36 are secured on the top of the table and support a shaft section 37 forming part of the flexible shaft, the section having a gear wheel 38 secured thereto that engages the gear wheel 34. An arm 39 is supported pivotally at one end thereof upon the top of the table part 21, and the arm is provided with an adjusting stop screw 40 that is secured in the arm and normally engages the top of the table to limit the movement of the arm towards the table, the arm being normally held or drawn towards the table by means of a rod 41 which is connected to the arm, a spring 42 on the rod and having one end thereof seated against the under side of the top of the part 21, and a nut 43 screwed onto the rod in engagement with the other end of the spring, permitting the arm 39 to be forced away from the top of the table. A shaft section 44 is connected by a universal coupling 45 to the shaft section 37 and is connected also by a universal coupling 46 to a shaft section 47 which is suitably journaled in the arm 39, the section 47 having a feed roll 48 secured thereto above the roll 33. A pair of opposing guides 49 and 50 are secured fixedly to the top of the table part 21 at opposite sides of the feed roll 48. A pulley 51 is secured to the shaft section 37 and a belt 52 connects this pulley with the pulley 14 (or with the pulley 14^a) for connecting the splitting mechanism with the feed-

ing apparatus. A bracket 53 is secured to the top of the main frame and supports a cutter guard 54 which is curved partially around the periphery of the cutting disk 7.

In practical use the machine may be set in motion and then a narrow strip of bark of natural thickness is placed with its inner side downward upon the top of the table part 21 between the guides 49 and 50 and pushed between the feed rolls 33 and 48 which will force the strip against the cutting edge of the disk 7, the disk splitting the bark so as to divide a thin ribbon like strip from the thicker stock strip, the thinner strip passing below the disk, and the remaining part of the strip passing above the disk to be caught by the operator after completing an operation to be drawn back and again started through the guides and feed rolls for splitting off another thin strip, and so on repeatedly until the stock strip has been entirely split up into the thin ribbon like strips. If the strips produced are not of the desired thickness the clamping nuts 25 and 26 may be loosened and the base member 17 may be moved slightly by means of the screw 27, so as to adjust the top part 21 of the table either higher or lower as may be desired with respect to the cutting edge of the disk 7, and then the clamping nuts are to be again tightened. If it be desired to re-adjust the guides and feed rolls with respect to the cutting edge of the disk 7, the clamping nuts 25 and 26 should be loosened and then the whole table with the feeding apparatus may be re-adjusted by operating the screw 30, after which the clamping nuts should be again tightened.

It will be observed that all of the bearing parts which support the feeding apparatus are widely separated so as to not be affected materially by lost motion, and that after re-adjustments the normal stationary parts may be rigidly fixed.

It will be observed also that while the strips of varying thickness of bark are passing between the feed rolls, the roll 48 will rise and fall automatically without being tilted on its axis, so that the best results may be attained in operation.

Having thus described the invention, what is claimed as new is—

1. A bark-splitting machine including a main frame having two guide rails thereon, a cutting disk mounted on the frame, a table base-member mounted adjustably on the guide rails and having two inclined guide rails on the top thereof, and a table top part mounted adjustably on the inclined guide rails and having feeding apparatus mounted thereon.

2. A bark-splitting machine including a main frame, a cutting disk mounted on the frame, a table base-member mounted adjustably on the frame and having inclined rails, a table top part mounted adjustably on the guide rails of the base member and having feeding apparatus mounted thereon, a screw for holding the top part or for adjustment thereof, and a screw for holding the top part against movement on the base member or for moving the base member between the frame and the top part.

3. A bark-splitting machine including a main frame provided with a slotted head, a cutting disk mounted on the frame, a table base-member mounted adjustably on the frame and provided with a slotted head and also inclined guide rails, a top part mounted adjustably on the guide rails and having two adjusting screws operating therein, one screw being mounted in the slotted head of the frame, and the other screw mounted in the slotted head of the base member, and feeding apparatus mounted on the top part.

4. A bark-splitting machine including a main frame hav-

ing a table base-member mounted adjustably thereon that has inclined top parts, a cutting disk mounted on the frame, a table top part mounted adjustably on the inclined top parts of the base-member and having a clamp-bolt connected therewith, a clamp-bar on the clamp-bolt and normally engaging the frame, a clamping nut on the clamp-bolt engaging the clamp-bar, means for moving the base member adjustably between the table and the top part, and feeding apparatus mounted on the top part.

10 5. A bark-splitting machine including a main frame, a cutting disk mounted on the frame, a table mounted on the frame adjustably, a pair of shafts mounted rotatively on the table and having each a feed roll secured thereto, one of the shafts being flexible, operating gearing connecting the shafts together, a drive pulley secured to one of the shaft, a pair of guides fixed on the table at opposite sides of one of the feed rolls, and means for adjusting the table vertically.

20 6. A bark-splitting machine including a main frame, a cutting disk mounted on the frame, a table mounted adjustably on the frame and provided with means for controlling its adjustability with respect to the frame, a lower feed roll shaft mounted in the table under the top thereof and having a feed roll secured thereto, a flexible feed roll shaft mounted upon the top of the table and comprising a shaft section mounted in stationary bearings and geared to the lower feed roll shaft, a shaft section mounted in movable bearings and having a feed roll secured thereto, the two shaft sections having each a universal coupling connected thereto, and a shaft section connected to the universal couplings.

35 7. In a bark-splitting machine, the combination of a main frame, a cutting disk mounted on the frame and provided with a curved guard, a table base-member mounted adjustably on the frame and having inclined guides, a table top part mounted adjustably on the guides, a drive shaft mounted in the frame and geared operatively with the cutting disk, an arm pivoted on the table top part and provided with a stop, a roll shaft section mounted on the arm and having a flexible shaft connected therewith, a feed roll secured to the roll shaft section, guides mounted at opposite sides of the feed roll, a pulley secured

to the flexible shaft, a belt connecting the pulley with the drive shaft, and a spring for the pivoted arm to draw it yieldingly towards the table top.

8. In a bark-splitting machine, the combination with a frame and a cutting disk mounted thereon, of a table comprising a top part and a wedge-shaped base-member adjustable either with respect to the other and mounted with the base member adjustable on the frame, an adjusting screw operatively connecting the top part with the base member, an adjusting screw operatively connecting the top part with the frame, means for binding the table securely to the frame, and feeding apparatus mounted on the top part of the table.

9. In a bark-splitting machine, the combination with a frame and a cutting disk mounted thereon, of a table mounted on the frame, an arm pivoted on the table and provided with a stop, a roll shaft mounted on the arm, a feed roll secured to the shaft, a pair of guides mounted on the table at opposite sides of the feed roll, a lower feed roll shaft mounted in the table under the top thereof and having a feed-roll secured thereto to cooperate with the other feed-roll and the pair of guides.

10. In a bark-splitting machine, the combination with a frame and a cutting disk mounted thereon, of a table mounted on the frame, a pair of guides mounted on the table, a lower feed-roll shaft mounted in the table under the top thereof and having a feed-roll secured thereto, a flexible feed-roll shaft mounted on the top of the table and comprising a shaft section mounted in stationary bearings and geared to the lower feed-roll shaft, a shaft section mounted in movable bearings and having a feed-roll secured thereto between the guides, the two shaft sections having each a universal coupling connected thereto, and a shaft section connected to the universal couplings, and means for forcing one feed-roll yieldingly towards the other feed-roll.

In testimony whereof, I affix my signature in presence of two witnesses, on the 23rd day of April, 1907.

HARRISON L. STALEY.

Witnesses:

MAX SHIREMAN,
EUGENE C. SHIREMAN.