

915,919.

A. R. WILKINSON.
WOOD ROSSER.
APPLICATION FILED MAY 16, 1908.

Patented Mar. 23, 1909.
4 SHEETS—SHEET 1.

Fig. 1—

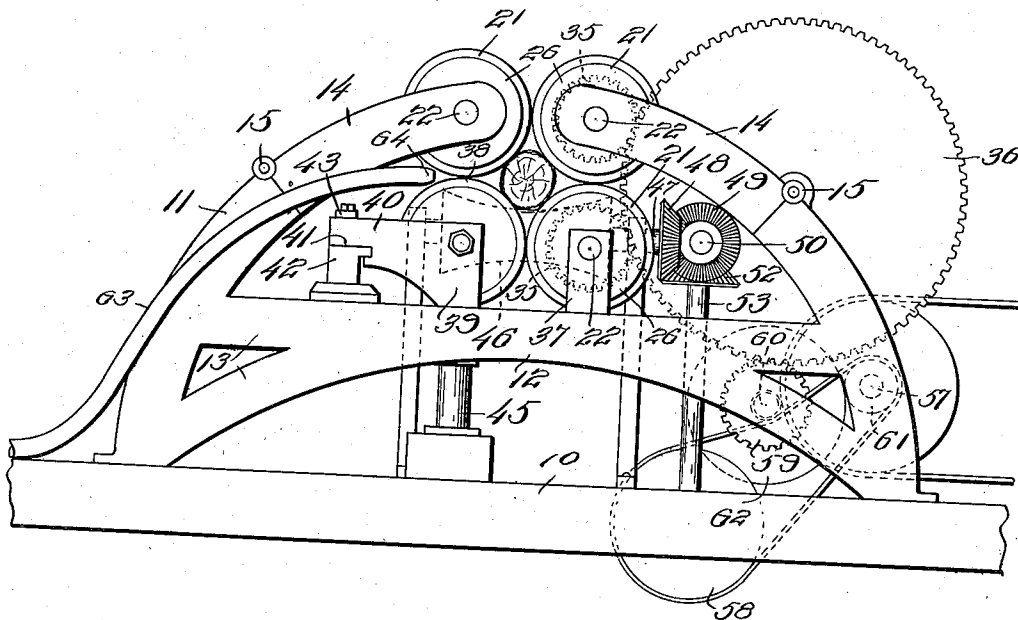


Fig. 4—

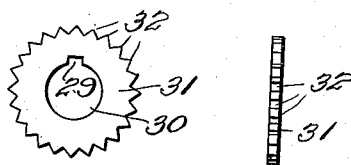
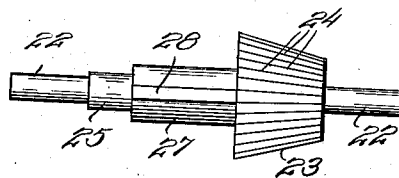


Fig. 5—

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4 SHEETS—SHEET 2.

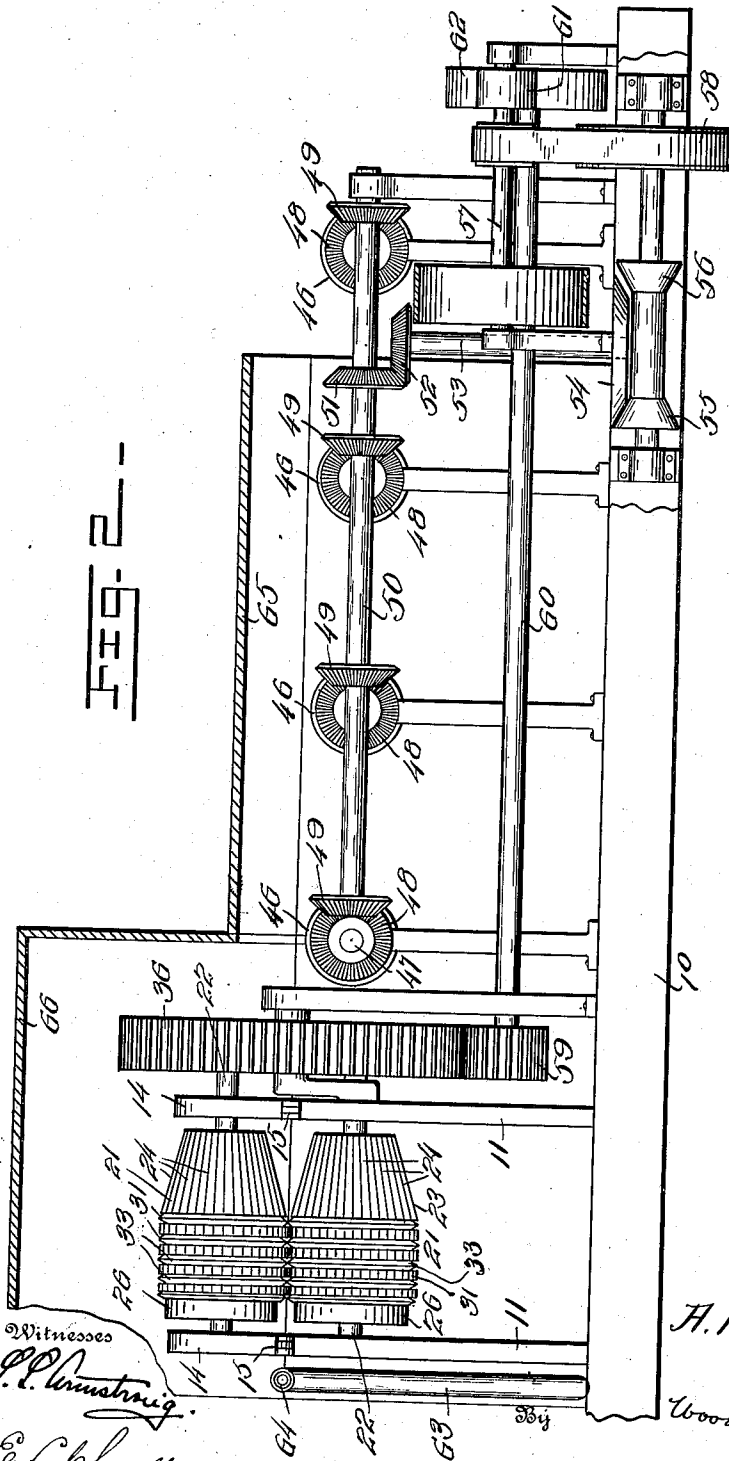


Fig. 2--

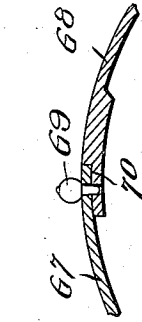


Fig. 10--

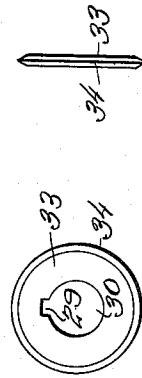


Fig. 6--

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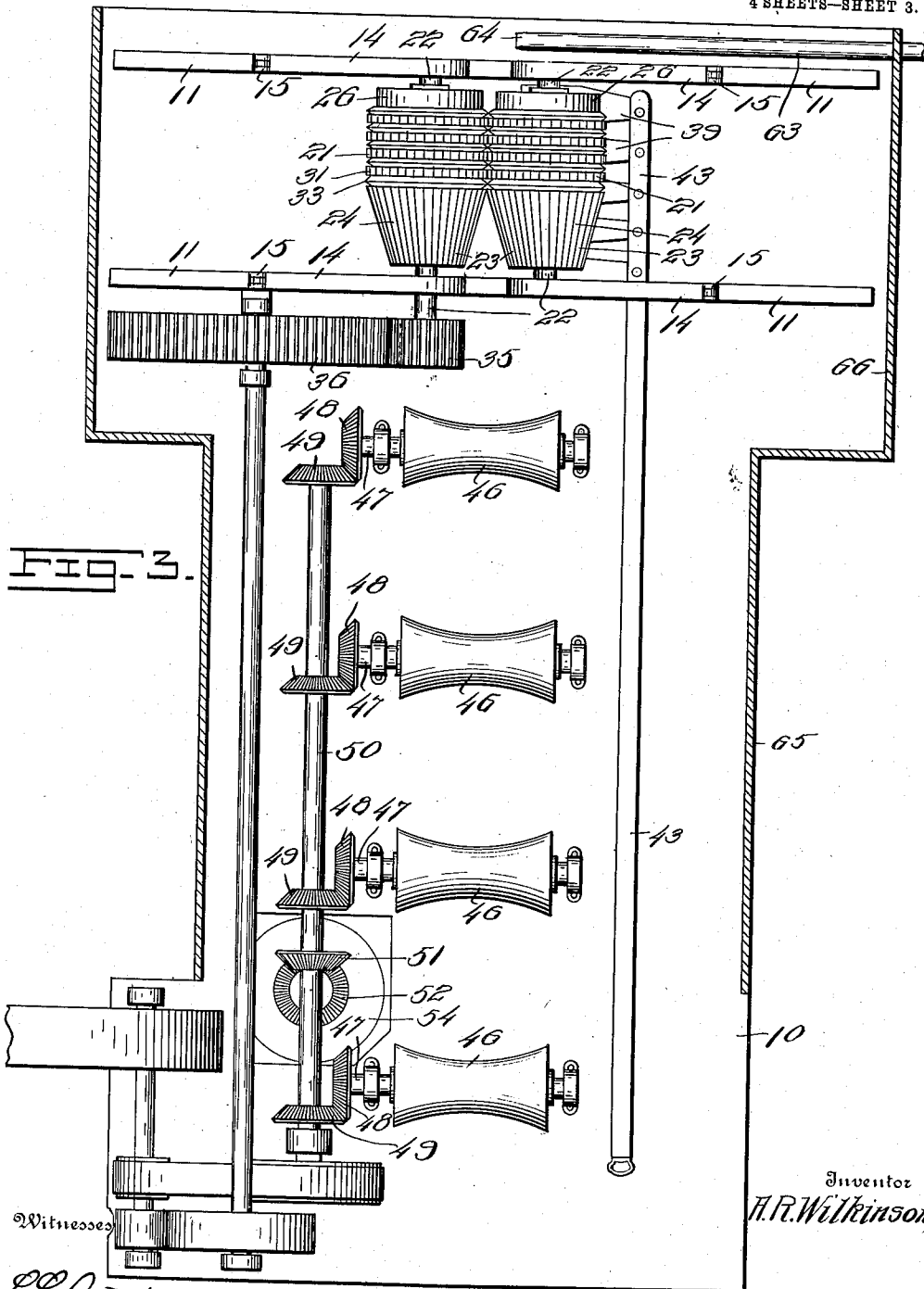
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

FIG - 7 -

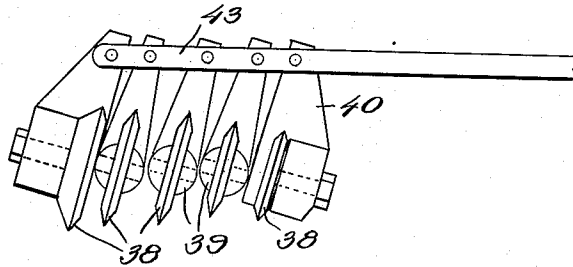


FIG. 8.

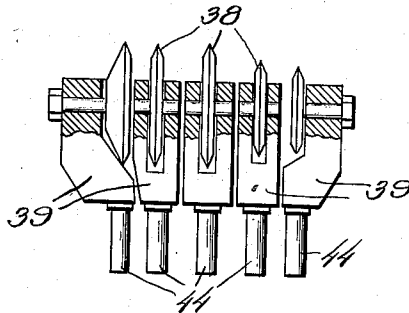
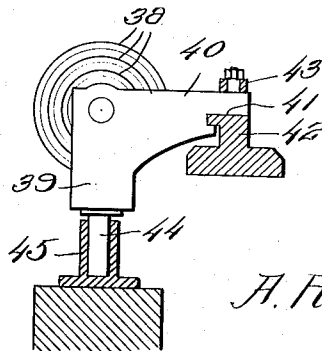


FIG. 9.



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UNITED STATES PATENT OFFICE.

ALBERT R. WILKINSON, OF ASHBURNHAM, MASSACHUSETTS.

WOOD-ROSSER.

No. 915,919.

Specification of Letters Patent.

Patented March 23, 1909.

Application filed May 16, 1908. Serial No. 433,279.

To all whom it may concern:

Be it known that I, ALBERT R. WILKINSON, a citizen of the United States, residing at Ashburnham, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Wood-Rossers, of which the following is a specification.

This invention relates to pulp making machines having special reference to the removal of the bark from logs preparatory to the grinding in the process of making pulp.

An object of the invention is to obviate all waste of the wood fiber in the removal of the bark.

Another object is to provide such a means which will not rasp the wood while removing the covering of bark from the log.

A further object is to employ especially constructed rolls which will be more efficient in the performance of their functions than any heretofore employed and which will admit of sharpening while the machine is in operation without the removal of the rolls.

A still further object is to construct a cutter roll that will admit of the feeding of the log with greater facility.

The invention has for a further purpose the adaptability of such a mechanism to logs of varying diameters which can be easily and readily adjusted.

Other objects and advantages will be apparent from the following description and it will be understood that changes in the specific structure shown and described may be made within the scope of the claims and that any suitable materials may be used without departing from the spirit of the invention.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a rear end elevation of the complete machine, the casing being removed. Fig. 2 is a side elevation of the same, the casing being removed, Fig. 3 is a top plan view showing the casing in open position, Fig. 4 is a side elevation of one of the cutting rolls, Fig. 5 is a side and end elevation of one of the transverse cutters, Fig. 6 is a side and

end elevation of one of the peripheral cutters, Fig. 7 is a detailed top plan view of the feeding disks and operating mechanism, Fig. 8 is a side elevation of the same. Fig. 9 is an end elevation of Fig. 7, Fig. 10 is a detailed and enlarged view of the fastening means for securing the casing.

Referring to the drawings 10 designates a suitable base upon which there is mounted a cast web frame 11 of preferably semicircular form. The frame 11 is reinforced by the webbed cross beam 12 which is forked as at 13 at its ends and to which is joined the main frame 11, it being cast integrally therewith. The frame 11 carries at each upper end arms 14 which are hinged at 15 and which form a continuation of the semicircular contour of the frame 11.

In the upper ends of the arms 14 are journaled cutter rolls 21 which are adapted to be raised as occasion requires it as hereinafter described. The rolls 21 comprise spindles 22 carrying integrally formed conical sections 23 tapering toward the forward ends of the spindles 22 and having pluralities of longitudinally disposed blades 24 formed upon their peripheries. The opposite ends of the spindles 22 are enlarged at 25 to support annular binding members 26. In immediate proximity to said enlargements there are intermediate enlarged sections 27 of the spindles 22, which are of a still greater diameter than the portion 25 and carry on one of their sides longitudinal beads 28 adapted to engage in recesses 29 communicating with the central apertures 30 of cutters 31 which are passed over said sections 27 and form the rolls 21. The cutters 31 have a plurality of transverse blades 32 formed upon their peripheries which when placed upon the spindles 22 have the same position as the longitudinal blades 24. Cutters 33 are also provided for the rolls 21 which differ from the cutters 31 in so much as the cutting edge 34 is peripheral and not disposed transversely upon the cutters. The cutters 31 and 33 are alternately slipped upon the enlarged section 27 of the spindle 22 and are held in position by the annular binding

member 26. Mounted upon the outer end of the spindle 22 is a pinion 35 meshing with a gear 36 which rotates said roll 21. Two of the rolls 21 are mounted in the ends of arms 14 while a third roll 21 is mounted in a journal 37 which is carried upon the upper face of the beam 12 directly beneath the journal end of the arm 14. A pinion 35 is employed in rotating this lower roll 21 through its connection with the gear 36.

A plurality of guiding and cutting disks 38 are separately carried in pivotally mounted journals 39 carrying a series of backwardly extending arms 40. The ends of the arms 40 are undercut as at 41 to receive and travel on a runway 42. An operating lever 43 is pivoted to the arms 40 at their outer ends at equidistant points, which arrangement disposes said arms 40 in parallel. The journals 39 have downwardly extending spindles 44 which are rotatably mounted in vertical bearings 45. Toward the forward end of the machine the disk cutters 38 are reduced in diameter to register with the conical portion 23 of the roller 21. The disks 38 are adapted to be turned in different planes for the purpose of regulating the feed of the log when passing between the rolls 21. A plurality of concave rollers 46 are horizontally mounted at the entrance of the machine over which the logs are passed as they are fed to the reduced ends of the rolls 21 and feed regulating disks 38. These rollers 46 are mounted upon shafts 47 carrying gears 48 which mesh with gears 49 carried by the power shaft 50. A bevel gear 51 meshes with a second bevel 52 which is carried by a counter shaft 53. Upon the lower end of said counter shaft 53 is carried a large friction pulley 54 having an iron friction surface alternately engaging with friction pulleys 55 and 56 which have a friction surface of paper and are carried by the main power shaft 57 being operated through pulleys 58.

The rolls 21 which are driven through pinions 35 and gear 36 are operated by a pinion 59 meshing with the gear 36, said pinion 59 being carried by a power shaft 60 driven by suitable pulleys 61 and 62, the pulleys 61 and 62 having paper and iron friction engaging surfaces respectively.

For the purpose of removing the bark when it is loosened from the log a jet of water is employed. The water enters the machine through the pipe 63 and out of the nozzle 64 under a heavy pressure.

The whole apparatus is inclosed in a metallic casing 65 which is enlarged at one end as at 66 adapted to confine the water as it passes over the log and conveys the refuse out of the opposite end of the machine. The metallic casing 65 is formed of sheet metal and has upper hinged portions 67 and 68 which swing longitudinally of the casing and are secured

in a closed position by a catch pin 69 passing through the cover 67 and through and under projecting lip 70 carried by the cover 68.

In operation, logs are introduced into the machine over the rollers 46 and are fed to the tapering ends of the rolls 21. The log being engaged by the rolls is given a rotary motion and is drawn through the rollers by action of the disks 38. The disks 38 are turned into a plane at an acute angle to the axis of the log and thereby a screw feeding action operates the longitudinal movement of the log. The rolls being in operation the log is cut transversely and also longitudinally chopping the bark into small fragments. Water is then admitted to the machine under a heavy pressure which is governed by the adhering qualities of the barks of various woods, when the small fragments of bark will be forced from the wood and carried off from the machine. If a log of larger than usual diameter is to be passed through the machine then the rolls 21 are raised which act enlarges the space between the rolls for the admission of the log. By changing the angle of the disks 38 by the lever 43 the speed of the log is changed as it passes through the rolls.

What is claimed is:—

1. A wood rossing machine comprising a frame, a cutting roller disposed in said frame, guiding disks adjustably disposed on said frame in parallel and juxtaposition with said cutting roller, arms mounted on said frame, cutting rolls disposed in the outer extremities of said arms adapted to rest upon said first cutting roll and said guiding disks for the purpose of impinging logs therebetween, a casing adapted to inclose said rolls and said cutting disks and means for directing water under pressure upon logs disposed between said cutting rolls and said feed disks.

2. A wood rossing machine comprising a frame, a cutting roll mounted in said frame, a plurality of guiding disks disposed in said frame in such position as to admit of horizontal movement, pivoted arms disposed upon said frame, cutting rolls mounted in the extremities of said arms, means for rotating one of said cutting rolls, means for horizontally moving said disks a casing for inclosing said rolls and means for directing water under pressure against logs interposed between said cutting rolls and said disks.

3. A wood rossing mechanism having cutting rolls, said cutting rolls comprising spindles, a tapered portion, longitudinal knives on said tapered portion, a plurality of disks having transverse knives, a plurality of disks having peripheral knives, said disks alternately disposed on said spindle, and an annular binding member for securing said disks in operative position.

4. A wood rossing machine comprising a body portion, cutting rolls mounted in said

body portion, a plurality of vertical bearings
mounted in said body portion, a plurality of
spindles disposed in said bearings, journals
positioned upon the upper extremities of said
5 spindles, a plurality of guiding disks mount-
ed in said journals, a plurality of backwardly
extended arms having undercut portions in
their outer extremities, a runway mounted
on said body portion to engage in said under-

cut portion and an operating lever pivotally 10
secured across the outer extremities of said
backwardly extended arms.

In testimony whereof I affix my signature,
in presence of two witnesses.

ALBERT R. WILKINSON.

Witnesses:

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WALTON B. WHITNEY.