

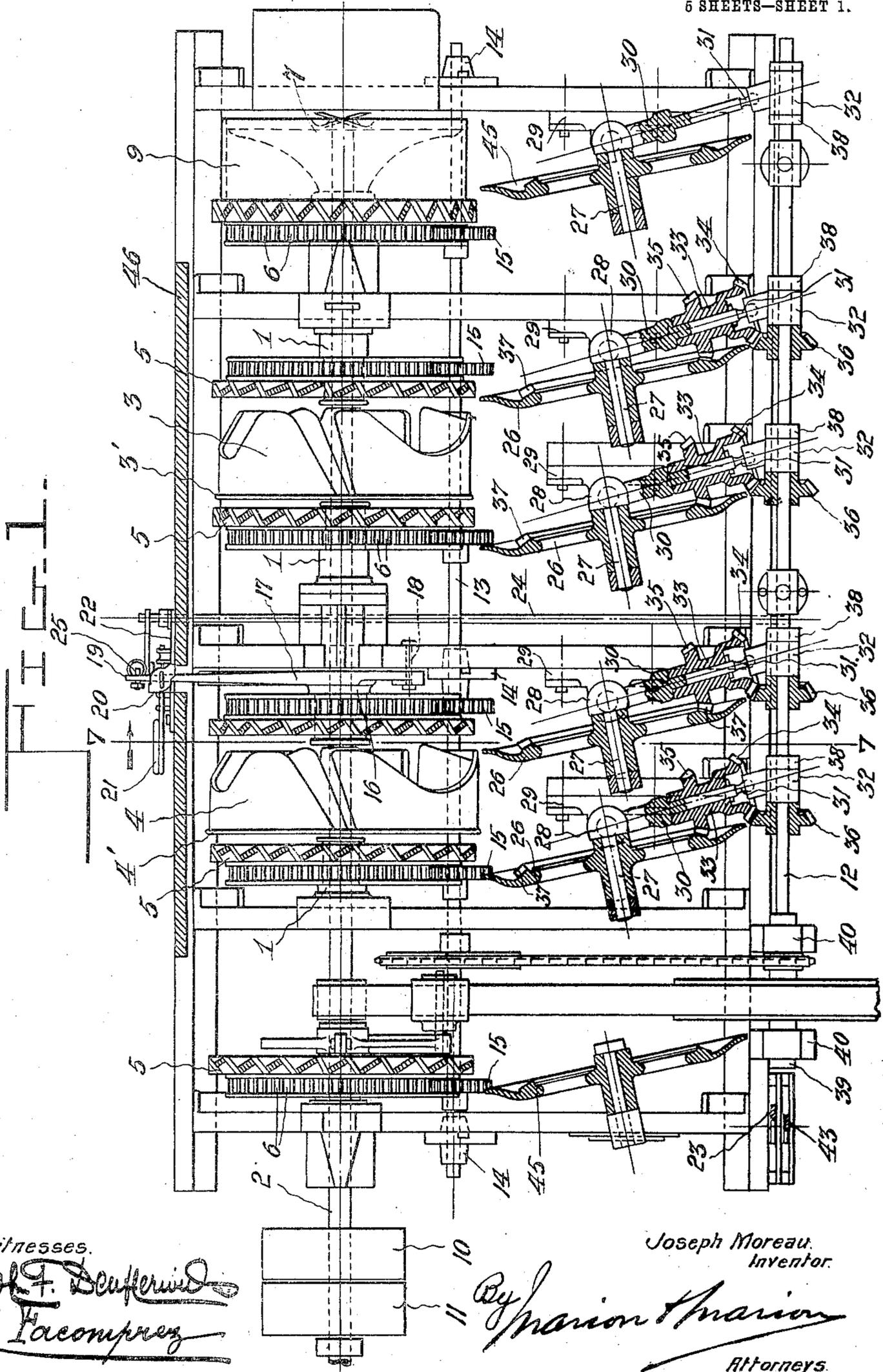
J. MOREAU.
ROSSING MACHINE.

APPLICATION FILED MAY 15, 1908.

924,918.

Patented June 15, 1909.

6 SHEETS—SHEET 1.



Witnesses.
John F. Defferies
C. Faconprez

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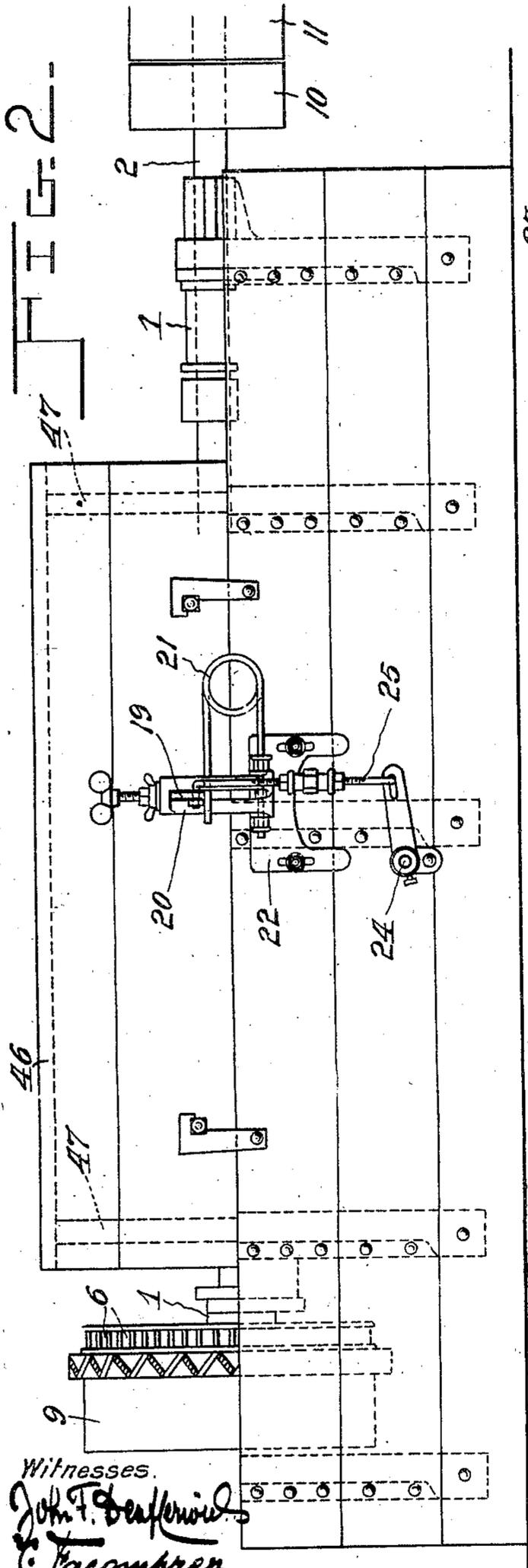
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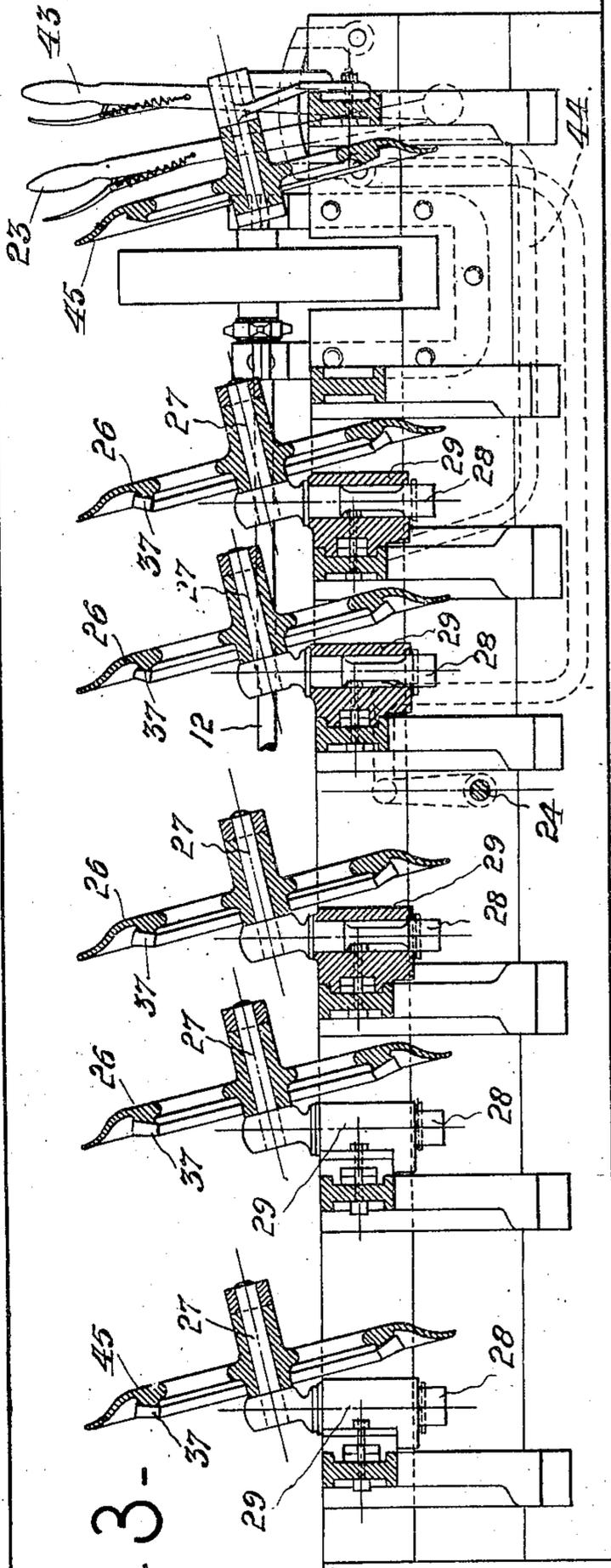


Fig. 3 -

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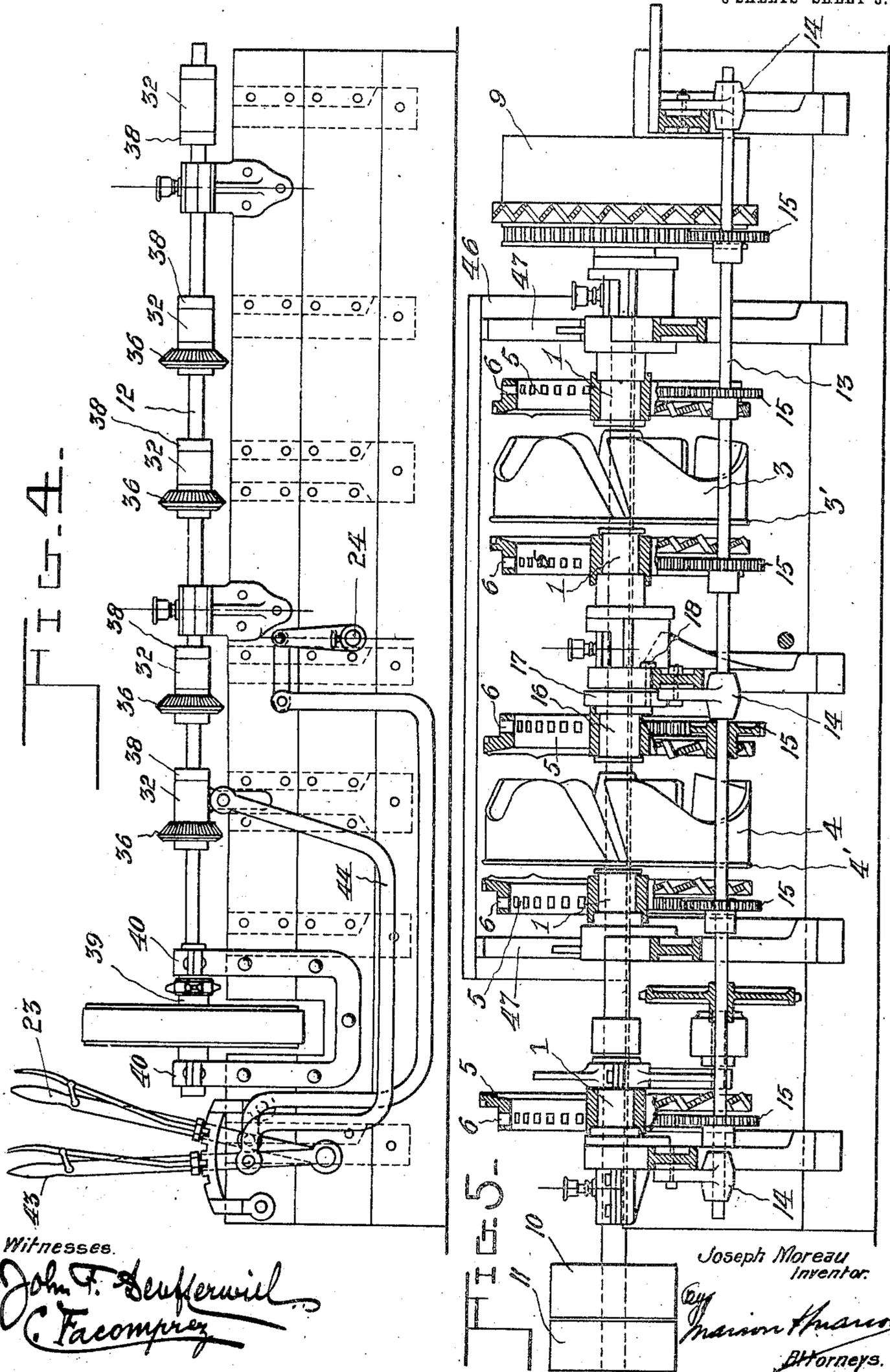
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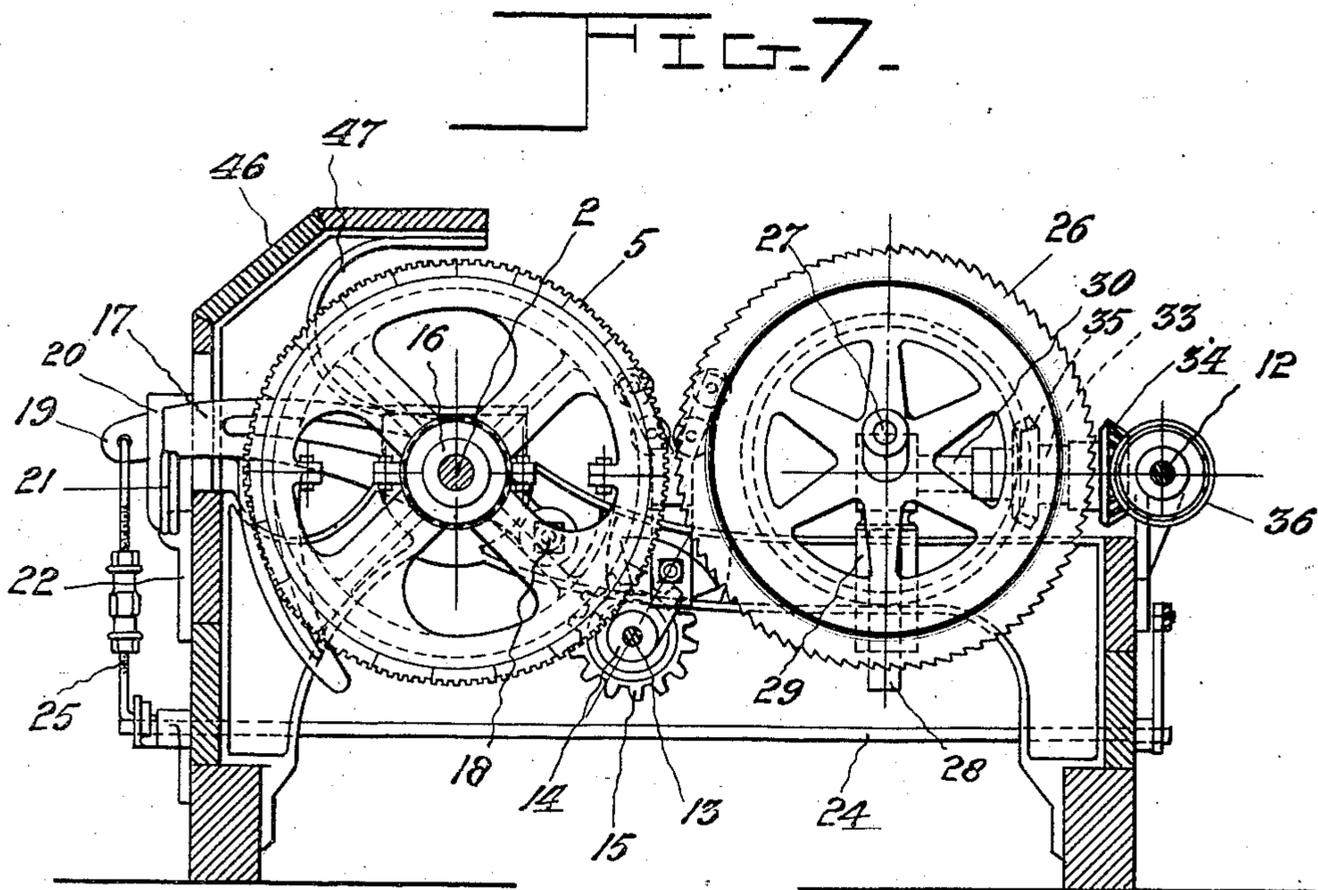
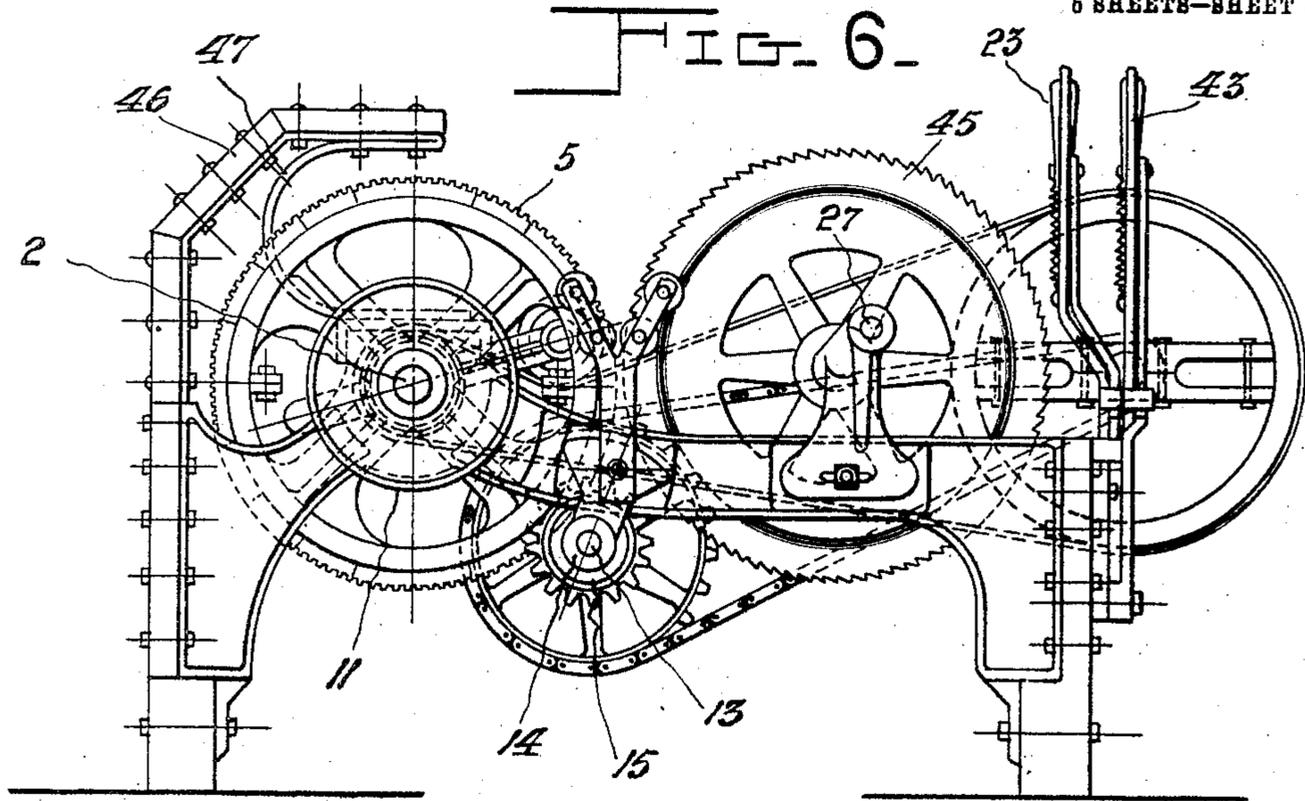
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6 SHEETS—SHEET 4.



Witnesses.

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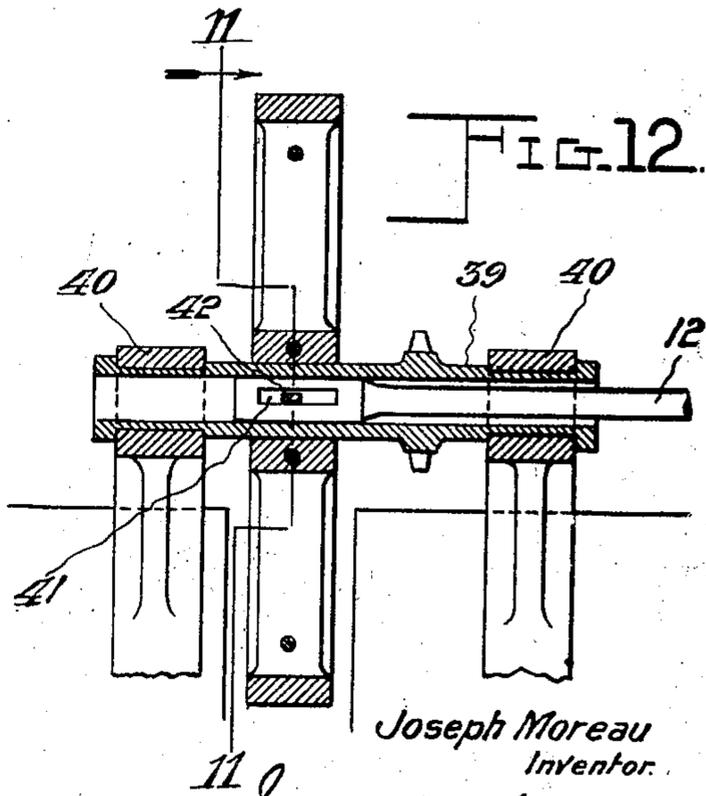
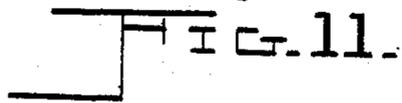
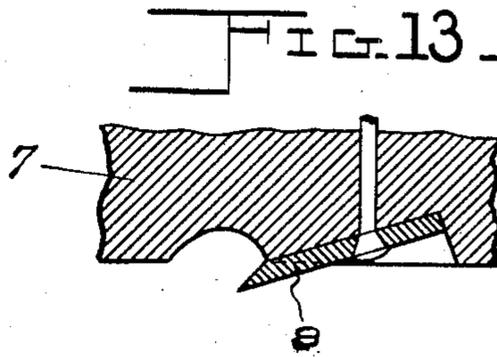
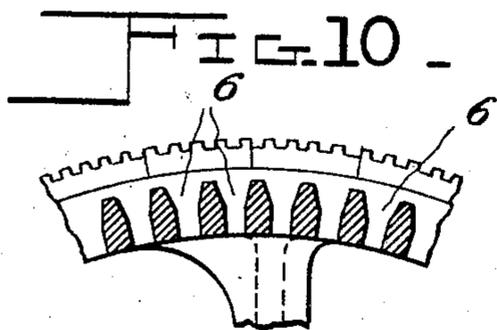
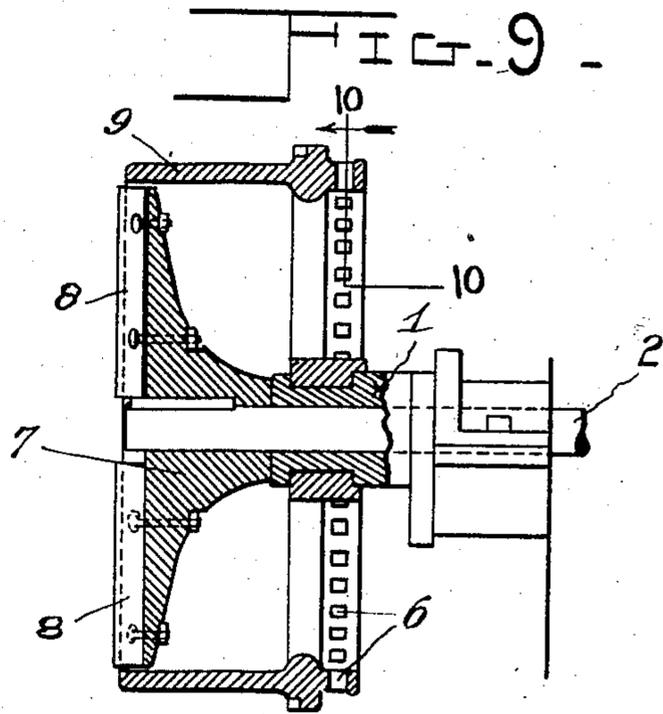
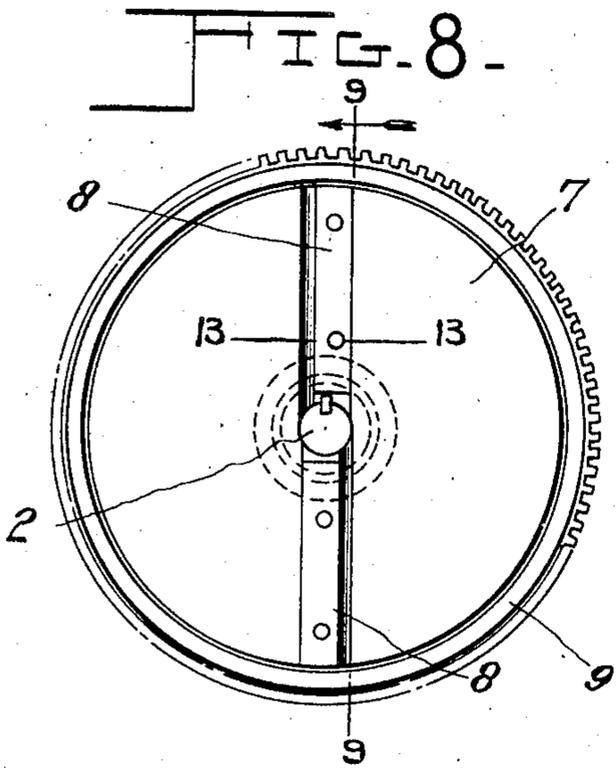
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6 SHEETS—SHEET 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOSEPH MOREAU, OF ST. GERMAIN DE GRANTHAM, QUEBEC, CANADA.

ROSSING-MACHINE.

No. 924,918.

Specification of Letters Patent.

Patented June 15, 1909.

Application filed May 15, 1908. Serial No. 432,968.

To all whom it may concern:

Be it known that I, JOSEPH MOREAU, a subject of the King of Great Britain, residing at St. Germain de Grantham, county of Drummond, in the Province of Quebec, Canada, have invented certain new and useful Improvements in Rossing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention to be hereinafter described relates to rossing or wood barking machines, and is particularly adapted for removing bark from pulpwood.

The object of the invention is to produce a simplified and improved machine over that described in my United States Patent No. 827,747.

Broadly speaking, the machine comprises a suitable framework, log feeding, log turning, knot cutting and log barking mechanism; means for rendering the log barking mechanism inoperative during the operation of the remaining mechanism, means for varying the operation of the log feeding mechanism; all said mechanisms and means being mounted on the framework.

In order to enable one skilled in the art to which the invention applies to the more readily understand the construction, operation and use of the machine, reference should be had to the accompanying drawings forming part of the present application, in which drawings like reference characters designate the same parts throughout the several views.

In the drawings: Figure 1 is a plan view of the machine, the log feeding mechanism being shown in section; Fig. 2 is a side elevation, showing the means for adjusting the tension of the yoke for rendering the rossing wheel inoperative; Fig. 3 is a vertical longitudinal section, showing the log feeding disks and their supports in section; Fig. 4 is a side elevation opposite to that shown in Fig. 2, and showing the levers for operating the feed changing mechanism and the yoke operating mechanism; Fig. 5 is a vertical longitudinal section through the log turning mechanism; Fig. 6 is a left-hand end view of Fig. 1; Fig. 7 is a cross section on line 7—7 of Fig. 1, looking in the direction of the arrow; Fig. 8 is a front view of the rotary cutter head; Fig. 9 is a section on line 9—9 of Fig. 8, looking in the direction of the arrow; Fig. 10 is

a section on line 10—10 of Fig. 9; Fig. 11 is a section on line 11—11 of Fig. 12, looking in the direction of the arrow; Fig. 12 is a vertical longitudinal section, showing the connections between the pulley and the shaft for driving the log feeding means; and, Fig. 13 is a section on line 13—13 of Fig. 8.

Any suitable solid form of framework may be used for supporting the various working parts of the machine. In the preferred construction, however, it comprises a plurality of longitudinal beams placed substantially parallel with one another, and connected together by a number of strong lateral cross beams, which may be used for several purposes other than that of simple frame elements, all as will later appear.

Each of the cross beams may carry near one end an upright arm, on which is formed or mounted a tubular bearing 1, in which turns the main shaft 2 of the machine, to which are fixed the knot cutter 3 and rossing wheel 4, each comprising substantially cylindrical heads provided with elongated openings through which cutting knives project. It will be noted that the knot cutter 3 and rossing wheel 4 are each provided with flanges or circumferential ribs 3' and 4' respectively. These ribs serve to prevent logs from being too tightly pressed against the cutting knives. Such excessive pressure against the knives would result in shaving or cutting off the wood together with the bark. On the outer faces of the bearings 1 are mounted freely rotatable log turning wheels 5, each provided with oblique rows of gripping teeth, which engage and turn the logs, so that the knot cutter and rossing wheel may operate on all sides of them. The rim of each of these wheels is provided with perforations 6, which pass completely through the same and cooperate with the teeth of driving pinions, thus providing means for driving the wheels. The great advantage in having the openings 6 pass completely through the rim, is that the chips, dirt, bark, &c., cannot collect in the openings and clog them, as would otherwise be the case.

To the forward end of the shaft 2 is fixed a rotary cutter head 7, carrying the cutter blades 8. About the cutter head is disposed a cylindrical guard 9, which revolves freely in an annular seat on the shaft 2, and is provided with openings 6 and oblique gripping teeth similar to those of the log turning wheels 5. This cutter is provided so that

hard lumps, "swells", large knots, and the like, may be cut from the logs before feeding them through the machine.

For operating the machine, fixed and loose pulleys 10 and 11 respectively are mounted on the shaft 2 and driven by any suitable form of belt or similar means. At the opposite side of the machine, and substantially parallel with the shaft 2, a second shaft 12 is mounted in bearings carried by the frame, and is driven from the first shaft through suitable belt and pulley connections. From this second shaft 12, a countershaft 13, mounted in hangers 14 dropped from the lateral frame members, is driven by suitable sprocket and chain connection. The shaft 13 carries a plurality of pinions 15, the teeth of which cooperate with the openings 6 in the rims of the walls 5 to drive the same.

At times it is desirable to render the rossing wheel inoperative, while the other mechanisms are working. The most practical way to do this is to so mount one of the log turning wheels that it may be moved to guide the logs away from the rossing wheel. For this purpose, the wheel 5, just in advance of the rossing wheel, instead of being mounted on a stationary bearing similar to that of the other wheels, is mounted on a stub shaft or pintle 16, carried by a yoke 17, which is pivoted at 18 to an upright carried by one of the frame members. To the yoke 16 is fixed the lever arm 19, which is extended through the side of the framework and allowed a limited amount of play in a slotted bracket 20, being normally maintained in raised position by means of the adjustable spring 21, one end of which projects through a slotted guide in the bracket 20 and forms a seat for the lever end, while the opposite end is seated in a plate 22 adjustably secured to the machine frame. Thus, normally, the lever arm is held raised, retracting the wheel 5 carried by the yoke and allowing the free working of the rossing wheel 4. Should it be desired to project the wheel carried by the yoke beyond the face of the rossing wheel 4 so that the logs would be held away from the rossing wheel, the hand lever 23 will be thrown to the left, thus rocking the shaft 24, and, through the link connection 25, drawing down the lever arm 19.

In order to feed the logs through the machine from the receiving to the delivery end past the knives 3 and 4, a plurality of adjustably inclined rotary serrated feed disks 26 are used, each disk having a vertical inclination as well as a variable inclination relative to the direction of feed of the lugs. Each of the disks is mounted to revolve freely about a pintle 27 carried in the head of a post 28, which is revolubly mounted in the vertical bearing sleeve 29 carried in the frame members. To the heads of the post 28 are also secured, rigidly, arms 30, having

ball and socket connections 31 with sleeves 32 on the shaft 12. Thus it will be seen that as the sleeves 32 are moved, the disks will be oscillated to change their inclinations relatively to the direction of feed of the lugs. Of course, as the inclination of the disks varies or is changed, so will the rate of feed of the lugs vary or be changed.

On the arms 30 are revolubly mounted sleeves 33, provided with beveled pinions 34 and 35, which mesh with beveled pinions 36 fixed to the shaft 12 and beveled gear teeth 37 on the rear faces of the disks. Of course, the gear teeth are all of sufficient depth to maintain driving connections while the disks 26 are oscillated. The sleeves 32 are held between collars 38 fixed to the shaft 12, and the pinions 36 are also fixed thereto, and consequently must move longitudinally with the shaft, though the shaft is free to revolve without turning them.

It is obvious that the driving connections between the shafts 2 and 12, and between the shaft 12 and countershaft 13, should not be altered by the longitudinal shifting of the shaft 12, as it is moved to change the feed of the logs. To that end, the pulley and sprocket wheel respectively of such connections are made fast to a tube 39 revolubly mounted in bearings in posts 40 at the delivery end of the machine, and the shaft 12 has one end inserted within the tube and provided with an elongated slot 41, through which is passed the key 42, which fastens both the tube 39, and pulley thereon, to the shaft 12, in such manner that they are all forced to rotate together as a unit, although the shaft may be moved longitudinally in the tube for the full length of the slot 41, without moving either tube or pulley.

In order to shift the shaft 12 as desired, a hand lever 43 is pivoted to the frame adjacent to the delivery end of the same, and to this lever is connected one end of an arm 44, the other end being connected to one of the sleeves 32. Thus when the lever is swung to the left or right, the disks, through the connections previously mentioned, will be swung in the opposite direction.

At the two opposite ends of the machine are placed idlers 45, similar in all respects to the disks 26, and having similar connections with the shaft 12, with the exception of the driving gears, which, of course, are omitted, these idlers acting merely as additional supports and guides for the log.

The cutting or working parts of the machine are covered over by a hood or guard 46, which may be either removably bolted to supports 47 forming part of the framework, or may be rigidly secured thereto. It is preferable, however, to have the hood removably secured, so that it may be taken off, and any accumulation of chips, bark, or other debris cleaned away.

In the present application the improvements are chiefly confined to the following parts of the machine: 1st, the driving connections between the shafts 2 and 12, and 5 12 and 13 whereby the shaft 12 may be shifted longitudinally without shifting the pulley or sprocket wheel thereon, as shown in Figs. 11 and 12; 2nd, the particular forms of the gears or openings 6 as shown in Figs. 10 5, 9 and 10; and, 3rd, the cutter head, as shown in Figs. 1, 5 and 9.

From the foregoing it will be noted that the gearing and more complicated parts of the mechanism are located at a distance 15 from the barking and cutting mechanism, and thus are not likely to become clogged by chips or bark during the operation of the machine.

It is clear that many changes may be made 20 in the construction of the several parts of the machine, that many rearrangements of these parts and many other combinations of them may be had, and that many substitutions for them may be made, without in any way de- 25 parting from the field and scope of the present invention, and it is meant to include all such within this application, wherein only a preferred form of the machine has been shown and described.

50 Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. In an apparatus of the character described the combination of cutting wheels, 35 coöperating sets of log turning wheels and feed disks, a power shaft for driving said cutting wheels, a counter-shaft for driving said log turning wheels, a shaft for driving said feed disks, a revolubly mounted tubular 40 sleeve adapted to slidably receive the last named shaft, a pulley mounted on said sleeve, driving connections between said pulley and the aforesaid power shaft, a sprocket on said sleeve, driving connections between 45 said sprocket and the aforesaid counter-shaft, and sliding connections between the shaft for driving the feed disks and said tubular sleeve whereby said shaft may be moved to adjust the angle of said feed disks.

50 2. In an apparatus of the character described, the combination of cutting wheels, coöperating sets of log turning wheels and feed disks, a power shaft for driving said cutting wheels, a counter-shaft for driving said 55 log turning wheels a shaft for driving said

feed disks, a revolubly mounted tubular sleeve adapted to slidably receive the last named shaft, a pulley mounted on said sleeve, driving connections between said pulley and the aforesaid power shaft, a sprocket 60 on said sleeve, driving connections between said sprocket and the aforesaid counter-shaft, and sliding connections between the shaft for driving the feed disks and said tubular sleeve and the pulley thereon whereby 65 said shaft may be moved to adjust the angle of said feed disks.

3. In an apparatus of the character described, the combination of cutting wheels, 70 coöperating sets of log turning wheels and feed disks, a power shaft for driving said cutting wheels, a counter shaft for driving said log turning wheels, a shaft for driving said feed disks, a revolubly mounted tubular 75 sleeve adapted to slidably receive the last named shaft, a pulley mounted on said sleeve, driving connections between said pulley, and the aforesaid power shaft, a sprocket on said sleeve, driving connections between 80 said sprocket and the aforesaid counter-shaft, and sliding connections between the shaft for driving the feed disks and said tubular sleeve and the pulley thereon, said connections comprising a pin passing loosely 85 through the shaft, through the sleeve and into the pulley whereby said shaft may be moved to adjust the angle of said feed disks.

4. In an apparatus of the character described, the combination of cutting wheels, 90 log turning wheels, a power shaft for driving said cutting wheels, a rotary cutter disk secured to said power shaft and adapted to be driven thereby, and means for driving said power shaft.

5. In an apparatus of the character de- 95 scribed, the combination of cutting wheels, log turning wheels, a power shaft for driving said cutting wheels, a rotary cutter head secured to said power shaft and adapted to be driven thereby, a guard loosely mounted on 100 said power shaft and disposed about said cutter head, and means for driving said power shaft and cutter head in reverse directions.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

JOSEPH MOREAU.

Witnesses:

T. MYNARD,
L. C. GAUTHIER.