

J. E. MITCHELL AND D. PARKS.
LOG CUTTING MACHINE.
APPLICATION FILED JULY 5, 1917.

1,332,912.

Patented Mar. 9, 1920.
6 SHEETS—SHEET 1.

Fig. 1.

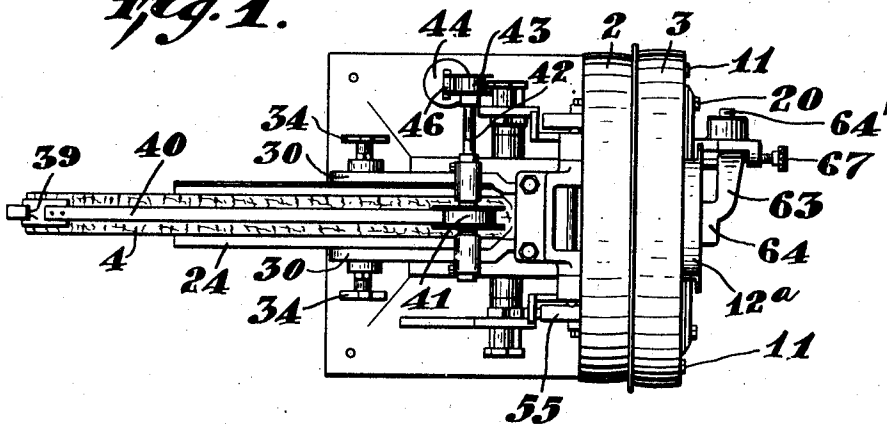
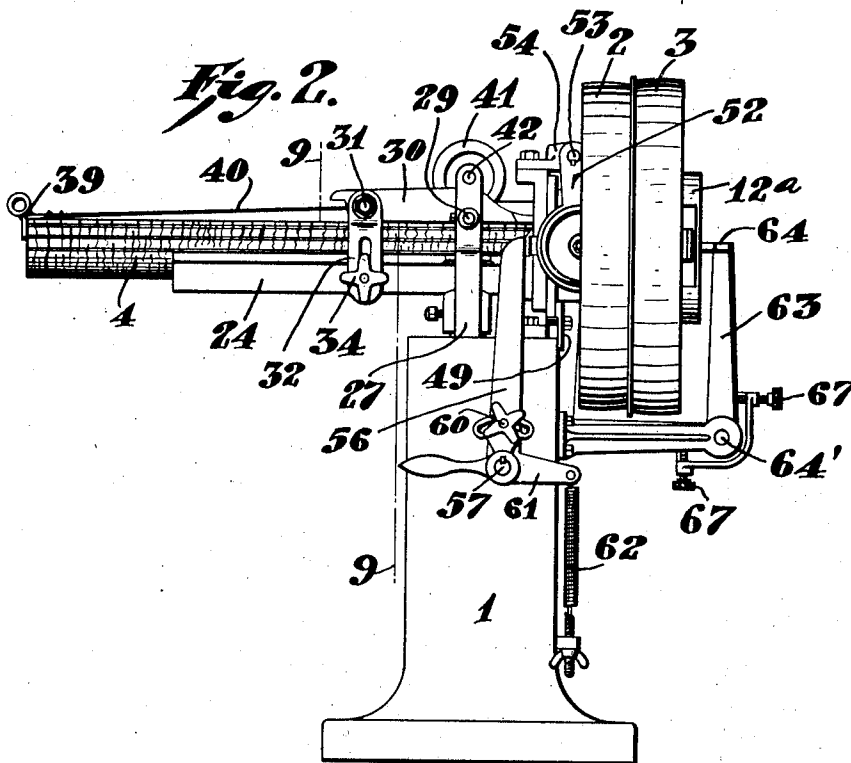


Fig. 2.



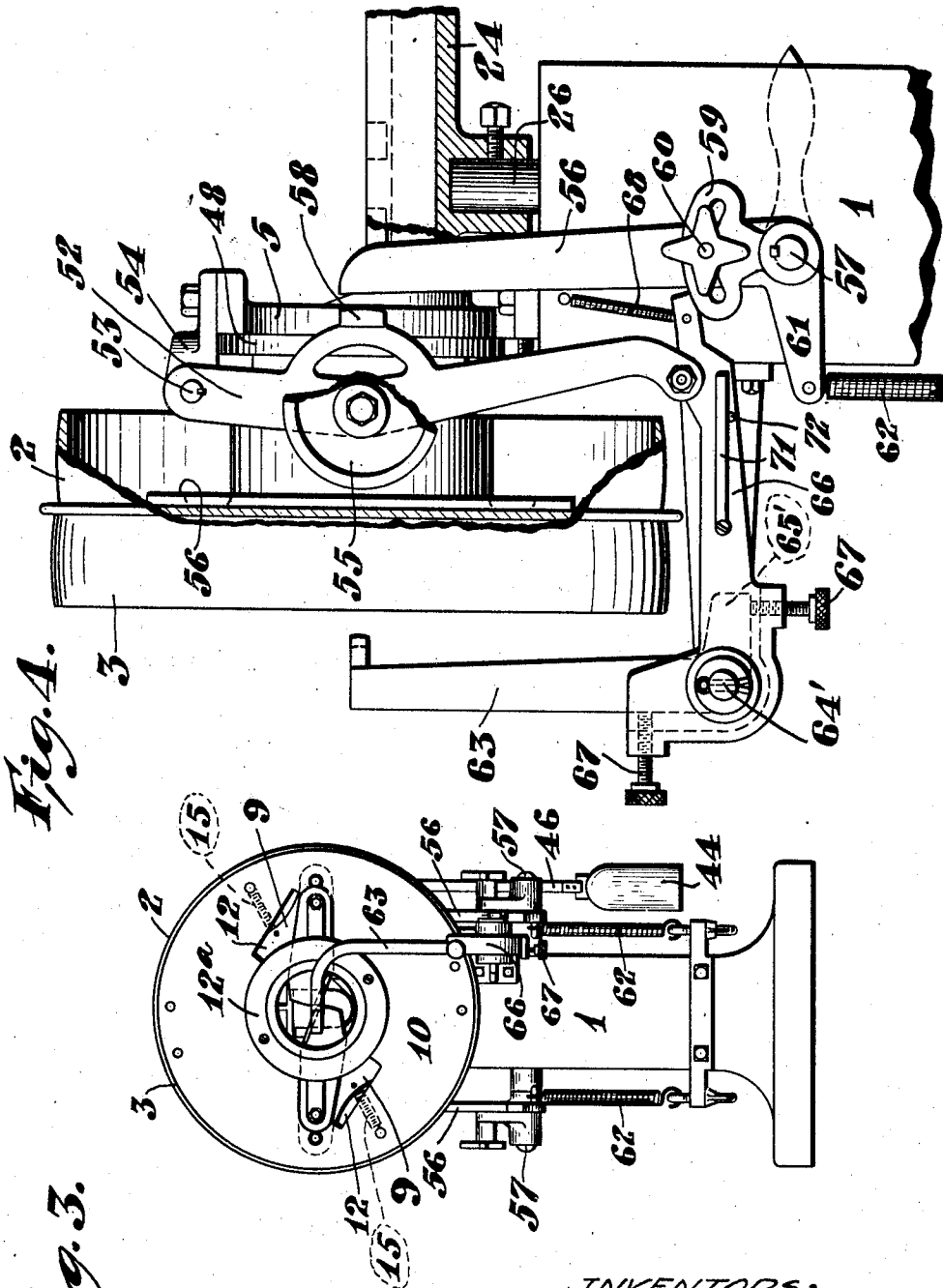
INVENTORS:
JOHN E. MITCHELL
DENNIS PARKS

BY *James A. Stewart*
ATTORNEY.

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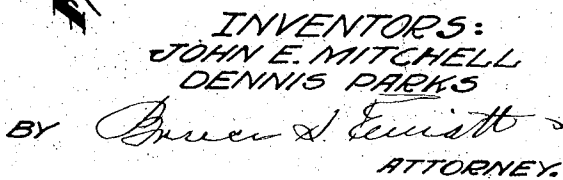
Patented Mar. 9, 1920.
6 SHEETS—SHEET 2.



INVENTORS:
JOHN E. MITCHELL
DENNIS PARKS
BY *Barney L. Furst*
ATTORNEY.

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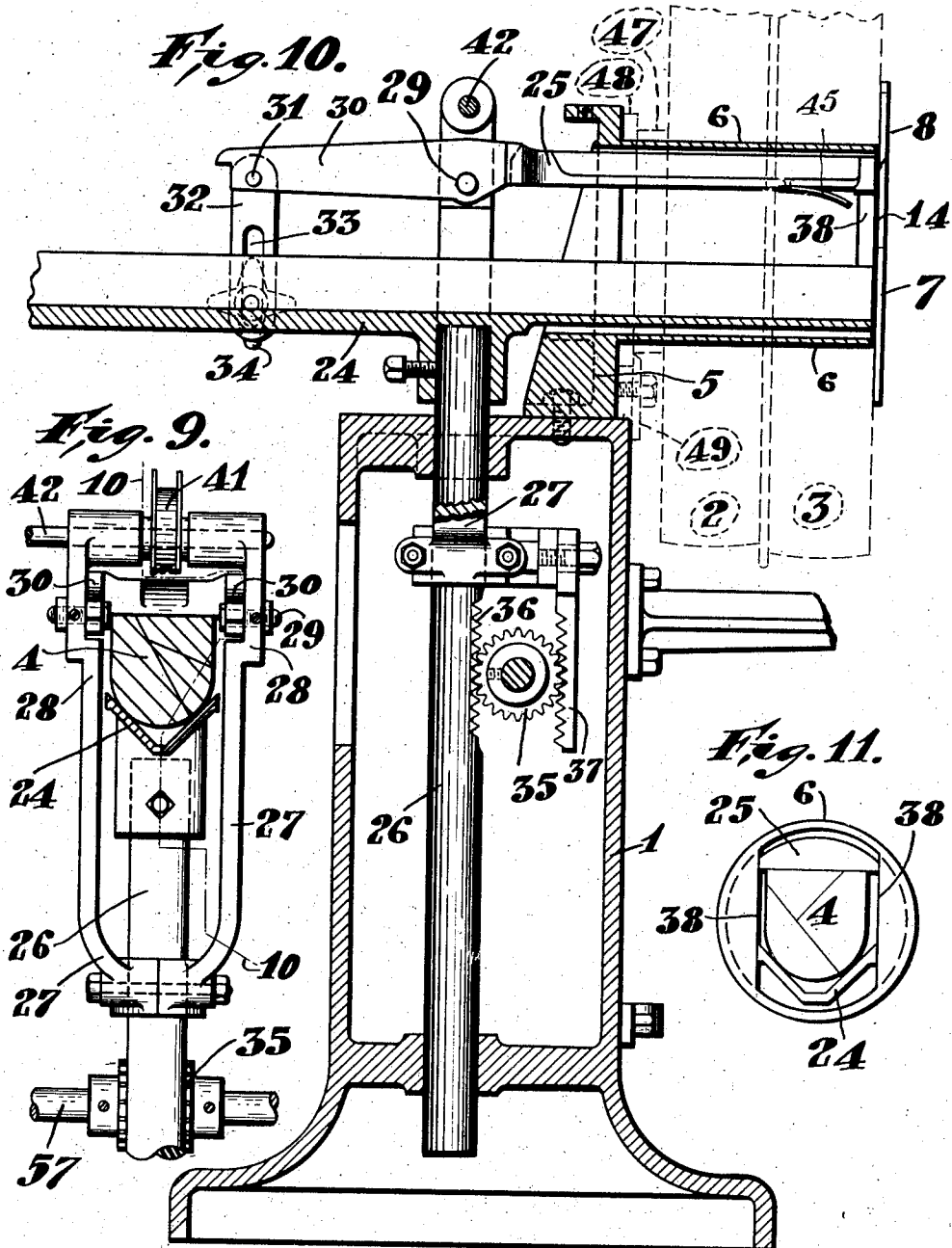
Patented Mar. 9, 1920.
6 SHEETS—SHEET 3.



J. E. MITCHELL AND D. PARKS.
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6 SHEETS—SHEET 4.



INVENTORS:
JOHN E. MITCHELL
DENNIS PARKS
BY *James A. Furst*
ATTORNEY.

J. E. MITCHELL AND D. PARKS.

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6 SHEETS—SHEET 5.

Fig. 12.

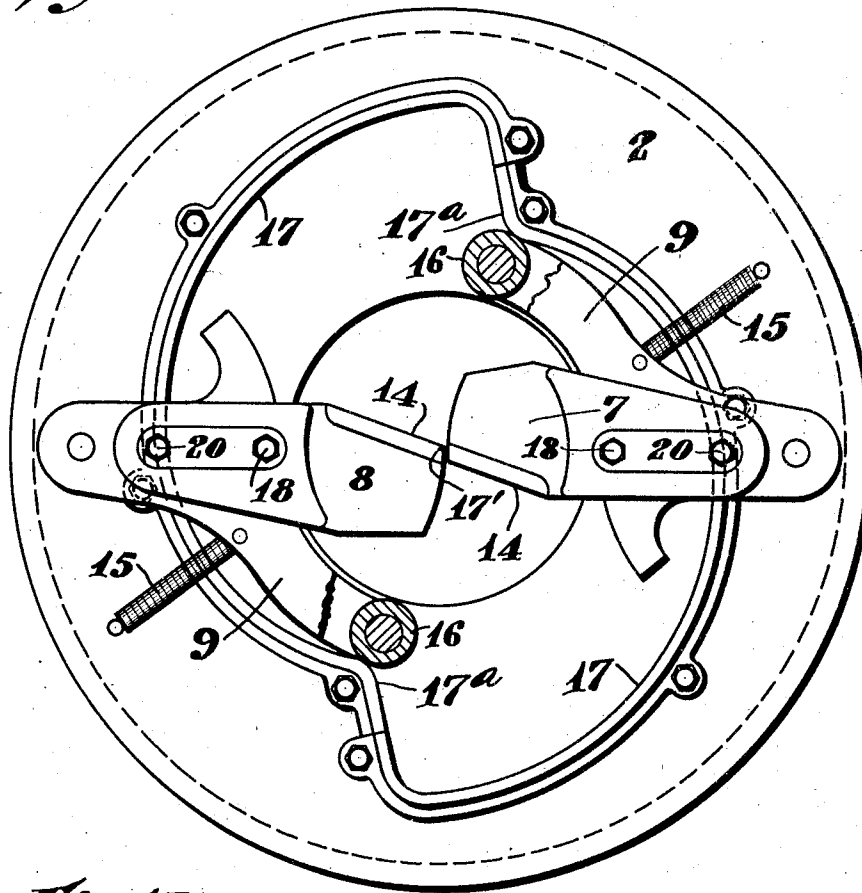
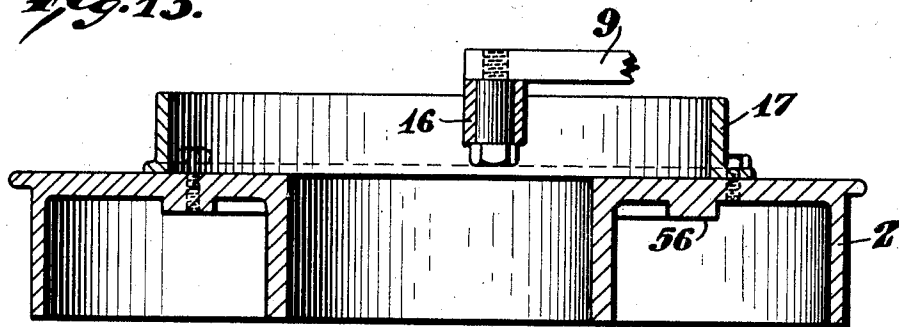


Fig. 13.



INVENTORS:
JOHN E. MITCHELL
DENNIS PARKS

BY *Grace S. Lusk*
ATTORNEY.

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6 SHEETS—SHEET 6.

Fig. 15.

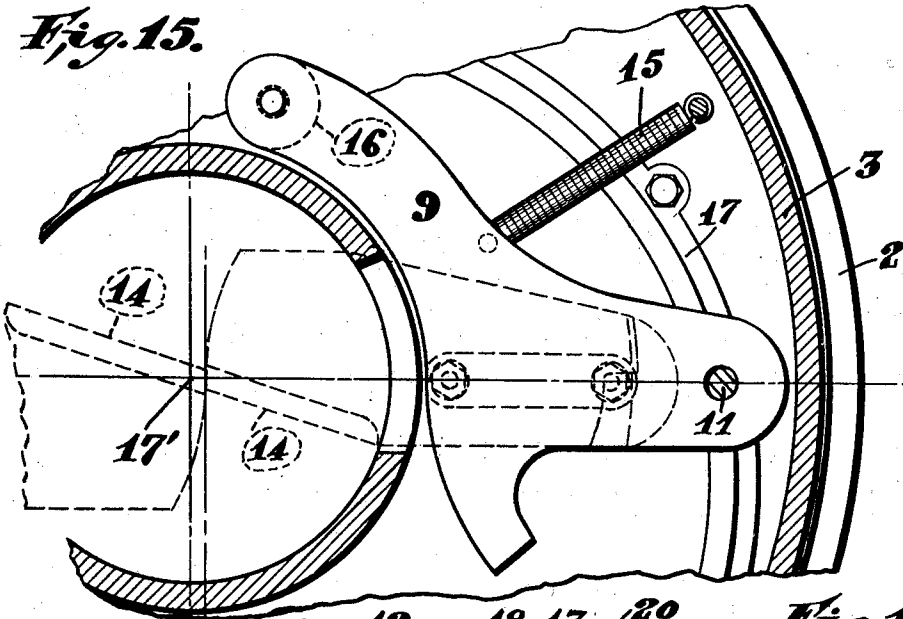


Fig. 14.

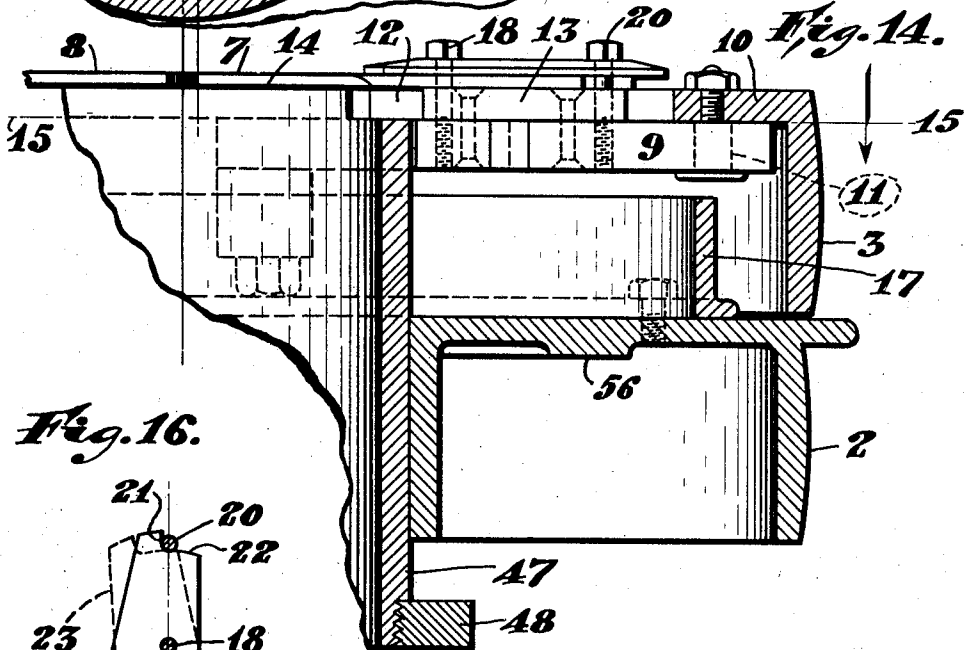
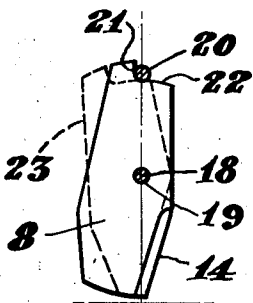


Fig. 16.



INVENTORS:
JOHN E. MITCHELL
DENNIS PARKS

BY *Ernest S. Fecchiatt*
ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN E. MITCHELL AND DENNIS PARKS, OF ST. LOUIS, MISSOURI.

LOG-CUTTING MACHINE.

1,332,912.

Specification of Letters Patent.

Patented Mar. 9, 1920.

Application filed July 5, 1917. Serial No. 178,527.

To all whom it may concern:

Be it known that we, JOHN E. MITCHELL and DENNIS PARKS, citizens of the United States, residing in the city of St. Louis and State of Missouri, have invented new and useful Improvements in Log-Cutting Machines, of which the following is a specification.

This invention relates to machines of the type employed for cross-cutting an elongated piece of stock. In the present specification the invention is described as applied to a machine for slicing lifts or heels from heel "logs". In one aspect the invention may be regarded as an improvement on the invention set forth in our Patent No. 1,252,137, issued January 1, 1918, for log cutting machines. This type of machine comprises two rotatable members which actuate cutting mechanism, to cut the stock into lifts. After each lift is severed, the stock is advanced into a new position and again held fixed while the next lift is severed. The general object of the present invention is to simplify the means for actuating the cutting mechanism and also to provide very simple and effective means for feeding the stock forward and for holding it while the lift is severed. A further object of the invention is to provide an improved gage and improved means for controlling it so that it will cooperate with the cutting mechanism. It is also one of our objects to provide a mounting for the knife or knives which will insure complete severing of each lift, and which will also enable the knife to maintain its proper adjusted position even if considerable regrinding has changed the normal position of its cutting edge.

Further objects of the invention will appear hereinafter.

In the drawing which fully illustrates the preferred embodiment of our invention,

Figure 1 is a plan of the complete machine;

Fig. 2 is a side elevation;

Fig. 3 is a front elevation of the machine;

Fig. 4 is a side elevation with parts broken away and partly shown in cross-section to illustrate the means for controlling the gage. This view shows the gage in its inactive position;

Fig. 5 is a view somewhat similar to Fig. 4, further illustrating the means for controlling the gage, and showing the gage in its

active position in full lines, its inactive position being shown in dotted lines;

Fig. 6 is a plan partly broken away, illustrating a detail of the means for developing the movement which effects the forward feeding movement of the stock and the control of the gage;

Fig. 7 is a plan showing the gage in detail and illustrating its mode of operation;

Fig. 8 is a detail partially in elevation and partially in section of the end of the lever that controls the gage;

Fig. 9 is a vertical cross-section taken through the machine about on the line 9—9 of Fig. 2, but upon an enlarged scale, with the frame of the machine omitted;

Fig. 10 is a longitudinal vertical section taken through the machine about on the line 10—10 of Fig. 9 with certain parts broken away or removed;

Fig. 11 is a front elevation of the parts shown in Fig. 10, that are located adjacent the knives;

Fig. 12 is an elevation, with certain parts broken away, and illustrating the cutting mechanism;

Fig. 13 is a cross-section showing some of the parts illustrated in Fig. 12;

Fig. 14 is a cross section taken through the parts of the machine in the vicinity of the cutting mechanism and particularly illustrating the mounting for the cutting mechanism;

Fig. 15 is a section taken on the line 15—15 of Fig. 14 and further illustrating the construction of these parts; and

Fig. 16 is a view illustrating a novel form for the knife which enables the knife to be clamped in adjusted positions to maintain the cutting edge of the blade in a substantially fixed relation.

Referring particularly to Figs. 1 to 3, inclusive, the machine comprises a vertical housing or frame 1. This housing or frame supports two rotatable members preferably in the form of two pulleys 2 and 3. Associated with these wheels is the cutting mechanism, which is so related to the wheels that when the wheels are rotated, the cutting mechanism will operate to sever a piece from a length of stock 4.

We provide a bracket 5, see Fig. 10, which is supported on the upper part of the housing 1, and this bracket is preferably formed with a tubular arbor 6, which projects hori-

zontally, and carries the two rotatable members or wheels 2 and 3. These wheels 2 and 3 are adjacently mounted and are independently rotatable on the arbor. They are so arranged that they can be readily driven by belts. In order to produce a relative rotary movement or a differential movement between the two wheels, we prefer to construct the pulley 2 of slightly smaller diameter than the pulley 3, the result of which is, that the pulley 2 will rotate at a slightly greater speed than the pulley 3 if the two driving belts 2^a and 3^a move at the same speed. (See Fig. 5.)

The relative rotary movement between the two pulleys 2 and 3, when they arrive in a predetermined relation or relative position, operates to actuate the cutting mechanism, (see Fig. 12) which preferably includes a pair of knives 7 and 8. Each knife is supported upon a carrier or arm 9, and these arms are preferably each pivoted at 11 on the inner side of the disk 10 of the pulley 3 (see Figs. 14 and 15).

In order to facilitate the attachment of the knives 7 and 8 to the arms, we provide openings 12 in the disk 10 of the pulley 3, and each arm or lever 9 is provided with a distance block 13, the outer face of which is flush with the outer face of the disk 10, which is itself flush with the end of the tubular arbor 6. On the outer face of each of these distance pieces or blocks 13, there is mounted one of the knives 7 or 8, so that the knives move across the face of the disk 10. These knives are mounted so that their cutting edges 14 are normally withdrawn from the position of the stock or heel log 4, and they are normally held withdrawn in this way, by means of coiled springs 15, see Fig. 15. As the relative rotary movement occurs each roller 16 runs along on the cam 17 on the wheel 2, and this swings the arms 9 inwardly on their pivots so that the edges 14 of the cutters or knives move across the stock. In other words, the knives not only move inwardly, but by reason of the relative movement between the stock and the knives the knives will move around and will cut the stock on all sides. In order to insure that the blades will completely cut through the stock, we prefer to mount the knives so that when cutting one of the knives will move at its inner end, past the longitudinal axis of the log which is indicated at 17' in Fig. 15. When the rollers reach the points 17^a Fig. 12, the springs 15 withdraw the knives. Each knife is supported on a pivot bolt 18 (see Fig. 14), which passes through a hole 19 in the knife. We also provide a tail-bolt 20, which, when the knife is first put in use may engage a shoulder 21 on the tail of the knife, adjacent to which the knife is formed with a circumferential edge 22, lying near a fixed bolt 20. These knives require to

be frequently resharpened so that the cutting edge 14 tends to move inwardly on the blade. The circumferential edge 22 and the tail-bolt 20 enable the wear on the edge 14 to be readily taken up, for example, when this edge is worn, the bolt 20 is loosened up, and the tail end of the knife is simply adjusted so as to maintain the cutting edge 14 in its proper relation. After the knife has been adjusted the bolt 20 is tightened up again. In Fig. 16 such an adjusted position of the knife is illustrated by the dotted lines 23. When the knife has been properly adjusted in this way it is securely clamped by the tail bolt 20. Over the knives a cap ring 12^a is attached on the face of the pulley 3.

While the knives 7 and 8 are passing through the stock, the stock is securely held by suitable holding means, preferably including a pair of jaws 24 and 25, see Fig. 10, the former of which acts as a horizontal trough or guide along which the stock advances in its feeding movement. The jaws 24 and 25 project into the tubular arbor 6 and are preferably arranged so that their clamping action is exerted principally in the vicinity of the knives. These jaws are operated automatically to release the stock when the knives are withdrawn, and the stock is then advanced automatically into proper position to enable the knives to cut off the next lift. The lower jaw 24 is supported on the upper end of a stem 26 which is guided to slide vertically in the housing 1. Near the end of this stem a yoke 27 is provided, see Fig. 9, the lower end of which slides freely on the stem. The upper ends of the arms 28 which form this yoke extend up through the upper end of the housing 1 and past the V-shaped lower jaw 24. At a suitable distance above this lower jaw 24, the upper jaw 25 is pivotally supported on suitable pivot bolts 29, see Fig. 10. The outer end of the jaw 25 is formed into two tails 30, the ends of which have their fulcrums at 31 on adjustable links 32, secured on the sides of the lower jaw 24. For this purpose each link has a slot 33 through which passes a clamping screw having a cross-shaped hand wheel 34, (see Fig. 2). When the machine is in operation the stock or log 4 is clamped between these jaws 24 and 25, but at regular intervals the slide bar 26 moves down and the yoke 27 moves up, so as to release the stock to permit it to be fed forward. This movement is controlled conjointly by the rotatable members or wheels 2 and 3, that is to say, when the wheels 2 and 3 are in the predetermined relative rotary position which holds the knives withdrawn, the jaws 24 and 25 will separate to permit the forward feeding of the stock. This opening of the jaws may be effected through the medium of a rocking pinion 35, (see Fig. 10), one side of which engages

a rack 36 formed on the side of the stem 26, and the other side of which engages a rack 37 extending down from the lower end of the yoke 27. It will be evident that as the fulcrums 31 are located toward the rear, the jaws 24 and 25 will clamp the log or stock most securely near the position of the knives 7 and 8. We prefer to guide the inner ends of the jaws 24 and 25 in the arbor 6. For this purpose the end of the arbor is formed with webs 38, the edges of which are parallel and act as guides for the jaws as they move apart or toward each other. See Fig. 11.

We provide very simple feeding mechanism for feeding the stock or log forward when the jaws are released, and the knives withdrawn. For this purpose, we provide a pusher which engages the back end of the stock, and this pusher is in the form of a small angular clip 39, see Fig. 2, which is simply hung on the stock, and attached to a strap or flexible band 40. This band 40 extends longitudinally above the stock and passes around the under side of a pulley 41, to which it is secured. This pulley is mounted on a cross-pin 42 supported in the upper end of the yoke 27, and the outer end of this cross pin or shaft 42 is provided with a pulley 43, from which a weight 44 is supported by a cord or strap 46. The effect of this construction is to create a tension in the strap 40, so that whenever the jaws are released the pusher 39 shoves the stock forward.

The distance to which the stock advances in its feeding movement is limited by a gage, which is also preferably controlled conjointly by the wheels 2 and 3, as will be described hereinafter.

In order to give the rocking movement to the pinion 35, to open the jaws 24 and 25 at the proper time, we provide mechanism associated with the wheels 2 and 3, which operates in such a way that when the wheels arrive in a predetermined rotary relation the pinion 35 will be rocked. In order to do this we prefer to develop a shifting movement of a part of the mechanism along the axis of rotation of the wheels, and we utilize this movement to rotate the pinion. This shifting movement along the axis of rotation may, if desired, be developed in one of the pulleys, in the present instance, in the pulley 2. In order to effect this, the pulley 3, which is the outside pulley, is preferably provided with a longitudinal hub or sleeve 47 which is rotatably mounted on the arbor 6, and the inner end of this sleeve is formed with a projecting collar 48 which is held against the vertical face of the bracket 5 by means of a suitable clamp 49 (see Figs. 2 and 10). The pulley 2 slides freely on this sleeve 47, and carries cams 50 which are diametrically opposite to each other; and

when the pulleys are in the position which holds the knives withdrawn, these cams come into engagement with rollers 51 on the other pulley 3 (see Fig. 6). When the cams ride up on the rollers in this way, they produce a shifting movement of the pulley 2 on the sleeve 47. That is to say, the shiftable member, in the present embodiment the pulley 2 will shift toward the right as viewed in Fig. 5.

In order to impart this movement to the rocking pinion 35 we prefer to provide a controlling member 52 which is preferably in the form of a lever located at each side of the axis of rotation. These levers are suitably supported on a pin 53 at their upper ends which is secured to a bracket 54, see Fig. 2. Each of these levers 52 carries a roller 55, and the faces of these rollers normally lie close to an annular strip or raceway 56 on the disk of the pulley 2. When the pulley 2 shifts toward the right, as viewed in Fig. 5, the levers 52 swing outwardly on their fulcrums 53 and actuate two levers 56, which are rigidly attached to the ends of the shaft 57, which carries the aforesaid rocking pinion 35. For this purpose the levers 52 are provided with toes 58 which engage the ends of the levers 56. In order to provide for adjusting the position of the levers 56 with respect to the shaft 57, the lever 56 is secured to the shaft by means of a segment 59 which is fixed on the shaft and provided with an arcuate slot through which a clamping bolt 60 passes. Each of the levers 56 has a short arm 61 to which a spring 62 is attached, which tends to rotate the shaft 57, and normally holds the jaws 24 and 25 clamped against the stock. The levers 56 should be adjusted so that they normally lie near the toes 58, so that as soon as the movement of the toes 58 begins, the levers will be actuated, and the pinion rocked to open the jaws. It is evident then that the actuation of the rocking pinion 35 is controlled through the agency of the cams 50.

The gage for limiting the forward movement of the stock is also controlled through the agency of the cams, and this is preferably accomplished by means of the same levers 52 which control the levers 56. The gage is preferably movable, and is normally disposed in an inactive position, at which time it is withdrawn from the vicinity of the knives. When the knives have been withdrawn, however, the gage is moved into its active position and approaches the location of the knives. This gage is indicated by the numeral 63, and is preferably in the form of an arm, the end of which projects over and is formed into a gage head 64. This gage head 64 presents a concave face 65 so that when the stock 4 comes against it, it engages only the edges of the stock. This form for the gage head increases the accuracy of the

gage, because it sometimes happens that near the central axis of the stock an equality or projection 4^a will be left by the knives. The edges of the end of the stock or log, however, are always accurately cut, and consequently this gage will give accurate results in operation.

In order to hold the gage in its active or its inactive positions, we prefer mounting it on a fixed stud 64' (see Fig. 4). The gage arm 63 has an adjusting toe 65'. On this same stud 64' there is pivotally mounted an actuating arm 66 for the gage 63, and this arm carries two set screws 67, one of which engages the toe 65, and the other of which engages the edge of the gage 63. Evidently by unscrewing one of these set screws, and screwing in the other, the angular position of the actuating arm 66 with respect to the gage arm 63 can be adjusted, as desired. Of course, these set-screws also enable the arm 66 to be held rigid with the gage 63. The arm 66 is pulled upwardly by a spring 68, and it is normally held in a fixed position by means of a roller 69 on the end of one of the levers 52 which engages a socket 70 formed on the upper edge of the arm 66. Fig. 4 shows these parts in their normal position, that is to say, with the gage 63 in its inactive position. When the shifting movement is developed by the cams 50 and rollers 51, to release the jaws, the lever 52 moves toward the right, see Fig. 5, and the roller 69 rolls out of the recess or notch 70 onto the adjacent edge of the lever 66. This has the effect of depressing the lever 66, and rocks the gage 63 into the position in which it is indicated in full lines in Fig. 5. As soon as the cams 50 pass off the rollers 51, the springs 62 operating through the levers 56 return the levers 52 to their normal position, so that the roller 69 will move back into the socket 70. In order to enable the jaws 24 and 25 to be held open when desired, we provide the side of the lever 66 with a small bar 71. This bar normally rests on a small pin 72. In order to use it for the purpose suggested, it should be swung up into the line with the axis of the roller 69, and the arm 52 swung toward it until the bar limits the further movement of the lever 52.

It will be noted that in the operation of this machine, the pulleys are capable of unlimited rotation in the same direction, that is to say, the machine does not have to be reversed to withdraw the knives, and in operation the knives are completely controlled by the continuous revolutions of the pulleys. It is understood that the embodiment of the invention described herein is only one of the many embodiments our invention may take, and we do not wish to be limited in the practice of our invention, nor in our

claims to the particular embodiment set forth.

In order to keep the stock or log 4 upright when the jaws 24 and 25 open, we provide a small leaf spring 45 (see Fig. 10) that engages the flat upper face of the log.

What we claim is:

1. In a machine of the class described, the combination of means for holding the stock, two independently driven coaxial rotatable members, means for revolving the same continuously at different speeds with respect to each other, cutting mechanism associated with said rotatable members for cross-cutting the stock, a cam on one of said rotatable members, and means carried by the other of said rotatable members, and actuated by said cam, for actuating said cutting mechanism.

2. In a machine of the class described, the combination of means for holding the stock, two independently driven coaxial rotatable members, means for driving the same continuously at different speeds with respect to each other, cutting mechanism including a knife guided on one of said rotatable members to move across the stock, a cam on the other of said rotatable members, and means engaging said cam for actuating said knife.

3. In a machine of the class described, the combination of means for holding the stock, two independently rotatable coaxial wheels, cutting mechanism associated therewith for cross-cutting the stock, means for continuously revolving said wheels so as to produce a relative rotary movement between the same, actuating mechanism for said cutting mechanism associated with said wheels, and means for actuating said cutting mechanism by the said relative rotary movement of said wheels.

4. In a machine of the class described, the combination of means for holding the stock, two independently rotatable members, cutting mechanism including a knife, associated therewith for cross-cutting the stock, means for driving said rotatable members so as to produce a relative rotary movement between the same, means associated with said rotary members and actuated by the said relative rotary movement of said members, to move the knife across the stock and withdraw the knife thereafter, and means controlled by the relative rotary position of said rotary members for effecting a forward movement of said stock when the knife has been withdrawn.

5. In a machine of the class described, the combination of means for holding the stock, two independently driven rotatable members, cutting mechanism associated therewith for cross-cutting the stock, actuating means for said cutting mechanism actuated

by a relative rotary movement of said rotary members, means for feeding the stock forward before the cut is taken, a movable gage for limiting the forward feeding movement of the stock before the cut is taken, and automatic means for withdrawing said gage before each actuation of the cutting mechanism.

6. In a machine of the class described, the combination of means for holding the stock, two independently rotatable members, cutting mechanism including a knife, associated therewith, for cross-cutting the stock, means for driving said rotatable members so as to produce a relative rotary movement between the same, means associated with said rotatable members and actuated by the said relative rotary movement of said members, to move the knife across the stock and withdraw the knife thereafter, means controlled by the relative rotary position of said rotary members for effecting a forward movement of said stock when the knife has been withdrawn, and a movable gage also controlled by said rotary members for limiting the forward movement of the stock.

7. In a machine of the class described, the combination of means for holding the stock, two independently rotatable members, cutting mechanism including a knife, associated therewith for cross-cutting the stock, means for driving said rotatable members so as to produce a relative rotary movement between the same, means associated with said rotary members and actuated by the said relative rotary movement of said members, to move the knife across the stock and withdraw the knife thereafter, a feed controlling member, means controlled thereby for effecting a forward feeding movement of said stock, and means for actuating said feed-controlling member by said rotary members conjointly, to cause the feeding movement of the stock when the knife has been withdrawn.

8. In a machine of the class described, the combination of means for holding the stock, two independently rotatable members, cutting mechanism including a knife, associated therewith for cross-cutting the stock, means for driving said rotatable members so as to produce a relative rotary movement between the same, means associated with said rotary members and actuated by the said relative rotary movement of said members, to move the knife across the stock and withdraw the knife thereafter, one of said rotatable members having cams, a feed-controlling member actuated through the agency of said cams when the said rotatable members are in a relative position to hold said knife withdrawn, and means actuated by said feed controlling member for effecting the forward feeding movement of the stock.

9. In a machine of the class described, the

combination of means for holding the stock, two adjacently mounted independently rotatable members, one of said members being shiftable to and from the other, cutting mechanism including a knife associated with said rotatable members for cross-cutting the stock, means for driving said rotatable members so as to produce a relative rotary movement between the same, means associated with said rotary members and actuated by the said relative rotary movement of said members to move the knife across the stock and withdraw the knife thereafter, one of said rotatable members having cams thereupon for shifting the shiftable rotatable member longitudinally on its axis when the knife has been withdrawn, and means actuated by the said shifting movement of the shiftable rotatable member for effecting a forward feeding movement of said stock when the knife has been withdrawn.

10. In a machine of the class described, the combination of means for holding the stock, two adjacently mounted independently rotatable members, one of said members being shiftable to and from the other, cutting mechanism, including a knife associated with said rotatable members, for cross-cutting the stock, means for driving said rotatable members so as to produce a relative rotary movement between the same, means associated with said rotary members, and actuated by the said relative rotary movement of said members to move the knife across the stock and withdraw the knife thereafter, one of said rotatable members having cams thereupon for shifting the shiftable rotatable member longitudinally on its axis when the knife has been withdrawn, means actuated by the said shifting movement of the shiftable rotatable member for releasing the stock from said holding means, and means for feeding the stock forward when released.

11. In a machine of the class described, the combination of means for holding the stock, two adjacently mounted independently rotatable members, one of said members being shiftable to and from the other, cutting mechanism including a knife associated with said rotatable members for cross-cutting the stock, means for driving said rotatable members so as to produce a relative rotary movement between the same, means associated with said rotatable members, and actuated by the said relative rotary movement of said members, to move the knife across the stock and withdraw the knife thereafter, one of said rotatable members having cams thereupon for shifting the shiftable rotatable member longitudinally on its axis when the knife has been withdrawn, a lever mounted so as to be actuated by said shiftable rotatable member

when it shifts longitudinally on its axis, means actuated by said lever to release the stock from said holding means, means for feeding the stock forward when released
 5 from said holding means, and a movable gage controlled by said lever, for limiting the forward movement of the stock.

12. In a machine of the class described, the combination of holding means consisting
 10 of a pair of separable jaws for clamping the stock, two adjacently mounted independently rotatable members, cutting mechanism including a knife associated with said rotatable members for cross-cutting the stock,
 15 means for driving said rotatable members so as to produce a relative rotary movement between the same, means associated with said rotary members and actuated by the said relative rotary movement of said mem-
 20 bers to move the knife across the stock and withdraw the knife thereafter, one of said rotatable members having cams thereupon, means actuated through the agency of said cams for opening said jaws to release the
 25 stock, and means for feeding the stock forward toward the knife while the knife is withdrawn.

13. In a machine of the class described, the combination of holding means consisting
 30 of a pair of separable jaws for clamping the stock, two adjacently mounted independently rotatable members, cutting mechanism including a knife associated with said rotatable members for cross-cutting the
 35 stock, means for driving said rotatable members so as to produce a relative rotary movement between the same, means associated with said rotary members and actuated by the said relative rotary movement of said
 40 members to move the knife across the stock and withdraw the knife thereafter, one of said rotatable members having cams thereupon, means actuated through the agency of
 45 said cams for opening said jaws to release the stock, means for feeding the stock forward toward the knife while the knife is withdrawn, and means also controlled through the agency of said cams for limiting
 50 the forward feeding movement of the stock.

14. In a machine of the class described, the combination of a substantially tubular arbor, two rotatable members mounted ad-
 55 jacently on said arbor, cutting mechanism including a knife, associated therewith, for cross-cutting the stock, means for driving said rotatable members so as to produce a relative rotary movement between the same, means associated with said rotatable mem-
 60 bers and actuated by the said relative rotary movement of said members to move the knife across the stock and withdraw the knife thereafter, holding means for the stock in-
 65 cluding a pair of jaws projecting into said tubular arbor, means controlled conjointly by said rotatable members for releasing said

jaws, and means for moving the stock forward when the jaws are released, and when the knife has been withdrawn.

15. In a machine of the class described, the combination of cutting mechanism,
 70 means for feeding a length of stock past the cutting mechanism to position the same to be severed, and a concave faced gage to engage the end of the stock at its edges where-
 75 by the gage face will clear any projection on the interior of the end face of the stock.

16. In a machine of the class described, the combination of means for holding the stock, two rotatable members, cutting mech-
 80 anism including a knife, associated with said rotatable members for cross-cutting the stock, means for driving said rotatable members so as to produce a relative rotary movement between the same, means associ-
 85 ated with said rotatable members and actuated by the said relative rotary movement of said members to move the knife across the stock, and withdraw the knife there-
 90 after, a movable gage for limiting the forward feeding movement of the stock, a controlling member for holding said gage in an active position or in an inactive position,
 95 and means for actuating said controlling member by said rotatable members conjointly.

17. In a machine of the class described, the combination of means for holding the stock, two rotatable members, cutting mech-
 100 anism including a knife, associated with said rotatable members for cross-cutting the stock, means for driving said rotatable members so as to produce a relative rotary move-
 105 ment between the same, means associated with said rotatable members and actuated by the said relative rotary movement of said members to move the knife across the stock, and withdraw the knife thereafter, a movable
 110 gage for limiting the forward feeding movement of the stock, a controlling member for holding said gage in an active position or in an inactive position, means for actuating
 115 said controlling member by said rotatable members conjointly, and means actuated by said controlling member for effecting a forward feeding movement of the stock when the knife has been withdrawn.

18. In a machine of the class described, the combination of means for holding the stock, two rotatable members, cutting mech-
 120 anism including a knife associated with said rotatable members for cross-cutting the stock, means for driving said rotatable members so as to produce a relative rotary move-
 125 ment between the same, means associated with said rotatable members and actuated by the said relative rotary movement of said members to move the knife across the stock, and withdraw the knife thereafter, one of
 130 said rotatable members being shiftable on its axis of rotation, cams on the other rota-

table member, for shifting said shiftable rotatable member when said rotatable members are in a predetermined relative rotary position, a pair of levers supported adjacent
 5 said shiftable rotatable member, and actuated by the shifting movement thereof, and means controlled by said levers for effecting the forward movement of the stock when the knife has been withdrawn.

10 19. In a machine of the class described, the combination of means for holding the stock, two rotatable members, cutting mechanism including a knife associated with said rotatable members for cross-cutting the
 15 stock, means for driving said rotatable members so as to produce a relative rotary movement between the same, means associated with said rotatable members and actuated by the said relative rotary movement of said
 20 members to move the knife across the stock, and withdraw the knife thereafter, one of said rotatable members being shiftable on its axis of rotation, cams on the other rotatable member for shifting said shiftable ro-
 25 tatable member when said rotatable members are in a predetermined relative rotary position, a pair of levers supported adjacent said shiftable rotatable member, and actuated by the shifting movement of the
 30 same when the knife has been withdrawn, and a movable gage also controlled by said levers for limiting the forward movement of the stock.

20. In a machine of the class described,
 35 the combination of means for holding the stock, two adjacently mounted pulleys of different diameters, whereby the said pulleys are rotated at different speeds when driven by belts running at the same speed, cutting mechanism associated with said pul-
 40 leys, and means for actuating the cutting mechanism by said pulleys when in a predetermined relative position.

21. In a machine of the class described,
 45 the combination of means for holding the stock, two adjacently mounted pulleys of different diameters, whereby the said pulleys are rotated at different speeds when driven by pulleys running at the same
 50 speed, cutting mechanism associated with said pulleys, means for actuating the cutting mechanism by said pulleys when in a predetermined relative position, and means controlled conjointly by said pulleys for
 55 effecting the feeding movement of the stock.

22. In a machine of the class described, the combination of means for holding the

stock, two independently rotatable wheels driven so as to produce a relative rotation between said wheels, one of said wheels hav- 60
 ing a disk with openings therein, knife actuating means mounted behind said disk, and actuated by the relative rotation of said wheels, and knives moving on the outer face of said disk and connected with said knife 65
 actuating means through said openings.

23. In a machine of the class described, the combination of a pair of separable jaws for clamping the stock, means for separat-
 ing said jaws to permit the stock to be fed 70
 forward, and a spring associated with one of said jaws and engaging the face of the stock for holding the stock upright while the jaws are separated.

24. In a machine of the class described, 75
 the combination of means for holding the stock, two independently rotatable members, means for giving said rotatable members a differential rotary movement, cutting mechanism associated with said rotatable 80
 members for cross-cutting the stock, actuated by said rotatable members when in predetermined positions during the said differential rotary movement, and feeding means for the stock controlled conjointly by 85
 said rotatable members.

25. In a machine of the kind described, the combination of means for holding the stock, two independently rotatable co-axial members, cutting mechanism associated 90
 therewith for cross-cutting the stock, means for revolving said members continuously in the same direction at different speeds, and means for actuating said cutting mechanism actuated by said members when in a pre- 95
 determined relative position.

26. In a machine of the kind described, the combination of means for holding the stock, two independently rotatable co-axial pulleys, belts for revolving the same at dif- 100
 ferent speeds in the same direction to produce a relative rotary movement between the same, cutting mechanism associated with said pulleys for cross-cutting the stock, actuating mechanism for actuating said cut- 105
 ting mechanism associated with said pulleys, and means actuated by the pulleys in a predetermined relative position for actuating said cutting mechanism.

In testimony whereof we have hereunto 110
 set our hands.

JOHN E. MITCHELL.
 DENNIS PARKS.