Feb. 15, 1927. 1,617,757

C. GROSS

COMBINED LOG DECK BLOCK AND KICKER STRUCTURE

Filed Feb. 12, 1926 2 Sheets-Sheet 1

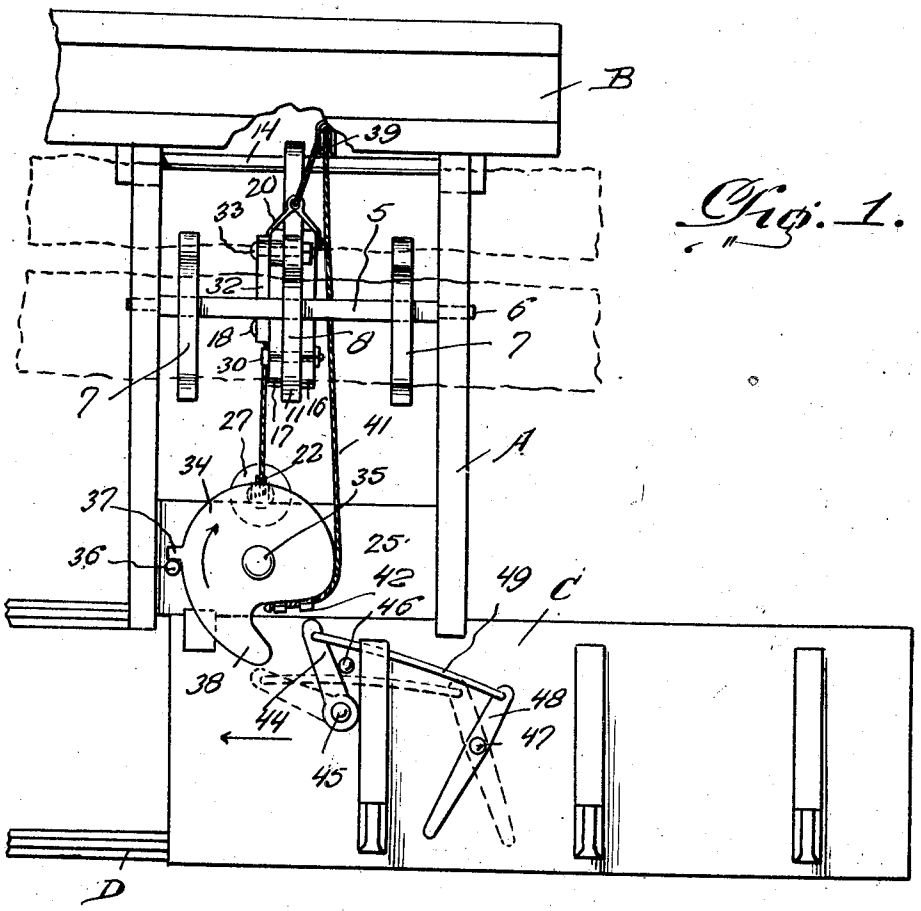


Fig. 1.

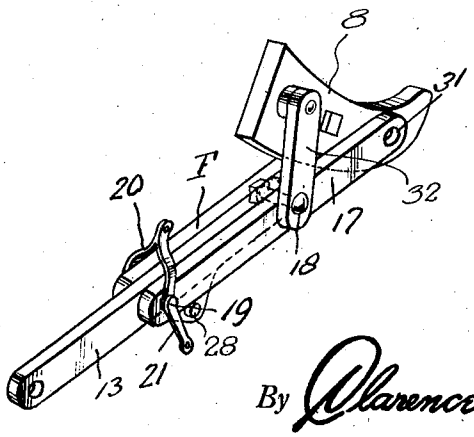


Fig. 6.

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Filed Feb. 12, 1926 2 Sheets-Sheet 2

Fig. 2.

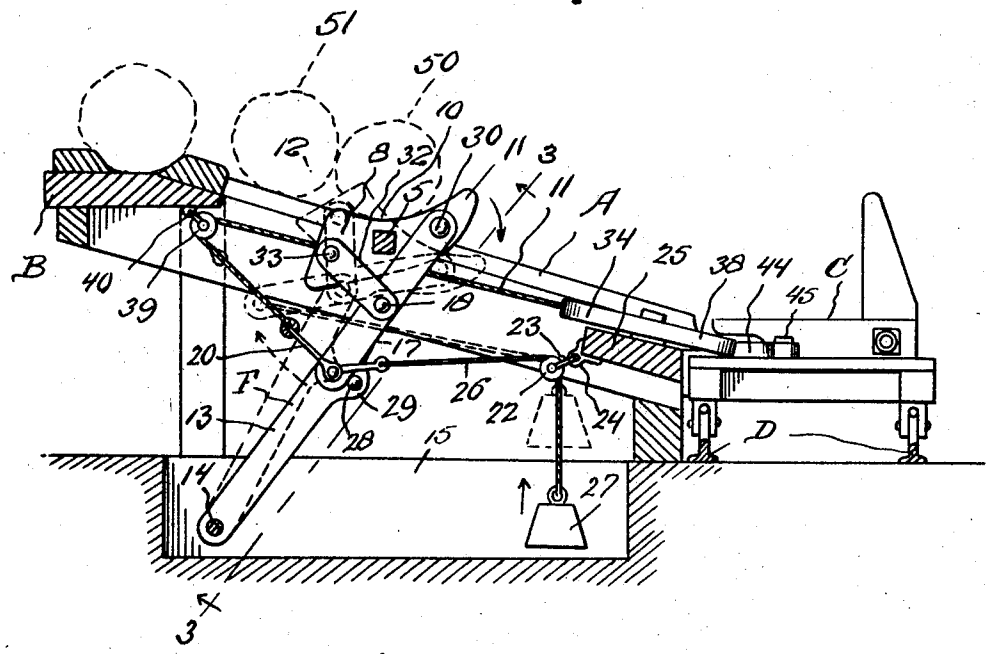


Fig. 3.

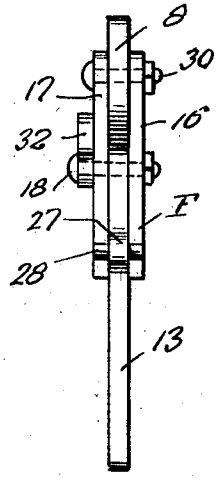
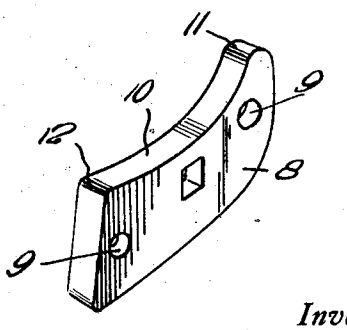


Fig. 4.



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UNITED STATES PATENT OFFICE.

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COMBINED LOG-DECK BLOCK AND KICKER STRUCTURE.

Application filed February 12, 1926. Serial No. 87,813.

The present invention relates generally to the inclined decks leading from the log trough to the log sawing carriage, and has for its principal object to provide means located intermediate the ends of the inclined deck for controlling the delivering of the logs to the saw mill carriage.

A very important object of the invention is to provide a highly novel device of this nature which is normally held in a predetermined position as a block to the logs and which may be actuated by the movement of the sawing carriage so as to release and kick a log downwardly toward the carriage, so that it will travel with sufficient speed down the inclined deck to reach the sawing carriage.

It is now the more common practice to provide a device of this nature intermediate the ends of the deck, but said devices now in common use are usually operated by steam. These devices are entirely too expensive to purchase or operate at a small mill, and, therefore, it is the purpose of the present invention to provide a structure which may be manufactured at a low cost and operated economically.

I further aim to provide a device of this nature which is exceedingly simple in its construction, strong, durable, thoroughly reliable in operation, easy to manipulate, install, assemble, and disassemble, one which is not likely to easily become out of order, one in which the parts are readily accessible, and one which is otherwise well adapted to the purpose for which it is designed.

With the above and numerous other objects in view as will appear as the description proceeds, the invention resides in certain novel features of construction, and in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawing:—

Figure 1 is a top plan view of a deck and carriage showing my improved device associated therewith,

Fig. 2 is a vertical longitudinal section through the deck structure showing the carriage in end elevation,

Fig. 3 is a detail view of the device taken substantially on the line 3—3 of Fig. 2,

Fig. 4 is a perspective view of the block and kicker element, and

Fig. 5 is a perspective view of the break toggle.

Referring to the drawing in detail, it will be seen that the deck A, trough B, and carriage C, are more or less of conventional construction, and are illustrated as such in the present drawings, merely for the purpose of illustrating the utility and general adaptability of my improved combined log deck block and kicker structure.

The floor of the deck A has been purposely left unillustrated for the purpose of more clearly bringing out the operation and construction of my improvement. The deck A inclines downwardly, as usual, from the trough B to the carriage C, which is movable in any well known manner on tracks D.

Referring now particularly to my improvement, it will be seen that a square shaft 5 has rounded ends 6 journaled in the sides of the deck A intermediate the ends thereof, so as to extend parallel with the trough B. In the present instance, I have illustrated three block and kicker elements 7 and 8 through which the square shaft 5 extends. These block and kicker elements are identical in construction except that the center element 8 is provided adjacent its ends with apertures 9, said apertures 9 not being necessary in the end kickers 7, which may be of any desired number depending, of course, upon the length of the shaft 5 or the width of the deck A. Each block and kicker element 7, 8, is of an oblong structure having its edge curved concavely as is indicated at 10, thereby forming a block extension 11 at one end and a kicker or corner 12 at the other end.

A break toggle is indicated generally by the letter F and includes an arm 13 pivoted at one end by a pin 14 below the deck A and adjacent a line drawn vertically and downwardly from the edge of the trough B adjacent the deck A. I have illustrated a sort of well 15 in which the pin 14 is mounted, but this is shown merely by way of example.

The other arm of the break toggle F is in two sections, 16 and 17 disposed in parallel spaced relation for receiving therebetween one end of the arm 13. A pin 18 pivots the sections 16 and 17 to the arm 13 as is clearly shown in Fig. 5. A yoke 20 and a link 21 are pivoted at 19 to sections 16 and 17. A pulley 22 is journaled in a suitable frame 23 pivotally mounted in a bracket 24 fixed to a cross member 25 at the bottom end of the deck A. A cable 26 has

one end attached to the link 21 and is trained over the pulley 22 and has at its other end a weight element 27, which normally holds the arms of the break toggle F in alinement, that is, with the free end of the arm 13 in abutment with the edges of sections 16 and 17 by means of a stop pin 28 which is disposed in a laterally extending lug 29 formed on the arm 13.

The arms 16 and 17 straddle the end of the element 8, having the block projection 11, and a pin 30 pierces the apertures 31 at the ends of sections 16 and 17, and the aperture 9 at said end of the element 8. A link 32 is pivoted on the ends of the pin 18, and is pivotally engaged by a pin 33 with the other aperture 9 of the element 8 adjacent the end thereof having the kicker extension 12.

A wheel 34 is rotatably mounted on the cross member 25 by a pintle 35 so as to be coplanar with the plane of the deck A. A stop pin 36 rises from the cross member 25 and is engaged by a peripheral and radially extending stop projection 37 on the wheel 34. A tangentially extending arm 38 projects from the wheel 34 and is normally disposed over the upper surface of the carriage C. A pulley 39 is mounted in any suitable manner such as at 40 to the trough B.

A cable 41 has one end fixed to the wheel 34 as at 42 and is trained over the pulley 39 and the other end thereof is fixed to the yoke 20. When the weight 27 is in the full line position shown in Fig. 2, and the arms of the break toggle F are in alinement, the cable 41 is taut, and holds the wheel 34 in the position shown in Fig. 1, that is, with the stop projection 37 in abutment with the stop pin 36 and the tangentially extending arm 38 extending over the upper surface of the carriage C.

An arm 44 is pivoted at one end on a pin 45 rising from the upper surface of the carriage C adjacent the forward end thereof, which is the end shown in Fig. 2 on the left hand end as shown in Fig. 1. A stop pin 46 is rising from the carriage C in substantial transverse alinement with the pin 45 in respect to the carriage C so as to limit the movement of said dog 44. A pin 47 rises from the carriage C and has pivoted thereon, the intermediate portion of a lever 48. The pin 47 is located to the rear of the pin 45. It is to be noted that said pin 47 is disposed substantially in the longitudinal median dimension of the carriage C, while the pin 45 is offset transversely of said median longitudinal dimension toward the side of the carriage adjacent the deck A. A link 49 connects the free end of the dog 44 with one end of the lever 48.

It is thought that I have now described the details of my improvement with sufficient particularity so that the operation thereof may be easily understood. Assuming that the carriage C is in the position shown in Fig. 1, and it is desired to deliver a log thereto, the dog 44 is set in the full line position shown in Fig. 1, by proper manipulation of the lever 48 as will be apparent. The carriage C is then moved to the left in the well known manner, thereby causing the dog 44 to engage the arm 38 and rock the wheel 34 in the direction of the arrow thereon Fig. 1. This rocking of the wheel 34 pulls upon the cable 41 causing the breaking of the break toggle F to take the dotted line position shown in Fig. 2, and simultaneously causing the cable 26 to raise the weight 27 to the dotted line position in the same figure.

As the break toggle F breaks, as just described, the links 32 rock the block and kicker elements 7 and 8 and the shaft 5 so that the log 50, referring to Fig. 2, which is disposed on the elements 7 and 8 is kicked downwardly and will roll down the deck A to the carriage C. The next log 51 is stopped by the block and kicker corner 12 of each element 7, 8. As soon as the carriage C has moved sufficiently to clear the arm 44 from the arm 38, the weight 27 will gravitate from the dotted line position shown in Fig. 2 to the full line position, thereby pulling on the cable 26 to bring the arms of the break toggle F back to their alining position, and simultaneously pulling upon the cable 41 to return the wheel 34 to its initial position shown in Fig. 1.

As the carriage moves back, that is to the right of Fig. 1, the dog 44 will engage the left hand edge which is inclined because of the tangential position of said arm in relation to the axis of the wheel 34 and therefore said dog 44 will be moved to the dotted line position shown in Fig. 1, so that further reciprocating of the carriage back and forth, will not allow the dog 44 to engage with the arm 38, but clear the same. Thus it is necessary when another log is needed to reset the dog 44 by proper manipulation of the lever 48 as is apparent.

The construction, operation, utility, and advantages of this invention will now be apparent to those skilled in this art without a more detailed description thereof. It is desired, however, to point out the ease with which the device operates, its reliability, its durability, and simplicity. The entire structure is very inexpensive to install, and costs nothing to operate. The man at the carriage controls the entire operation of the mechanism whereas heretofore it has been necessary to provide a second man to roll the log down by hand to the carriage.

The present embodiment of the invention has been disclosed in detail merely by way of example, since in actual practice it attains the features of advantage enumerated as desirable in the statement of the invention and the above description. It will be apparent,

however, that numerous changes in the details of construction, in the materials, and in the combination and arrangement of the parts may be resorted to without departing from the spirit or scope of the invention as hereinafter claimed, or sacrificing any of its advantages.

Having thus described my invention, what I claim as new is:—

1. A combined block and kicker structure for sawing plants; wherein the plant includes an inclined deck and a carriage movable past the lower end thereof; comprising a kicker and block element rockably mounted in the deck intermediate its ends, means for actuating the element, and means on the carriage for setting in motion the first means upon the movement of the carriage past the lower end of the deck.

2. A combined block and kicker structure for sawing plants, wherein the plant includes an inclined deck and a carriage movable past the lower end thereof; comprising a block and kicker element rockably mounted in the intermediate portion of the deck, an operating mechanism for said element, and manually controlled means on the carriage for engaging said mechanism to place it in motion when desired upon the movement of the carriage past the lower end of the deck.

3. A combined block and kicker structure for sawing plants; wherein the plant includes an inclined deck and a carriage movable past the lower end thereof; comprising a kicker and block element rockably mounted in the deck intermediate its ends, means for actuating the element, means on the carriage for setting in motion the first means upon the movement of the carriage past the lower end of the deck, and means for returning the element to its initial position after having been rocked.

4. A combined block and kicker structure for sawing plants, wherein the plant includes an inclined deck and a carriage movable past the lower end thereof; comprising a block and kicker element rockably mounted in the intermediate portion of the deck, an operating mechanism for said element, manually controlled means on the carriage for engaging said mechanism to place it in motion when desired upon the movement of the carriage past the lower end of the deck, and means for returning the element to its initial position after having been rocked.

5. A combined block and kicker structure for sawing plants; wherein the plant includes an inclined deck; comprising block and kicker elements rockably mounted in the intermediate portion of the deck, a break toggle having its lower ends stationarily pivoted and its upper end pivoted to one of the elements, a link pivotally engaged with the upper arm of the break toggle and with one end of the element, means for normally holding the arms of the break toggle in alinement, and said elements in log holding position, and means for breaking the alinement of said toggle for rocking the element and releasing the log.

6. A combined block and kicker structure for sawing plants; wherein the plant includes an inclined deck; comprising block and kicker elements rockably mounted in the intermediate portion of the deck, a break toggle having its lower ends stationarily pivoted and its upper end pivoted to one of the elements, a link pivotally engaged with the upper arm of the break toggle, and with one end of the element, means for normally holding the arms of the break toggle in alinement and said elements in log holding position, means for breaking the alinement of said toggle for rocking the element and releasing the log, said last mentioned means being in the form of a cable trained in a predetermined path of movement, and a rockable wheel to which said cable is attached.

7. A combined block and kicker structure for sawing plants; wherein the plant includes an inclined deck and a carriage movable past the lower end thereof; comprising a block and kicker element rockably mounted in the intermediate portion of the deck, a break toggle comprising a pair of arms pivoted together, means for allowing the breaking of said arms in one direction only, the bottom end of the lower arm being pivoted below the deck, the upper end of the upper arm being pivoted to the forward end of the element, a link pivoted to the intermediate portion of the upper arm and to rear end of the element, and means mounted on the carriage for breaking the toggle for rocking the element.

8. A combined block and kicker structure for sawing plants; wherein the plant includes an inclined deck and a carriage movable past the lower end thereof; comprising a block and kicker element rockably mounted in the intermediate portion of the deck, a break toggle comprising a pair of arms pivoted together, means for allowing the breaking of said arms in one direction only, the bottom end of the lower arm being pivoted below the deck, the upper end of the upper arm being pivoted to the forward end of the element, a link pivoted to the intermediate portion of the upper arm and to the rear end of the element, a pulley at the forward end of the deck, a cable trained over said pulley and engaged with the pivot between the arms of the toggle, a weight at the other end of said cable, a second pulley mounted at the rear end of the deck, a cable trained over said second pulley and engaged with the pivot of the arms of the toggle, and means mounted on the carriage for

pulling said second cable for breaking the toggle to rock the element.

9. A combined block and kicker structure for sawing plants; wherein the plant includes an inclined deck and a carriage movable past the lower end thereof; comprising a block and kicker element rockably mounted in the intermediate portion of the deck, a break toggle comprising a pair of arms pivoted together, means for allowing the breaking of said arms in one direction only, the bottom end of the lower arm being pivoted below the deck, the upper end of the upper arm being pivoted to the forward end of the element, a link pivoted to the intermediate portion of the upper arm and to the rear end of the element, a pulley at the forward end of the deck, a cable trained over said pulley and engaged with the pivot between the arms of the toggle, a weight at the other end of said cable, a second pulley mounted at the rear end of the deck, a cable trained over said second pulley and engaged with the pivot of the arms to the toggle, a wheel rockably mounted on the deck, stop means limiting the movement of said wheel, said second cable being attached to said wheel for actuation thereby and means on the carriage for rocking the wheel.

10. A combined block and kicker structure for sawing plants; wherein the plant includes an inclined deck and a carriage movable past the lower end thereof; comprising a block and kicker element rockably mounted in the intermediate portion of the deck, a break toggle comprising a pair of arms pivoted together, means for allowing the breaking of said arms in one direction only, the bottom end of the lower arm being pivoted below the deck, the upper end of the upper arm being pivoted to the forward end of the element, a link pivoted to the intermediate portion of the upper arm and to the rear end of the element, a pulley at the forward end of the deck, a cable trained over said pulley and engaged with the lower end of the upper arm of the toggle, a weight at the other end of said cable, a second pulley mounted at the rear end of the deck, a cable trained over said second pulley and engaged with the lower end of the upper arm of the toggle, a wheel rockably mounted on the deck, stop means limiting the movement of said wheel, said second cable being attached to said wheel for actuation thereby, an arm extending tangentially from said wheel and normally disposed above the carriage, and means on the carriage for engaging said arm so that the movement of the said carriage past the lower end of said deck will rock said wheel for pulling on said second cable, and breaking said toggle to rock said element.

11. A combined block and kicker structure for sawing plants; wherein the plan includes an inclined deck, and a carriage movable past the lower end thereof; comprising a block and kicker element rockably mounted in the intermediate portion of the deck, a break toggle comprising a pair of arms pivoted together, means for allowing the breaking of said arms in one direction only, the bottom end of the lower arm being pivoted below the deck, the upper end of the upper arm being pivoted to the forward end of the element, a link pivoted to the intermediate portion of the upper arm and to the rear end of the element, a pulley at the forward end of the deck, a cable trained over said pulley and engaged with the pivot between the arms of the toggle, a weight at the other end of said cable, a second pulley mounted at the rear end of the deck, a cable trained over said second pulley and engaged with the pivot of the arms of the toggle, a wheel rockably mounted on the deck, stop means limiting the movement of said wheel, said second cable being attached to said wheel for actuation thereby, an arm extending tangentially from said wheel and normally disposed above the carriage, means on the carriage for engaging said arm so that the movement of the said carriage past the lower end of said deck for rocking said wheel for pulling on said second cable, and breaking said toggle to rock said element, said means last mentioned, including an arm pivoted on the carriage, a stop on the carriage for engagement by the said last mentioned arm to hold it in a position to abut said first mentioned arm as the carriage moves in one direction past the lower end of the deck.

12. A combined block and kicker structure for sawing plants; wherein the plant includes an inclined deck, and a carriage movable past the lower end thereof; comprising a block and kicker element rockably mounted in the intermediate portion of the deck, a break toggle comprising a pair of arms pivoted together, means for allowing the breaking of said arms in one direction only, the bottom end of the lower arm being pivoted below the deck, the upper end of the upper arm being pivoted to the forward end of the element, a link pivoted to the intermediate portion of the upper arm and to the rear end of the element, a pulley at the forward end of the deck, a cable trained over said pulley and engaged with the pivot between the arms of the toggle, a weight at the other end of said cable, a second pulley mounted at the rear end of the deck, a cable trained over said second pulley and engaged with the pivot of the arms of the toggle, a wheel rockably mounted on the deck, stop means limiting the movement of said wheel, said second cable being attached to said wheel for actuation thereby, an arm extending tangentially from said wheel and nor-

mally disposed above the carriage, means on the carriage for engaging said arm so that the movement of the said carriage past the lower end of said deck for rocking said wheel for pulling on said second cable and breaking said toggle to rock said element, said means last mentioned including an arm pivoted on the carriage, a stop on the carriage for engagement by the said last mentioned arm to hold it in a position to abut said first mentioned arm as the carriage moves in one direction past the lower end of the deck, a lever pivoted on the carriage, and a link connecting the end of the lever with the free end of the arm pivoted on the carriage.

In testimony whereof I affix my signature.

CECIL GROSS.