

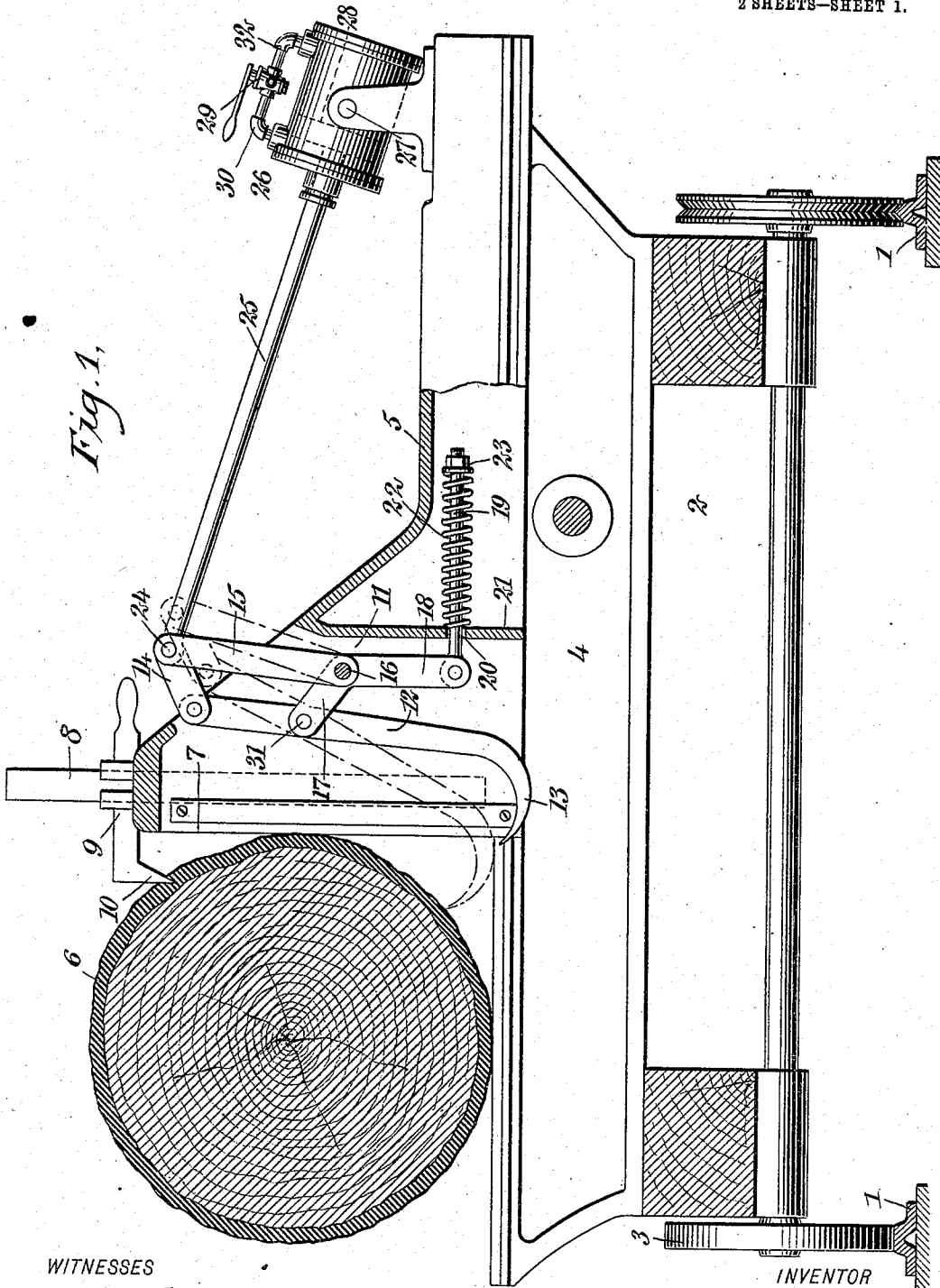
O. M. KREBS.  
DOGGING DEVICE.

APPLICATION FILED APR. 7, 1908. RENEWED JULY 30, 1909.

936,784.

Patented Oct. 12, 1909.

2 SHEETS—SHEET 1.



WITNESSES

Edward Thorpe.  
J. D. Ammer

INVENTOR

Oliver M. Krebs

BY *Munn & Co*

ATTORNEYS

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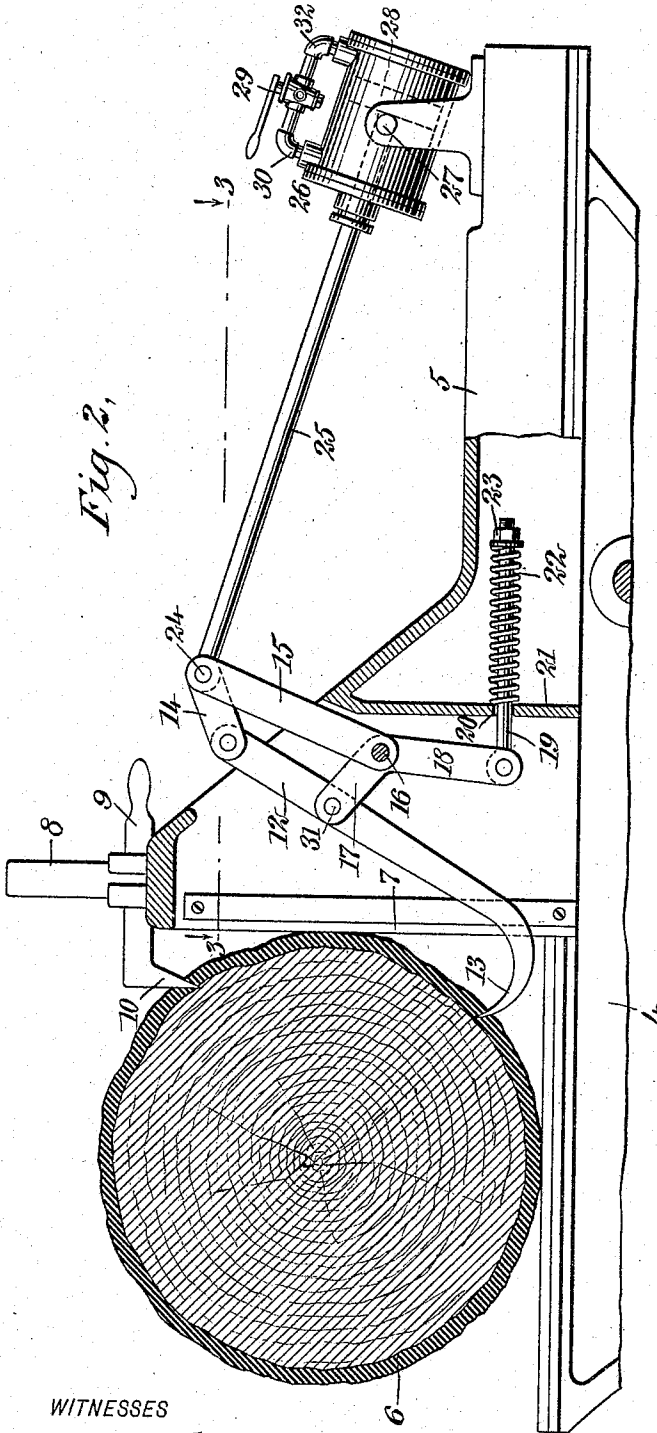
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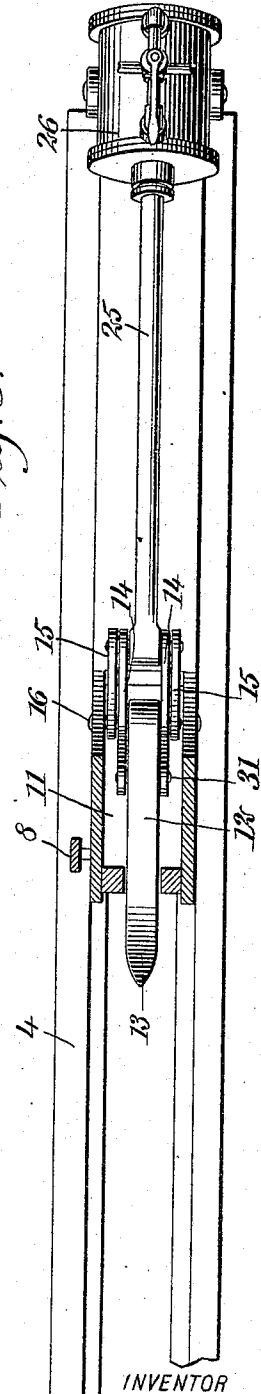
Fig. 2.



WITNESSES

Edward Thorpe  
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Fig. 3.



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# UNITED STATES PATENT OFFICE.

OLIVER MORTON KREBS, OF MEMPHIS, TENNESSEE.

## DOGGING DEVICE.

936,784.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed April 7, 1908, Serial No. 425,674. Renewed July 30, 1909. Serial No. 510,418.

*To all whom it may concern:*

Be it known that I, OLIVER MORTON KREBS, a citizen of the United States, and a resident of Memphis, in the county of Shelby and State of Tennessee, have invented a new and Improved Dogging Device, of which the following is a full, clear, and exact description.

This invention relates to saw mills, and especially to such as are provided with a reciprocating carriage which presents a log or timber to the saw to be ripped into planks.

The logs in being sawed are secured by dogs to knees which are adjustable upon head blocks. After each cut these knees are advanced on the head blocks so as to present the log to the saw to saw another plank. The log is held to the knees by dogs. The dogs which are used in practice do not hold the logs rigidly on the carriage, and as the reversal of movement of the carriage occurs very suddenly, the logs are apt to become dislodged.

The object of this invention is to provide a dogging device which will enable the logs to be securely held against the knees.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical transverse section through a saw mill carriage, a portion of one of the knees being also shown in cross section; this view shows the dogging device about to be operated; Fig. 2 is a view similar to Fig. 1, but showing the dogging device in actual operation; and Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 2.

Referring more particularly to the parts, 1, 1 represent the rails of the track upon which the carriage 2 is reciprocated in the usual manner, the said carriage running upon wheels 3. The carriage 2 is provided with a plurality of head blocks 4 of common construction, upon which knees 5 are guided to move transversely of the carriage, as will be readily understood. The log 6 lies upon the carriage, and its side remote from the saw is engaged by the vertical faces 7 of the knees in the usual manner. Each knee is provided at its sides with vertical guide bars

8 on which dogs 9 slide. These dogs are provided respectively with downwardly projecting spurs 10, which are adapted to be driven into the upper side of the log, as shown. Any suitable means may be provided for clamping these dogs 9 to the guide bars 8 in the usual manner. The forward portion of the knee is cut away so as to form an operating chamber or space 11 in which the dog 12 of my dogging device is mounted. The lower part of this dog is formed into a hook 13 formed at the lower end of a bar, and the bar is connected at its upper end by a link 14 with an arm 15, the lower end of the said arm 15 being pivotally mounted upon a pivot bolt 16 mounted in a horizontal position as indicated.

At an intermediate point the body of the dog 12 is pivotally attached to an upwardly inclined arm 17 of a bell crank lever or rocker 18, the lower arm of this bell crank lever 18 being provided with a pivotally attached stem 19 which passes through an opening 20 in a vertical wall 21 which forms a part of the body of the knee. On the rear side of the wall 21 a helical spring 22 is provided around the stem, which thrusts against the wall 21 as indicated. The rear end of this spring 22 thrusts against a nut and collar 23 attached to the end of the stem. At the pivot 24 which connects the link 14 with the arm 15, the piston rod 25 of a steam cylinder 26 is attached. The cylinder 26 is mounted to oscillate upon trunnions 27 as shown. The spring 22 tends to hold the parts in the position in which they are shown in full lines in Fig. 1, at which time the piston 28 with which the piston rod 25 connects is disposed in the forward end of the cylinder, as indicated in dotted lines in Fig. 1.

In operating the device, the dogs 9 are set in the log first, after which steam or a similar operating medium is admitted to the inner end of the cylinder through a suitable valve 29, and an inlet branch 30. This forces the piston 28 toward the outer end of the cylinder and embeds the point of the hook 13 in the under side of the log. This will move the parts into the position shown in the dotted lines in Fig. 1. As the rotation takes place after the point of the hook 13 strikes the log, the resistance of the log will operate to cause the bell crank lever 18 to rotate on its pivot bolt 16. This will raise the pivot pin 31 which connects the arm 17

of the bell crank lever with the dog 12. In this way the hook 13 as it becomes embedded in the under side of the log, will move toward the knee. In this way the log will be drawn close to the knee and held rigidly against it. When the log is to be released or undogged, this can be accomplished by admitting the steam or operating fluid for the cylinder 26 to the outer end thereof through the branch inlet 32.

It will be understood that in the first part of the movement of the dog 12 there is no compression whatever of the spring 22. The movement is rapid and the dog embeds its hook in the log. As soon as sufficient resistance is offered at the point of the dog, the spring becomes compressed and the rotation referred to begins on the pivot bolt 16. This rotation, of course, draws the log against the face of the knee in the manner described. With this dogging device cooperating with the dogs 9, the log is very firmly held against the knees, and it will not slip with the reversing of the carriage.

The fact that the log is engaged by dogs from the lower side as well as the upper side enables the log to be securely held even after a number of cuts have been taken in the log, and the dog may be carried on well beyond the center of the log without the log's becoming dislodged.

This device is especially useful where the logs are taken from the water before sawing, as it holds the logs securely whether their faces are slippery or not.

It should be stated that the form of the bell crank lever is such that the arms thereof present an obtuse angle between them. It is essential that the pivot point 31 should lie above the pivot 16, for if this were not a fact the upward rotation of the arm 17 would not occur, and the log would, therefore, not be drawn toward the knee in the latter part of the movement of the dog 12. On account of the fact that the lower arm of the bell crank lever 18 is substantially vertical, the arm 17 inclines upwardly, and an obtuse angle between the two arms of the bell crank lever 18 results.

In connection with the mode of operation of the device, attention is called to the fact that when the piston rod 25 is actuating the dog, the link 15 operates as a guide or radius rod, and the link 14 operates as a draw bar to pull the upper end of the dog rearwardly.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A saw mill carriage having a knee, a rocker mounted on said knee, a dog pivotally mounted on said rocker and adapted to engage the log, means for driving said dog into the log before said knee and tending to move said rocker in a direction to draw the

log toward the knee, and a spring resisting the motion of said rocker.

2. A saw mill carriage having a knee, a bell crank lever pivotally mounted on said knee, a dog pivotally mounted on said bell crank lever, a cylinder connected with said dog for operating the same, said dog being attached to said bell crank lever so that it exerts a turning effect thereupon after said dog engages the log, and means tending to resist the turning movement of said bell crank lever.

3. A saw mill carriage having a knee, a lever pivotally mounted on said knee, a dog pivotally mounted on an arm of said lever, means for actuating said dog to strike the log held before said knee, and means connected with the other arm of said lever resisting a rotation thereof.

4. A saw mill carriage having a knee, a bell crank lever pivotally mounted upon said knee and having an upwardly inclined arm, a dog pivotally attached to said inclined arm, a second arm pivotally mounted co-axially with said bell crank lever, a link connecting said second arm with the upper end of said dog, means connected with said second arm for actuating said dog, and a spring tending to resist the movement of said bell crank lever.

5. A saw mill carriage having a knee, a dog mounted on the upper part of said knee and projecting downwardly, a bell crank lever, a dog pivotally attached to said bell crank lever and having a hook at the lower end thereof projecting upwardly, an arm pivotally mounted, a link connecting said arm with said second-named dog, means attached to said arm for rotating the same to actuate said second-named dog, and a spring resisting the movement of said bell crank lever.

6. A saw mill knee having a bell crank lever pivotally mounted thereupon, said bell crank lever having an upwardly inclined arm, a dog pivotally mounted on said arm and having a hook adapted to engage the under side of the log, a stem attached to the other arm of said bell crank lever, a spring disposed around said stem and tending to rotate said bell crank lever after being displaced, an arm pivotally mounted on the same axis with said bell crank lever, a link connecting said last arm with the upper end of said dog, and means connected with said last arm for operating the same.

7. A saw mill carriage having a knee, a rocker mounted on said knee, a dog, a cylinder mounted on trunnions on said carriage, a piston rod extending from said cylinder and connected with said dog for actuating the same, said dog affording means for rocking said rocker after said dog engages the log, and means for resisting the rocking movement of said rocker.

8. A knee, a bell crank lever pivotally  
mounted therein and having an upwardly  
inclined arm, a dog pivotally attached to  
said arm and adapted to engage the under  
5 side of the log, a spring tending to resist  
the movement of said bell crank lever, an  
arm extending upwardly and pivotally  
mounted on the same axis with said bell  
crank lever, a link connecting the upper  
10 end of said last arm with the upper end of  
said dog, a cylinder mounted upon trun-

nions, and a piston extending from said cyl-  
inder and connected with the upper end of  
said last arm.

In testimony whereof I have signed my 15  
name to this specification in the presence of  
two subscribing witnesses.

OLIVER MORTON KREBS.

Witnesses:

E. R. McKNIGHT,  
T. B. DILLON.