W. THORP.

SAWMILL DOG.

APPLICATION FILED JAN. 10, 1911.

1,010,820.

Patented Dec. 5, 1911.

Fig. 1.

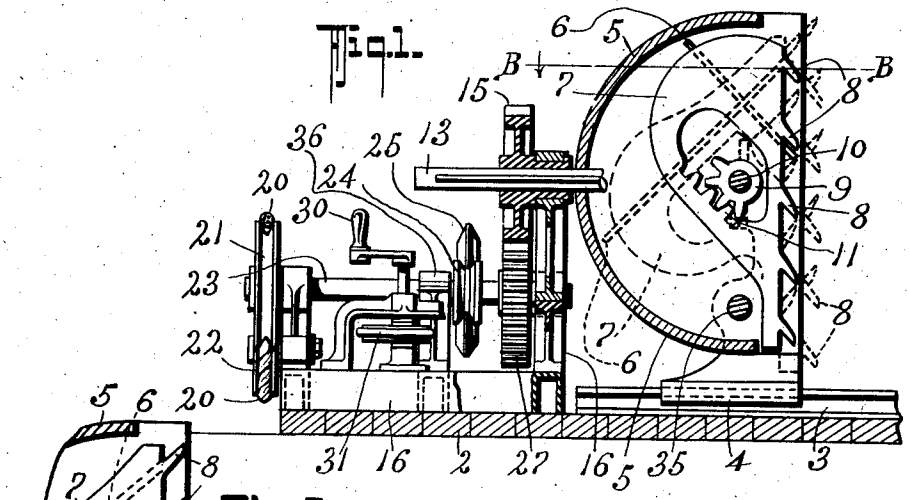


Fig. 4.

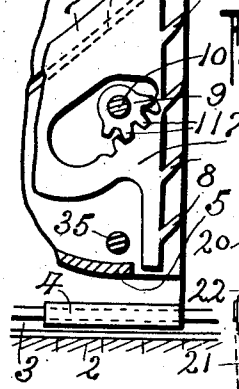


Fig. 2.

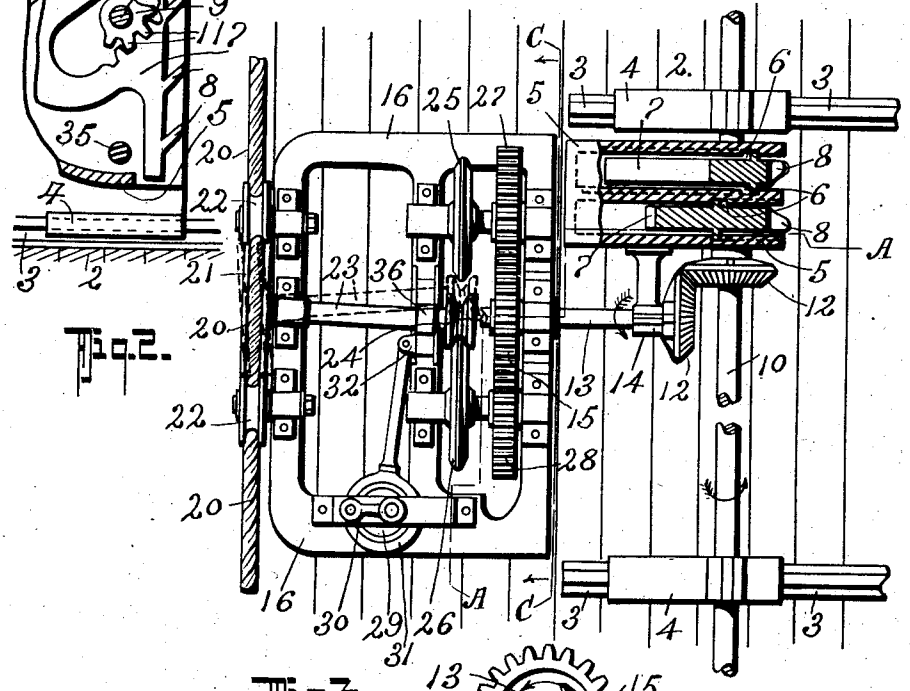
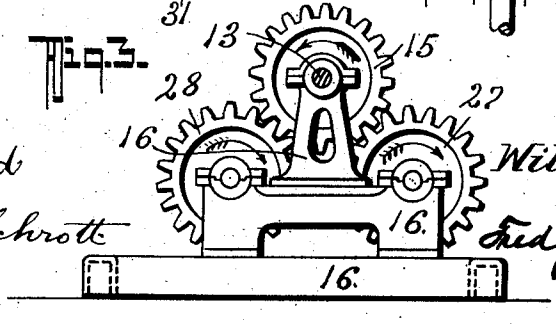


Fig. 3.



WITNESSES:

H. Woodard

John G. Schrott

INVENTOR

William Thorp

BY Fred G. Peterick & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM THORP, OF VANCOUVER, BRITISH COLUMBIA, CANADA.

SAWMILL-DOG.

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Application filed January 10, 1911. Serial No. 601,847.

To all whom it may concern:

Be it known that I, WILLIAM THORP, citizen of the Dominion of Canada, residing at Vancouver, in the Province of British Columbia, Canada, have invented a new and useful Sawmill-Dog, of which the following is a specification.

This invention relates to an improvement in the means by which a log is secured on a saw carriage. Such devices, which are known as "dogs," are usually hand operated, and where the logs are heavy a considerable amount of time may be consumed in applying the "dogs" in a manner to effectively secure the log on the head blocks of the carriage before presentation to the saw. This objection I overcome by providing a means whereby dogging devices, one adjacent to each head block of the carriage, may be simultaneously operated to secure or release a log and further that these devices are operated by power through a mechanism driven from that of the saw carriage.

The invention is particularly described in the following specification, reference being made to the drawings by which it is accompanied, in which:

Figure 1 is a sectional elevation on the line A A in Fig. 2, Fig. 2 is a plan and part section on the line B B in Fig. 1, Fig. 3 is a section on the line C C in Fig. 2. Fig. 4 is a section on the line D—D of Fig. 2.

In these drawings 2 represents the floor of the saw carriage, 3 being the head blocks and 4 the head block knees, which are simultaneously advanced on the blocks 3 to set the log, which is carried on the head blocks, toward the saw.

Adjacent to each head block, or to such number of them as may be considered necessary, and with its outer face in close proximity to that of the knee 4 which bears against the log is a casing frame 5, so connected to the head block knees as to be movable with them as they are advanced or receded from the saw. Slidably mounted within each casing frame 5 are "dogging" members 7 having spikes 8 projecting from their outer faces at angles of approximately forty-five degrees and of sufficient length to enable them to be driven through the bark of a log and effect a secure hold of the wood. The spikes 8 of the adjacent "dog" members are oppositely directed, those of one being angled upward while those of the other member are angled downward, and the spike bearing members 7 are slidably mounted in guides 6 to move respectively in approximately the same angle as that at which the spikes 8 are set. The members 7 are moved outward from their casing frames 5 to "dog" a log or are withdrawn within the face of the casing by pinions 9 on a shaft 10 which extends lengthwise of the carriage and is supported in bearings in the several head block knees. The teeth of these pinions 9 mesh in rack teeth 11 formed in the "dogging" members so that the rotation of the shaft 10 will advance or recede the "dogging" spikes according to the direction of rotation of the shaft 10.

The shaft 10 is driven by bevel gears 12 from a shaft 13 one end of which, that adjacent to the driving bevel, is carried in a bearing 14 which is secured to or forms a part of one of the casing frames 5, the other end of the shaft being endwise slidable with a feather key in a pinion 15 while the pinion is itself rotatable in a bearing in a frame 16 secured to the saw carriage. This frame 16 contains the mechanism by which the "dogging" members 7 are power operated and by which the direction of rotation of the shafts 13 and 10 is reversed.

The power to operate the dogging mechanism is taken from an endless wire rope 20 which may be the same as operates the power set works of the saw carriage, if such is used. This wire rope 20 is held in frictional contact with a rope sheave 21 secured on a shaft 23 rotatable in bearings in the frame 16, and its arc of contact on the sheave is enlarged by idlers 22 in the usual manner. The shaft 23 on which the rope sheave 21 is secured carries at its opposite end a friction pulley 24 which is grooved to receive V edged friction wheels 25 or 26 secured on short shafts and having tooth gears 27 and 28 which are in mesh with gear 15 on the shaft 13.

The end of the shaft 23 which carries the friction pulley 24 is susceptible of lateral movement to one side or the other to bring its pulley 24 into frictional driving contact with one or the other of the V edged friction wheels 25 or 26 according as it is desired to drive the shaft 10 in one direction or the other to project the dogging members to secure a log on the carriage or to withdraw them therefrom to release it. This required lateral movement of the shaft 23 is effected by slidably mounting the bearing 36 which supports the end of it adjacent to the fric-

tion wheel 24, on the base frame 16, and by providing an eccentric 29 rotatable on a vertical axis by an upstanding crank handle 30 the strap 31 of which eccentric is connected at 32 to the bearing 36.

In the use of this device, the log having been deposited upon the head blocks 3 and in contact with the head block knees 4, the spikes 8 of all the dog members 7 are forced outward, each in the angle of its spikes, beyond the face of the casing frames 5 in which they are slidable, and beyond the faces of the head block knees against which the log bears. This projection of the dog spikes 8 is simultaneously performed throughout the length of the carriage and is effected by the power derived from the moving endless wire rope 20, which constantly rotates the shaft 23 and the grooved friction wheel 24 secured on it. This dogging mechanism is brought into play by the use of the eccentric 29 by the crank handle 30, by which use the grooved friction wheel 24 is drawn into driving contact with the friction wheel 25 or 26 and through either one of the gear wheels 27 or 28 with gear 15 on the shaft 13, drives through the bevel gears 12 the shaft 10 to project the spikes 8 or to withdraw them according as it is required to secure or to release the log.

The casing frames 5 which slidably carry the dogging members 7 may form a part of the head block knees or may be connected to them in any suitable manner that they may be advanced or receded with the knees. In the drawings herewith, which show the attachment of this power dogger to an existing saw carriage the casing frames 5 are carried upon the shaft 10 by which movement of the dogging members is simultaneously effected, and the strong supporting shaft 35. Both these shafts pass through the several head block knees and will thus carry the dogging members that they will travel in or out with the head block knees as a log on the head blocks is advanced to the saw. The endwise movement of the shaft 13 in the pinion 15 enables a driving connection to be maintained between the mechanism connected to the head block knees and that through which power is derived and which is secured to the saw carriage.

What I claim is—

1. As a means for securing a log on a saw carriage, the combination with the head block knees, of dogging members slidably mounted adjacent to the knees each member having dogging spikes projecting from it at opposite angles in alternate members and means for simultaneously moving the dogging members to project or withdraw the spikes, said last named means comprising a rotatable shaft movable with the head block knees and extending in the direction of movement of the same, a power transmitting connection between said shaft and said dogging members, a relatively fixed gear keyed to said shaft and through which said shaft is movable, a pair of driven gears continuously meshing with said shaft gear, shafts for said driven gears, a friction disk on each driven gear shaft, a driving shaft, a friction pulley carried by said driving shaft and adapted to mesh separately with said friction disks, and means for shifting said driving shaft to bring said friction pulley into engagement with one or the other of said friction disks.

2. As a means for securing a log on a saw carriage, the combination with the head block knees, of dogging members slidable adjacent to the knees said dogging members having spikes projecting from them at an angle of approximately forty-five degrees, the angle of the spikes on adjacent members being reversed, and power operated means for simultaneously moving the dogging members in opposite directions, said last named means comprising a rotatable shaft movable with the head block knees and extending in the direction of movement of the same, a power transmitting connection between said shaft and said dogging members, a relatively fixed gear keyed to said shaft and through which said shaft is movable, a pair of driven gears continuously meshing with said shaft gear, shafts for said driven gears, a friction disk on each driven gear shaft, a driving shaft, a friction pulley carried by said driving shaft and adapted to mesh separately with said friction disks, and means for shifting said driving shaft to bring said friction pulley into engagement with one or the other of said friction disks.

3. In a machine of the character stated, the combination with the parallelly movable head block knees, the dogging members carried by said knees, of mechanical means for actuating said dogging members, said means including a rotatable driven shaft directly connected with said dogging members to operate all of them, said driven shaft extending transversely to the direction of movement of said head block knees, a counter-shaft gear connected with said driven shaft and extending in the direction of movement of said head block knees, means causing said counter-shaft to move with said head block knees, a relatively fixed supporting member, a bearing mounted on said frame, a gear mounted on said bearing and apertured to receive said counter-shaft, to which it is spline connected, a pair of stub shafts mounted in bearings in said frame and each including a gear meshing with said counter-shaft gear, a driven shaft mounted in bearings in said supporting frame, means for shifting said driven shaft into operative connections with either of said stub shafts, and a rope drive for said driven shaft.

4. In a machine of the character stated, the combination with the parallelly movable head block knees, the dogging members carried by said knees, of mechanical means for actuating said dogging members, said means including a rotatable driven shaft directly connected with said dogging members to operate all of them, said driven shaft extending transversely to the direction of movement of said head block knees, a counter-shaft gear connected with said driven shaft and extending in the direction of movement of said head block knees, means causing said counter-shaft to move with said head block knees, a relatively fixed supporting member, a bearing mounted on said frame, a gear mounted on said bearing and apertured to receive said counter-shaft, to which it is spline connected, a pair of stub shafts mounted in bearings in said frame and each including a gear meshing with said counter-shaft gear, a driven shaft mounted in bearings in said supporting frame, means for shifting said driven shaft into operative connections with either of said stub shafts, and a rope drive for said driven shaft, said driving shaft shifting means including a crank shaft, an eccentric on said crank shaft and connections between said eccentric and one of the bearings of said driving shaft.

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

WILLIAM THORP.

Witnesses:
ROWLAND BRITTAIN,
WM. S. SOUTAR.