A. FOSS & L. COOLIDGE.

LOG TURNER.

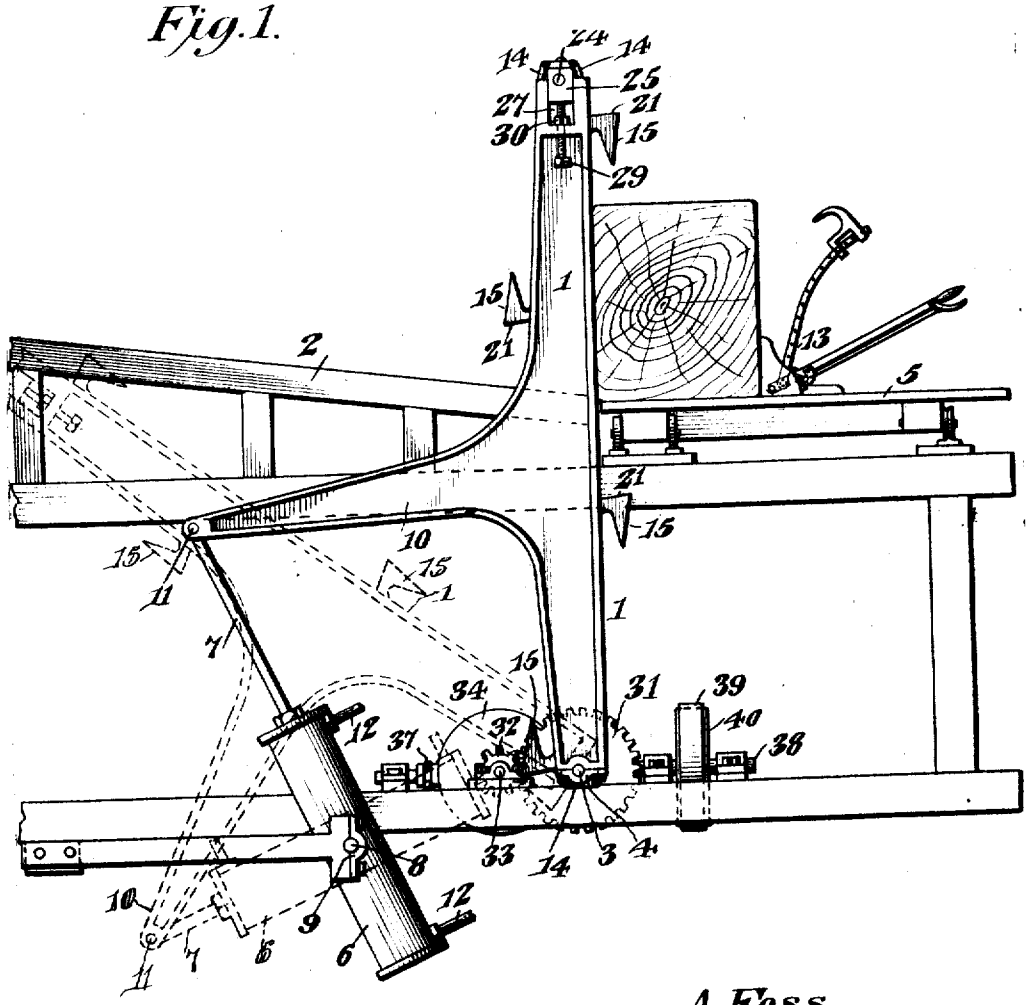
APPLICATION FILED SEPT. 12, 1907.

902,142.

Patented Oct. 27, 1908.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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3 SHEETS—SHEET 2.

Fig. 2.

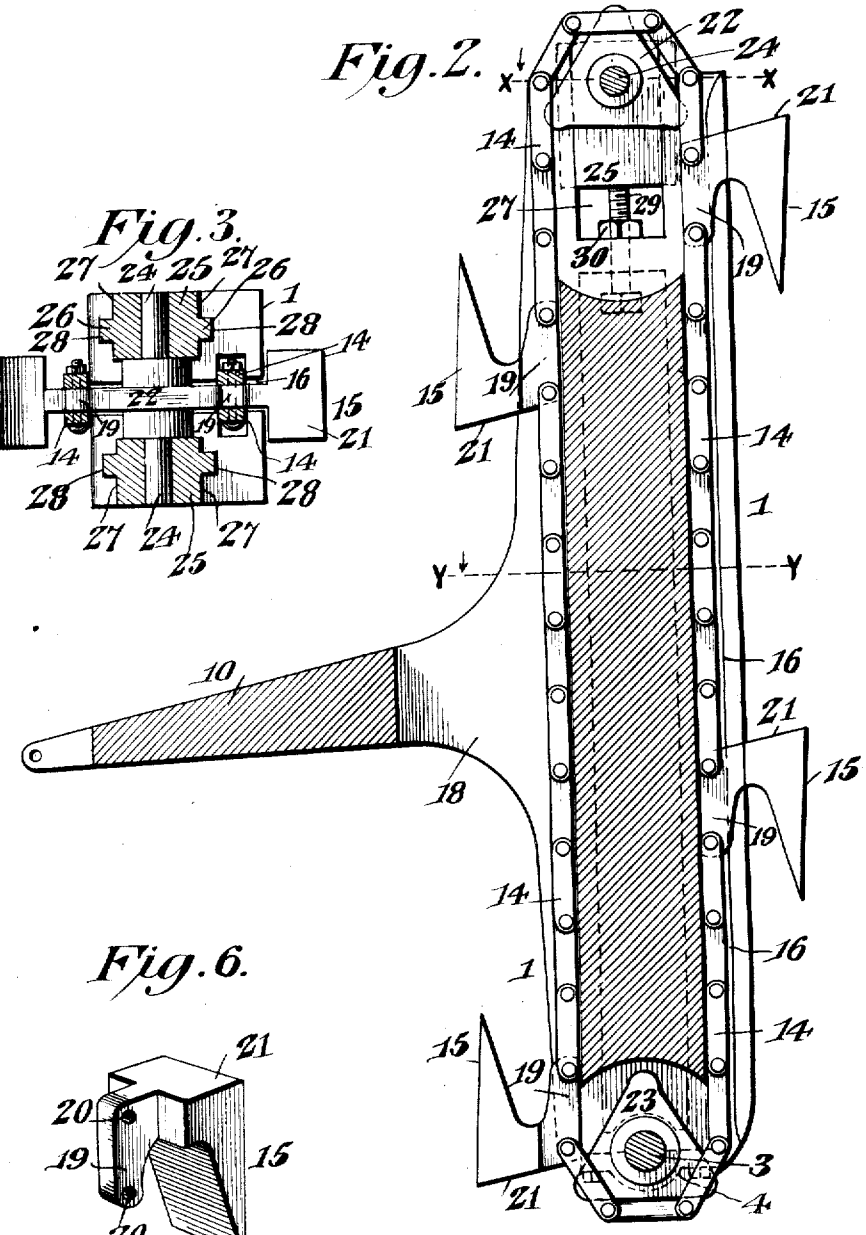


Fig. 3.

Fig. 6.

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3 SHEETS—SHEET 3.

Fig. 4.

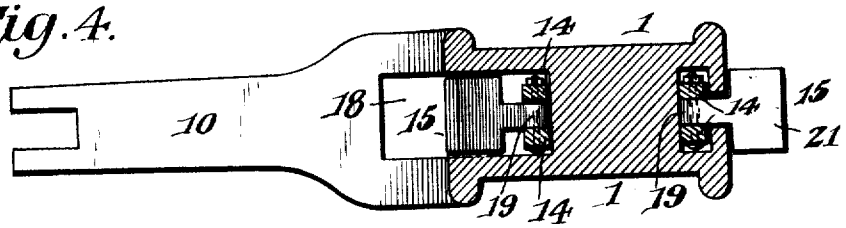
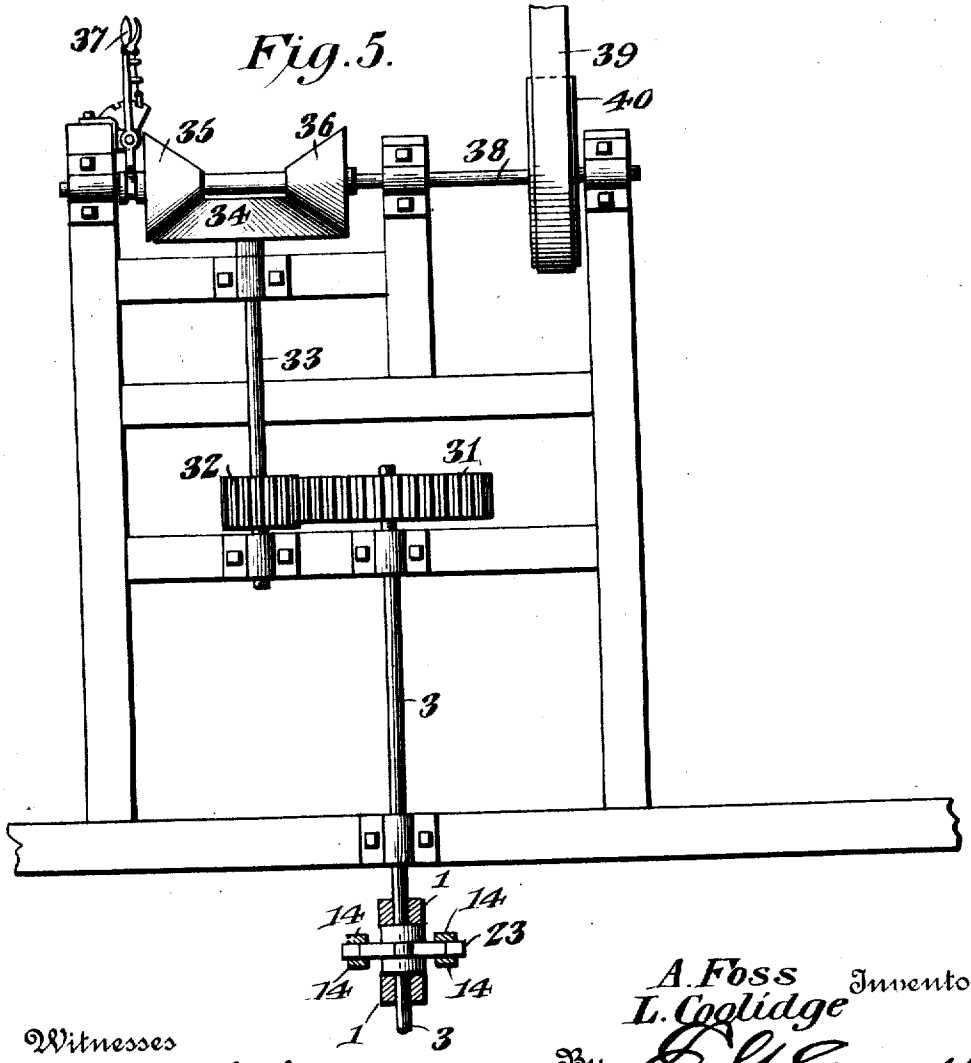


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

AAGE FOSS AND LOREN COOLIDGE, OF MONTESANO, WASHINGTON.

LOG-TURNER.

No. 902,142. Specification of Letters Patent. Patented Oct. 27, 1908.

Application filed September 12, 1907. Serial No. 392,581.

To all whom it may concern:

Be it known that we, AAGE FOSS and LOREN COOLIDGE, citizens of the United States, residing at Montesano, in the county of Chehalis and State of Washington, have invented a new and useful Log-Turner, of which the following is a specification.

The invention relates to improvements in log turners.

The object of the present invention is to improve the construction of log turners, and to provide a log turner of simple and comparatively inexpensive construction capable of enabling a log to be handled with greater facility than heretofore both in moving it from the log deck to the carriage and in turning it thereon.

A further object of the invention is to provide a log turner of this character, which will be easy on the timber and not knock out large chunks from the logs when turning the same.

Also it is the object of the invention to provide a log turner, adapted to turn a log either against or from the knee of a head block, and capable of engaging the log either at the top or bottom to arrange either the top or bottom face of the log at the front.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended: it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is an elevation of a log turner, constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view of the oscillatory support or lever, illustrating the arrangement of the endless chain and the dogs thereof. Fig. 3 is a transverse sectional view, taken substantially on the line x—x of Fig. 2. Fig. 4 is a similar view, taken substantially on the line y—y of Fig. 2. Fig. 5 is a plan view, illustrating the arrangement of the gearing for operating the endless chain. Fig. 6 is a detail perspective view of one of the dogs.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates an oscillatory lever or member of suitable metal and consisting of a bar or beam, extending upwardly from a point beneath the log deck 2 of a saw mill, and pivotally mounted at its lower end by means of a horizontal shaft 3, a suitable bearing 4 being provided at the lower end of the lever or support 1 for the shaft 3. The log deck is provided with a suitable opening for the passage of the upper portion of the lever or support, which is adapted to swing toward and from a saw mill carriage 5 from the position shown in full lines in Fig. 1 of the drawings to that shown in dotted lines in the said figure.

The oscillatory movement of the lever or support is effected by means of a pivotally mounted cylinder 6, having a piston 7, which extends upwardly from the cylinder. The cylinder is provided at its center with suitable trunnions 8, and it is pivotally mounted in suitable bearings 9 to enable it to conform to the oscillatory movements of the support or lever 1. The support or lever 1 is provided at an intermediate point with a rearwardly projecting arm 10, arranged approximately at right angles to the body of the lever and connected at its outer end with the outer end of the piston by a suitable pivot 11. The cylinder, which is designed to be operated by steam or other suitable power, is equipped with pipes 12 adapted to serve as exhaust and feed pipes. In practice the cylinder will be equipped with suitable means for admitting pressure at one side of the piston and for exhausting at the opposite side, but as the particular construction of such mechanism does not constitute any portion of the present invention, detail illustration and description thereof are deemed unnecessary. The cylinder through its piston is adapted to swing the lever or support upwardly from the dotted position of Fig. 1 to move a log towards the saw mill carriage, and it is adapted to hold a log tightly against the knees of the carriage, while the former is being properly secured by suitable dogging mechanism 13.

The support or lever is equipped with an endless chain 14, provided at intervals with dogs 15 operating in a front longitudinal groove 16 of the body portion of the lever or support, the inner end of the arm being provided with a slot or opening 18 for the passage of the chain and the dogs. The chain, which may be of any preferred construction, is preferably made up of links arranged al-

ternately at the sides and at the center of the chain, and the dogs, which are tapered longitudinally of the chain, are provided with integral shanks 19, having end perforations 20 and pivoted to the adjacent side links of the chain. The dogs are provided with straight rear edges or faces 21, arranged at an acute angle to the outer front faces of the dogs and forming heel portions, which are adapted to engage a log at the bottom thereof. The points formed by the taper of the dogs are adapted to engage the log at the top thereof. The endless chain, which is mounted on upper and lower sprocket wheels 22 and 23, may run in either direction to engage a log either at the top or bottom and to turn a log either against or from the knees, or to move a log toward or from the saw mill carriage. The front groove 16 of the body portion of the lever is T-shaped in cross section, and it forms opposite inwardly extending or over-hanging side portions or flanges to engage the side links, as clearly illustrated in Fig. 4 of the drawings. The dogs are provided with straight inner faces, located at opposite sides of the shanks 19 and arranged to slide on the support at opposite sides of the longitudinal groove 16, and the said dogs, when at the front of the support, are interlocked with the same by means of the endless chain. The side flanges, which extend longitudinally of the groove 16, prevent the chain from pulling out of the groove, and they keep the dogs from tilting either upwardly or downwardly. This construction also provides a log turner of great strength and enables the log turner to be constructed of any size to suit the character of work to be performed, and the necessary power may be applied to the log turner without liability of injuring the dogs or the endless chain.

The upper and lower sprocket wheels 22 and 23 are triangular, and the upper one is mounted on an upper shaft 24, journaled in suitable bearings of adjustable blocks 25, which are adapted to be moved upwardly to stretch the endless chain to the desired tension. The bearing blocks 25, which are provided with opposite ribs 26, are arranged in vertical recesses 27 of the upper end of the lever or support, and the ribs 26 engage corresponding grooves 28 in the opposite walls of the recesses 27. The lower ends of the slidable bearing blocks 25 are engaged by adjusting screws 29, mounted on the lever or support at the bottom of the recesses 27 and secured in their adjustment by suitable lock nuts 30.

The lower sprocket wheel is mounted on the horizontal shaft 3, which is connected by spur gears 31 and 32 with a countershaft 33, and the latter carries a friction wheel 34, located between opposite friction pinions 35 and 36 of the shifting mechanism, having an operating lever 37. The shifting lever is adapted to be operated to carry either of the friction pinions 35 and 36 into engagement with the friction wheel 34 for moving the endless chain in either direction. The friction pinions 35 and 36 are mounted on a shaft 38, which is connected by a belt 39 and a pulley 40 with any suitable source of power. Instead of employing shifting mechanism having friction wheels, spur gears, or other form of shifting mechanism may be provided for operating the endless chain. As the lever or support is pivotally mounted on the horizontal shaft, which carries the lower sprocket wheel 23, the oscillation of the support or lever does not affect the operation of the gearing. The ends of the body portion of the support or lever are slotted or bifurcated to receive the sprocket wheels, the side recesses 27 being located at opposite sides of the upper slot or bifurcation.

When the front flight of sprocket chains is moved upwardly, one of the dogs will be carried into engagement with the lower face of the log, and the latter will be rotated in a direction to present its bottom face to the saw. When it is desired to present the top of the log to the saw, the chain is moved in the opposite direction to engage one of the dogs with the upper face of the log, and the support is then swung backwardly to tilt the log to bring its top face to the front.

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

1. In a log turner, the combination of an oscillatory support adapted to fit against one of the faces of a log, a cylinder having a piston connected with the support for actuating the same, an endless chain mounted on the support and provided with log-engaging means spaced apart a sufficient distance to permit the log to fit against a support and adapted to engage a log either at the top or bottom, and gearing connected with the endless chain for operating the same.

2. In a log turner, the combination of an oscillatory support adapted to fit against one of the faces of a log, an endless chain provided with dogs tapered longitudinally of the chain to form front engaging portions and provided with straight rear edges, whereby the dogs are adapted to move a log in either direction, means for oscillating the support, and gearing for operating the chain.

3. In a log turner, the combination of an oscillatory support having a groove provided with inwardly extending flanges, an endless chain mounted on the support and operating in the groove and adapted to engage the inner faces of the said flanges and provided with exterior dogs slidable on the

outer faces of the said flanges, said dogs being interlocked with the support by the endless chain, and gearing for operating the chain.

4. In a log turner, the combination of an oscillatory support provided with a front groove and having its ends bifurcated, the upper end of the support being also provided with opposite recesses, bearing blocks arranged in the recesses and slidably interlocked with the walls thereof, an upper shaft carried by the bearing blocks, a lower shaft forming a pivot for the support, sprocket wheels mounted on the upper and lower shafts, a chain meshing with the sprocket wheels and operating in the front groove and provided with dogs and interlocked with the support by the said chain, adjusting devices connected with the bearing blocks for stretching the chain, and gearing connected with the lower shaft for operating the chain.

5. In a log turner, the combination of an oscillatory support provided at its front with a longitudinal groove, sprocket wheels mounted at each end of the support, a chain arranged on the sprocket wheels and extending along the support at the front and back of the same, the front portion of the chain being located within the said groove, and dogs having flat inner faces to slide on the inner face of the support at opposite sides of the groove and provided with reduced integral shanks extending into the groove and forming links of the chain and interlocked with the support by means of the said chain.

In testimony, that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

AAGE FOSS.
LOREN COOLIDGE.

Witnesses:
D. W. FLEET,
R. H. FLEET.