(No Model.) 2 Sheets—Sheet 1.

G. E. THURSTON.

LOG TURNER.

No. 471,200. Patented Mar. 22, 1892.

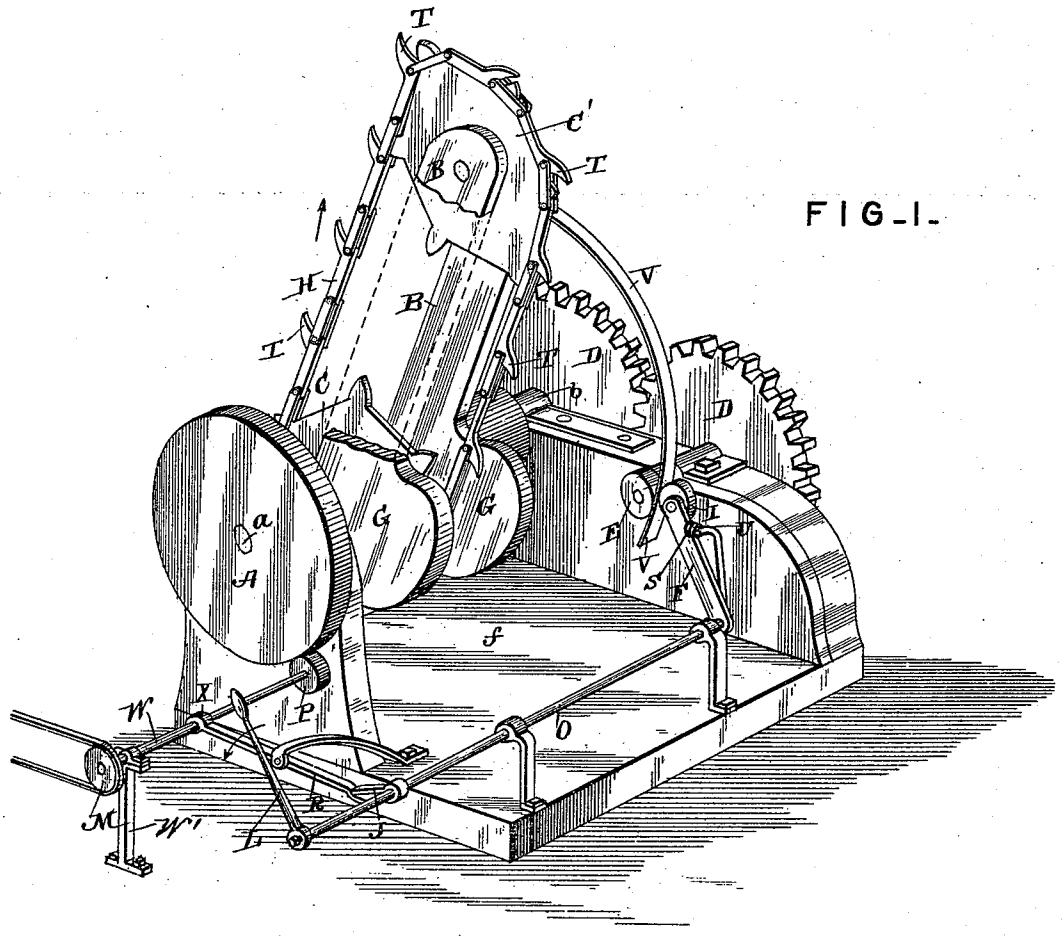

FIG-1-

Witnesses

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(No Model.) 2 Sheets—Sheet 2.

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FIG. 2.

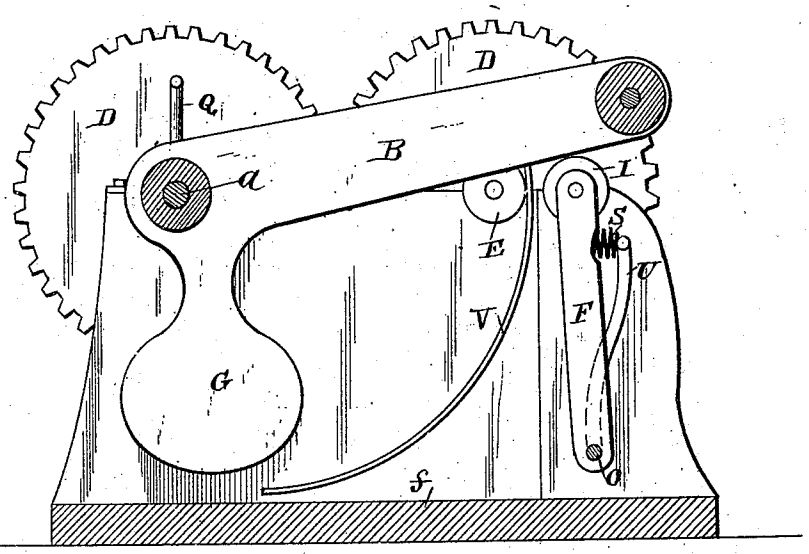
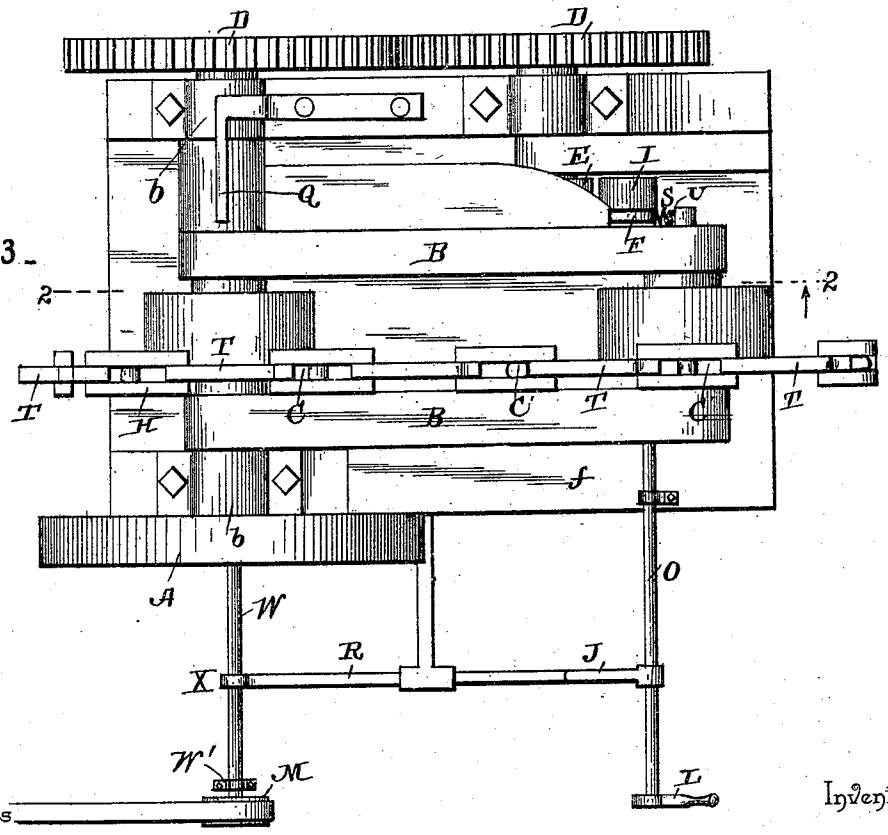


FIG. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE EBER THURSTON, OF OLEAN, NEW YORK.

LOG-TURNER.

SPECIFICATION forming part of Letters Patent No. 471,200, dated March 22, 1892.

Application filed May 8, 1891. Serial No. 391,994. (No model.)

To all whom it may concern:

Be it known that I, GEORGE EBER THURSTON, a citizen of the United States, residing at Olean, in the county of Cattaraugus and State of New York, have invented a new and useful Log-Turner, of which the following is a specification.

This invention relates to wood-sawing machines, and more especially to the log-turners adapted to be used in connection therewith; and the object of the same is to produce certain improvements in devices of this character.

To this end the invention consists in the general arrangement and details of construction hereinafter more fully described and claimed, and as illustrated on the sheet of drawings, wherein—

Figure 1 is a general perspective view of this device in its operative position. Fig. 2 is a section on the line 2 2 of Fig. 3. Fig. 3 is a plan view of the device out of engagement with the log.

Referring to the said drawings, the letter M designates the main wheel, to which power is applied by a suitable belt, and this wheel is keyed upon a swinging shaft W, which is loosely mounted near one end in a bearing W′ and at its other end has a friction-pulley P, adapted to be borne against the driving-wheel A of this device by mechanism hereinafter described. The driving-wheel A is keyed upon a shaft *a*, mounted in suitable boxes *b* and supported by a base *f*, and upon this shaft is journaled a U-shaped frame B. On the shaft between the arms of this frame is keyed a sprocket-wheel C, which is connected by a chain belt H with another sprocket-wheel C′, journaled at the outer end of the frame B, and this sprocket-chain H has outwardly-projecting fingers or teeth T, as shown. When the device is in operative position, as seen in Fig. 1, the chain belt H is being moved in the direction of the arrow by the rotation of the friction-pulley P in contact with the driving-wheel A, and as the teeth T of the chain H engage the log the latter will be turned upon the carriage of the wood-sawing machine in a manner which will be obvious.

To start and stop the movement of this chain H, I make use of the following devices: O is an operating-shaft, upon which is keyed a lever L and a projection J. R is a rod centrally pivoted to a suitable support and one end passing beneath the projection J, while the other end has a box X, in which the swinging shaft W turns freely. When the lever L is moved in the direction of the arrow in Fig. 1, one end of the rod R is depressed and the box X at its other end is raised. This raises the friction-pulley P into contact with the driving-wheel A, and as said pulley is constantly driven by the main wheel M when it is brought into contact with said driving-wheel the shaft *a* will of course be turned and the chain H moved.

In its normal position this log-turning device stands as best seen in Figs. 2 and 3—that is to say, with the frame B in an approximately horizontal position, so that the teeth T of the chain H will not engage the log, and the frame is held in this position by a weight G, secured thereto.

Secured to the frame is a curved arm V, which passes over a friction-wheel E, and the latter is mounted on a shaft which is driven from the main shaft by intermeshing gears D.

The letter F designates a swinging arm mounted loosely on the operating-shaft O and carrying an idle-wheel I at its extremity, and the end of said shaft O is turned up, as seen at U, an expansive spring S being interposed between this upturned end and the arm F to press the latter normally forward, so as to bear the curved arm V against the friction-wheel E. This occurs when the lever L is raised, as seen in Fig. 1, although when this lever is moved in the opposite direction the idle-wheel I will be drawn out of contact with the curved arm V, and the weight G will return the frame B to its horizontal position.

With the above construction of parts, the frame B standing in a horizontal position, and it becoming desirable to elevate it so as to turn the log, the lever L is moved in the direction of the arrow, as seen in Fig. 1. This bears down the projection J, raises the friction-pulley P, and starts the rotation of the shaft *a* and the movement of the chain H, though the frame holding the latter is in a horizontal position; but the intermeshing gears D cause the friction-wheel E to rotate, and the upward movement of the lever throws the idle-wheel I toward said friction-wheel and clamps the curved arm V between these

wheels, so that as the wheel E rotates the arm V is slowly raised, and with it the frame B. When the latter reaches an upright position, as seen in Fig. 1, it strikes a stop Q, which prevents its further elevation, and the friction-wheel E then slips against the arm V, the spring-actuated idle-wheel I yielding to permit. At this time the teeth T of the chain H engage and turn the log, and as soon as it has been turned sufficiently the operator releases the pressure upon the lever L, when the weight G will return the parts to their normal position.

The device is easy to manufacture and simple in its construction and operation, and considerable change may be made in the details of construction without departing from the spirit of my invention.

What is claimed as new is—

1. In a log-turner, the combination, with a shaft having a driving-wheel and a sprocket-wheel, a second sprocket-wheel mounted in movable bearings, a toothed chain connecting the sprockets, and an arm projecting from said bearings, of a rotating shaft mounted in a box, a pivoted rod carrying said box, an operating-shaft having a projection engaging said rod, a spring-pressed idle-wheel carried by a swinging arm, which is connected with a turned-up end of said operating-shaft, and a rotating friction-wheel, the arm which projects from the bearings standing between the idle and friction wheels, as and for the purpose set forth.

2. In a log-turner, the combination, with a shaft having a driving-wheel and a sprocket-wheel, a second sprocket-wheel mounted in movable bearings, a toothed chain connecting the sprockets, and an arm projecting from said movable bearings, of a rotating shaft mounted in a box, a pivoted rod carrying said box, an operating-shaft having a projection engaging said rod, and friction devices operated by the oscillation of said operating-shaft to move the arm, which projects from the bearings longitudinally, and to rotate the shaft carrying the driving-wheel, as and for the purpose set forth.

3. In a log-turner, the combination, with a shaft, means for turning it at will, a sprocket-wheel fixed thereon, a frame pivotally mounted thereon, another sprocket-wheel journaled at the other end of the frame, and an endless chain passing over the sprocket-wheels and having outwardly-projecting teeth, of a weight on the lower side of said frame, a friction-wheel driven by gearing from said shaft, a curved arm projecting from the frame and passing over said friction-wheel, an idle-wheel opposite said friction-wheel, an operating-shaft having a turned-up end, to which said idle-wheel is connected yieldingly, and a lever for moving said shaft, as and for the purpose set forth.

4. In a log-turner, the combination, with a shaft, means for turning it at will, a sprocket-wheel fixed thereon, a frame pivotally mounted thereon, another sprocket-wheel journaled at the other end of the frame, and an endless chain passing over the sprocket-wheels and having outwardly-projecting teeth, of a weight on the lower side of said frame, a friction-wheel driven by gearing from said shaft, a curved arm projecting from the frame and passing over said friction-wheel, an operating-shaft having a lever, a swinging arm pivoted onto said shaft and having an idle-wheel opposite said friction-wheel, the end of the shaft being turned up, and a spring between said end and arm, as and for the purpose set forth.

5. In a log-turner, the combination, with the main shaft having a driving-wheel, a sprocket-wheel fixed on said shaft, a frame pivotally mounted thereon, another sprocket-wheel journaled at the other end of the frame, and an endless chain passing over the sprocket-wheels and having outwardly-projecting teeth, of a weight on the lower side of said frame, a rotating friction-wheel, a curved arm projecting from the frame and passing over said friction-wheel, an operating-shaft having a lever and a projection, a swinging arm on said shaft having an idle-wheel opposite said curved arm, a swinging shaft rotated by suitable power and having a friction-pulley opposite said driving-wheel, and a centrally-pivoted rod, one end having a box embracing said swinging shaft and the other end being engaged by said projection, as and for the purpose set forth.

6. In a log-turner, the combination, with the main shaft having a driving-wheel, a sprocket-wheel fixed on said shaft, a movable frame, another sprocket-wheel journaled in the frame, and an endless chain passing over the sprocket-wheels and having outwardly-projecting teeth, of a rotating friction-wheel, an arm projecting from the frame and passing over the friction-wheel, an operating-shaft having a lever, one end of the shaft being turned up, a swinging arm pivoted on said shaft and having an idle-wheel opposite said friction-wheel, a spring between said arm and upturned end, a swinging shaft rotated by suitable power and having a friction-pulley opposite said driving-wheel, a centrally-pivoted rod one end of which has a box embracing said swinging shaft, and a projection on the operating-shaft engaging the opposite end of said rod, as and for the purpose set forth.

7. In a log-turner, the combination, with the main shaft having a driving-wheel, a sprocket-wheel fixed on said shaft, a frame pivotally mounted thereon, another sprocket-wheel journaled at the other end of the frame, and an endless chain passing over the sprocket-wheels and having outwardly-projecting teeth, of a weight on the lower side of said frame, a friction-wheel driven by gearing from said main shaft, a curved arm projecting from the frame and passing over said friction-wheel, and means, substantially as described,

for simultaneously applying power to said driving-wheel and pressing the curved arm against the friction-wheel, as and for the purpose set forth.

8. In a log-turner, the combination, with the main shaft having a driving-wheel, a sprocket-wheel fixed on said shaft, a frame pivotally mounted thereon, another sprocket-wheel journaled at the other end of the frame, and an endless chain passing over the sprocket-wheels and having outwardly-projecting teeth, of a weight on the lower side of said frame, a friction-wheel driven by gearing from said main shaft, a curved arm projecting from the frame and passing over said friction-wheel, an idle-wheel opposite said friction-wheel, a swinging arm, in the free end of which said idle-wheel is journaled, a stop limiting the rise of said frame, and means, substantially as described, for simultaneously applying rotary power to said driving-wheel and pressing said swinging arm with a yielding force toward said curved arm, as and for the purpose set forth.

9. In a log-turner, the combination, with a main shaft, a sprocket-wheel thereon, another sprocket-wheel mounted in movable bearings, an endless chain passing over said sprocket-wheels and having outwardly-projecting teeth, and a friction-arm projecting from said movable bearings, of a rotating friction-wheel, an idle-wheel adjacent said friction-wheel, between which wheels said friction-arm projects, a swinging arm, in the free end of which said idle-wheel is journaled, and means, substantially as described, for simultaneously applying rotary power to the sprocket-wheel on the main shaft and pressing said swinging arm toward said friction-arm, as and for the purpose hereinbefore set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

GEORGE EBER THURSTON.

Witnesses:
WILLIAM COBB,
WILLIAM V. SMITH.