

(No Model.)

R. D. INMAN.

COMBINED SET WORKS AND INDEX MECHANISM FOR SAWMILLS.

No. 578,928.

Patented Mar. 16, 1897.

Fig. 1.

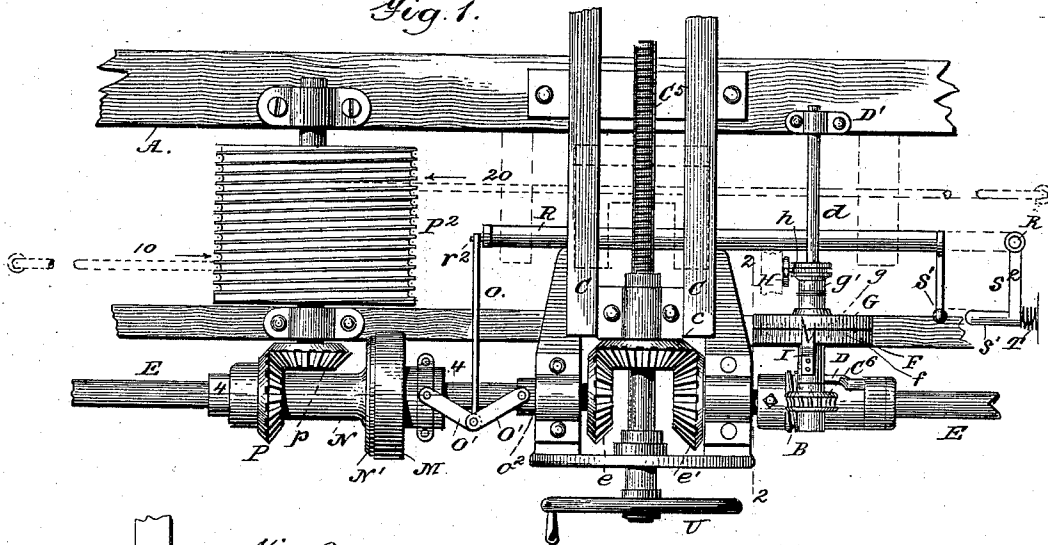


Fig. 2.

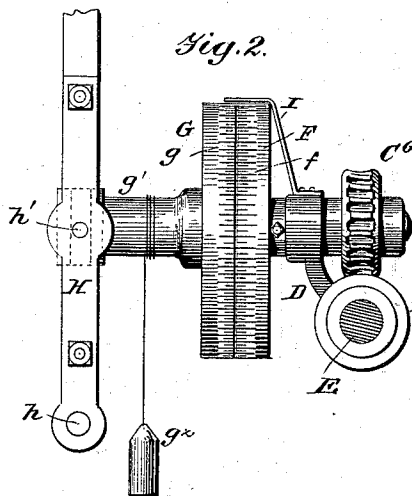


Fig. 4.

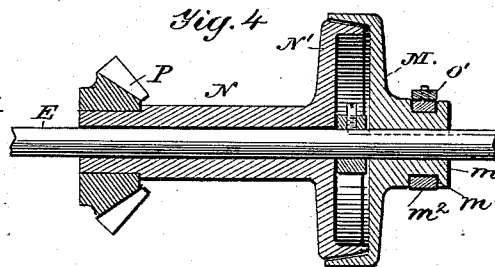


Fig. 3.

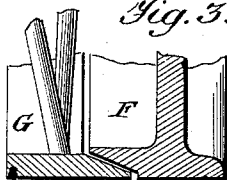


Fig. 5.

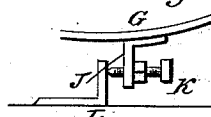
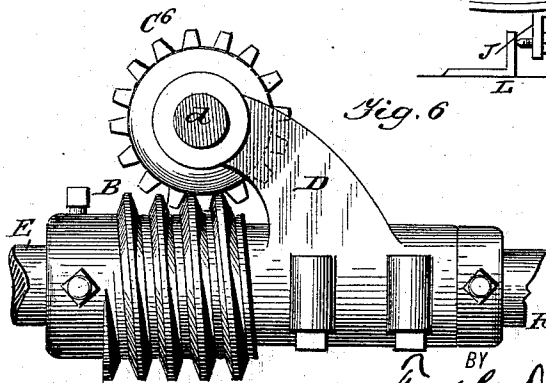


Fig. 6.



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COMBINED SET-WORKS AND INDEX MECHANISM FOR SAWMILLS.

SPECIFICATION forming part of Letters Patent No. 578,928, dated March 16, 1897.

Application filed September 23, 1896. Serial No. 606,741. (No model.)

To all whom it may concern:

Be it known that I, ROBERT D. INMAN, residing at Portland, in the county of Multnomah and State of Oregon, have invented a new and Improved Combined Set-Works and Index Mechanism for Sawmills, of which the following is a specification.

My invention relates to improvements in wood-sawing machinery, and it primarily seeks to provide a simple and economically-constructed set-works automatically operated and arranged to quickly and accurately set the head-blocks or knees in order to saw the log into lumber of any desired thickness.

My invention also seeks to provide a simple means for reciprocating the carriage, lever mechanism for reversing the movement, and index mechanism set in an operative condition by such lever mechanism, arranged in such a manner as to be readily manipulated by the "setter."

With other objects in view, which will hereinafter be referred to, my invention consists in a sawmill-carriage and operating mechanism therefor and for setting the knees, embodying the peculiar combination and novel arrangement of parts such as will be first described in detail and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a top plan view of a portion of a sawmill-carriage with my improvements applied. Fig. 2 is a transverse section taken on the line 2 2 of Fig. 1. Fig. 3 is a detail view of the friction-disk members, having the index marks or scales. Fig. 4 is a detail longitudinal section taken on the line 4 4 of Fig. 1. Fig. 5 is a detail view of the top devices for the index-disks hereinafter referred to, and Fig. 6 is a detail end view of the index mechanism.

Referring now to the accompanying drawings, in which like letters indicate like parts in all the figures, A represents the sawmill-carriage and C indicates one of the transverse guide-rails, upon which is held to slide a head-block or knee in a manner presently described.

At a point near the central guide-rails is journaled a drum P^2 of about eighteen to twenty inches diameter, which drum is attached to and moves with the carriage, such drum serving as the means of communicating power to

the set-works and the index mechanism in a manner which is best illustrated in Fig. 1.

By reference to such Fig. 1 it will be seen the drum has a series of annular grooves in which a pair of operating ropes are adapted to seat. Such ropes, which are designated by 10 and 20, have one end secured to the drum, while their other end is secured permanently to a fixed part of the mill, the adjacent or drum ends of such ropes being carried over the drum in reverse directions, so that when the carriage moves in one direction one rope will be unwinding as the other winds up, and vice versa.

The shaft of the drum P^2 has a bevel-pinion p , which meshes with a bevel-pinion P on a hub member N , loosely fitted on a main drive-shafting E , which has bevel-pinions e e' , which mesh with a bevel-pinion c on the knee or head block operating screw-shafts C^5 , as clearly shown.

The hub N has a friction-disk member N' , which is adapted to engage a slidable friction clutch-disk M , having a spline connection with the shaft E , whereby it will rotate with such shaft and be made longitudinally to engage the clutch-disk N' , such disk M having a hub portion m , provided with an annular groove m' , in which is held a band m^2 , as shown.

R indicates a rock-shaft journaled longitudinally of the carriage and at a point under or near the knee or block guides C , which shaft at one end has a crank-handle s' , disposed in convenient reach of the setter, and which has its pendent member s^2 normally held in engagement with a buffer-spring T , which serves to throw the shaft R back to its normal position, when hand-pressure is released.

At the opposite end the shaft R has crank member r^2 , to which is connected one end of a pitman O , which connects to the toggle-links $O' O'$, one of which connects with a fixed hub portion o^2 of the carriage, while the other is pivotally connected to the collar m^2 of the slide-clutch M .

So far as described it will be readily seen that when the setter manipulates the lever or handle s' to rock the shaft R the pitman O will expand the toggle-links O' and thereby cause the clutch-disk M to make contact with

the disk N', lock the hub N with it, and thereby utilize the power from the drum P², transmitted to gear P, to revolve the shaft members E E and cause it through its several bevel-gear connections to operate the several screw-shafts which connect with and operate the knees, the feed of such knees depending on the time which the operator holds the clutch-disks M and N in contact, it being understood that the setting of the log is accomplished before the carriage has moved near enough to the saw to bring the log in engagement therewith.

In connection with my improved means for setting the log I employ an index attachment adapted to be operated by the movement of the carriage and simultaneously with the movement of the knees, which mechanism in practice is disposed on the carriage in close proximity to the setter's place and so arranged that the index can be quickly and positively determined without the necessity of making deductions or additions common in the ordinary indexing devices now in general use.

Referring now more particularly to Figs. 2, 3, and 5, which illustrate clearly the index mechanism, it will be seen that on one portion of the drive-shafting E is secured a worm-wheel B and a bracket D, in which and a suitable bracket D' on the carriage-frame is journaled a transversely-disposed shaft *d*, on the front end of which is secured a worm-wheel C⁶, which meshes with the worm-wheel B.

On the shaft D is also fixedly held a friction-disk member F, having index-marks *f* on its peripheral face, which is adapted to be engaged by a frictional disk member G, loosely held on the shaft *d*, having index-marks *g* on its outer face, such disk also having a hub member *g*², to which is connected one end of a cord or chain hung pendent by the weight *g*¹, the purpose of which will presently appear.

I indicates an index or pointer secured to the bracket C⁶ and projected over the disks F and G, as shown.

H indicates a lever fulcrumed at *h* to a bearing on the carriage-frame and pivotally connected at *h*' to the hub of the loose disk G, the upper end of such lever being in close proximity to the lever *s*', so the setter can manipulate both without changing his position.

It will be noticed that the arrangement of the parts is such that the indexing mechanism can only be operated when the setter holds lever *s*' to set in operation shaft-section. It will thus be clear that during the forward feed of the carriage the setter, by manipulating the lever H, causes index-disks to move, and when the same has moved four inches or so much as it is intended to set out the log he releases the lever H, at which time the weight *g*² will turn the disk G, which forms the indicator-disk proper, back to its starting-point for another set out, the backward

movement of the said disk G being limited by an adjustable stop J K and fixed bracket L, as clearly shown in Fig. 5.

It should be stated that as the index mechanism can be operated at any time the shaft members E revolve it is not necessary to throw out the lever H just before the log reaches the saw, as it may be done at any time while carriage is moving forward.

So far the setting mechanism has been described in its operation for moving the log out against the saw. I will now describe the use of the operating mechanism on the backward movement of the carriage.

When the log is sawed and all off the carriage and it is desired to put another log on for sawing, (the knees at this time being at their extreme outer position,) it is necessary to first move the knees back sufficiently to receive the next log. This is done by throwing the lever or clutch mechanism for operating shafting E in gear when the carriage starts back empty. During this operation the rotation of the shafting E will be a reverse one, and the several screw-shafts which operate the knees will be revolved likewise, and consequently move such knees backward to a position to receive a log, such backward movement being regulated by the setter, who can by manipulating lever or handle *s*' move the knees back partially or entirely their full movement.

Each of the knee-operating screw-shafts is extended and provided with a hand-wheel and crank, so they can be operated by hand when the attachments are not in position for operation.

From the foregoing description, taken in connection with the accompanying drawings, the advantages and complete operation of my invention will be clearly understood. The same is of a simple nature, the operation of setting the knees and manipulating the index mechanism being easily accomplished by the setter. The parts are so arranged and combined that they can be economically constructed, easily manipulated, and adapted for an effective and positive operation for the intended purposes.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A sawmill-carriage having a main drive-shafting rotated in reverse directions by the reciprocal movement of the carriage, screw-shafts for operating the knees, geared with such drive-shafting, the shaft *d* geared with the main drive-shafting, index devices mounted on the shaft *d*, said devices consisting of an indexing-wheel slidable and rotatable on the shaft *d*, said wheel having a clutch member, a fixed clutch member held on the shaft *d*, lever devices for sliding the rotatable wheel-clutch, in engagement with the fixed clutch and means for rotating the sliding wheel back to a normal or zero position as set forth.

2. In a sawmill-carriage, the combination

with a main drive-shaft operated by the movement of the carriage, a knee-setting mechanism having a drive-shaft, having clutch-gear connections with the main drive-shaft, of an indexing device comprising a drive-shaft 5 geared with the main drive-shaft, a clutch index-wheel fixedly held on such shaft, and index clutch-wheel held to rotate and slide on the shaft *d*, automatically rotated to a reverse or normal position when released from 10 the fixed clutch-wheel and lever devices for shifting the slidable wheel in engagement with the fixed clutch-wheel as specified.

3. In a sawmill-carriage, the combination 15 with the knees and the knee-setting mechanism, of an index means consisting of a drive-shaft geared with the setting mechanism a clutch-wheel fixedly held on the shaft, a sliding clutch-wheel loosely held on the shaft 20 having index-marks on its periphery, a point-

er, a lever for moving the slide-wheel in engagement with the fixed wheel and means for returning the index-wheel to normal position substantially as shown and for the purposes 25 described.

4. In a sawmill-carriage as described, the combination with a knee, a screw-shaft for operating same, the shaft E geared with the screw-shaft, the operating-drum P² the sliding clutch N having gear P geared with the 30 drum-shaft, the rock-shaft R, means for holding it to its normal position, the sliding disk M, toggles O' O' the pitman O all being arranged in the manner substantially as shown and described.

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