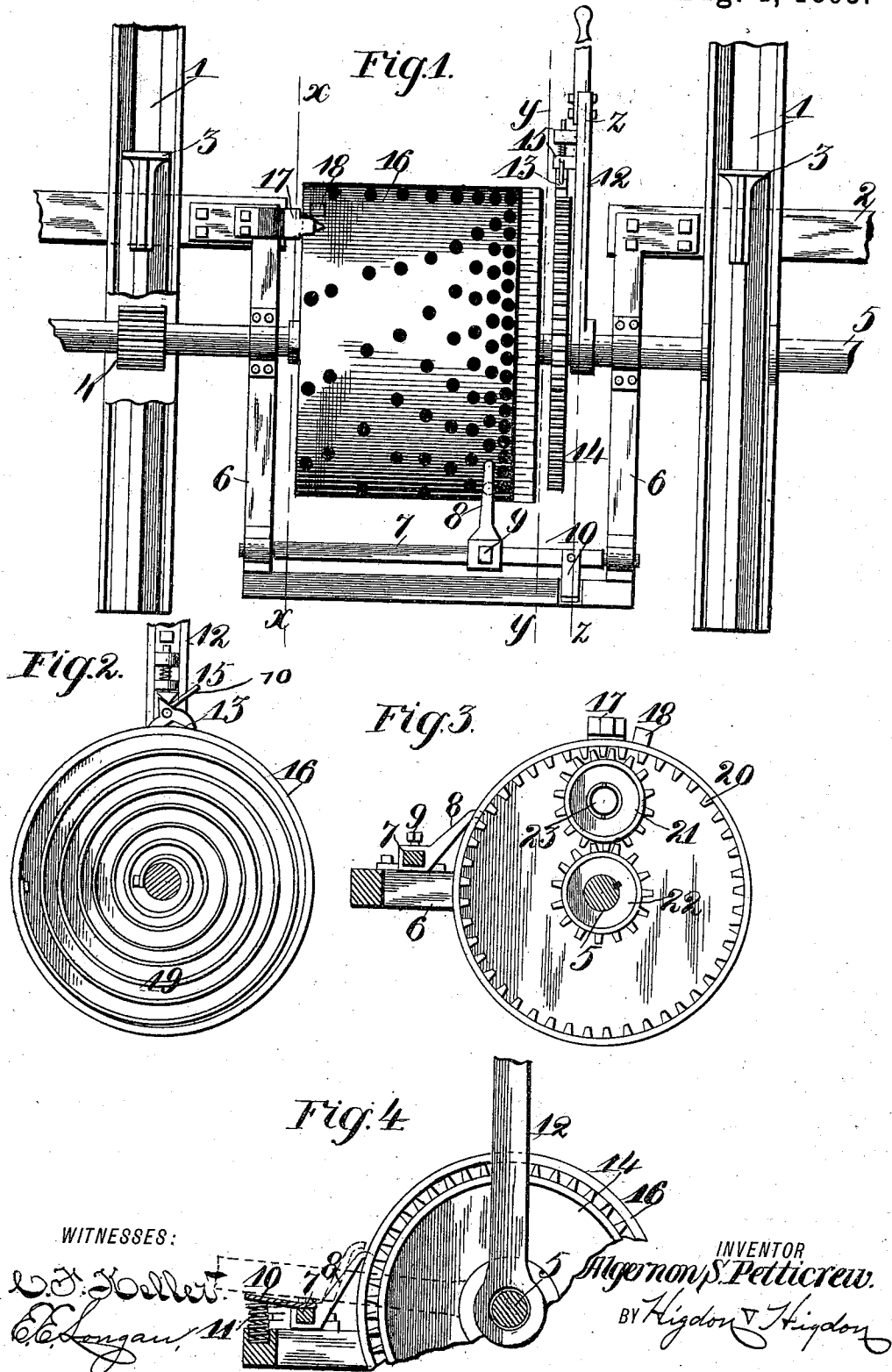


(No Model.)

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AUTOMATIC RECEDING SAWMILL SET WORKS.

No. 502,316.

Patented Aug. 1, 1893.



WITNESSES:

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ALGERNON S. PETTICREW, OF ST. LOUIS, MISSOURI.

AUTOMATIC RECEDING SAWMILL-SETWORKS.

SPECIFICATION forming part of Letters Patent No. 502,316, dated August 1, 1893.

Application filed January 20, 1891. Renewed July 1, 1893. Serial No. 479,394. (No model.)

To all whom it may concern:

Be it known that I, ALGERNON S. PETTICREW, of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Automatic Receding Sawmill-Setworks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in automatic receding saw-mill set works, and consists in the novel arrangement and combination of parts as will be fully hereinafter described and designated in the claims.

In the drawings:—Figure 1, is a top plan view of my complete invention. Fig. 2 is a vertical section taken on the line *xx* of Fig. 1, showing a volute coil located in the drum for receding the set works. Fig. 3, is a similar section taken on the line *yy* of Fig. 1, showing the inner gearing of the drum, and Fig. 4 is a vertical section taken on the line *zz* of Fig. 1.

Referring to the drawings:—1, indicates guide-ways for the knee-blocks, which guide-ways are made after the usual construction, and are so constructed that the base of the knee-blocks is free to move backward and forward in the same. Said guideways are suitably mounted upon a carriage frame 2.

3, indicates the knee-blocks proper, the bases of which are provided with teeth or cogs which are adapted to mesh with pinions 4 which are secured to the set shaft 5. Said set shaft is suitably and mechanically mounted in the guide-ways 1, and is adapted to freely move in its appropriate bearings therein. When set shaft 5 is rotated or revolved, it imparts its motion to pinions 4 which are rigidly secured to the same, and said pinions impart their motion to the knee-blocks 3.

6, indicates a frame-work in which set shaft 5 also has its bearings, and said frame-work has an additional function of affording protection for suitable mechanism mounted and partially inclosed in the same.

7, indicates a small bar or shaft which is pivotally secured in frame work 6. Secured to bar 7 is an adjustable dog 8, which has the function of holding the drum shown and consequently the set works in the desired position. Said dog is adjustable along the length

of the bar 7 and is held in a rigid position wherever desired by means of thumb-screw 9. Likewise secured to said bar 7 is an arm 10. Said arm 10 is adapted to rest upon a spiral spring 11 which spring is suitably and mechanically mounted in frame work 6. The function of said spring is to hold dog 8 in engagement with the drum as will be more fully hereinafter described.

12 indicates a lever which is free to move on set shaft 5—by the means of which and its contiguous mechanism motion is imparted to set shaft 5.

13 indicates a double or reversible pawl yieldingly secured to lever 12. Said pawl is held in engagement with the teeth formed upon the wheel 14 by means of a spiral spring 15.

Wheel 14 is rigidly secured to set shaft 5, and when said wheel is rotated or revolved consequently its motion is connected or imparted to said set shaft.

16 indicates a drum, which drum is provided on one of its edges with a graduated scale as desired and also throughout its width with a series of perforations in which the hook portion of pawl 8 is adapted to engage. Said perforations are arranged around the circumference of said drum in a series and in parallel lines. The perforations of the first line on the right as shown in the drawings—Fig. 1,—are closer together than those of the adjacent lines which are arranged across the entire width of the drum.

By means of the graduated scale formed on the drum, and the perforations formed therein and suitable locking mechanism, the width of the planks is adjusted.

17 indicates a pointer located on the frame 6 on the opposite side of the drum to which the scale is secured. By means of this pointer and scale the extent to which it is desired to rotate the drum can be readily determined by the operator casting his eye across the drum.

18 indicates a lug formed on the exterior surface of the drum against which pointer 17 is adapted to strike thereby preventing said drum from turning more than one revolution, and keeping the knee-guides from running out of their proper guides and coming in contact with the saw if advanced upon the same.

19, indicates a volute spring which is located

on the inside of drum 16 and one end of said spring is rigidly and substantially secured to set shaft 5 and the other end thereof is likewise secured to the drum. The object of this
 5 spring is to rotate the drum backward and consequently recede the set works. The opposite end of drum 16, or the end opposite to the one in which spring 19 is located is provided on its inner periphery or circumference
 10 with a series of cogs 20, which cogs are adapted to mesh with the cogs formed in the pinion 21 mounted on a stud 23, formed on the head of the drum 16. The cogs of said pinion 21 are adapted to mesh with the cogs of a similar pinion 22, which pinion is rigidly secured to set shaft.

Having fully described my invention I will now proceed to describe its operation.

When the operator desires to advance the
 20 knee-blocks 3 he bears or presses down upon lever 12, and brings it into sufficient contact with arm 10 to trip or disengage dog 8. After he has effected this disengagement by an upward movement of the lever or elevation of
 25 the same in which operation pawl 13 engages in the cogs of wheel 14, he thereby imparts motion to said wheel, and said wheel being rigidly secured to set shaft 5, will impart motion to said shaft, and said shaft will communicate its motion to pinions 4, and pinions 4
 30 will impart their forward motion to knee-blocks 3 and consequently said knee-blocks will push the log forward. Said set shaft also imparts its motion to pinion 22 which is
 35 rigidly secured thereon, and said pinion 22 imparts its motion to pinion 21, and pinion 21 imparts its motion to drum 16. When said drum has been rotated to the extent desired by the operator, which he can readily perceive by pointer 17 the dog 8 automatically engages with certain of the perforations formed in said drum. Of course
 40 this forward motion of the knee-blocks can be repeated and carried as far as the dimensions of the mechanism will permit. However, when it is desired to recede the knee-blocks or move them backward, dog 8 is disengaged by pressing down on arm 10, and the elasticity of the volute spring 19 will rotate the drum and consequently the shaft, and furthermore, the
 50 knee-blocks in a backward direction without the aid of any other mechanism to effect the backward motion of the knee-blocks. The lug 18 secured to the external surface of drum
 55 16 will prevent said drum from making more

than one revolution thereby preventing the running off of the knee-blocks as hereinbefore stated, and in the reverse motion of said drum, or the motion imparted by the elasticity of spring 19, will prevent the blocks from
 60 running off in a backward direction, or to be more explicit, the perimeter of drum 16 is approximately of the same length as the base of the knee-blocks 3.

Having fully described my invention, what I claim is—

1. The combination with knee blocks of a shaft carrying pinions engaging therewith, a drum having a perforated periphery loosely mounted upon the said shaft, but revolved
 70 thereby, a dog adapted to engage the perforations in the said drum, means for rotating the said shaft, and a spring contained within the drum and around the shaft for rotating the latter in the opposite direction, substantially
 75 as described.

2. The combination with knee blocks, of a shaft carrying pinions engaging therewith, a headed drum loosely mounted upon the said shaft and having a perforated periphery and
 80 internal cog teeth, a spring adapted to rotate the said cylinder in one direction a pinion upon the said shaft opposite the said teeth, and a pinion mounted upon the head of the drum and gearing with the said teeth and with
 85 the opposite pinion upon the shaft and a spring actuated dog adapted to engage in the perforations in the said drum, substantially as described.

3. The combination with knee blocks, of a
 90 shaft carrying pinions engaging therewith, a headed drum loosely mounted upon the shaft and having a perforated periphery and internal cog teeth, a pinion upon the said shaft opposite the said teeth, a pinion mounted upon
 95 the head of the drum and gearing with the said teeth and with the opposite pinion upon the shaft, a spring actuated dog adapted to engage in the perforations in the said drum, means for rotating the shaft, and a spring
 100 contained within the drum and around the shaft for rotating the latter in the opposite direction, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALGERNON S. PETTICREW.

Witnesses:

E. E. LONGAN,
 H. C. JOHNSON.