

(No Model.)

B. MCINTIRE & C. J. KOEFOED.
GANG EDGER.

3 Sheets—Sheet 1.

No. 504,231.

Patented Aug. 29, 1893.

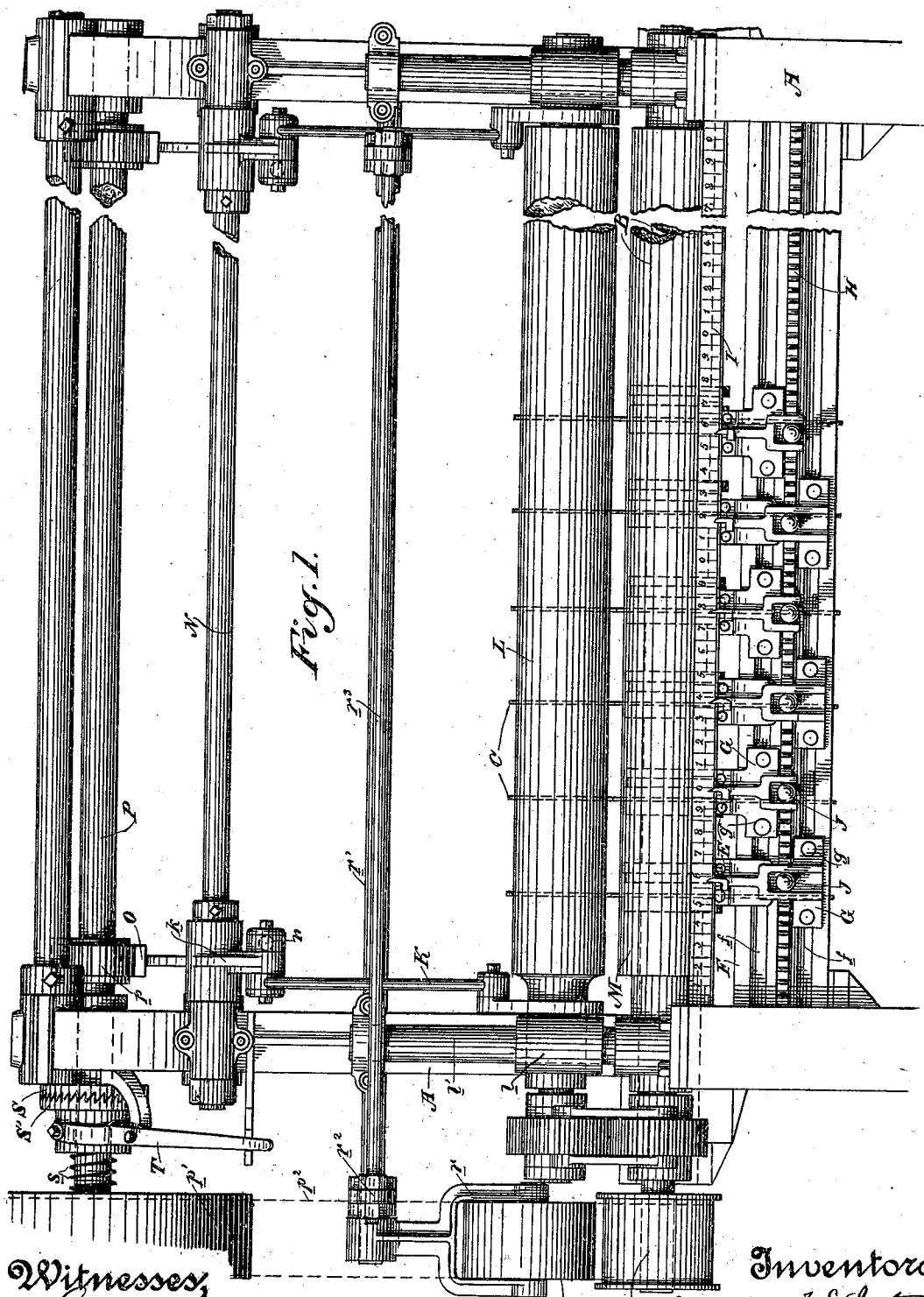


Fig. 1.

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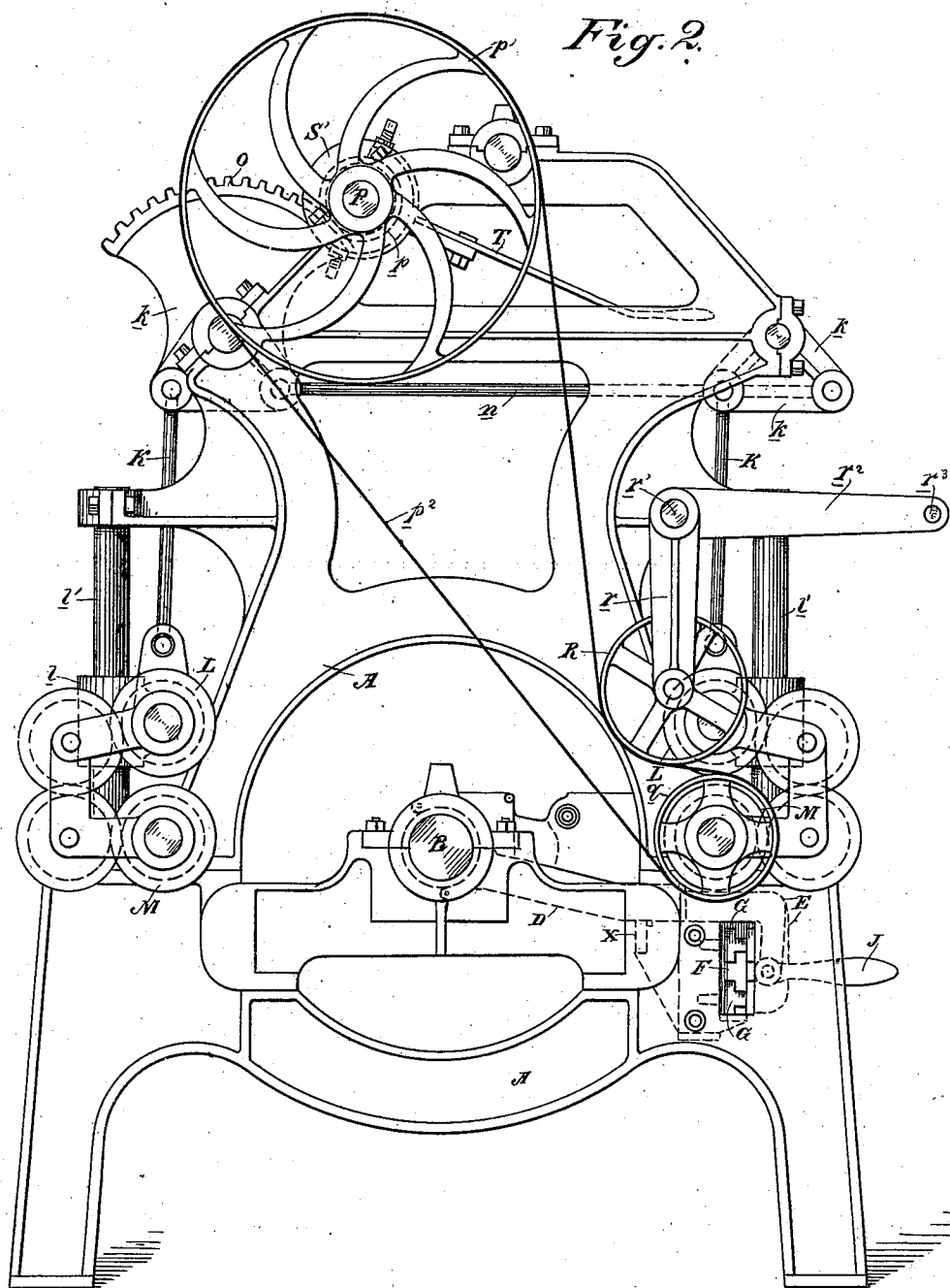
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3 Sheets—Sheet 2.

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GANG EDGER.

No. 504,231.

Patented Aug. 29, 1893.



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UNITED STATES PATENT OFFICE.

BARTLETT MCINTIRE AND CHARLES J. KOEFOED, OF SAN FRANCISCO, CALIFORNIA, ASSIGNORS TO THE VULCAN IRON WORKS, OF SAME PLACE.

GANG-EDGER.

SPECIFICATION forming part of Letters Patent No. 504,231, dated August 29, 1893.

Application filed July 5, 1892. Serial No. 439,038. (No model.)

To all whom it may concern:

Be it known that we, BARTLETT MCINTIRE and CHARLES J. KOEFOED, citizens of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Gang-Edgers; and we hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to the class of gang edgers, and it consists in the novel constructions, combinations and arrangements hereinafter fully described and specifically pointed out in the claims.

The objects of our invention are to provide simple, effective and accurate means of shifting the saws, and of raising or adjusting the feed rolls.

Referring to the accompanying drawings for a more complete explanation of our invention,—Figure 1 is a front elevation of our gang edger. Fig. 2 is an end elevation of same. Fig. 3 is a cross section through the guide bar F and saw arbor showing one of the arms D, yokes E and connected parts. Fig. 4 is a plan view of same. Fig. 5 is a view of the inner end of one of the handles J.

A is the frame of the machine.

B is the saw arbor extending longitudinally of the frame and mounted in suitable bearings at each end.

C are the saws mounted upon the arbor and fixed in collars thereon which are adapted in the usual manner to slide longitudinally upon the arbor so as to be moved nearer to or farther from each other, to determine and regulate the width of material to be cut.

In order to move or shift the saws we have the following mechanism: D are arms, the inner curved ends of which are adapted to fit in a groove or channel around the saw collars. The outer ends of these arms are connected with sliding yokes E by means of a tongue and groove connection at *e* and bolts *e'* securing them together, this connection being of such a character as will enable the arms, when the bolts are removed, to be moved to one side to be disengaged from the yokes whereby their inner ends may be disengaged from the saw collars, and enable the saws to be slipped off the arbor when required.

Along the front of the machine is secured a horizontal guide bar F having made in its outer face two grooves or ways *f* one above the other. These grooves or ways are made T-shaped in cross-section as shown. The yokes E bend over the top of this guide bar and are provided with slides G which fit into one of the ways or grooves *f*. These slides are on the inner surface of the ends of the yokes, and have head portions *g* which bear on the outer surface of the bar F, necks *g'* which pass into the opening of the grooves or ways, and body portions *g''* which fit in the grooves or ways. The neck portion bears on the top and bottom walls of the grooves or ways, and the body portion bears with its front against the front walls of the grooves or ways, but its top and bottom and back do not touch the adjacent walls. There are thereby formed four bearing surfaces, namely, the bearing of the head portions, the two bearings of the neck in the mouth of the grooves, and the bearings of the front of the slides within the grooves. The slides of alternate yokes fit in the same grooves, that is to say, the first yoke may have its slide fitted in the lower groove, the next have its slide fitted in the upper groove, and the next in the lower groove again, so that there need be but two grooves or ways to act as guides for the whole series of slides. These slides, by reason of their bearing in the grooves or ways, fit very accurately and move easily, and therefore do not have to be very long. They do not bind when the yokes and saws are moved from side to side. The placing of the grooves or ways in the outer surface of the guide bar prevents saw-dust from accumulating in them which would have a tendency to prevent a free movement of the slides.

Along the longitudinal front center of the guide bar F is formed or secured the notched bar H, said notches corresponding with the figures on a bar I above which represent certain fractions of lumber measurement, and the notches corresponding with these figures represent the fractional value.

Pivoted in the outer ends of the yokes are the gravity handles J having projections *j* on their inner ends or heads adapted to enter the notches of the bar H, and thus to

hold the yokes in the position to which they are adjusted. This projection is preferably made tapering as shown, being smaller at the end that first enters the notches in the bar, thereby acting as a guide in case the handle is not exactly opposite the notch in the bar. The weight of the outer end of the handle is sufficient to keep the inner end engaged with its notch, but when the handle is lifted the inner end is disengaged and the whole device may be pushed to one side or the other, thus moving the saw upon its arbor.

X is a bar suitably supported from the frame of the machine and adapted to lend support to the outer ends of the arms D where they are connected with the inner ends of the yokes.

L are the upper feed rolls, and M are the lower feed rolls. The upper rolls have each end journaled in boxes *l* which move up and down on vertical guides or standards *l'*, the top ends of which are supported and held in position by suitable boxes in the frame, and the lower ends rest on a casting that forms the cap for the lower roll bearing.

K are lifting rods, the lower ends of which are hinged or pivoted to the boxes *l* of the upper rolls. There are four of these lifting rods, two at each end, and two at each side of the machine. The upper ends of these rods are pivoted to crank arms or plates *k* which are mounted or pivoted at each end of horizontal parallel rock shafts N, extending on each side of the machine, and said crank arms or plates are connected by transverse links or rods *n* at each end.

Upon one of the longitudinal shafts N are mounted gears O which mesh with pinions *p* on a shaft P above. These gears O are segmental and are preferably formed with the crank plates *k* on the back of the edger.

Upon the end of the shaft P is a pulley *p'* which receives a belt *p²* from a pulley *q* mounted on one end of one of the lower feed roll shafts.

R is a tightener pulley, which is journaled upon a swinging frame *r*, and adapted to tighten the belt whereby the shaft P will be caused to rotate in one direction, and by means of its pinions engaging the gears, the shafts N will be oscillated in unison by reason of their connecting rods *n*, and their crank arms or plates *k* will be turned so as to raise the lifting rods K, and thereby raise the upper feed rolls in unison on each side of the machine. The swinging frame of the tightener pulley is upon a shaft *r'* having crank arms *r²*, and operated by a continuous front rod or handle bar *r³* whereby it may be operated from any portion of the front of the machine.

Now, in order to hold the feed rolls up in the position to which they are raised, when required, we have the following mechanism:— S is a clutch in the form of a disk having ratchet teeth upon one side, said clutch being securely bolted to the frame of the ma-

chine. S' is a similar clutch having teeth upon its adjacent face which are adapted to engage with the teeth of the clutch S. The clutch S' has a sliding movement on a feather on the shaft P, and is kept engaged normally with the clutch S by means of a spiral spring bearing behind it. T is a lever engaging suitably the hub of the clutch S' and adapted to throw it out of its engagement with the clutch S. The teeth of the two clutches are so arranged that they slip by each other when the rolls are being raised by the shaft P, as heretofore described, but engage on the back movement, and prevent the rolls from falling from the position to which they have been lifted, and they will be held in this position until by means of the clutch lever the disengagement of the two clutches is effected. It will also be seen that by reason of the length of the clutch teeth, the rolls can be lifted a certain distance without slipping a tooth, and can return to the position in which they should be held so as to provide for the passage of a chip or piece of bark on the cant as it is passing through the rolls.

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

1. In a gang edger, and in combination with its series of movable saws and arms connected therewith, the sliding yokes connected with the outer ends of the arms and having on the inner surfaces of their outer ends the T-shaped slides, the fixed guide bar with a T-shaped groove, the said slide having its head portion bearing against the face of the bar, the neck portion passing into mouth of the groove bearing top and bottom thereon, and body portions fitting freely in the groove and bearing with their front surfaces against the front portion of said groove, substantially as herein described.

2. In a gang edger and in combination with its series of movable saws and arms connected therewith, the sliding yokes connected with the outer ends of the arms, the fixed guide bar with T-shaped grooves in its outer face, and the slides on the inner surface of the outer ends of the yokes having head portions bearing against the face of the bar, neck portions passing into the mouths of the grooves bearing top and bottom thereon, and body portions fitting freely in the grooves and bearing with their front surfaces against the front walls of said grooves, substantially as herein described.

3. In a gang edger, the vertically moving upper feed rolls, in combination with the lifting rods, having their lower ends pivoted to the roll shaft connections, the rock shafts N having crank arms or plates with which the upper ends of the lifting rods are connected, the rods or links *n* connecting the crank arms or plates at each end, the gears on one of the rock shafts, the shaft P above with pinions engaging the gears and means for turning shaft P, substantially as herein described.

4. In a gang edger, the vertically movable
upper feed rolls, in combination with the lift-
ing rods having their lower ends pivoted to
the roll shaft connections, the rock shafts N
5 having crank arms or plates, with which the
upper ends of the lifting rods are connected,
the rods or links n connecting the crank arms
or plates at each end, the gears on one of the
shafts, the shaft P above with pinions engag-
10 ing the gears, the pulley on the end of the
shaft P, the pulley on the shaft of the lower

feed roll, the belt connecting the said pulleys
and the swinging tightener pulley operating
on the belt, substantially as herein described.

In witness whereof we have hereunto set our 15
hands.

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Witnesses:

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J. A. BAYLESS.