

W. C. FARNUM.
LOG HANDLING DEVICE.
APPLICATION FILED JAN. 25, 1912.

Patented Oct. 22, 1912.

4 SHEETS—SHEET 1.

1,041,763.

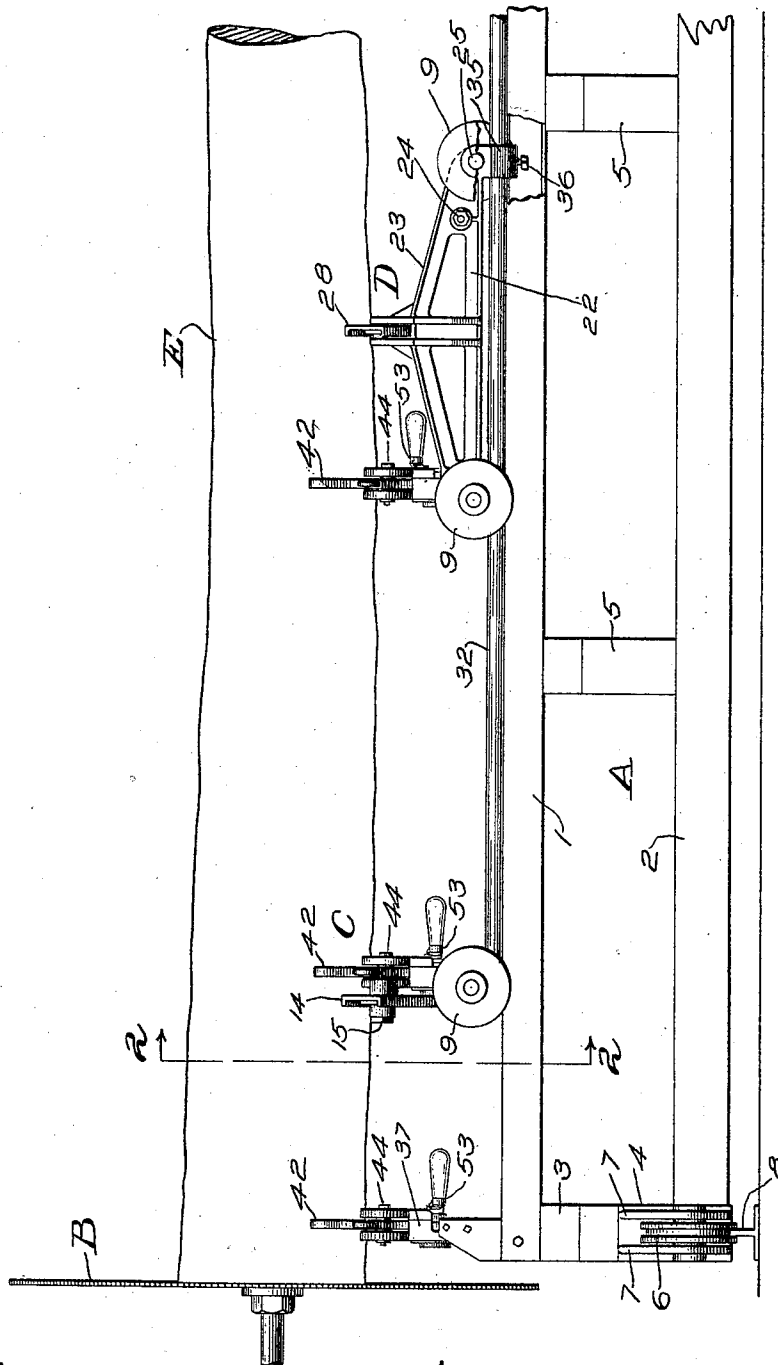


Fig. 1.

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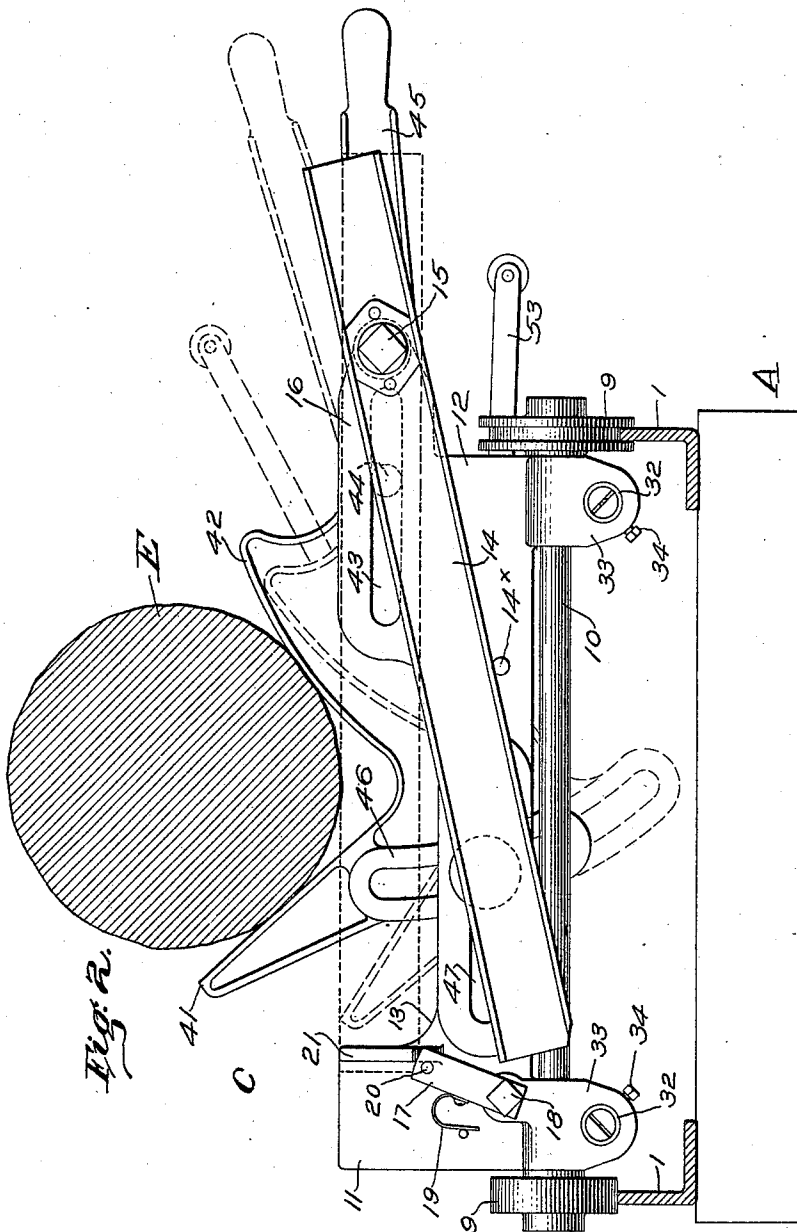
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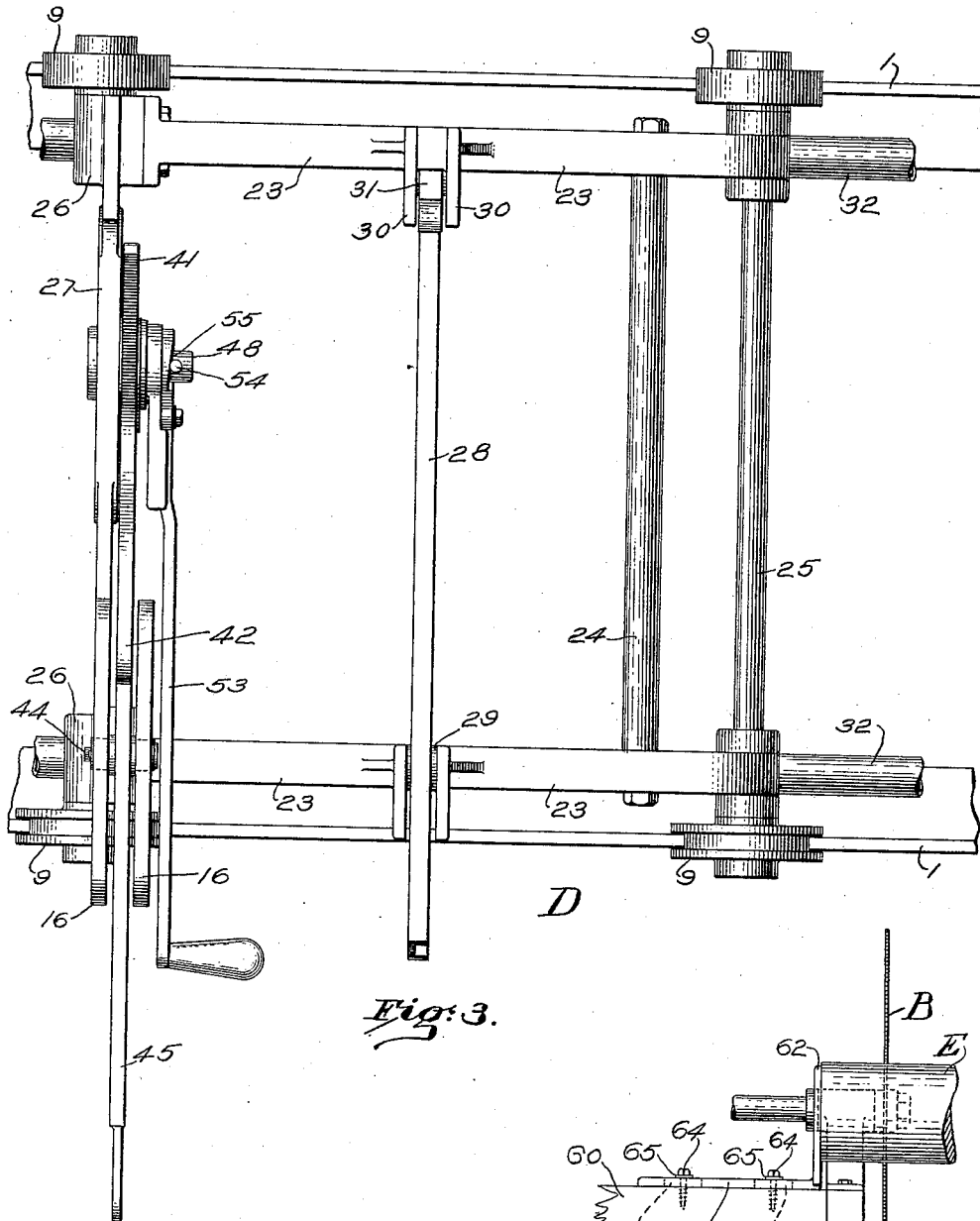


Fig. 3.

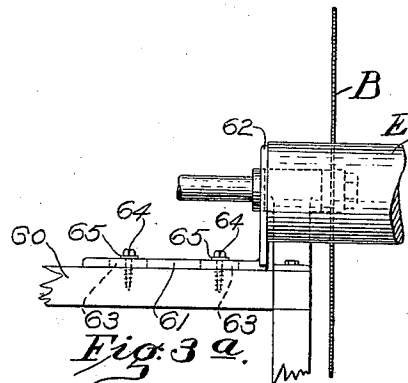


Fig. 3 a.

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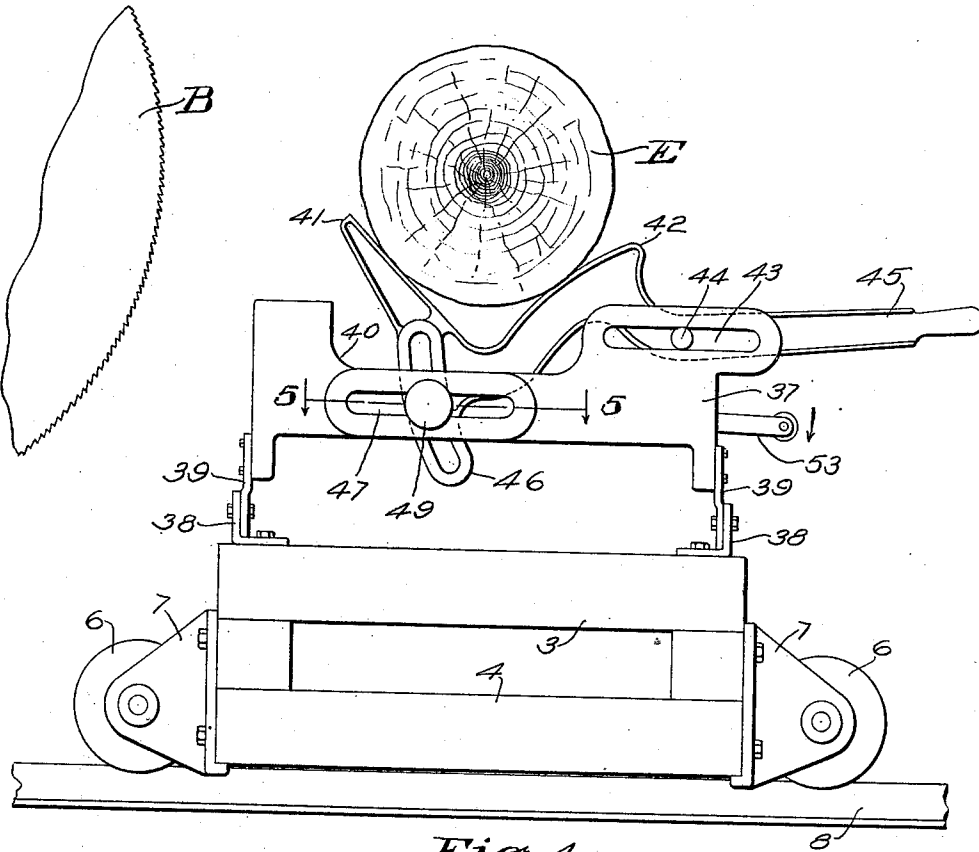


Fig. 4.

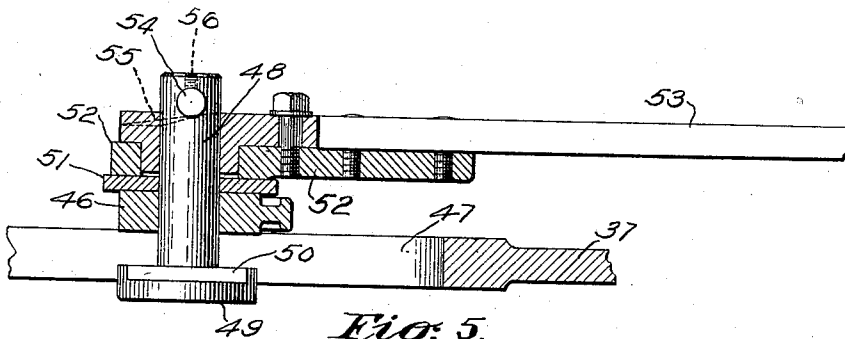


Fig. 5.

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UNITED STATES PATENT OFFICE.

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TO HENRY E. COWDREY AND CHARLES F. COWDREY, BOTH OF FITCHBURG,
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LOG-HANDLING DEVICE.

1,041,763.

Specification of Letters Patent.

Patented Oct. 22, 1912.

Application filed January 25, 1912. Serial No. 673,426.

To all whom it may concern:

Be it known that I, WILLIAM C. FARNUM, a citizen of the United States, residing at Fitchburg, in the county of Worcester and State of Massachusetts, have invented an Improvement in Log-Handling Devices, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The invention to be hereinafter described relates to devices for handling logs, and more particularly to devices for handling logs with relation to means for sawing the logs transversely into sections or relatively short lengths.

Where a large number of wooden articles of the same character, such as handles or similar devices, are to be produced in a turning machine, economy of operations demands that the blanks from which they are turned shall be adapted for treatment by the same turning machine in rapid succession without the necessity for readjustment of the turning centers. This requires that the blanks shall be of uniform length. If some are longer than others, the longer ones require additional treatment to reduce them to the same size, and such additional treatment results not alone in additional labor and expense, but loss of material.

With these facts in view, the aims and purposes of the present invention will best be made clear from the following description and accompanying drawings of one form of means for putting the invention into practical effect, it being understood that the details may be varied and modified within the true scope of the invention which is properly set forth by the claims.

In the drawings:—Figure 1 is a side elevation of an apparatus embodying features of the present invention, parts being broken away; Fig. 2 is a transverse section on the line 2—2, Fig. 1, the parts being represented on a larger scale; Fig. 3 is a plan view on an enlarged scale of the rear truck, some of the parts being shown broken away; Fig. 3^a is a detail of the gage. Fig. 4 is an end view of the log carriage, looking in the direction of the arrow, Fig. 1, the parts being on a large scale; and Fig. 5 is a section on the line 5—5, Fig. 4, showing in detail one form of jack clamp.

The log carriage, which as a whole may be

designated by A, Fig. 1, may be of the usual or well known form, and comprise the longitudinal top and bottom rails 1 and 2 suitably tied together by the transverse beams 3 and 4, Fig. 4, and separated vertically by the uprights 5, 5. The log carriage A, as usual, is mounted upon rolling supports 6, 6 preferably arranged at each end of and at intermediate points in the length of the carriage, if desired. Only the rolling supports 6, 6 at one end of the carriage are shown, it being understood that the other supports may be of like character. The rolling supports 6, 6 are preferably sustained in brackets 7, 7 appropriately secured to the carriage, and are provided with grooves for engaging the transverse tracks 8, as indicated in Figs. 1 and 4, the construction being such that the log carriage, as a whole, may be moved transversely to receive a log from some stationary support at one side of the carriage, and then, when the log has been properly adjusted on the carriage, present the log to the saw B in order to cut the log into sections transversely of desired lengths. In these respects, the log carriage A and the saw B may be of any appropriate or desired character, and being well known in the art need no further description.

In devices of this general character as heretofore used, the log, which was to be sawed into sections by transverse cuts of the saw, has been supported in such manner that in order to get the planes of transverse cuts parallel, the log had to be slabbed off or cut longitudinally in one or more planes to form a supporting or gaging surface along the length of the log, with consequent loss of material and increased cost. With this and other facts in mind, the present invention aims, among other objects, to provide means whereby, regardless of the shape and contour of the log, the sections formed by the saws shall all be cut in planes truly parallel, and the entire log be thus cut into small lengths suitable for the formation of blanks of uniform lengths by dividing the sections in a longitudinal direction. Each section thus cut from the log will furnish a number of blanks, either round, square, or other shape, and all of such blanks whether from the same or different section will be of the same length adapted to the centers of the same turning machine, without readjustment of the turning centers.

The top rails 1, 1 of the log carriage A are preferably formed of angle iron, as indicated by Figs. 2 and 3, which form appropriate tracks extending longitudinally of the carriage for the front and rear trucks C and D respectively, each of which may be provided with rollers 9 to engage said tracks, the constructions being such that said trucks may be moved readily in a direction longitudinally of the log carriage A, as will hereinafter more fully appear.

The front truck C preferably comprises a frame, Figs. 1 and 2, supported by a shaft or axle 10 on which the rollers 9 are mounted, said frame having side portions 11 and 12 rising to the full height of the truck and a central depressed portion 13. Pivotaly mounted at one side of the truck is a skid 14, Fig. 2, the pivotal point 15 whereof may be conveniently formed by a suitable belt passed through the skid and secured to a side extension or bracket 16, the construction being such that when the skid 14 is turned into position to receive a log as the latter is moved onto the truck, its upper surface forms a substantial continuation of the upper surface of the side portions 11 and 12 of the truck.

To sustain the skid in its log receiving position, a suitable catch may be provided, such, for instance, as the catch 17 pivoted to the truck at 18 and normally under the influence of a spring 19, Fig. 2; the construction being such that when the skid is turned to the dotted line position, Fig. 2, which may be known as its log receiving position, its end portion will ride over the catch 17, force it back in opposition to the spring 19, until, when the skid finally reaches its log receiving position, the spring 19 will at once move the catch beneath the end of the skid and support said end, as will be understood. A pin 20 on the side of the catch limits movement of the catch under the action of the spring 19, and is adapted to contact with a flange 21 for this purpose. There are preferably two flanges 21 projecting from the frame to provide vertical guides for the end of the skid as it rises to position and to thereafter prevent side distortional movement of the skid, as will be clearly understood. A pin 14* may sustain the free end of the skid when it is lowered.

The rear truck D is somewhat differently formed, and preferably comprises side frames each formed of a horizontally extending portion 22, Fig. 1, and inclined portions 23 preferably tied together transversely by a suitable tie bolt 24, Figs. 1 and 3, and the axle 25. The front portion of the rear truck D, Fig. 3, is provided with suitable side bearings 26 for the roller supports 9, and such bearings are connected by a centrally depressed frame 27 which may

be substantially the same as described for the front truck C.

The skid 28 of the rear truck is pivotally mounted at 29 to one of the side frames of the truck and preferably between the front and rear pairs of rollers 9, 9, as indicated in Fig. 3, the construction being such that when the weight of the log is received upon the skid 28 there will be no tendency for the rear truck to rise at either end. The free end of the skid 28 is received between the guide flanges 30 between which it may move as described for the skid 14 of the front truck, a similar spring catch 31 serving to hold the skid 28 in its log receiving position.

As heretofore announced, the front and rear trucks C and D are movable longitudinally on the log carriage A, and are connected by the truck connecting slide rods 32, 32, one at each side of the trucks. The slide rods are secured to depending ears 33, Fig. 2, extending from the frame of the front truck, and are held thereto by suitable means, as, for instance, the set screws 34. These rods extend through lugs 35 projecting from the rear truck D, and, if desired, may be held thereto by set screws 36, though such set screws are not essential, the construction being such that the front and rear trucks may be moved relatively into closer or more remote relation for purposes that will presently appear.

Secured rigidly to the front end, the left, Fig. 1, of the log carriage is a jack frame 37, such frame being conveniently held to the log carriage by the brackets 38 and 39, Fig. 4. This jack frame 37, like the frame of the front truck has a depressed central portion 40, but unlike the truck frame, it has no log receiving skid.

Both the front and rear trucks, as well also as the jack frame 37, are provided with a log controlling and holding jack, those of the front and rear truck frames serving to hold and support the log during the entire series of transverse cuts made by the saw, and that of the jack frame on the log carriage in connection with that on the rear truck serving to hold the log in its original alinement while the front truck is moved to a new position or toward the rear truck as made necessary by the gradually diminishing length of the log. As these jacks may all be of the same general character, a description of one will be sufficient for all, reference being had to Figs. 2, 3, 4 and 5.

Each of the jacks comprises two diverging arms or members 41 and 42 rigidly connected and forming a receiving seat between them for a log E. Each jack is mounted on a shifting pivot so that it not only may be raised and lowered to engage and disengage a log but may also be moved transversely of

its support to properly position and hold the log as desired. Likewise each jack has a locking device shiftable with it, so that when adjusted transversely, the locking device may be effective to hold the jack in log supporting position. As one means to this end, each of the trucks and the jack frame 37 is provided with a transversely extending slot 43 adapted to receive loosely and support the pivot 44 of the jack, a handle 45 serving to properly manipulate the jack as will presently appear.

Extending from each jack is a slotted locking member 46 curved on the arc of a circle the center of which is the pivot 44. Each of the truck frames and the jack frame 37 are provided with a slot 47 preferably parallel with the slot 43 in which moves the pivot 44 of the jack, and passing through the slotted locking member 46 and the slot 47 is a locking device, one convenient form of which is best indicated in Fig. 5.

As shown the locking device comprises a bolt 48 having a head 49 provided with a cut away portion 50 to engage the side walls of the slot 47 to thereby prevent rotative movement of the bolt. The bolt 48 passes through the slot 47 and the slotted locking member 46 at the side of which is a washer 51 adapted to be engaged by bearing portions 52 secured to an operating handle 53 extending to the side of the log carriage. At its inner end the bolt is provided with a pin 54, Fig. 5, adapted to ride on the cam face 55 of the handle 53 said pin being retained in place by a set screw 56 and the construction being such that upon movement of the handle downward or in the direction of the arrow, Fig. 4, the cam surface 55 will draw the parts together and effectually lock the jack in adjusted position, whereas, movement of the handle in the opposite direction will serve to loosen the parts and permit the jack to be freely turned about its pivot 44 as a center and to move transversely of its support, the locking device during such transverse movement traveling with the jack.

In order to more effectually support the pivot 44 of the jack, the supporting frame is preferably provided with the laterally extending bracket portions 16, one of which may be disposed one each side of the jack, as indicated by Fig. 3, so that the pivot 44 may extend through the jack and have support at either side thereof, as shown. It will be noted that the function of the jack which is mounted on the log carriage or jack frame is to temporarily support and maintain the log in its original position as determined by the jacks of the two trucks, when the jack on the front truck is lowered to permit the said truck to be moved toward the rear truck when the length of the log has been reduced to an extent to require such readjustment of the front truck.

That the sections cut from the log by the saws may be of uniform length a suitable gage may be employed, one form of which is shown by Fig. 3^a, wherein a frame 60 carries a gage plate 61 having a portion 62 projecting transversely to the path of movement of the log as it is carried longitudinally of the log carriage by the trucks and their jacks. The gage plate 61 is preferably provided with elongated slots 63, 63, through which pass the clamp screws 64 having suitable washers 65 resting on the top of the gage plate, the construction being such that the gage plate and consequently the gage 62 may be adjusted toward and from the saw B in accordance with the length of sections to be cut and then clamped in position. When a section is to be cut, the trucks are moved longitudinally of the log carriage until the end of the log E engages the gage 62, whereupon the log carriage is moved transversely to present the log to the saw. Since the gage remains fixed it will be clear that the sections cut from the log will be of the same length, and since the jack supports as described maintain the axial alinement of the log the same throughout the series of cuts, it follows that the blanks formed from said log section will be of uniform character as to length and end portions.

From the construction described, it will be noted that when a log is to be moved onto the trucks, the skids are raised to present a substantially horizontal surface on which the log may be received, the jacks at such time being unlocked and depressed. When the log has been properly located on the truck skids, the jacks are moved transversely of the trucks if necessary to bring their embracing arms into position beneath the log, whereupon the jacks are raised into log supporting position and locked, the axis of the log at such times being substantially at right angles to the plane of movement of the saw. Since the log may be more or less bent or turned from a straight line, it will be noted that notwithstanding this fact the embracing arms of the jacks will maintain the log in fixed position. The skids are then lowered, the log being wholly supported by the jacks. The trucks are then moved longitudinally of the carriage the desired length of the section to be cut transversely, which may be determined by a suitable gage, and the log carriage moved to present the log to the action of the saw. Since the log is sustained wholly by the jacks it will be apparent that the planes of saw cut for all the sections will be parallel. When a number of sections have been thus cut, it becomes necessary to move the front truck to a new position nearer the rear truck, but it is equally desirable that the axis of the log as originally fixed be maintained. To this end the jack on the log carriage is raised and locked

in log supporting position, whereupon the jack on the front truck may be lowered and the front truck be moved toward the rear truck without disturbing the original alignment of the log. The jack on the front truck may then be raised to its log supporting position and locked, and the jack on the log carriage will then be lowered to permit the trucks to move the log longitudinally of the carriage for a fresh cut.

Since the original alignment of the log has not been changed, it follows, that the various planes of saw cut will remain parallel and by properly gaging the lengths of sections cut by the usual gaging devices, not necessary to describe, it will be noted that the entire log may be sawed into sections of uniform length and that the planes of their respective ends will be parallel, so that when the sections are divided into blanks by cutting them longitudinally all of the blanks will be of uniform length ready for engagement by the centers of the turning machine without further adjustment.

Various changes and modifications may be made in the details described within the true scope of the invention as pointed out by the claims.

What is claimed is:

1. In a device of the character described, the combination of a log carriage mounted for movement transversely and provided with longitudinal tracks, a front truck and a rear truck mounted for longitudinal movement on said carriage, and each provided with a pivotally mounted jack having log engaging and supporting portions, and means for locking the jacks in log supporting positions when adjusted on their pivotal mounting.

2. In a device of the character described, the combination of a log carriage mounted for transverse movement, a saw for operating transversely of a log supported on said carriage, a front truck and a rear truck each having a skid to receive and support a log, a jack mounted on each of said trucks and having log engaging and supporting portions, means for raising said jacks into log supporting positions, means for locking the jacks in said positions, and means permitting the skids to be moved from contact with the log that the latter may be wholly supported by said jacks as it is presented to the saw for cutting into sections transversely.

3. In a device of the character described, a saw, a log carriage movable transversely of the saw, a front truck movable longitudinally of the carriage and provided with a jack having flaring side members to engage and support a log, a rear truck also longitudinally movable on the carriage, and a jack frame mounted on the carriage at the end adjacent to the saw and having a jack,

said jacks being mounted on the front truck and jack frame respectively to permit the latter to be moved into supporting relation to the log and the jack on the truck to be moved from such supporting relation that the front truck may be moved longitudinally of the log frame to place its jack in a new supporting position while maintaining the log in its original undisturbed axial alignment with respect to the saw.

4. In a device of the character described, the combination of a saw, a log carriage movable transversely of the saw, a front truck and a rear truck movable longitudinally of said carriage and adapted to support and present different longitudinal portions of a log to the action of the saw, said front truck being provided with a log supporting jack movable to and from supporting position, and means on the log carriage movable into position to support the end portion of the log in its original axial relation with the saw when the jack on the front truck is moved out of supporting position to permit the said truck to move into new supporting relation longitudinally of the log.

5. In a device of the character described, the combination of a saw, a log carriage movable transversely of the saw, a front truck and a rear truck for supporting a log as it is cut transversely into sections, said front truck being provided with a jack having flaring side portions for engaging and supporting a log, said jack being pivotally mounted for movement into and out of log supporting position, and means permitting said jack to be moved transversely of the truck.

6. In a device of the character described, the combination of a saw, a log carriage movable transversely of the saw, a front truck and a rear truck movable longitudinally of said carriage and each provided with a log receiving skid pivotally mounted at one side of its truck, a jack on each truck having log receiving arms to embrace a portion of said log and mounted for pivotal and transverse movement, means for locking the jacks in log supporting position, and means permitting the skids to move about their pivotal mounting out of contact with the log that the latter may be wholly supported by said jacks.

7. In a device of the character described, the combination of a saw, a log carriage movable transversely of the saw, a front truck and a rear truck movable longitudinally of said carriage and each provided with a log receiving skid pivotally mounted at one side of its truck, a jack on each truck having log receiving arms to embrace a portion of said log and mounted for pivotal and transverse movement, means for locking the jacks in log supporting position, means permitting the skids to move about

their pivotal mounting out of contact with the log that the latter may be wholly supported by said jacks, and means at the front end of the carriage to hold the log temporarily while the jack on the front truck is disengaged from the log to permit the said truck to be moved relative to the rear truck into a new log supporting position.

8. In a device of the character described, the combination of a saw, a log carriage movable transversely of the saw, a log supporting truck movable longitudinally of the log carriage, a jack having a transversely shiftable pivotal mounting on said truck, and a locking device also shifting transversely with the jack to maintain the jack in log supporting position in any of its transverse adjustments.

9. In a device of the character described, the combination of a saw, a log carriage movable transversely of the saw, a log supporting truck movable longitudinally of the log carriage, a jack having a transversely shiftable pivotal mounting on said truck, a locking device also shifting transversely with the jack to maintain the jack in log supporting position in any of its transverse adjustments, said truck being provided with a skid to support the log as it is moved onto said truck, and means permitting the skid

to be moved from log supporting position that the log may be supported and held by the jack when the latter is locked in log supporting position.

10. In a device of the character described, the combination of a saw, a log carriage movable transversely of the saw, a front truck and a rear truck movable longitudinally of the log carriage to present different longitudinal portions of the log for treatment by the saw, a jack on the front truck having portions to embrace a portion of and to support the log, means for locking the jack in log supporting position, and means mounted on the log carriage and movable into log supporting position to temporarily support the front end of the log when the jack on the front truck is unlocked and moved from log supporting position to permit the front truck to be moved relative to the rear truck, said means being movable from log supporting position that the log may be moved longitudinally.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

WILLIAM C. FARNUM.

Witnesses:

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WM. B. RICHARDSON.