June 8, 1926. 1,588,112

J. T. JOHNSEN

COMPOSING ROOM SAW

Filed Feb. 9, 1921 4 Sheets-Sheet 1

Fig. 1.

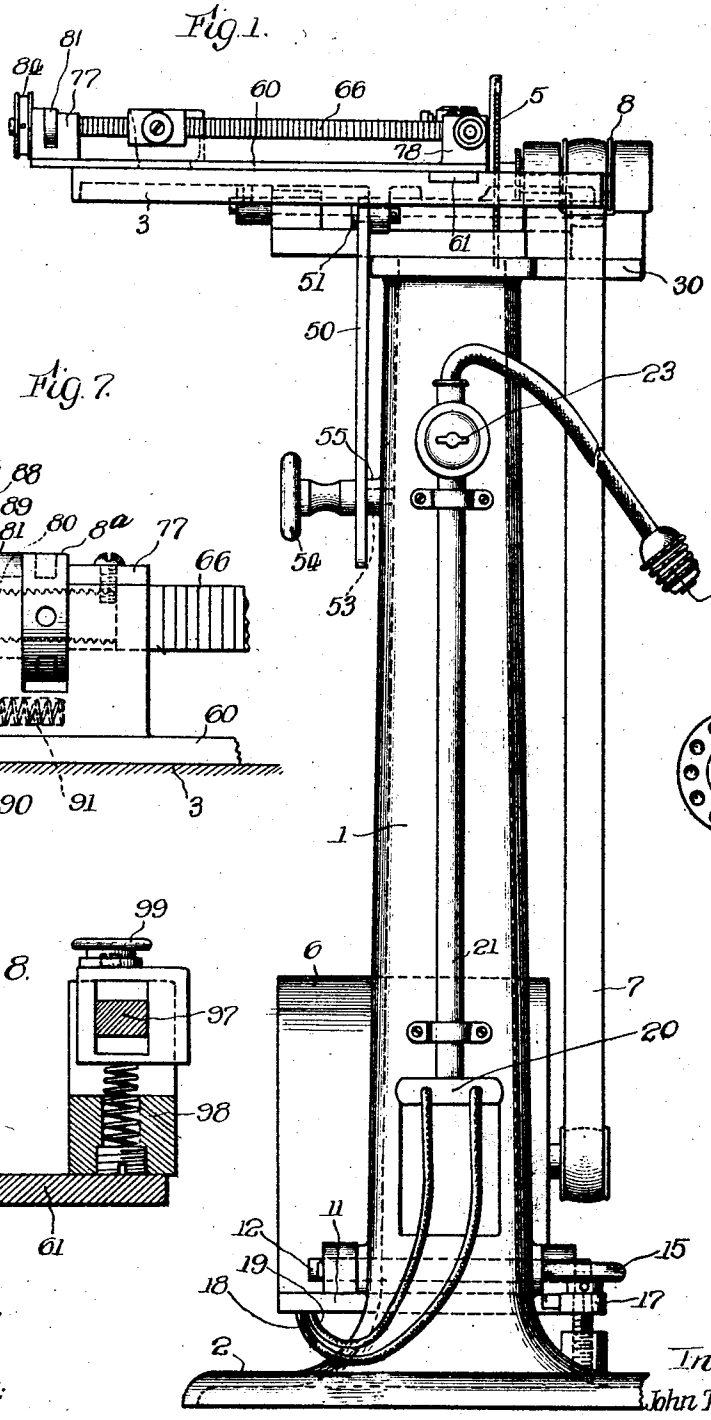


Fig. 7.

Fig. 9.

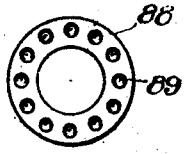


Fig. 8.

Witness:
A. J. Sauer.

Inventor:
John T. Johnsen,
By A. Miller Bagnell Atty.

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Fig. 2.

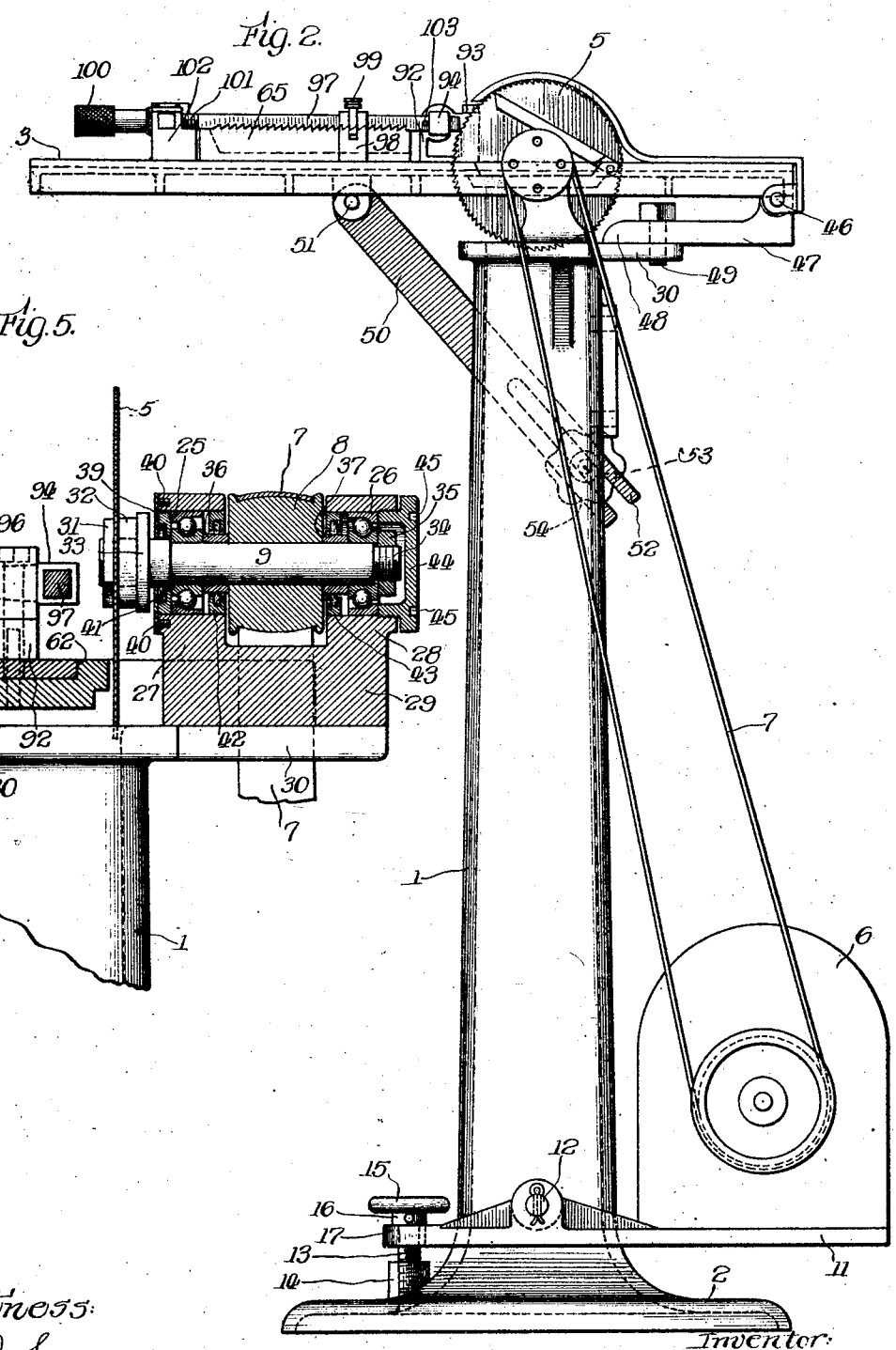


Fig. 5.

Witness:
A. J. Sauser.

Inventor:
John T. Johnsen,
By A. Miller Russell Atty.

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J. T. JOHNSEN

COMPOSING ROOM SAW

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Fig. 3.

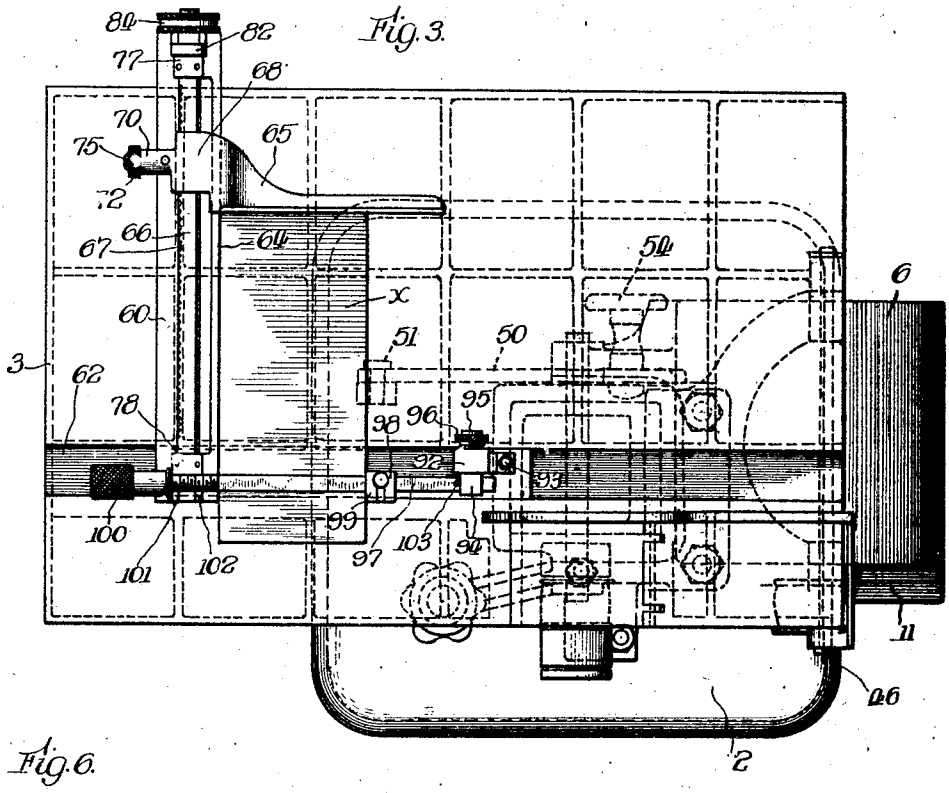
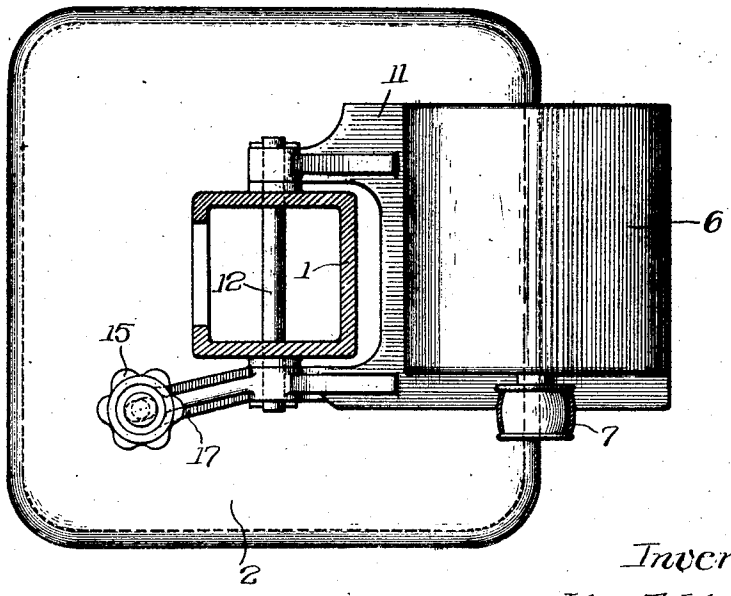


Fig. 6.



Witness:
A. J. Sauser.

Inventor:
John T. Johnsen,
By A. Miller Beckfield Atty.

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J. T. JOHNSEN

COMPOSING ROOM SAW

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Fig. 4.

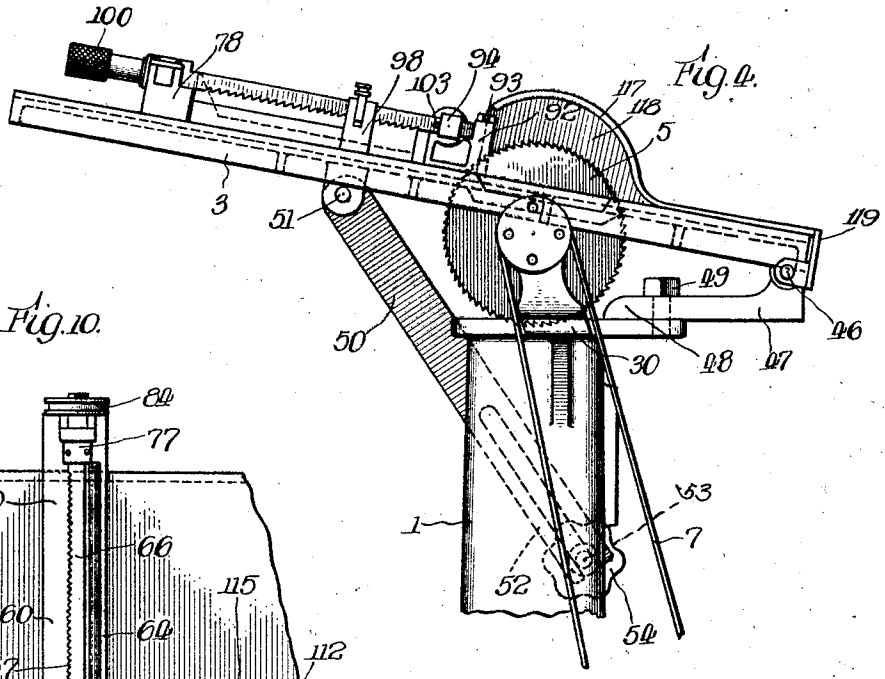


Fig. 10.

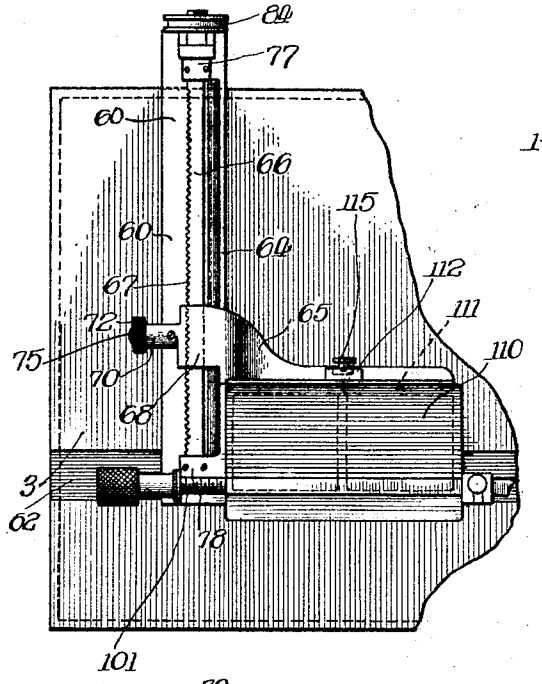


Fig. 11.

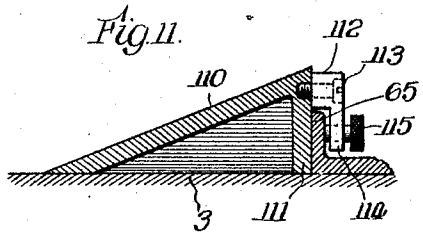
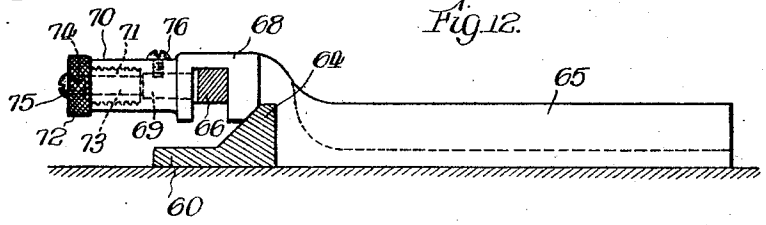


Fig. 12.



Witness:
T. J. Sauser.

Inventor:
John T. Johnsen,
By A. Miller Belfield Atty

Patented June 8, 1926. 1,588,112

UNITED STATES PATENT OFFICE.

JOHN T. JOHNSEN, OF CHICAGO, ILLINOIS.

COMPOSING-ROOM SAW.

Application filed February 9, 1921. Serial No. 443,532.

My invention relates to composing-room saws,—that is, saws particularly adapted for use in composing rooms of printing press plants.

One of the objects of the invention is to provide a practical and effective form of composing room saw.

Another object of the invention is to arrange for the accommodation of the machine to the work, its adjustment for various purposes and various kinds of work, to secure ease of manipulation, ready adaptability and so on.

Another object of the invention is to secure simplicity of construction with consequent cheapness of manufacture.

Another object of the invention is to simplify the driving arrangements and avoid certain requirements of other larger devices of this kind.

In the accompanying drawings Fig. 1 is a front elevation of a device embodying my present invention;

Fig. 2 is a side elevation of the same;

Fig. 3 is a plan view of the same;

Fig. 4 is a side elevation of the upper part of the device in an adjusted position;

Fig. 5 is a vertical section of an upper portion of the device taken axially of the saw shaft;

Fig. 6 is a horizontal section taken near the bottom of the device; and

Figs. 7, 8, 9, 10, 11 and 12 are views of details of construction.

Referring to the drawings, I show a device having a body or supporting frame 1 rising in the form of a column and provided with a laterally extending base or bottom portion 2, which latter is adapted to rest upon the floor.

The column 1 is preferably made rectangular in form, as shown in Fig. 6. At the upper end of the column 1 is a table 3 which is to receive and support the work which is to be operated on by the saw. A saw 5 is shown arranged at the upper end of the member 1 so as to operate in conjunction with the table 3, the work being placed on the table 3 and then operated on by the saw 5.

As a means for driving or rotating the saw, I show an electric motor arranged within a casing 6 supported near the bottom of the device and connected by a belt 7 with a pulley 8 (Fig. 5), on the shaft 9 carrying the saw 5. As an arrangement for adjusting the tightness of the belt 7, I show means by which the electric motor in the casing 6 may be adjusted vertically so that the belt 7 may be made more or less tight as desired, to secure the best operation of the saw.

As a preferred arrangement, the casing 6 is mounted on a movable platform 11 which is shown pivoted upon a pivot 12 passing through the lower portion of the column 1, whereby the platform 11 may be swung up and down to give the proper belt adjustment. To secure such swinging movement and lock the platform in adjustment, I show an adjusting screw 13 passing through the platform and fitted into a threaded socket 14 on the bottom member 2, the upper end of the screw 13 having a wheel 15 with a shank or collar 16, so that by rotating the wheel 15 the screw may be worked up and down and the collar 16 arranged to act upon the other end 17 of said platform, so that the latter will be tilted about the pivotal mounting 12.

The electrical conductors 18 and 19 from the electric motor are preferably run to a cleat 20 on the column 1 and thence into an insulating tube 21 and thence out of the upper end of the same, and provided at its end with a screw plug 22 to fit into a wall socket to make connection with an ordinary electric lighting fixture. A switch 23 is preferably employed to control the current to the motor. By this arrangement a small motor may be employed and a direct connection made with a building or factory lighting circuit, so that it is not necessary to have special electrical arrangements nor necessary to have a transformer nor a fuse device. This simplifies and reduces expense.

The mounting for the saw 5 preferably involves ball bearing arrangements, as shown in Fig. 5, these ball bearings being shown at 25 and 26, which are arranged at the opposite ends of the saw shaft 9. The ball bearing 25 is arranged within a journal member 27 and the ball bearing 26 within a journal or bearing 28, the members 27 and 28 being preferably extended up from and formed integral with a block 29 secured upon a laterally projecting support 30 at the upper end of the column 1.

The saw 5 is secured to the shaft 9 by means of nuts 31 and 32, the latter fitting against a flange 33 on the shaft 9. The other end of the shaft 9 is reduced and screw threaded as at 34, and provided with a nut

35. Collars 36 and 37 are arranged on the shaft 9 on opposite sides of the belt pulley 8 and between the latter and the ball bearings 25 and 26, respectively. A ring 39 is secured as by screws 40 to the journal block 27, and a collar 41 is arranged between the ring 39 and ball bearing 25. Other rings 42 and 43 are arranged outside of the collars 36 and 37, respectively. The rings 41, 42 and 43 are provided with felt packing or the like for excluding dust. A cap or closure 44 is fitted into the open end of the journal block 28, said member 44 and block 28 being correspondingly threaded so as to permit adjustment of the member 44 which may be accomplished by providing it with apertures 45—45 adapted to receive the prongs of an operating tool. By this arrangement the bearings and shaft for the saw may be fully encased and protected from dust and filings, and also may be properly adjusted and held in adjusted position.

As an arrangement for adjusting the work vertically with reference to the saw, I preferably pivot the work table 3 at its rear end, as at 46, so that its front end may be raised and lowered to permit the work to be presented to the saw at different heights. The pivot 46 is preferably supported at its opposite ends by a bracket 47 whose middle portion 48 is secured to the lateral projection 30 by means of bolts 49.

As an arrangement for holding the table 3 in any adjusted position I show a link or arm 50 pivotally connected at 51 to the under side of said table and having a slotted end 52 adapted to cooperate with a bolt 53 having an adjusting wheel 54. By this arrangement by loosening the bolt 53 by turning the handle 54, the slotted arm 50 may be released and the table 3 swung up or down to any desired position, after which the wheel 54 may be again turned to lock the slotted arm 50 in the adjusted position, the bolt 53 fitting into a threaded socket 55 on the member 1 (Fig. 1). The table 3 is shown in a somewhat elevated position in Fig. 4.

The table 3 is preferably provided with mechanism by which the work may be gripped and presented to the saw.

The arrangement shown comprises a gauge or gauge plate 60, adapted to rest upon the table 3 and movable on the same, said plate being provided with a transversely extending slide 61 adapted to fit in a correspondingly shaped groove or recess 62 in the table 3 (Figs. 3 and 5). In this way the gauge 60 may be moved back and forth on the table toward and away from the saw, such movement being directed by the slide 61 sliding in the recess or slideway 62. The gauge 60 is provided with a front upwardly extending abutment 64 against which the work may rest, so that by pushing the gauge 60 forward the work will be pressed upon and advanced by the abutment 64.

Provision is also made for holding the work against lateral movement and also for pushing it laterally toward the saw, that is in a direction lengthwise of the member 60. To such end I show a slide arm 65 (Fig. 10), which is adapted to slide along the member 60 toward and away from the saw 5.

As an arrangement for permitting the lateral sliding movement of the arm 65 and for holding it in any adjusted position, I show mechanism for this purpose partly on the member 60 and partly on said member 65. Such mechanism comprises a rack 66 mounted on the gauge 60 and having teeth 67 on its rear face, the member 65 being provided with a hook or loop shaped portion 68 adapted to fit over the top and both sides of said rack 66, as shown in Fig. 12.

As an arrangement for permitting the adjustment of the slide arm 65 along the rack 66 and also holding said arm in any position to which it may be adjusted, I show the loop or shank 68 provided with a locking pin 69 which is adapted to fit and slide longitudinally in the tubular end or handle piece 70 projecting from the portion 68. The locking member 69 passes through a screw 71 which fits in the enlarged screw threaded recess in the outer end of said member 70. The screw 71 has a knurled head 72 by which it may be turned so as to adjust it longitudinally of the member 70. The outer end portion of the member 69 is reduced as at 73, and made cylindrical in form so that the screw 71 may rotate upon it, and the outer end of said portion 73 is provided with a screw threaded socket adapted to receive the end of a screw 74, the head 75 of which is outside of the head 72. The end of the member 69 is toothed so that it may grip or engage the teeth 67 on the rack 66 and said member 69 is provided with a longitudinal slot adapted to receive the end of a screw 76, whereby said member 69 may be slid back and forth to engage and disengage the rack teeth 67 without rotating. The rotation of the member 72 causes this in and out movement of the member 69. Thus the slide arm 65 may be engaged with and disengaged from the rack 66 by turning the head or collar 72 in one direction or the other and when released may be slid from side to side of the table 3 along the rack 66 to any desired position, and may be then locked by again turning the head 72, so as to cause the member 69 to grip the rack tooth 67. This will give a general adjustment of the arm 65 but not an exact adjustment of the same.

To secure such an exact adjustment I provide an arrangement by which the rack 66 may be adjusted slightly in a longitudinal manner in one direction or the other to a

small extent. To such end said rack 66 is mounted loosely in bearings 77 and 78, so as to permit of longitudinal adjustment of the rack 66 in said bearings. To secure such longitudinal adjustment I show the mechanism illustrated in detail in Fig. 7. In this mechanism the end 66^a of the rack 66 is reduced in size and externally threaded and on this threaded portion is arranged a sleeve 80 having a bore threaded to correspond with the threaded portion 66^a. The sleeve 80 is adapted to fit in a pillow block or journal 81 and has an enlargement or collar 8^a adapted to fit between the pillow block 81 and the bearing 77, whereby the sleeve 80 will be held against longitudinal movement and thereby will cause longitudinal movement on the part of the rack 66 when said sleeve 80 is turned or rotated. For rotating said sleeve 80 a hand wheel 84 is provided, being mounted on the outer end of the sleeve 80, upon an annular enlargement 85 thereof, which enlargement is provided with an annular recess 86, and a screw 87 is fitted into the wheel 84, so that said wheel 84 may be clamped or locked to the hub portion 85 and thereby cause the sleeve 80 to rotate with said wheel 84. The inner flange 88 of the wheel 84 is preferably provided with a series of apertures 89 and a ball 90 backed by a spring 91 is arranged in a recess in the base portion of the gauge 60, so that said wheel 84 will be automatically locked in any position to which it may be turned. Thus a slight extent of longitudinal movement may be given the rack 66 so as to effect a close or fine adjustment of the slide arm 65 after the same has been put in approximately the desired position by adjusting said arm 65 on the rack 66.

As a means for clamping the work to the gauge I show clamping mechanism mounted on the table 3. The mechanism shown comprises a bracket 92 adapted to be detachably secured to the table by means of a bolt 93. This bracket is provided with a holder 94 (Fig. 3) in the form of a rotatable plug passing through a socket in the upper portion of the bracket 92 and having a projecting threaded end 95 which is adapted to receive a knurled nut 96. The other end of the plug member 94 is enlarged and made in the form of a rectangular socket so that by turning the nut 96 the member 94 may be clamped or loosened in the bracket 92.

The rectangular socket 94 receives a slide rod 97 adapted to slide to a slight extent in said socket so that said rod 97 may be bodily removed from the socket in 94 or adjusted slightly in the same. A sliding head 98 is mounted on the rod 97 and arranged to slide lengthwise of the same, said head 98 being provided with an adjusting screw 99 by which the head may be temporarily locked in any position to which it may be adjusted.

At the other or front end of the rod 97 there is mounted a nut handle 100 having a threaded socket adapted to fit on the correspondingly threaded end 101 of said rod 97. The work table 3 is provided with a bearing 102 between which and the bearing 78 the rod 97 is adapted to fit. Thus the work shown at X in Fig. 3 may be placed between the front 64 of the gauge 60 and the sliding head 98 and then the nut handle 100 may be turned and thereby will tend to draw the rod 97 toward the handle 100 with the result that the work will be clamped by the head 98 against the front 64 and thus held firmly in position. This does not interfere at all with the movement of the gauge 60, nor of the arm 65, but on the contrary permits the adjustment of said members and then also permits the movement of the gauge 60 longitudinally of the table 3 toward and away from the saw after the work has been properly adjusted by the arm 65 and then clamped by the clamping mechanism involving the rod 97 and nut handle 100.

The rod 97 may be entirely separated from the table 3 by withdrawing it from the socket 94 and when so withdrawn may be placed elsewhere while the saw is operating on work which it is not desired to clamp in position. When such work is to be used the member 97 will be put back in position in the socket 94. The pin 103 is preferably employed to limit the inward movement of the member 97 in the socket 94. By loosening the nut 96 the socket 94 may be readily rotated, thereby permitting the handle 100 to be swung up and down into and out of the socket formed by the members 78 and 102, so as to allow work to be placed in position on the table without interference by the rod 97 and also to permit free access to said work.

I further show an arrangement for supporting the work in an inclined position so that when presented to the saw it may be cut on a bevel. This arrangement is shown in detail in Figs. 10 and 11. It comprises an inclined supporting member 110 having an upright portion 111 adapted to fit against the side of the arm 65. For attaching this member 110 detachably to the arm 65 I show a clamp 112 provided with a screw 113 which passes through said clamp and engages the upright portion 111, the lower end portion 114 of the clamp 112 extending down on the outer side of the arm 65 and an adjusting screw 115 being passed through said portion 114 so as to permit the arm 65 to be gripped between 111 and 114. By turning the screw 115 one way or the other this inclined work support may be connected or disconnected from the arm 65.

I also show a guard 117 for the saw 5, said guard preferably comprising a guard portion 118 to fit at the side and above the

saw, and a shank portion 119 which extends back and is pivoted on the pin 46.

It will be understood that changes and modifications may be made without departing from the spirit of the invention.

What I claim is:

1. A device of the class specified, comprising a rotary cutting element, a driving motor belt connected with said element, a swinging platform pivoted between its ends and carrying the motor at one side of the pivot, and an adjusting screw engaging the platform at the other side of the pivot, and arranged to swing the ends of the platform vertically by its operation, whereby a substantially balanced arrangement is secured and belt tightening or loosening may be readily obtained by turning the adjusting screw in one way or the other.

2. A device of the class specified, comprising a rotary cutting element, a driving motor, a pivotally mounted platform therefor, a belt running substantially vertically between the cutting element and motor and driven by said motor, and means whereby the tension of the belt may be controlled, said means comprising an adjusting screw vertically disposed so that its operation will swing the platform vertically in one direction or the other, both the platform pivot and said adjusting screw being mounted on the machine frame.

3. A device of the class specified, comprising a work table and a slidable gauge therefor, an arm slidably mounted on said gauge, and means whereby said arm may be adjusted and held in position comprising means for positioning the arm relatively to the gauge and means for adjusting said last mentioned means to effect a further adjustment of said arm.

4. In a device of the class specified, the combination with a work table of a gauge mounted for slidable movement thereon, a slidable arm mounted for movement lengthwise of said gauge, a longitudinally extending member with which said arm has a connection permitting the adjustment of the arm along said member and also the locking of said arm to said member, and means for longitudinally adjusting said member to effect a further adjustment of said arm.

5. The combination of a work table and a gauge mounted for slidable movement thereon, a rack carried by said gauge and extending lengthwise thereof, an arm mounted for slidable movement along said gauge, and having means for engaging and making connection with said rack and means for longitudinally adjusting said rack.

6. The combination of a work table and a gauge mounted for slidable movement thereon, a rack carried by said gauge and extending lengthwise thereof, an arm mounted for slidable movement along said gauge, and having means for engaging and making connection with said rack and means for longitudinally adjusting said rack, said means comprising a screw threaded end on said rack and a rotary member carried and held in position by the gauge and adapted to shift the rack longitudinally by its rotation.

7. The combination with a work table and a gauge mounted thereon, of an arm mounted for slidable movement along the gauge, a rack carried by the gauge and mounted for longitudinal movement relatively thereto, said rack having a screw threaded end, means for detachably connecting said arm to said rack and means for adjusting said rack longitudinally.

8. The combination with the work table of a gauge mounted thereon and provided with a longitudinally extending rack, an arm slidable relatively to the gauge and means for connecting said rack to said arm comprising a locking device for engaging the rack teeth and means for adjusting said device, said means comprising a threaded plug connected with said locking member for moving the same when said plug is turned.

9. The combination with the work table and a gauge mounted thereon of a rack extending lengthwise of the gauge, an arm mounted for sliding movement along said gauge, and means for locking said arm temporarily to said rack, said means comprising a slidable locking pin and a threaded member connected with said locking pin for adjusting the same.

10. The combination with the work table and a gauge mounted thereon of a rack extending lengthwise of the gauge, an arm mounted for sliding movement along said gauge, and means for locking said arm temporarily to said rack, said means comprising a slidable locking pin and a threaded member connected with said locking pin for adjusting the same, said locking pin passing through said threaded member and the threaded member being fitted into a threaded socket.

11. The combination with the work table and a gauge mounted thereon of a rack extending lengthwise of the gauge, an arm mounted for sliding movement along said gauge, and means for locking said arm temporarily to said rack, said means comprising a slidable locking pin and a threaded member connected with said locking pin for adjusting the same, said locking pin passing through said threaded member and the threaded member being fitted into a threaded socket, said locking pin having a longitudinal groove and a projection fitting into said groove for insuring longitudinal motion of said pin without rotation.

12. The combination with the work table and a gauge mounted thereon of a rack ex-

tending lengthwise of the gauge, an arm mounted for sliding movement along said gauge, and means for locking said arm temporarily to said rack; said means comprising a slidable locking pin and a threaded member connected with said locking pin for adjusting the same, said locking pin passing through said threaded member and the threaded member being fitted into a threaded socket, said locking pin having a longitudinal groove and a projection fitting into said groove for insuring longitudinal motion of said pin without rotation, said projection comprising an adjustable screw.

13. The combination of a work table and a gauge mounted thereon, a rack extending longitudinally of the gauge, an arm mounted slidably to said gauge and arranged for adjustment along said rack, means for temporarily locking the arm to the rack and means for adjusting said rack longitudinally.

14. The combination of a work table and a gauge mounted thereon, a longitudinally adjustable rack mounted on said gauge, and means for adjusting said rack comprising bearings in which said rack is slidably mounted and a threaded connection at the end of the rack by turning which the rack will be moved longitudinally.

15. The combination of a work table and a gauge mounted thereon, a rack mounted on said gauge and arranged for longitudinal adjustment and means for adjusting said rack longitudinally comprising a threaded portion at the end of the rack, a sleeve having a threaded bore fitting over said threaded portion, means for holding said sleeve against longitudinal movement while permitting its rotation and means for rotating said sleeve.

16. The combination of a work table and a gauge mounted thereon, a rack mounted on said gauge and arranged for longitudinal adjustment and means for adjusting said rack longitudinally comprising a threaded portion at the end of the rack, a sleeve having a threaded bore fitting over said threaded portion, means for holding said sleeve against longitudinal movement while permitting its rotation and means for rotating said sleeve, said rotating means comprising a wheel with means for locking it to the sleeve.

17. The combination of a work table and a gauge mounted thereon, a rack mounted on said gauge and arranged for longitudinal adjustment and means for adjusting said rack longitudinally comprising a threaded portion at the end of the rack, a sleeve having a threaded bore fitting over said threaded portion, means for holding said sleeve against longitudinal movement while permitting its rotation and means for rotating said sleeve, said rotating means comprising a wheel with means for locking it to the sleeve, and means for holding said wheel temporarily in adjusted position comprising a ball adapted to fit in apertures in the wheel and a spring tending to press said ball into said apertures.

18. In a device of the class specified, the combination of a work table and clamping means thereon, comprising a gauge mounted on the table and a clamping bar having means for engaging the work and drawing it toward the gauge, said means comprising a head on the bar and a threaded device connected with the end of the bar and acting against the gauge so that by turning movement it will draw said head toward said gauge, said head being mounted for sliding movement and the bar being provided with rack teeth and said head being provided with means for temporarily engaging said teeth.

19. In a device of the class specified, the combination of a work table and clamping means thereon, comprising a gauge mounted on the table and a clamping bar having means for engaging the work and drawing it toward the gauge, said means comprising a head on the bar and a threaded device connected with the end of the bar and acting against the gauge so that by turning movement it will draw said head toward said gauge, said head being mounted for sliding movement and the bar being provided with rack teeth and said head being provided with means for temporarily engaging said teeth, said threaded member comprising a nut handle adapted to fit over the threaded end of said rack bar.

20. The combination with a work table of a gauge thereon and a clamping device for clamping the work to the gauge comprising a rack bar provided with a sliding head, a support for the end of said bar farthest from the gauge, said support being rotatable to permit the bar to be swung up and down and also being adapted to permit the detachment of the bar and a nut handle mounted on the other end of the bar which end is screw threaded, said bar being arranged crosswise of the gauge and the threaded end extending to the side of the same opposite said sliding head and said nut handle being adapted to fit against the gauge so that by turning movement it will draw the bar toward the gauge.

21. The combination with a work table and a gauge thereon, of an arm arranged for sliding movement relatively to said gauge, and an inclined support for the work provided with means for detachably connecting it to said arm.

22. The combination with a work table and a gauge thereon, of an arm arranged for sliding movement relatively to said gauge, and an inclined support for the work provided with means for detachably connecting

it to said arm, said connection comprising a clamp screw connected to the support and an adjusting screw for connecting said clamp to said arm.

23. The combination with a pivotally mounted work table and a rotary saw cooperating with said table, of a guard for said saw pivotally mounted coaxially with the pivot of said table and thereby movable with the table but adjustable independently of same.

In witness whereof, I hereunto subscribe my name this 14th day of January, A. D., 1921.

JOHN T. JOHNSEN.