

(No Model.)

2 Sheets—Sheet 1.

C. O. MOOK.

ADJUSTABLE ROLLER FOR WOODWORKING MACHINES.

No. 504,932.

Patented Sept. 12, 1893.

Fig. 1.

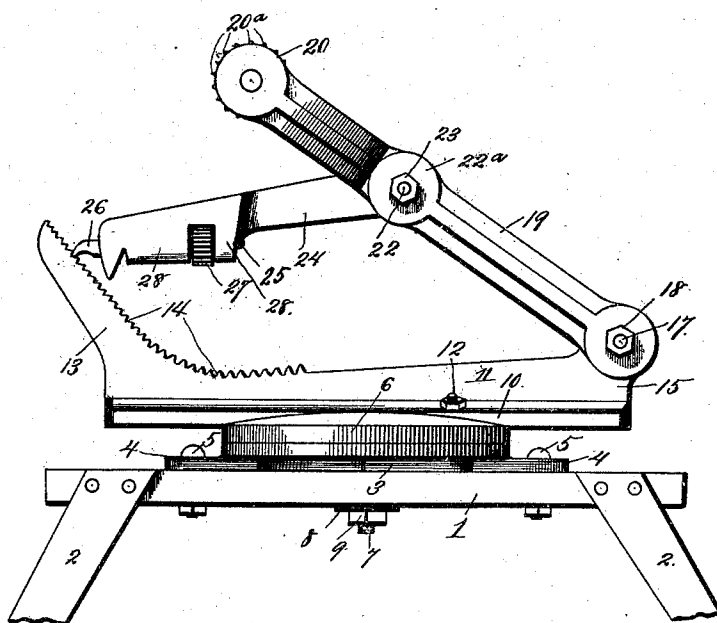
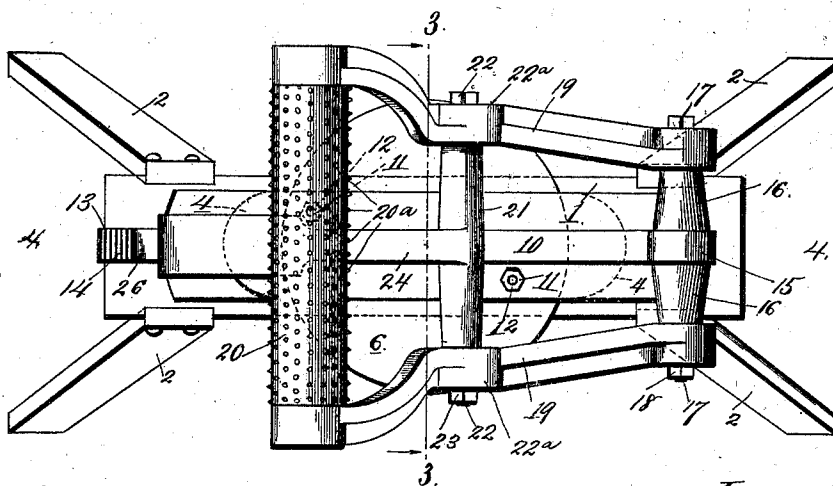


Fig. 2.



Witnesses:

Yours truly,
Jas. L. Coudron

Inventor,

Chas, O, Mook,

By Hegdon and Hegdon
Attys.

(No Model.)

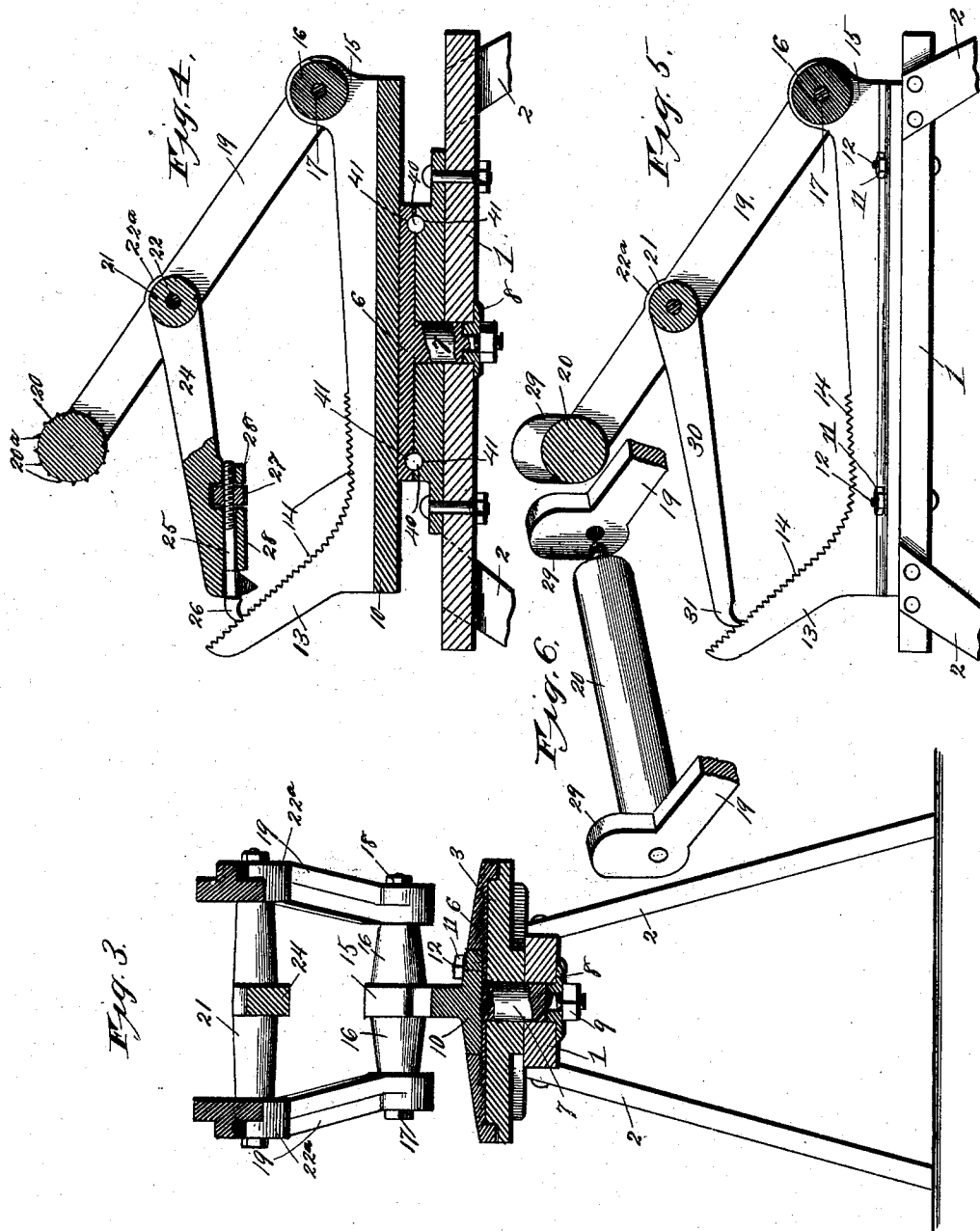
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UNITED STATES PATENT OFFICE.

CHARLES O. MOOK, OF KANSAS CITY, MISSOURI.

ADJUSTABLE ROLLER FOR WOODWORKING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 504,932, dated September 12, 1893.

Application filed August 1, 1892. Serial No. 441,892. (No model.)

To all whom it may concern:

Be it known that I, CHARLES O. MOOK, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Adjustable Rollers for Woodworking-Machines, 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 appliances for supporting boards, pieces of timber and various other classes of stock in operative position relative to planers, borers, saws, and various other kinds of wood-working machines.

The objects of my invention are to produce an appliance which shall be simple, strong, durable and inexpensive in construction, very easy to manipulate, and capable of being readily and very accurately adjusted so as to meet all of the requirements as to position and changes of position of the work relative to the operative mechanism of woodworking machines while the work is being operated upon by the machines.

To the above purposes my invention consists in certain peculiar and novel features of construction and arrangement as hereinafter described and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of the revolvable type of my adjustable support. Fig. 2 is a plan view of the same. Fig. 3 is a transverse vertical section of the same on the line 3—3 of Fig. 2. Fig. 4 is a vertical section of the same on the line 4—4 of Fig. 2; the plane of this section being at a right angle to the plane of the section of Fig. 3. Fig. 5 is a view partly in side elevation and partly in transverse vertical section of a stationary form of my support. Fig. 6 is a detached perspective view of one form of the supporting roller and of the adjacent ends of the two carrying arms therefor; said arms being provided with enlarged ends serving as lateral guides for the stock.

Referring now to the accompanying drawings and more particularly to Figs. 1, 2, 3, and

4, 1 designates a horizontal bar or beam which may be of any suitable or preferred length and width, and which may also be either of wood or of metal as preferred. At its ends this beam or bar is supported by a number of oblique divergent legs 2, which are arranged in pairs at opposite ends of the bar or beam as shown, and which also may be either of wood or of metal and of any suitable length and height, as circumstances may demand.

The bar or beam 1 and its supports or legs 2 constitute a horse or trestle and in these figures to which particular reference is now made, a base-plate 3 is shown as mounted upon the bar or beam 1 about midway of the length of the same, and provided, with lugs or ears 4 through which are passed screws or bolts 5 for securing the base-plates 3 in horizontal position upon the bar or beam 1. This base plate 3 constitutes the base of a turn-table and is preferably of circular form in marginal contour and is also preferably formed of a single casting or piece. Immediately above the base-plate is mounted a cap 6 of the turn-table, this cap also occupying a horizontal position and corresponding in form and dimensions with the base 3. The cap 6 is formed centrally with a vertically pendent pivot 7 which extends downward through a corresponding opening in the center of the base 3 and also through the adjacent portion of the bar or beam 1. The lower end portion of this pivot 7 is reduced to extend through a bearing-cap 8 which is located in contact with the under side of the bar or beam 1 and the lower extremity of this reduced portion of the pivot 7 is externally screw-threaded to receive a nut 9 which abuts against the under side of the cap 8 and thus retains the cap and turn-table in proper relative position upon the base of the turn-table.

Upon the upper side of the base 6 of the turn-table, is formed or suitably secured an elongated horizontal bar 10; this bar being shown as secured to the top of the turn-table by a pair of nuts 11 which are secured upon the upper ends of a pair of bolts 12; the said bolts projecting upward from the base 3 of the turn-table, and being located at opposite sides of the end portions of the bar. It is to be understood that the bar 10 may be either

in the form of a T-bar in cross-section, as shown in Fig. 3, or otherwise, as preferred. Near one of its ends, this bar 10 is formed with an extension or standard 13 which is preferably integral with the bar and which projects obliquely upward and longitudinally outward from the bar. 14 designates a series of ratchet-teeth which are formed upon the inner side of the extension 13 and also upon the upper side of the adjacent end of the bar 10; these teeth 14 extending in a continuous series from the upper to the lower end of their area as shown, and being preferably of varying degrees of width, that is to say, in spaces between the lower teeth of the series or those teeth which are formed upon the end of the bar 10, are of greater width while the spaces between the teeth which are formed upon the inner side of the extension 13 are of less width, and these spaces may be of varying widths, so that varying degrees of fineness of adjustment may be readily attained as hereinafter fully explained. It is to be understood that while these teeth may be of the variable character just explained, they may, if preferred all be of uniform character without departing from the essential spirit of my invention.

Upon the opposite end of the bar 10 from that which carries the extension 13, is formed a second extension 15 which is preferably integral with the bar 10. From this standard 15 project oppositely two lateral trunnions 16 through which extends longitudinally a pivot bolt 17; one end of this bolt being externally screw-threaded to receive a retaining nut 18.

19 designates two carrying arms each of which may be of T-form in cross-section, as shown, and the rear end of each of which loosely surrounds one end of the pivot-bolt 17 just referred to. These carrying arms 19 are of any suitable or preferred length, but are shown for purposes of illustration, as of somewhat less length than the distance from the upper end of the extension 13 to the opposite extremity of the bar 10. The outer or free end portions of these carrying arms are also shown as curved laterally away from each other, and between the outer ends of these arms is journaled the supporting roller 20. The ends of the roller 20 turn freely in the outer or free ends of the carrying-arm. This roller and certain peculiarities in the construction of the outer or free ends of these carrying-arms will be hereinafter fully explained.

Between the two carrying-arms 19 is interposed a cross-trunnion-bar 21 through which extends longitudinally a pivot bolt 22; a suitable retaining-nut 23 being screwed upon one end of this retaining-bolt, and the enlargements 22^a being formed preferably nearer the outer or free ends of the carrying-arms 19, as shown.

From the trunnion-bar at a point midway of the length of the same, extends forwardly

an arm 24 which is preferably formed integrally with the trunnion-bar. Through the outer portion of this arm 24 extends longitudinally an adjusting-rod or screw 25 the front end of which carries a toothed-head 26, the tip of which engages with one or another of the teeth 14, before described. The rear portion of this screw-rod is externally screw-threaded to receive an adjusting nut 27 which works between two projections 28 of the arm 24.

In Figs. 1, 2, 3, and 4, the roller 20 is shown as serrated provided with spike-like protuberances 20^a upon its outer surface, and at its ends the roller is shown as being equal in diameter to the width of the outer ends of the carrying-arms 19.

In Figs. 5 and 6 the roller 20 is shown as formed with a perfectly smooth surface and the outer ends of the carrying-arms 19 are shown as formed with upwardly extending enlargements 29; the purposes of these protuberances and projections 29 being hereinafter explained. Moreover, in Fig. 5 the cross-trunnion-bar 21 is shown as provided with an arm 30 the front end of which is formed with a toothed-head 31; the tip of this head engaging the ratchet teeth 14 and the adjustable head or dog 26 and its screw-rod and adjusting nut being dispensed with.

In Fig. 3, the upper surface of the lower turn-table member and the under surface of the upper turn-table member are shown as perfectly flat or plane in form so that they work in contact with each other throughout their area. In Fig. 4, however, the upper and lower surfaces respectively of the lower and upper turn-table member are shown as formed with registering circular grooves 41 within which are placed a suitable number of anti-friction spheres or balls 40; these spheres or balls serving to reduce the friction between the moving parts of the turn-table to a minimum.

It is to be understood that when this appliance is to be used in connection with planers, and similar machines, the side guides or projections 29 may be dispensed with; the side guides or projections being used when the application is being employed in connection with boring-machines and similar machines.

With planing-machines, boring-machines and the like, the stationary form of support shown in Fig. 5 is preferably employed, while the turn-table type of appliance is used with sawing-machines and the like. It is to be understood also that when the appliance is to be used with sawing-machines the adjustable dog is not used, the appliance having a plane arm 30 being preferably employed in such instances. It will thus be seen that I propose to construct two or more types of the machine; the one being a stationary machine, as shown in Fig. 5 (without a turn-table) and the other being a revoluble machine as shown in the other figures, either of these machines hav-

ing an adjustable head 26 and its attachments or merely a plane arm 30 and its head.

I will first describe the operation of the machine in connection with a boring-machine.

5 One of the appliances is set at each side of the machine and the roller 20 is adjusted to precisely the height required to support the beam or stock properly beneath the boring tool. The bar or beam is now laid upon the rest or
10 bed of the machine and is supported at its ends upon the rollers 20 of the two appliances. The boring tool is now brought down upon the stock in the usual manner and the required aperture or hole is made in the usual
15 manner, after which it will be seen that the stock can be readily moved along until the required place in the stock for the formation of a second aperture or socket reaches the boring-tool. It will be obvious from this description that all necessity of the workman
20 raising the stock bodily is avoided and that the stock is supported much more steadily and securely than it could possibly be supported by the hands of one or more workmen.

25 Now I will describe the operation of the appliances when used in connection with a planing-machine. One of the supporting appliances is placed at one end of the planer and the other at the opposite end of the planer.
30 In this class of work it is absolutely necessary for effectiveness of execution that the boards or stock to be planed shall be set at precisely the required height relative to the cutter of the planer, so that only so much
35 material shall be removed as shall render the surfaces smooth but without extravagant waste of stock. Therefore, before commencing operation, the adjusting screw 27 is turned so as to move the head 26 a greater or less distance, a variation of one-sixteenth of an inch
40 being thus easily attainable. Both rollers are thus set in exact accordance with each other and the boards or stock is run through the machine in the usual manner; one roller 20
45 supporting one end portion of the stock and the roller 20 of the other appliance supporting the opposite end of the stock.

I will finally describe my appliance as used in connection with cross-saws and rip-saws.

50 Two of the appliances are used in this instance, one being placed at each side of the bed of the rip-saw. The stock is supported by the two rollers of the two appliances and is passed through the rip-sawing machine in the usual manner thus cutting the stock into
55 suitable widths. The widths of stock are now piled upon the roller of one of my appliances and this roller is quickly swung around horizontally so as to extend at right angles
60 to its former position, so as to bring the stock in proper position relative to the cross-saw to be cut thereby. In this instance the serrated rollers are used and the side guides or projections are also used, the serrations of the
65 rollers biting into the stock sufficiently to prevent slipping of the stock on the rollers, and the side guides preventing any disloca-

tion of the stock from the rollers during the swinging of the stock from one saw to the other.

70 From the above description it will be seen that I have produced a supporting appliance for woodworking machines, which is simple, strong, durable, and inexpensive in construction and which is capable of effective operation in connection with wood-working machines of a great variety of types and which
75 obviates most of the labor heretofore involved in handling such stock; the appliance furthermore, being capable of supporting the stock steadily and accurately.

I desire it to be understood that while I have stated that the appliances are intended for woodworking machinery and while such is principally the case, they may with very
80 slight alterations be adapted to metal work and various other similar classes of work.

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

90 1. A supporting appliance for woodworking machinery, comprising a suitable supporting framework, a pair of carrying-arms mounted pivotally upon said supporting framework, a supporting roller mounted between said arms; a series of ratchet-teeth carried by the upper
95 portion of the supporting framework and a pivotal adjusting arm carried between the said carrying arms and engaging with said ratchet-teeth, substantially as set forth.

100 2. A supporting appliance for woodworking machinery, comprising a suitable framework, a pair of carrying-arms mounted pivotally upon said supporting framework, a supporting roller carried between said arms; an adjustable supporting-arm secured pivotally to said carrying-arms and having an adjustable head, an adjusting-nut for said head and a series of ratchet-teeth engaged by the adjustable head and carried by the upper part
105 of the supporting framework, substantially as set forth.

110 3. A supporting appliance for woodworking machinery, comprising a suitable supporting framework, a pair of roller-carrying-arms pivotally mounted upon said framework, a pivotal adjusting-arm carried by the said carrying-arms and having an adjustable head, and an adjusting-nut carried by the stem or rod of the adjustable head, substantially as set
115 forth.

120 4. A supporting appliance for wood-working machinery, comprising a suitable supporting frame-work, a longitudinally extending base-plate secured upon said frame-work, a longitudinally extending bar formed upon said base-plate or secured thereon, and having an extension at each end, a series of teeth formed in the upper side of one of said extensions and upon the upper side of the longitudinally
125 extending bar, a pair of parallel arms 19 pivoted on opposite sides of the extension at the other end of the said bar, and carrying an externally serrated roller in their outer ends,

a bolt connecting said parallel arms, and an arm pivoted on said bolt, and having a toothed head adapted to engage the teeth on the upper sides of the longitudinally extending bar and the extension therefrom, substantially as set forth.

5 5. A supporting appliance for wood-working machinery, comprising a suitable frame-work, a stationary base-plate mounted upon said
10 frame-work, and having a circular body-portion, a revoluble top-plate mounted upon said base-plate having a centrally depending pivot passing through a central opening in the stationary base-plate and the frame-work, and
15 a retaining nut engaging the lower end of said pivot and bearing against the under side of the frame-work, and a frame located upon the revoluble top-plate, and supporting arms pivoted thereto, and a roller journaled in the
20 outer ends of said supporting arms, substantially as set forth.

6. A supporting appliance for wood-working machinery, comprising a suitable frame-work, a base plate located upon said frame-work
25 having a circular body-portion projecting

upwardly therefrom, and having a circular groove therein, a top-plate having a circular groove in its under side adapted to register with the groove in the upper side of the circular body-portion, a number of balls located
30 in said grooves, a pivot pendent from the underside of the top-plate and passing through a central opening in the circular base plate and through the frame-work, and having its lower end reduced and screw-threaded, a
35 flanged cap engaging the lower end of the said pivot, and a nut engaging the projecting end of the said pivot, and bearing against the under side of the flanged cap, and a supporting frame mounted upon the top-plate, a
40 pair of pivotal arms carried upon said frame, and a roller journaled between said arms, substantially as described.

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

CHARLES O. MOOK.

Witnesses:

HARRIET E. PRICE,
G. Y. THORPE.