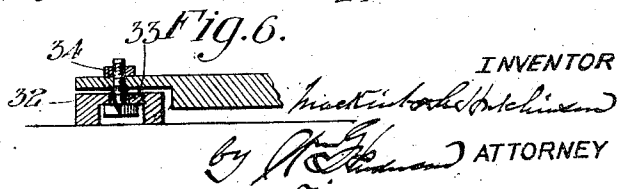
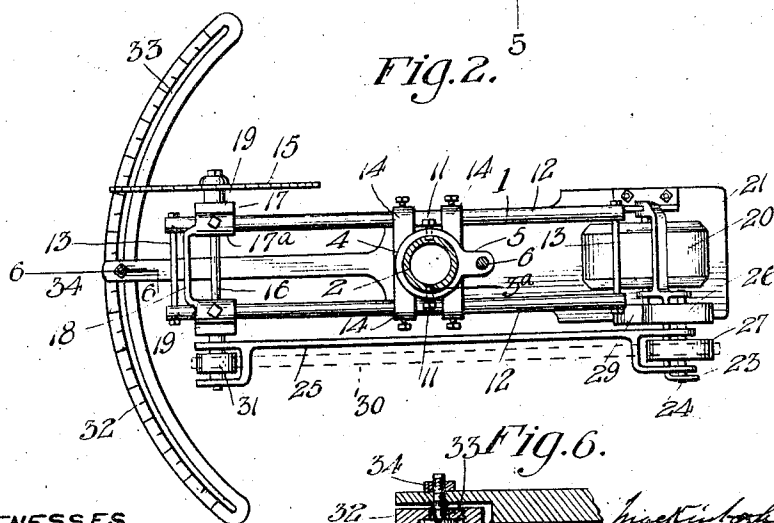
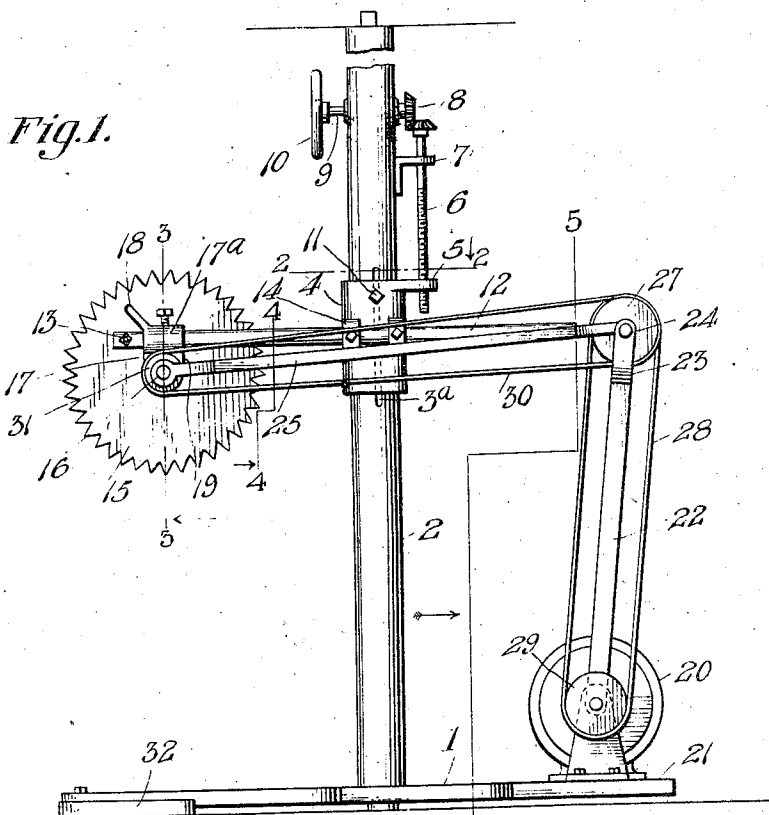


M. HUTCHINSON.
SAWING MACHINE.
APPLICATION FILED APR. 24, 1911.

1,014,708.

Patented Jan. 16, 1912.

2 SHEETS—SHEET 1.



WITNESSES

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2 SHEETS—SHEET 2.

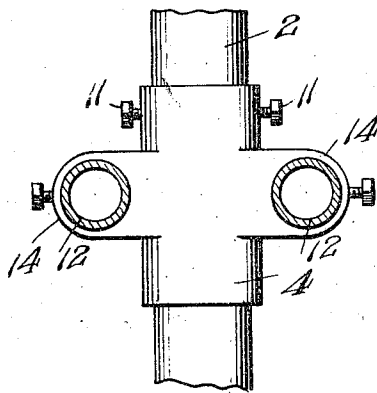
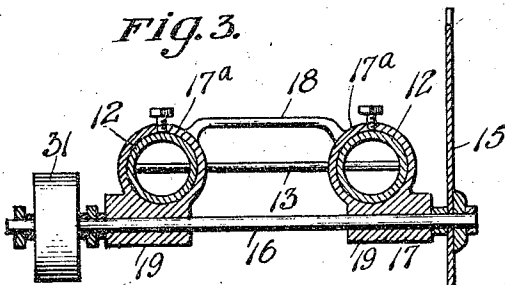


Fig. 4.

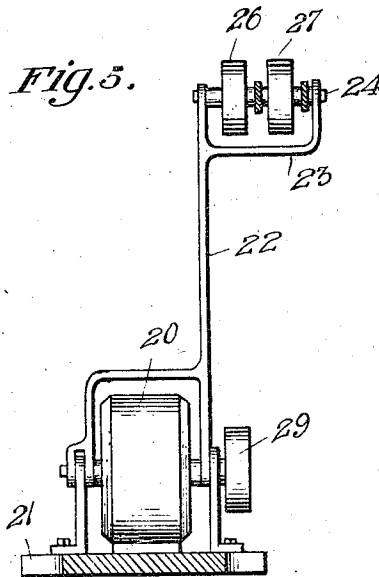
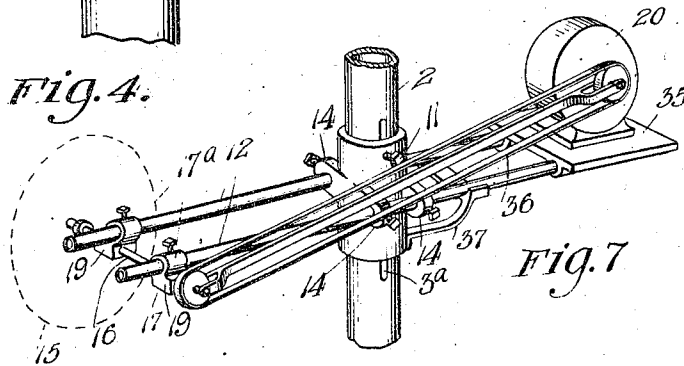


Fig. 7.

WITNESSES

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UNITED STATES PATENT OFFICE.

MACKINTOSH HUTCHINSON, OF TORONTO, ONTARIO, CANADA.

SAWING-MACHINE.

1,014,708.

Specification of Letters Patent.

Patented Jan. 16, 1912.

Application filed April 24, 1911. Serial No. 623,066.

To all whom it may concern:

Be it known that I, MACKINTOSH HUTCHINSON, a citizen of the Dominion of Canada, residing at Toronto, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Sawing-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in sawing machines, more especially intended for mitering, cross-cutting, dadoing and kindred operations.

The primary object of the invention is to improve the construction and organization of such a machine in features to be hereafter particularly specified, to secure the advantages of lightness, simplicity, universality of adjustment, and compactness.

The accompanying drawings illustrate advantageous embodiments of the invention.

In the said drawings:—Figure 1 is a side elevation of a preferred form of the machine which is adapted for both light and heavy work; Fig. 2 is a sectional plan view on the line 2—2 of Fig. 1; Fig. 3 is a detail vertical section on the line 3—3 of Fig. 1; Fig. 4 is a detail vertical section on the line 4—4 of Fig. 1; Fig. 5 is a detail sectional view on the line 5—5 of Fig. 1; Fig. 6 is a detail sectional view on the line 6—6 of Fig. 2; and Fig. 7 is a detail perspective view of a slightly modified construction especially intended for light work.

Similar character of reference designate corresponding parts throughout the several views.

In the construction shown in Figs. 1 and 2 the main operating parts are assembled with relation to a bed plate 1 and an upright post 2 which, at its lower end, is fixed to the bed plate. The latter is pivotally supported at a point coincident with the axial center of the post on any suitable rest and the post in like manner is pivoted co-axially at its upper end to any stationary part or bracket.

Upon the post 1 a frame 4 in the form of a cylinder is conformably fitted for axial sliding movement. The frame 4 is provided

with a suitably located lug 5 having a threaded opening and the sliding movements of said frame are effected by a vertical threaded shaft 6 which engages in the threaded opening in the lug 5. The shaft 6 which has a bearing in a bracket 7 secured to the post, is rotated through the agency of miter gears 8, one of which is carried by said shaft and the other of which is carried by a horizontal shaft 9 supported from the post and provided with a hand wheel 10. The frame is fixed at any desired position to which it may be moved by set screws 11 which are threaded through the frame at opposite sides thereof and engage, incidentally as guides, in the grooves 3^a formed in the post.

The frame 4 constitutes an element of the saw supporting means, the other element of said means embodying a pair of parallel horizontal beams 12, connected by bolts 13 and supported in and slidable through lugs 14 which are arranged in pairs at opposite sides of the frame.

The saw which is of the disk type usually employed in this class of machines is indicated by the numeral 15 and is mounted upon a shaft 16. The latter is hung from the beams 12 by bracket 17 which is provided with sleeves 17^a to surround the beams and is fixed thereon at their forward ends as by set screws threaded through the sleeves and engaging the beams. The bracket 17 is provided with a handle 18 and also at its opposite sides with depending apertured lugs 19 which serve as supporting bearings for the shaft 16, the latter passing under the beams.

The saw is preferably driven from an electric motor 20 which is mounted on a rearward extension 21 of the bed plate 2. An arm 22 is pivoted to brackets which are carried by the base of the motor and at its upper end terminates in a fork 23 which serves as a support for a shaft 24. A link 25 extends between the shaft 24 and the shaft 16 and positively connects the arm 22 and the bracket 17. The shaft 24 is provided with two sheaves 26 and 27, the sheave 26 being coupled by a belt or rope 28 to a sheave 29 on the shaft of the motor 20, and the sheave 27 being coupled by a belt 30 to a sheave 31 on the shaft 16.

The saw is positioned to work in different vertical planes by turning the bed plate 2 upon its support through a suitable

angle. This angle is indicated by an arcuate scale 32 which has a suitable extent and is of course concentric with the axial center of the post. The scale 32 is formed with a concentric slot 33 of T or key-hole form and the bed plate 2 is provided with an extension or finger which overlies the scale 32 and carries a bolt 34, the head of which works in the undercut portion of the slot 33 and by means of which the bedplate is fixed at any desired position.

From the foregoing description it will be apparent that the saw may be adjusted, vertically by moving the frame 4 with relation to the post 1, horizontally by moving the bracket 17, forwardly or rearwardly as required, the beams 12 sliding through the lugs 14, and to different vertical planes by moving the post and bed plate on their pivot connections. The saw is thus adjustable to any desired position and plane and the organization which provides for these adjustments is of simple, light and compact nature. The particular relation of the beams to the post and of the saw carriage and saw shaft to the beams is of especial advantage in that it enables the use of the machine over work benches and in various other places in connection with which many existing types of machines for similar work are of no use whatever. The machine owing to its lightness is portable and at the same time has amply sufficient strength and stability for all practical purposes.

The form of construction shown in Fig. 7 is intended for light work only and involves a departure from the construction shown in Fig. 1 only in respect of the mounting and connection of the motor 20. In this example the motor is secured on a base plate 35 which is fixed on the beams 12 at the rear side of the post 1. The base plate 35 may be set at different positions in the beams to secure a desired tension of the belt 36 which connects the motor shaft and the shaft 16. Owing to the added weight in the beams the latter may be braced by a bracket 37 which projects rearwardly from the frame 4. With the exception of the features just described the construction shown in Fig. 7 is similar to the construction shown in Fig. 1 and except that it is not adapted for heavy work, has all the advantages of the construction shown in Fig. 1.

Having fully described my invention I claim:

1. In a machine of the type set forth, in combination, an upright post, a frame associated with the post and adjustable axially thereof, beams carried by the frame and projecting forwardly from the post, a bracket mounted on the beams and adjustably movable in the direction thereof, a shaft supported by the bracket, a saw carried by the shaft, and means operable in

any position of the bracket to drive the shaft.

2. In a machine of the type set forth, in combination, an upright post, a frame surrounding the post and adjustable axially thereof, beams carried by the frame and projecting forwardly from the post, a bracket fixedly mounted on the beams the latter being supported for axial sliding movement, the bracket having depending apertured lugs, a shaft journaled in the lugs and carrying a saw, and means operable in any position of the bracket and the beams to drive the saw.

3. In a machine of the type set forth, in combination, an upright post a frame conformably surrounding the post and adjustable thereof in the direction of the axis of the post, the frame having apertured lugs at opposite sides thereof, parallel horizontal beams fitted in the lugs for sliding movement and projecting forwardly from the post, a bracket fixed on the beams and provided with apertured depending lugs, a shaft journaled in the lugs and carrying a saw, and means operable in any position of the bracket and the beams to drive the saw.

4. In a machine of the type set forth in combination, an upright post, a frame surrounding the post and adjustable axially thereof, beams carried by the frame and projecting forwardly from the post, a bracket mounted on the beams and adjustably movable in the direction thereof, an electric motor having a stationary support, an arm pivoted co-axially with the motor shaft and terminating at its upper end in a fork, a shaft journaled in the fork, a link connecting the arm and the bracket, gearing between the motor shaft and the last named shaft, a saw carrying shaft supported by the bracket and gearing between the second named shaft and the saw carrying shaft.

5. In a machine of the type set forth, in combination, an upright post having a co-axial pivotal mounting, a frame associated with the post and adjustable axially thereof, beams carried by the frame and projecting forwardly from the post, a bracket mounted on the beams, the bracket being movable in the direction of the beams, a shaft supported by the bracket a saw carried by the shaft, and means operable in any position of the carriage to drive the shaft.

6. In a machine of the type set forth, in combination, an upright post having a co-axial pivotal mounting, a bed plate secured to the lower end of the post, a curved slotted scale which is overhung by the bed plate, the latter having a bolt which works in the slot in the scale and by which the bed plate may be fixed at any desired position with respect to the scale, a frame associated with the post and adjustable axially thereof, beams carried by the frame and projecting

forwardly from the post, a bracket mounted on the beams, the bracket being movable in the direction of the beams, a shaft supported by the bracket, a saw carried by the shaft, and means operable in any position of the carriage to drive the shaft.

7. In a machine of the type set forth, in combination, an upright post having a coaxial pivotal mounting, a bed plate fixed to the lower end of the post and having a rearward extension, an electric motor mounted on the extension, a frame associated with the post for adjustment axially thereof, beams carried by the frame and projecting forwardly from the post, a bracket mounted

on the beams for adjustment in the direction thereof, a saw carrying shaft supported by the bracket, an arm pivoted on the extension of the bed plate and terminating in a fork, a shaft supported by the fork, gearing between the motor shaft and said last named shaft, gearing between the saw carrying shaft and said last named shaft, and a link connecting the arm and the bracket.

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

MACKINTOSH HUTCHINSON.

Witnesses:

A. F. LOBB,

W. M. WHITEHEAD.