Jan. 26, 1932. K. O. RODNING 1,842,630

PORTABLE SAW MACHINE

Filed March 18, 1930 2 Sheets-Sheet 1

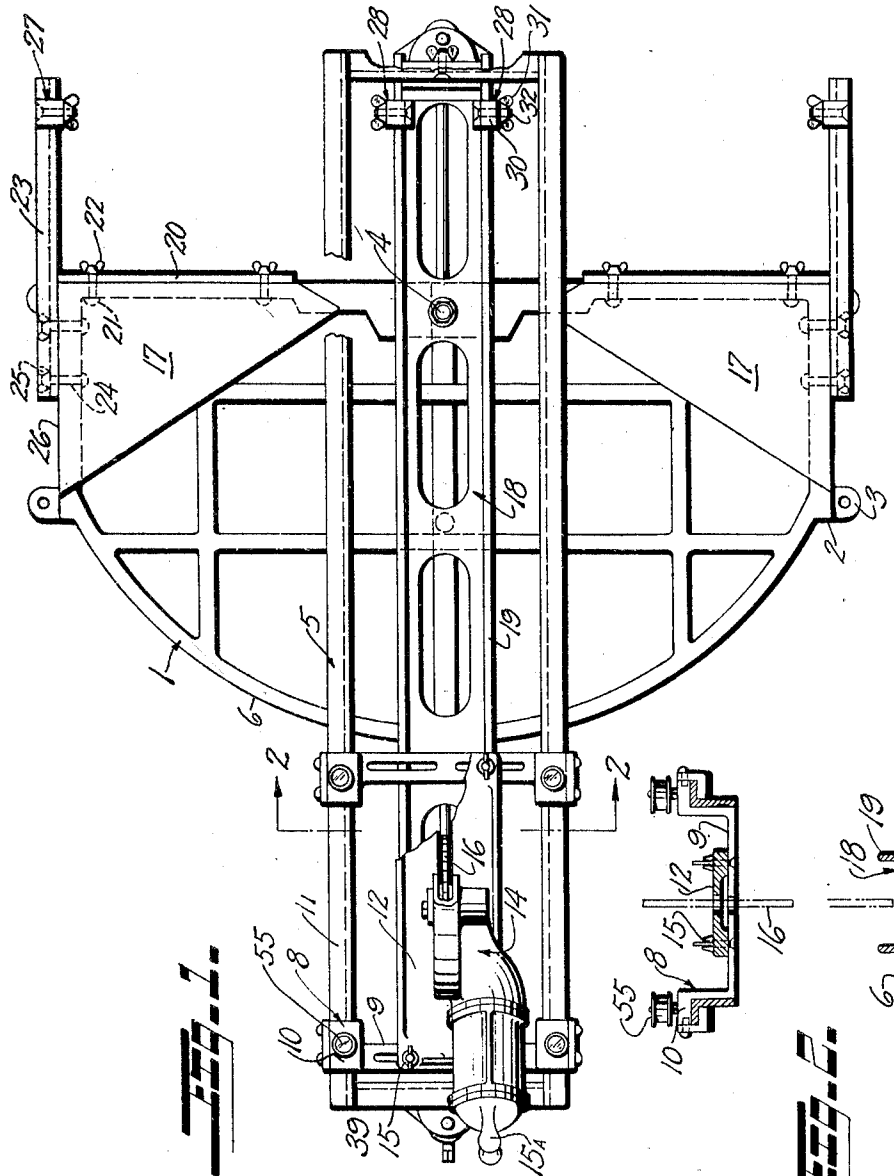


Fig. 1.

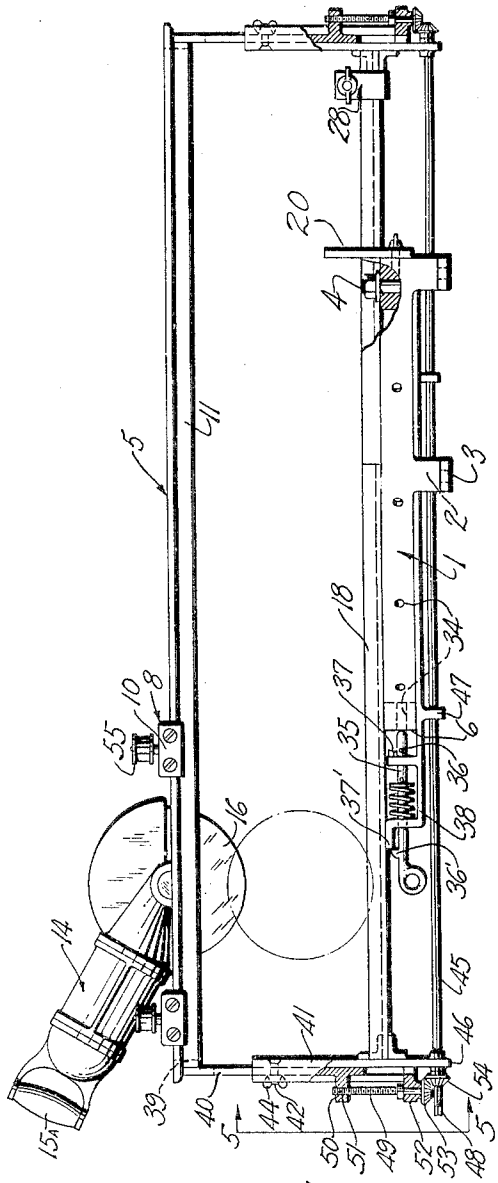
Fig. 2.

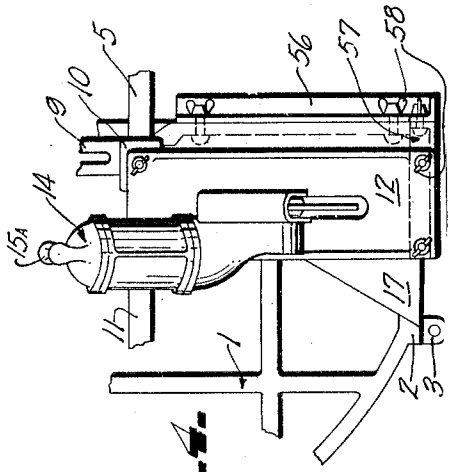
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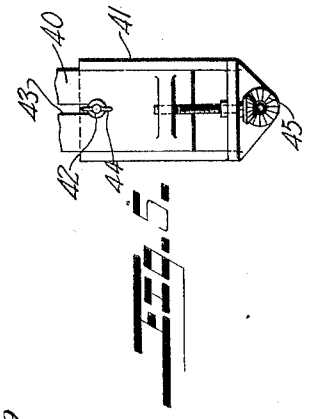
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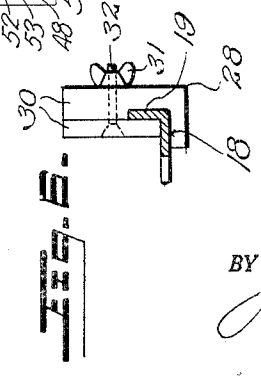
PORTABLE SAW MACHINE

Filed March 18, 1930 2 Sheets-Sheet 2









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Patented Jan. 26, 1932

1,842,630

UNITED STATES PATENT OFFICE

KNUT O. RODNING, OF OAKLAND, CALIFORNIA

PORTABLE SAW MACHINE

Application filed March 18, 1930. Serial No. 436,722.

This invention relates to a portable adjustable saw carriage or machine which is especially designed for use in connection with portable motor driven saws and provides for cross-cutting, ripping, mitering, and various other sawing operations, in a particularly efficient and accurate manner.

An object of the invention is to provide a portable saw carriage of the character described which is constructed so that a portable electric saw may be quickly and easily attached thereto and effectively operated for various sawing purposes in a much easier and more accurate manner than is ordinarily possible with such saws.

A further object is to provide a portable saw machine of the character described which will be comparatively simple as to construction, light as to weight, small, compact, and capable of being set up for use without necessitating permanent or elaborate anchorage or fastening provision therefor, it being possible to carry the equipment from one room or part of a building to the other to facilitate the sawing operations required.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawings accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawings and description may be adopted within the scope of the invention as set forth in the claims.

Referring to the drawings,

Figure 1 represents a top plan view of the machine of my invention as when set up for use and having a portable saw incorporated therewith.

Figure 2 represents a sectional view taken on the plane of line 2—2 of Figure 1.

Figure 3 represents a side elevation of the apparatus of this invention.

Figure 4 is a fragmentary top plan view of the machine as when arranged for ripping.

Figure 5 is a fragmentary front elevation of a detail of the machine.

Figure 6 is an enlarged side elevation of one of the adjustable stops.

The present embodiment of my invention, as illustrated in detail in the accompanying drawings, comprises a skeleton frame 1 of approximately semi-circular form and provided with suitable legs 2 having attaching feet 3 whereby the frame may be secured upon a table or other suitable support by means of screws, bolts, clamps or other fastenings not shown.

Pivoted as at 4 upon the frame 1 is a substantially rectangular adjustable frame 5 having an arcuate sliding engagement with the upper side of said frame. The pivotal connection of the frame is made at a point centrally of the ends of the main frame along the flat or straight side of the latter and at a point near but spaced from one end of the adjustable frame whereby the latter may be swung in an arc corresponding to the curvature of the curved side 6 of said main frame. Slidably mounted upon the adjustable frame is a saw supporting carriage 8 consisting of independently slidable cross bars 9 provided at their ends with shoes 10 slidably interlocked with angle iron side rails 11 comprising the upper portion of the adjustable frame. These bars 9 are adjusted relatively in order to be properly spaced to support the base 12 of the portable motor driven saw 14. Suitable fastenings 15 are employed to removably secure the saw to the carriage aforementioned, and with this arrangement it will be seen that the saw may be grasped by the handle 15ª and moved back and forth on the carriage 8 to dispose the rotary saw blade 16 in the desired position for operation as will be later described.

It will now be seen that with the saw slidably supported on the carriage 8, which latter is movable with the adjustable frame 5, it is possible, on pivotal adjustment of the adjustable frame and appropriate sliding adjustment of the carriage 8, to dispose the saw blade at various points and positions for effecting different sawing operations on wood or other material placed on the main frame. In this connection it will be noted that the main frame is provided with two

substantially triangular work supporting plates 17 which have their upper surfaces disposed substantially flush with the bottom bar 18 of the adjustable frame 5. This bar 18 is channel-shaped with flanges 19 on opposite sides thereof. The saw blade 16 is disposed parallel to and centrally between said flanges, ordinarily in slightly spaced relation to the upper surface of said bar and in line with the pivot 4. Thus a piece of material, or board, extended transversely over the bar 18 while being supported on the plates 17, is disposed in position to be engaged by the saw blade, and straight, beveled, or mitre saw cuts may be made as desired, depending upon the adjustment of the frame 5 and of the carriage 8. In this connection attention is called to the fact that the present day popular types of portable electric saws with which this equipment is to be used provide for rotative adjustment of the saw relative to the base thereof whereby the saw blade may be inclined variously, and different mitre or beveled cuts may be therefore made as desired.

As a means for guiding the work, flanges 20 are removably secured by fastenings 21 and 22 along the straight edge of the frame on opposite sides of the pivot 4. In the event that a particularly wide board or piece of material is to be sawed, extension bars 23 are removably secured to the frame 1 by fastenings 24 and 25 along straight portions 26 which are provided at the ends of the frame and extend at right angles to the straight edge of the frame. These extension bars carry adjustable stops 27 arranged to take the place of the guide flanges 20. Similar stops 28 are adjustable on the flanges 19 of the bar 18 and are adapted to be aligned with the stops 27 whereby the board or work is guided at three points and may be maintained in desired relation to the saw. Each of these stops includes jaws 30 arranged to clamp the member on which it slides, there being a wing nut 31 for each stop whereby the jaws may be clamped when said nut is properly turned upon the screw 32 joining said jaws.

To provide for accurate gauging of the adjustments, and accuracy in the sawing operations, the curved side 6 of the main frame is provided with suitable graduations, not shown. On the front edge of this curved side are a plurality of depressions or openings 34 properly aligned with various graduations and adapted to receive a combined spring urged detent and set member 35 which latter is carried on the under side of the bar 18 of the frame 5. By this arrangement the frame 5 may be locked in various positions of adjustment. In order to lock the frame 5 in positions of adjustment when the detent 35 is out of registration with one of the openings therefor, said detent is operated as a set screw to frictionally engage said curved side 6. Upon clockwise turning of the detent a projection 36 thereon engages a cam face 37 and the inner end of the detent frictionally binds against said curved surface and thereby acts as a set screw. Upon counter clockwise loosening movement of the detent 35 a projection 36′ engages a stop shoulder 37′ in such manner as to hold the detent against the action of its spring with the free end spaced from the curved surface 6 whereby free adjustment of the frame 5 may be effected. When the detent is turned to move the projection 36′ clear of the shoulder 37′ the spring urges the detent inward whereby it may be engaged in one of the depressions 34, further turning movement being necessary in order to engage the projection 36 with cam 37. The device 35 is carried by a guide and brace bar 38 affixed at its ends to the under side of the bar 18.

In order to elevate the saw to vary the depth of the saw cuts, portions of the frame 5 are vertically adjustable. As here shown the side rails 11 are joined by end pieces 39 from which depend plates 40 that are slidably engaged with upstanding plates 41 affixed to the bar 18. On the plates 41 are bolts 42 which extend through the slots 43 in the plates 40 whereby the latter may slide relative to the plates 41. Wing nuts 44 provide for clamping the plates 40 in adjusted position. To insure accuracy in the vertical adjustment of the frame 5 I employ mechanical adjusting means. This means includes a rotary shaft 45 disposed beneath the main frame and lengthwise of the bar 18 in bearings 46 depending from the plates 41, there being additional bearings 47 on the bar 38. The end of the shaft adjacent the curved side 6 of the main frame is provided with a squared part 48 to receive a crank or other device, not shown, to provide for rotation of the shaft. In order to elevate and lower the adjustable portions of the frame 5 when the shaft is rotated, screw shafts 49 are arranged to cooperate with lugs 50 having screw threaded openings 51 therein. These screws are supported in suitable bearings 52 affixed to the lower part of the plates 41 and at their lower ends carry beveled gears 53 which mesh with similar gears 54 on the ends of the shaft. By this arrangement it will be seen that the side rails 11 of the frame 5 may be raised and lowered as desired whereby the saw blade 16 may be adjusted to make saw cuts of various depths, this being particularly efficacious for dado work.

To provide for ripping with the equipment of this invention the saw is removed from the carriage 8 and re-attached thereto with the base 12 affixed to the shoes 10 on one side of the frame 5. Ordinarily these shoes carry screw-threaded openings for grease cups 55 and said cups are removed whereby suitable fastenings may be inserted into the grease

cup openings to effect the attachment of the saw base as aforesaid. The forward part of the saw is adapted to be supported by an L-shaped bracket 56 which is attached to the base 1 by the fastenings 21 and 22 which are ordinarily used for securing one of the flanges 20. One leg of this L-shaped bracket 56 is slotted whereby an angular adapter 57 may be adjustably secured to the front portion of the saw and to said leg by suitable fastenings 58. In this way the front end of the saw is adjustably supported and the saw blade is disposed in such position as to rip work which is moved transversely across the frame 5.

It will now be seen that I have provided a simply constructed, comparatively small, light, portable machine which will readily facilitate the use of portable electric saws and permit of accuracy in all sorts of sawing operations, including mitering, compound mitering, cross-cutting, ripping, and dadoing. Among the advantages of the equipment of this invention is the provision for readily carrying the equipment from one part of a building to the other and easily setting up the equipment for operation on a table, work-bench, or the ordinary saw horses, it being unnecessary to employ specially built foundations or frameworks or complicated anchoring means. Ordinary C clamps, or screws bolts and nuts, are all that are required to quickly secure the equipment to a work-bench or the like whereby said equipment may be operated in accordance with this invention.

Another feature of importance is that in having the lower edge of the saw blade disposed below the carriage and parallel to and between the side rails 11 of the adjustable frame and over the frame member 18, in parallel relation to said member and said rails, the saw blade is effectively guarded and injury to the users of the equipment is thereby prevented. Furthermore, this arrangement makes for a better balancing and a smoother operation of the entire device as well as for strength in a light skeleton construction.

I claim:

1. In a portable saw machine, a stationary frame on which material to be sawed is placed, an adjustable frame mounted upon and for angular adjustment relative to said stationary frame, a carriage slidably mounted on the adjustable frame and arranged to have a portable motor driven saw attached thereto for movement therewith, said carriage comprising relatively slidably adjustable sections arranged to be spaced apart to accommodate the particular saw device to be attached thereto and to be fixed to said saw device.

2. In a portable saw machine, a stationary frame on which material to be sawed is placed, an adjustable frame mounted upon and for angular adjustment relative to said stationary frame, a carriage slidably mounted on the adjustable frame and arranged to have a portable motor driven saw attached thereto for movement therewith, said stationary frame having a curved portion provided with depressions therein, a spring urged detent on the adjustable frame arranged to withdrawably engage in said depressions, and means in association with said detent and said frames providing for a binding engagement of the detent with said stationary frame incident to appropriate rotation of said detent.

3. In a portable saw machine, a stationary frame on which material to be sawed is placed, an adjustable frame mounted upon and for angular adjustment relative to said stationary frame, a carriage slidably mounted on the adjustable frame and arranged to have a portable motor driven saw attached thereto for movement therewith, said stationary frame having a curved portion provided with depressions therein, a spring urged detent on the adjustable frame arranged to withdrawably engage in said depressions, means in association with said detent and said frames providing for a binding engagement of the detent with said stationary frame incident to appropriate rotation of said detent, and means normally holding said detent withdrawn against the action of its spring and acting to release the detent on turning movement thereof in the direction which provides the binding operation aforesaid.

4. In a portable saw machine, a stationary frame, a movable frame pivoted upon the fixed frame and having an upper member providing a track for substantially the full length of the movable frame and a lower member spaced from the upper member and arranged to afford a supporting surface for the work, and a carriage slidable on said track and a saw mounted on the carriage and arranged to depend below the upper member and the carriage.

5. In a portable saw machine, a stationary frame arranged to support the material to be sawed, a frame pivoted upon and angularly adjustable relative to said stationary frame and having an upper member providing a track for substantially the full length thereof, and a lower member spaced from the upper member arranged to afford a supporting surface for the work in conjunction with said first frame, and a carriage on said track arranged to have a motor driven saw supported thereon with the lower edge blade of the saw disposed below the carriage and the upper member of the second frame.

6. In a portable saw machine, a stationary frame arranged to support the material to be sawed on an upper surface of the frame, a frame pivoted upon and angularly adjust-

able relative to said stationary frame and having a vertically adjustable upper member providing a track for substantially the full length thereof, and a lower member spaced from the upper member arranged to afford a supporting surface for the work in addition to said first frame, and a carriage mounted on said track arranged to have a portable motor driven saw detachably supported thereon with the lower edge blade of the saw disposed below the carriage and upper member of said second frame.

7. In a portable saw machine, a stationary frame arranged to support the material to be sawed on an upper surface of the frame, a frame pivoted on said first frame for angular adjustment relative thereto and having an upper member with horizontal spaced portions affording a track, and a lower portion spaced vertically from the upper portion providing a material supporting surface in conjunction with said first mentioned surface, and a carriage mounted on said tracks and arranged to have a portable motor driven saw detachably supported thereon with the lower edge blade of the saw disposed below the carriage and below and between the horizontal spaced portions of said upper member.

In testimony whereof I have hereunto set my hand at Oakland, California, this 12th day of March, 1930.

KNUT O. RODNING.