

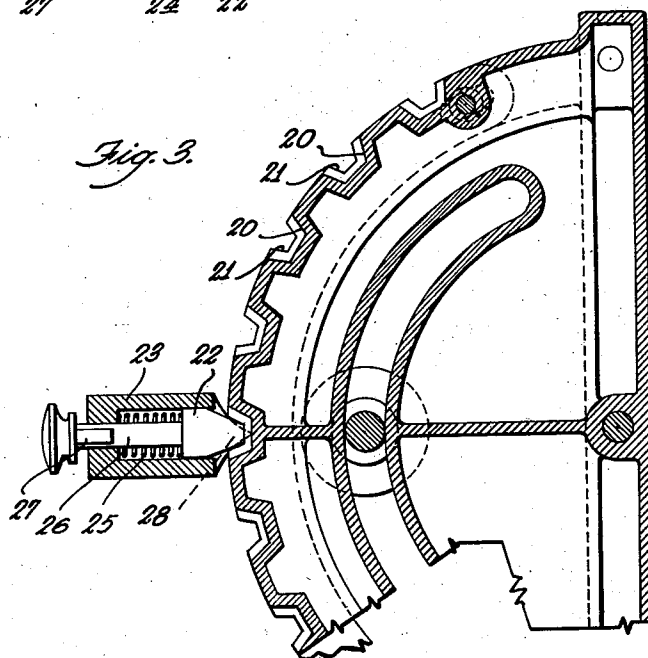
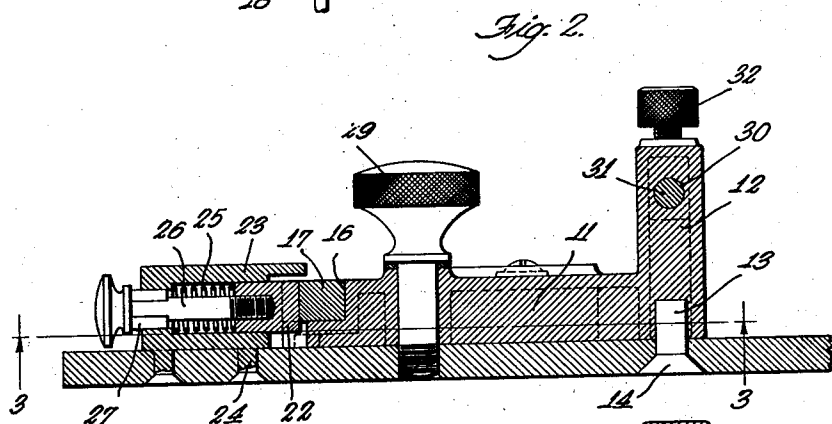
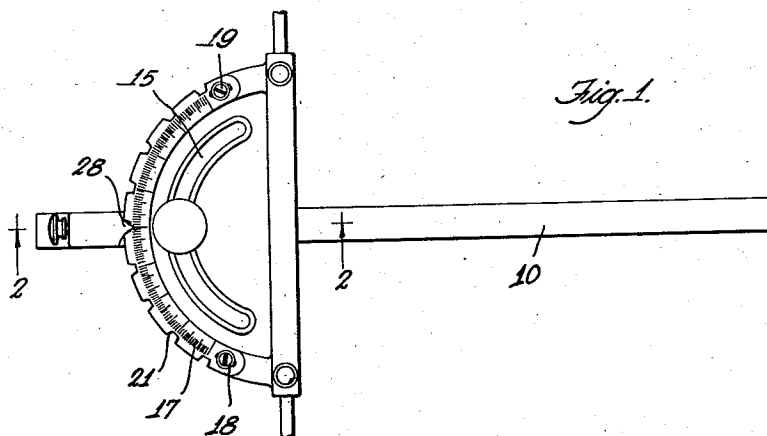
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MITER GAUGE

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MITER GAUGE

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This invention relates to improvements in miter gauges, and particularly to that class of miter gauges designed to be used in conjunction with power driven saws, enabling materials to be easily cut by the saws on a miter. In this class of work a very large percentage of miter cuts are made on conventional angles, for example most of the cuts will be at angles of 90 degrees, 45 degrees, 60 degrees, 30 degrees, 15 degrees, or 75 degrees. Such being the case it is highly advantageous to provide a construction which will enable adjustment of the fence quickly with respect to the base to any one of these frequently used positions and to provide a construction which will accurately cause the fence to assume the desired angular position relatively to the base.

An object of the present invention is to provide an improved miter gauge wherein provision is made to enable the fence to be quickly adjusted with respect to the base into any one of these positions which are most frequently used and which will cause the fence to accurately assume the position with respect to the base as will produce the desired angular cut when the material is forced into the saw.

Another object of the invention is to provide a construction, having the above mentioned characteristics and advantages, which will enable the setting of the fence at any angle with respect to the base and locking it in place in such position, which may be at an angle intermediate any of the principal positions which are most frequently used.

A further object of the invention is to provide an improved miter gauge of extremely suitable and durable design and which may be easily manufactured, applied to a saw table, and easily used.

With the foregoing and other objects in view, which will be made manifest in the following detailed description, and specifically pointed out in the appended claims, reference is had to the accompanying drawing for an illustrative embodiment of the invention, wherein:

Fig. 1 is a top plan view of the improved miter gauge.

Fig. 2 is a vertical section taken substantially upon the line 2—2 upon Figure 1.

Fig. 3 is a sectional view taken substantially upon the line 3—3 upon Figure 2.

Referring to the accompanying drawing, wherein similar reference characters designate similar parts throughout, the improved miter gauge consists of a base 10. This base may be an elongated base of rectangular cross section designed to fit and slide in a groove formed for its reception in the surface of a saw table. A casting 11 is mounted thereon, which provides an upright surface 12 constituting the fence against which the material to be cut by the saw may be positioned. This casting is pivotally mounted on the base such as by a rivet 13 hav-

ing a countersunk head 14 on the under side of base 10. It will be understood that the casting 11 may rotate about the center of rivet 13 as a center. The casting 11 has an arcuate slot 15 formed therein and presents a semi-circular rear edge which is rebated as at 16 to receive an arcuate or segmental scale 17. The scale 17 has slots 18 formed in its ends through which attaching screws 19 extend. These slots provide for a slight adjustment of the scale with respect to casting 11 so that in attaching the scale to the casting the graduations thereon will be properly positioned with respect to surface 12. The rear edge of casting 11 is notched, the notches being shown by the reference character 20. These notches 20, which are formed in the casting, are larger than similarly shaped notches 21 which are formed in the scale 17 opposite principal or most frequently used graduations. This arrangement is preferred so that any slight adjustment of the scale with respect to casting 11 will in no way throw notches 21 out of registry with notches 20. Also inasmuch as the bottom surface of scale 17 is in spaced relation to base 10, the larger notches 20 will afford a clearance to allow sawdust to drop freely and not accumulate on the base 10 in such a way as to interfere with the entry of the indexing member 22. The indexing member 22 has forwardly tapering sides designed to closely fit notches 21. It is slidable in a housing 23 having lugs on its under side indicated at 24 by which it is attached to base 10 and it is urged forwardly toward the scale by means of a compressed coil spring 25. It can be retracted by means of a handle 26 extending through the housing and through the coil spring, which carries fins or ribs 27 slidable in keyways formed in the end of the housing. These fins prevent rotation of the handle and rotation of the indexing member 22. Also by withdrawing the handle and giving it a partial turn the fins will hold the indexing member retracted against the action of the spring. The housing also carries a stationary pointer 28 arranged to traverse the graduations on scale 17. A tightening screw 29 is threaded into the base 10 through arcuate slot 15 and this, on being tightened, will serve to fasten or lock casting 11 to the base. As indicated upon the drawing, the under side of the casting is preferably cored out or made hollow to save material and to make the casting 11 relatively light. In the ends of the fence there are drilled apertures 30 to receive stops 31, which may be fastened in adjusted position by means of tightening screws 32.

The operation and advantages of the improved miter gauge are as follows. The miter gauge is shown in the position wherein the fence is at ninety degrees to the longitudinal axis of base 10, this being a position very frequently assumed

by the fence for a majority of cuts to be made. Assuming, however, that it is desired to change the fence so as to make a forty-five degree cut, the tightening screw 29 is loosened so as to render the casting 11 free to rotate as soon as indexing member 22 is withdrawn from the ninety degree notch. The indexing member is then withdrawn by means of handle 26 and the casting 11 is turned until the forty-five degree notch is approximately opposite the indexing member. The indexing member is then released, entering the forty-five degree notch, and the tapered sides of the indexing member engaging the tapered sides of the notch 21, opposite the forty-five degree graduation on the scale, accurately center the casting 11 in such a way that its surface 12 will be exactly at forty-five degrees to the length of base 10. In this position tightening screw 29 may be tightened to fasten casting 11 in place, or it may be left loose inasmuch as the engagement of the indexing member 22 with the notch is sufficient to hold the casting in place. Likewise if it is desired to shift casting 11 into any other position which is frequently used, a suitable notch is formed on the scale 17 for all of the principally used positions, enabling the casting to be quickly turned to any of these frequently used positions and accurately centered by merely releasing handle 26 and allowing the indexing member to enter a notch. If, however, it is desired to so position casting 11 that surface 12 will be at an intermediate angle with respect to the length of base 10, this may be accomplished by holding the indexing member 22 retracted and then adjusting casting 11 so that pointer 28 is exactly opposite the graduations on the scale 17, which is desired. While in this position tightening screw 29 is tightened to lock the casting to the base and thereafter handle 26 is released.

It will be noted that the arrangement is such as to enable sawdust to fall freely through notches 21 and that it will not accumulate in these notches, preventing the entry of the indexing member 22 and the accurate positioning of surface 12 with respect to base 10 by the entry of the indexing member into the notch. The sawdust may fall freely through notches 21 and, as notches 20 are larger, whatever sawdust accumulates in them does not interfere with the proper engagement between scale 17 and the indexing member 22.

The improved construction enables the fence to be very easily and quickly adjusted to any of the principal or most frequently used positions merely by retracting handle 26, swinging the casting 11, and releasing handle 26. However, by the provision of tightening screw 29 adjustment of the casting to any intermediate position is possible. Obviously the number of notches used on the scale may be increased or decreased from the number shown.

During this method of adjustment, wherein tightening screw 29 is used, the indexing member may be held in retracted position by retracting handle 26 and giving it a partial turn, causing the ribs or fins to engage the end of the housing and hold the indexing member retracted against the action of the spring.

Various changes may be made in the details of construction without departing from the spirit or scope of the invention as defined by the appended claims.

I claim:

1. A miter gauge comprising a base, means providing a fence pivotally mounted upon the base,

means providing a notched segment associated with the fence having inwardly tapering notches, and indexing means associated with the base having a tapered point adapted to be caused to enter and closely fit any of the notches to cause the fence to accurately assume the desired angular position with respect to the base, the bottoms of the tapered notches being wider than their tops.

2. A miter gauge comprising a base, means providing a fence pivotally mounted upon the base, a notched segmental scale adjustably mounted on the fence forming means for adjustment relatively thereto, and spring urged indexing means on the base adapted to be caused to selectively enter any of the notches.

3. A miter gauge comprising a base, means providing a fence pivotally mounted upon the base, a notched segmental scale adjustably mounted on the fence forming means for adjustment relatively thereto, a housing on the base, a spring urged indexing member in the housing urged to enter any of the notches, and a pointer on the housing arranged to traverse the scale.

4. A miter gauge comprising a base, means providing a fence pivotally mounted upon the base, a notched segmental scale adjustably mounted on the fence forming means for adjustment relatively thereto, and spring urged indexing means on the base adapted to be caused to selectively enter any of the notches, the bottom of the scale being arranged in spaced relation to the base.

5. A miter gauge comprising a base, means providing a fence pivotally mounted upon the base, a notched segmental scale adjustably mounted on the fence forming means for adjustment relatively thereto, a housing on the base, a spring urged indexing member in the housing urged to enter any of the notches, a pointer on the housing arranged to traverse the scale, said fence forming means having an arcuate slot, and a tightening screw threaded into the base through the slot whereby the fence forming means may be fastened to the base in all adjusted positions some of which may be between those wherein a notch is entered by the indexing means.

6. A miter gauge comprising an elongated base adapted to be positioned on a table, means providing a fence pivotally mounted upon the base, said means carrying a notched arcuate segment on its back, and a spring urged indexing means mounted upon the base for sliding movement in a longitudinal direction thereof and radially toward the center of rotation of the fence adapted to be caused to selectively enter the notches, the notches in the segment and the indexing means presenting upright sides which converge inwardly toward the center of rotation of the fence.

7. A miter gauge comprising an elongated base adapted to be positioned on a table, means providing a fence pivotally mounted upon the base, said means carrying a notched segmental scale on its back, a housing on the base in back of the scale, and a spring urged indexing means in the housing slidable longitudinally of the base and toward the center of rotation of the fence and adapted to be caused to selectively enter the notches, the notches in the segment and the indexing means presenting upright sides which converge inwardly toward the center of rotation of the fence.

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