Oct. 28, 1941. T. M. CASTLE 2,260,883

ANGLE GAUGE FOR PRINTERS' SAWS

Filed Nov. 22, 1940 2 Sheets-Sheet 1

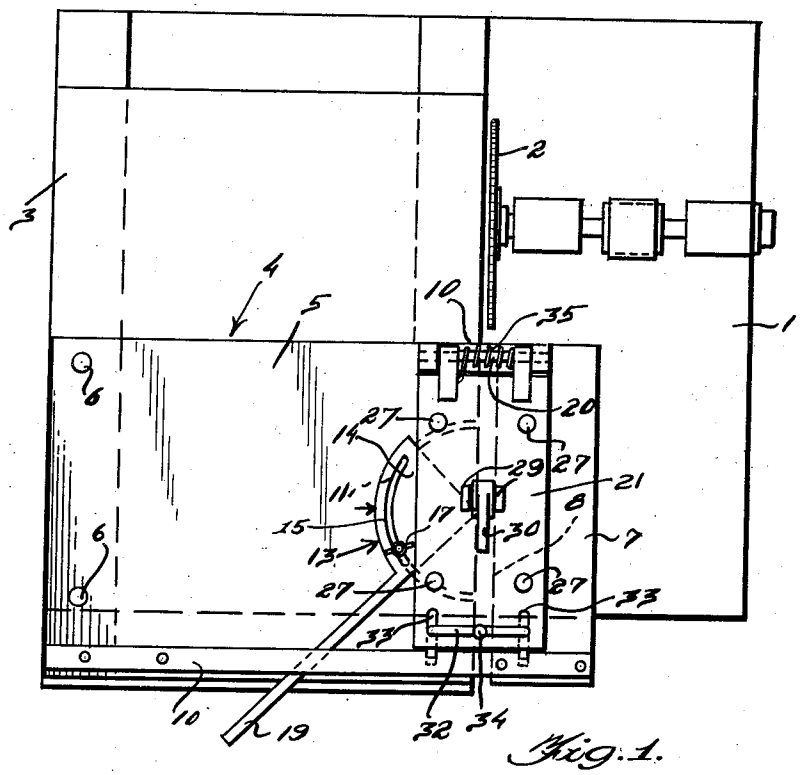


Fig. 1.

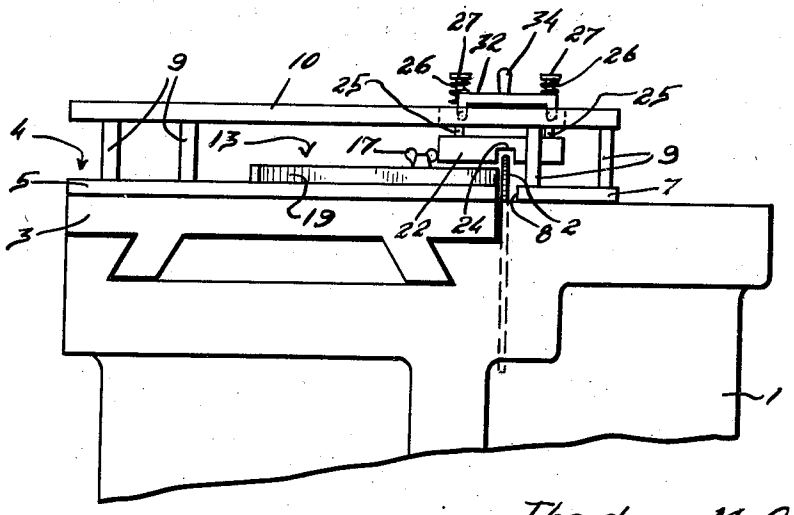


Fig. 2.

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ANGLE GAUGE FOR PRINTERS' SAWS

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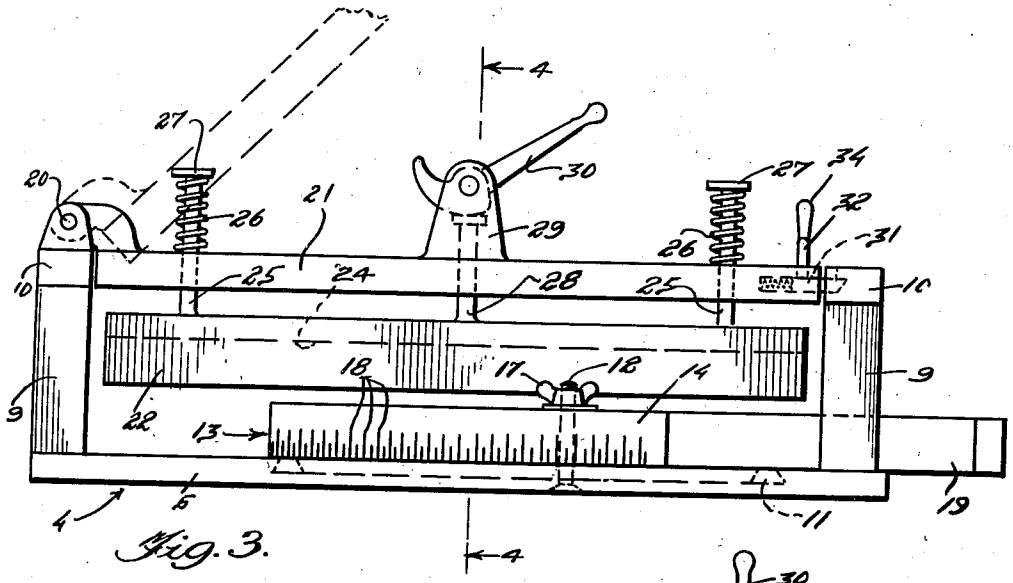


Fig. 3.

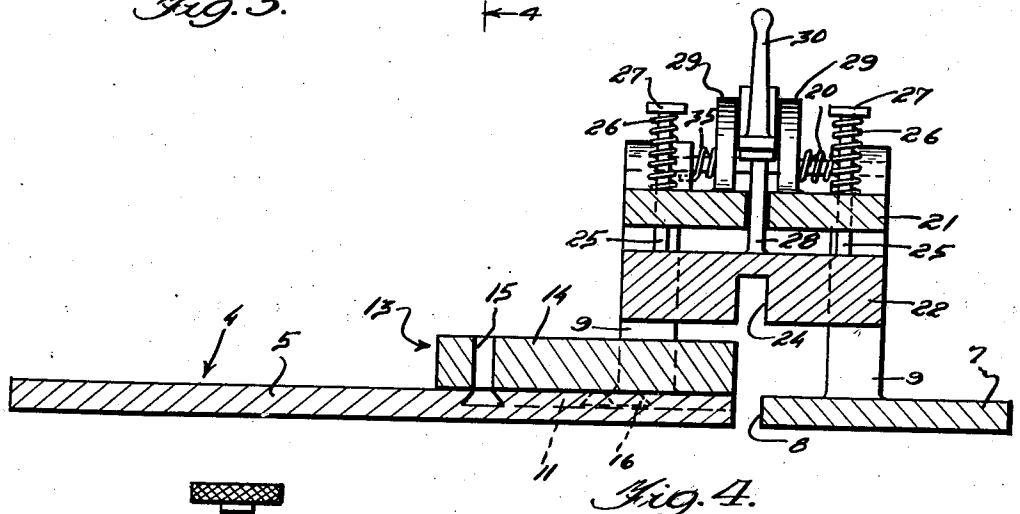


Fig. 4.

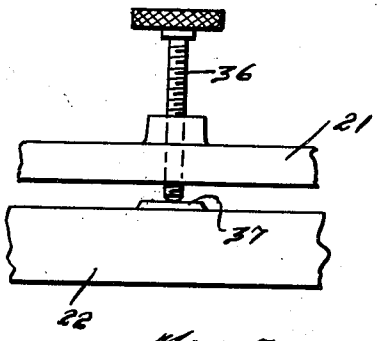


Fig. 5.

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UNITED STATES PATENT OFFICE

2,260,883

ANGLE GAUGE FOR PRINTERS' SAWS

Theodore M. Castle, Geneva, Ill.

Application November 22, 1940, Serial No. 366,741

3 Claims. (Cl. 29—69)

The present invention relates to new and useful improvements in angle gauges for printers' saws and has for its primary object to provide, in a manner as hereinafter set forth, a device of this character embodying novel means through the medium of which the material may be expeditiously and accurately placed and secured in any desired position for cutting said material at different angles.

Another very important object of the invention is to provide an angle gauge of the aforementioned character which is adapted to hold both ends of the material after the cut has been made.

Still another very important object of the invention is to provide an angle gauge of the character described which is adapted to be mounted for operation on the slidable top of a conventional printer's saw table without the necessity of making material structural alternations therein.

Other objects of the invention are to provide an angle gauge of the character set forth which will be comparatively simple in construction, strong, durable, highly efficient and reliable in use, compact and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a top plan view of an angle gauge constructed in accordance with the present invention, showing the device mounted on a printer's table.

Figure 2 is a view in end elevation thereof.

Figure 3 is a view in side elevation of the device.

Figure 4 is a cross sectional view, taken substantially on the line 4—4 of Figure 3.

Figure 5 is a fragmentary view in side elevation, showing a modification.

Referring now to the drawings in detail, it will be seen that the reference numeral 1 designates a conventional printers' table having mounted thereon a rotatable saw 2 which may be driven in any suitable manner. Slidable on the table 1 forwardly of the same 2 is a top 3.

The embodiment of the present invention which has been illustrated comprises a base of suitable material which is designated generally by the reference numeral 4. The base 4 includes a comparatively large or main section 5 which is firmly secured in any suitable manner, as at 6, on one end portion of the slidable table top 3. The base 4 further includes a comparatively small section 7 which is slidable on the table 1 adjacent the top 3.

The base sections 5 and 7 extend in spaced parallelism to each other thus defining a slot 8 which accommodates the saw 2. Rigid posts 9 rise from the sections 5 and 7 of the base 4. Rigidly mounted on the upper ends of the posts 9 and extending across the slot 8 are bars 10 which connect the base sections 5 and 7.

The base section 5 has formed in its upper surface a curved or arcuate groove or channel 11 which communicates with the slot 8. Mounted in the groove 11 and rising therefrom is a threaded shank 12. Mounted for swinging adjustment on the base section 5 is a material positioning gauge of suitable material which is designated generally by the reference numeral 13. The gauge 13 comprises a segment 14 having formed therein adjacent its periphery a curved, concentric slot 15 which communicates throughout its length with the groove 11. The arcuate slot 15 in the segment 14 accommodates the threaded shank 12. At the ends of the arcuate slot 15 arcuate ribs 16 are provided on the lower face of the segment 14 and travel in the groove 11. Thus, the gauge 13 is mounted for swinging adjustment in a horizontal plane on the base section 5. A wing nut 17 is threaded on the shank 12 for frictionally clamping the gauge 13 in adjusted position on the base section 5. The periphery of the segment 14 is graduated, as at 18. Projecting from one side of the segment 14 is an integral arm 19.

Mounted on the connecting bar 10 which is adjacent the saw 2 is a shaft 20. Journaled for swinging movement in a vertical plane on the shaft 20 is a plate 21. Suspended beneath the plate 21 and vertically movable relative thereto is a clamping jaw 22. The jaw 22 has formed in its lower surface a groove 24 (see Fig. 4) which is located above the slot 8 in the base 4. It may be well to here state that the groove 24 also accommodates the saw 2.

Rising from the material clamping jaw 22 is a plurality of headed rods 25 which pass slidably through the plate 21. Coil springs 26 encircle the upper portions of the rods 25 and have one end engaged with the plate 21 and their other ends engaged beneath the heads 27 of said rods for raising or elevating the jaw 22. Also rising from the clamping jaw 22 and extending slidably

through the plate 21 is a headed pin 28. Journaled between a pair of bearings 29 on the plate 21 is a cam lever 30 which is operatively engaged with the upper end of the pin 28 for moving the jaw 22 downwardly into engagement with the work against the tension of the coil springs 26.

Slidably mounted in the free end portion of the plate 21 is a pair of spring projected bolts 31 which are engageable in sockets provided therefor in the other connecting bar 10 for releasably securing said plate 21 in lowered or operative position. The bolts 31 are connected for operation in unison through the medium of a yoke 32 secured to said bolts and operable in slots 33 which are provided therefor in the upper portion of the plate 21. Rising from the yoke 32 is a handle 34. A spring 35 is provided at the hinged or pivoted end of the plate 21 for assisting in raising said plate with the clamping jaw 22.

It is thought that the operation of the device will be readily apparent from a consideration of the foregoing. Briefly, the material positioning the gauge 13 is set and secured in the desired adjusted position by tightening thereon the wing nut 17. The material to be cut is then placed against the gauge 13 on the base structure 5 in a manner to traverse the slot 8. The plate 21 is then swung downwardly to a horizontal position and locked through the medium of the bolts 31, thereby positioning the clamping jaw 22 over the work. The cam lever 30 is then actuated for forcing the jaw 22 downwardly against the tension of the springs 26 into engagement with the work for firmly clamping said work to the base 4 on both sides of the slot 8. The slidable top 3 with the device of this invention thereon is then actuated on the table 1 for making the cut, the slot 8 and the groove 24 receiving the saw 2. When the cut has been made the top 3 with the device of this invention thereon is retracted. It will be observed that after the cut has been made both ends of the material are firmly held by the clamping jaw 22. The cam lever 30 is now swung in the opposite direction for releasing the cut material, the jaw 22 being elevated out of engagement with said material by the coil springs 26. The plate 21 is then unlatched and swung upwardly to permit the cut material to be removed and the device is ready for the next operation.

In the modification illustrated in Figure 5 of the drawings, the reference numeral 36 designates the thumb screw which is threadedly mounted in the plate 21 and which may be used in lieu of the cam lever 30, the pin 28, etc. Toward this end, the lower end of the thumb screw 36 is engaged with the jaw 22 for forcing said jaw downwardly against the tension of the coil springs 26. A suitable bearing 37 is provided on top of the jaw 22 for receiving the lower end of the thumb screw 36.

While the device is primarily intended for printers' saws, it may also be made in various sizes and adapted for use on substantially all saws where strip material is to be cut on various angles. Further, the device may be provided beneath the base with ribs engageable in slots of certain saw tables for the purpose of guiding the gauges thereof.

It is believed that the many advantages of an angle gauge constructed in accordance with the present invention will be readily understood and although preferred embodiments of the device are as illustrated and described, it is to be understood that further modifications and changes in the details of construction may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

1. An angle gauge for printers' saws comprising a base structure having a slot therein for the reception of a saw, a member hingedly mounted for swinging movement in a vertical plane on said base structure, a clamping jaw mounted on said member and slidable toward and away from same, said jaw, when in operative position, being engageable with the material for holding said material on both sides of the slot, and means on the member for moving the jaw into clamping engagement with the material.

2. An angle gauge for printers' saws comprising a base structure having a slot therein for the reception of a saw, a work positioning gauge adjustably mounted on the base structure, a plate mounted for swinging movement in a vertical plane on the base structure, means for releasably securing the plate in a substantially horizontal position on the base structure over the slot, a clamping jaw slidably suspended beneath the plate, said jaw, when in operative position, extending across the slot and being engageable with the material for securing said material on both sides of said slot, a pin on the jaw extending slidably through the plate, and a cam lever mounted on the plate and engaged with the pin for moving the jaw into clamping engagement with the material.

3. An angle gauge for printers' saws comprising a base structure having a slot therein for the reception of a saw, a plate mounted for swinging movement in a vertical plane on the base structure, means for releasably securing said plate in a substantially horizontal position on the base structure above the slot, a material clamping jaw slidably mounted beneath the plate, a thumb screw threadedly mounted in the plate and engaged with the jaw for moving said jaw into clamping engagement with the material, said jaw, when in operative position, extending across the slot and securing the material on both sides thereof, and resilient means operatively connected to the jaw for yieldingly urging said jaw away from the material and toward the plate.

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