(No Model.) 2 Sheets—Sheet 1.

J. E. BILL.

SAW GUIDE.

No. 434,756. Patented Aug. 19, 1890.

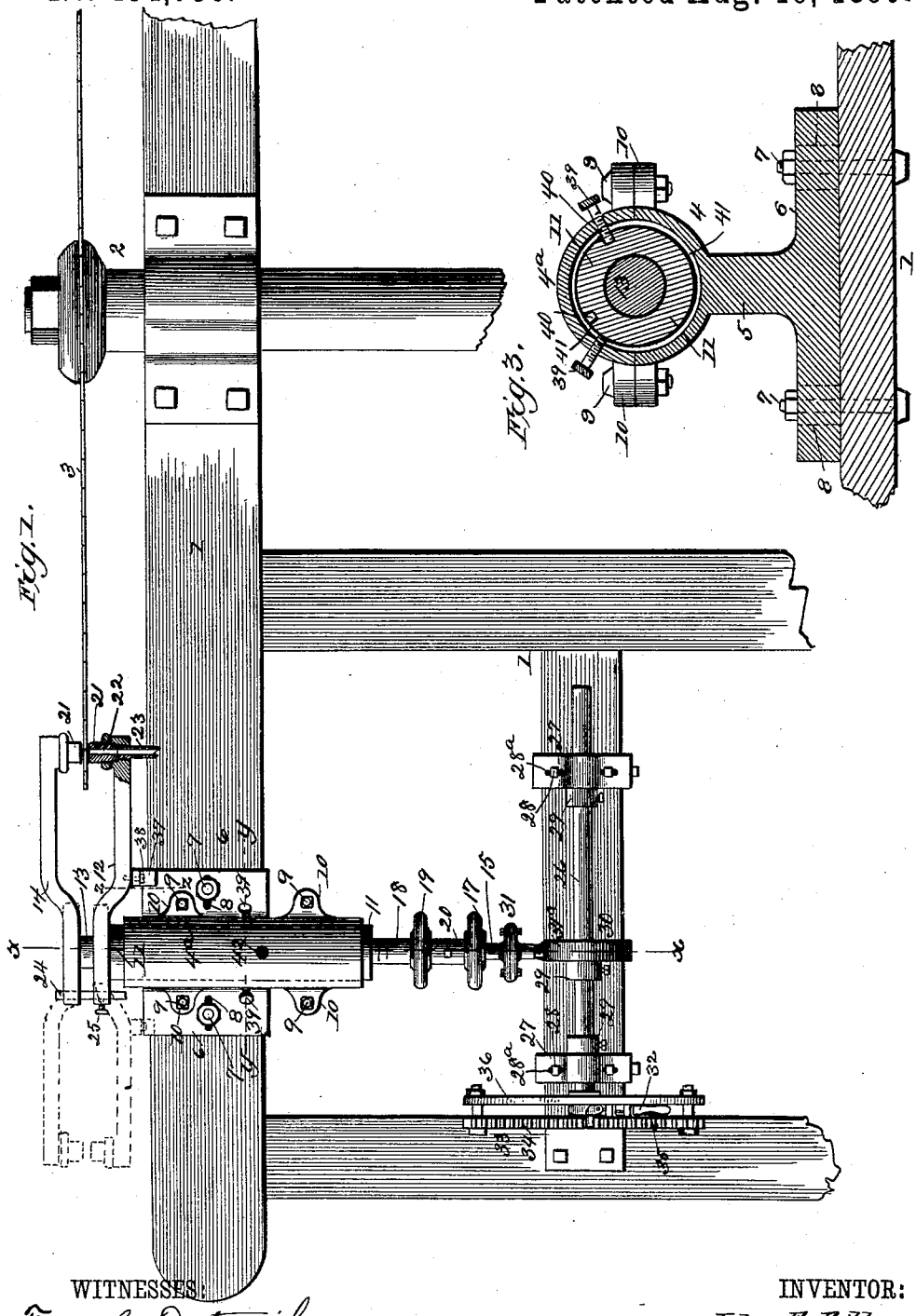


Fig. 1.

Fig. 3.

WITNESSES:

Fred G. Dieterich

Jos. A. Ryan

INVENTOR:

John E. Bill

BY Munn & Co

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

J. E. BILL.

SAW GUIDE.

No. 434,756. Patented Aug. 19, 1890.

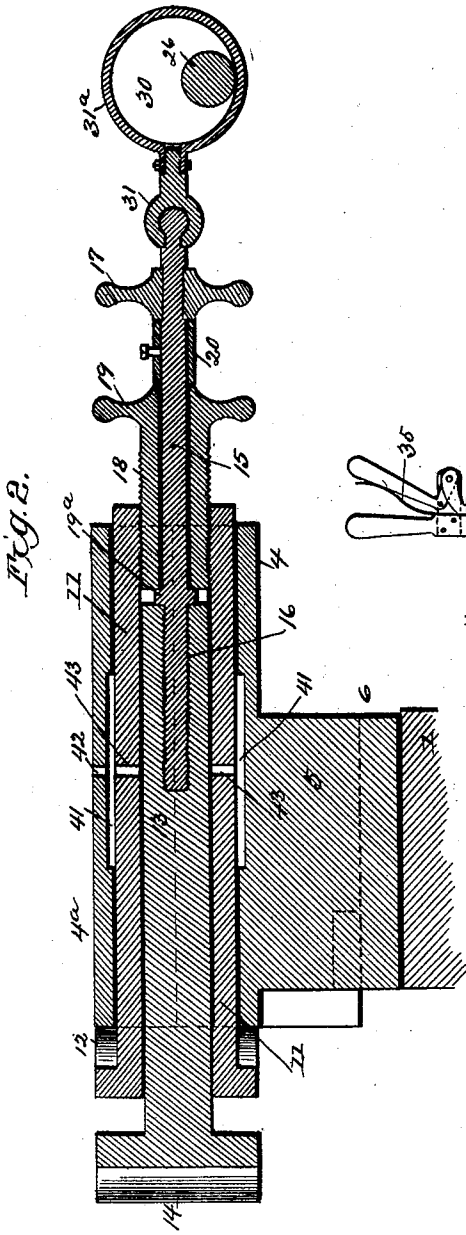


Fig. 2.

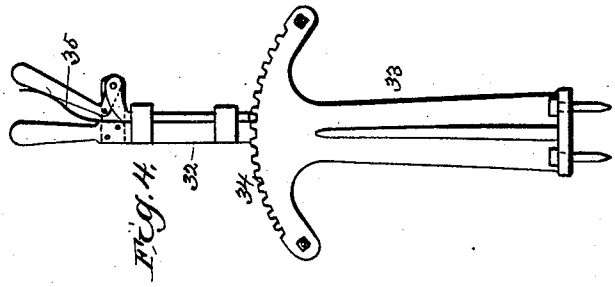


Fig. 4.

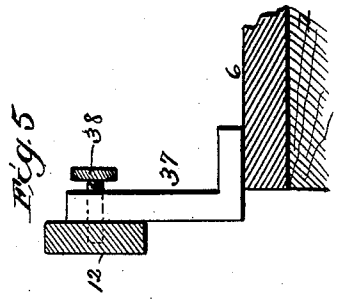


Fig. 5

WITNESSES:

Fred G. Dieterich

Jas. A. Ryan

INVENTOR:

John E. Bill.

BY Munn & Co

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN E. BILL, OF EVANSVILLE, INDIANA, ASSIGNOR OF ONE-HALF TO THE HELFRICH SAW AND PLANING MILL COMPANY, OF SAME PLACE.

SAW-GUIDE.

SPECIFICATION forming part of Letters Patent No. 434,756, dated August 19, 1890.

Application filed February 23, 1889. Serial No. 300,973. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. BILL, of Evansville, in the county of Vanderburg and State of Indiana, have invented a new and useful Improvement in Saw-Guides, of which the following is a specification.

The features of novelty of my improved saw-guide will be hereinafter described in connection with others, and then more specifically indicated.

Referring to the accompanying drawings, Figure 1 is a top plan view of my invention, showing the same arranged in its operative position. Fig. 2 is a longitudinal vertical sectional view taken on line *x x* of Fig. 1. Fig. 3 is a transverse vertical sectional view taken on line *y y* of Fig. 1. Fig. 4 is a detail view of the single operating-lever and its cogged rack, and Fig. 5 is a sectional view taken on line *z z*.

The same numerals of reference indicate corresponding parts in all the figures.

Referring to the several parts by their designating-numerals, 1 indicates the saw-frame, 2 the saw-arbor, and 3 a circular saw.

4 indicates the lower half of the drum or cylindrical outer casing of my machine, which is supported firmly upon the central longitudinal stem or web 5 of a base 6, this lower half 4 being cast integral with the said stem and base, by which means great strength and solidity of support are obtained. The base is secured adjustably upon the frame 1 by bolts 7 passing through slots 8 in the base-flange.

4^a indicates the upper half of the drum or cylindrical outer casing, the two halves of the casing being bolted together by screw-bolts 9, passing through ears 10 of the two halves. Within this drum or outer casing fits a cylindrical sleeve 11, which is larger than the casing $4\ 4^a$, the forward projecting end of this sleeve having formed integral with it one of the guide-arms, which may be called the "inner guide-arm" 12. In this cylindrical sleeve 11 fits a shaft 13, round in cross-section and having cast integral with it at its outer end the other or outer guide-arm 14.

15 indicates an adjusting rod or screw, which is formed at its outer end with a circular head, this screw-rod being prevented from longitudinal movement by its outer end being held in a ball-and-socket joint, as hereinafter set forth, which arrangement permits of the rod being turned freely. The inner end of this rod is screw-threaded and fits in a threaded central longitudinal opening 16 in the rear end of the shaft 13, so that it will be seen that as the threaded rod is turned by means of a hand-wheel 17, which is formed on its outer end, the shaft 13, and with it its guide-arm 14, will be moved in or out, according to the direction in which the screw-rod is rotated.

Upon the rod 15 is mounted a sleeve 18, formed at its outer end with a hand-wheel 19, by which it is turned, and having its inner end formed with an exterior screw-thread. The rear end of the cylindrical sleeve 11 is formed with an interior screw-thread, and in this threaded end of the sleeve 11 works the threaded inner end of the adjusting-sleeve 18. The inner end of sleeve 18 has a bearing against a collar 19 on the rod 15, while a collar 20 forms a bearing for its outer end. It will be seen that as the adjusting-sleeve 18 is turned by its hand-wheel 19 the cylindrical sleeve 11, and with it its guide-arm 12, will be adjusted in or out, according to the direction in which the sleeve 18 is rotated. From the foregoing it will be seen that by turning the rod 15 and adjusting-sleeve 18 by their hand-wheels the guide-arms can be separately and quickly adjusted to get the exact required distance between them.

In the jaw of each guide-arm is seated a wooden guide-pin 21, having a central aperture 22 passing clear through it, and a tube or pipe 23 leads water from a tank or other suitable water-supply to the pin 21, so that a constant stream of cold water is led through the wooden pins to the blade, and thus prevents heating and expansion of the saw by friction, the steady flow of water keeping the feed-apertures 22 of the wooden guide-pins clear and preventing their becoming clogged, thus insuring the perfect working of the cooling device. The two guide-arms, when properly adjusted, are held parallel to each other by means of a metal pin 24, which passes through opposite openings in the rear end of the guide-arms, this movable pin being se-

cured in place by a thumb-screw 25. When new wooden guide-pins are to be inserted, the thumb-screw 25 is loosened, when the pin 24 is moved until its end is clear of the outer guide-arm, when the said arm can be turned up or down until ready access can be had to the clamping-jaws and the wooden pins.

26 indicates a shaft, which is supported in bearings in castings 27 27, which are bolted upon the frame 1 by bolts 28 passing through slots 28^a in the casting-flanges. Collars 29 29 prevent longitudinal movement of the shaft. Upon this shaft is an eccentric-disk 30, which fits and turns in collar or circle 31^a, which is connected to the outer end of the rod 15 by a ball-and-socket joint 31, as shown. One projecting end of the shaft 26 is squared, and upon it is secured the lower end of a handle or lever 32, by means of which the shaft can be easily and conveniently turned in its bearings.

33 indicates a metal casting having at its top a curved rack 34, and the lever 32 has at its upper end a spring-catch 35, so arranged, as shown most clearly in Fig. 4 of the drawings, that the lower end of the latch or bolt will engage with the teeth of the curved rack 34, the handle of the spring-catch being so arranged that it is conveniently operated by the sawyer's hand as he grasps the handle of the lever. When the sawyer moves the lever 32, the shaft 26 is turned, and the eccentric-disk 30, turning with the shaft, it will be seen that the rod 15 will be moved back and forth, carrying with it the shaft 13 and sleeve 11, and thus both guide-arms are moved or adjusted together. The parts are so located that the sawyer can grasp and move the lever without leaving his position or bending over the saw and thus getting into danger, and can thus easily and rapidly adjust both guide-arms by the one movement. The spring-catch on the lever locking into the teeth of the rack holds the guide-arms firmly at the exact point to which they are adjusted, so that they cannot be accidentally pushed out of that position by any force. Moving the lever one notch of the rack shifts the guide-arms one-forty-seventh of an inch, while a greater movement of the arms can be effected in a moment by moving the lever farther back or forth. A curved guide 36 for the lever is bolted to the side of the curved rack, as shown. The guide-arms can be swung over either to the right, as shown in Fig. 1, or to the left, when required, so that the machine can be bolted to either side of a saw, according to whether it is a right or left hand saw.

To the inner guide-arm 12 is secured by a set-screw 38 an L-shaped support 37, which can be turned around on the set-screw, so that when the guide-arms are swung around to either side the lower end of the support will rest upon the flange-base 6, thus forming a support for the guide-arms. When the adjusting-sleeve 18 is turned by its hand-wheel to move in or out the cylindrical-sleeve 11, the sleeve is prevented from turning or twisting around in the outer drum or casing by a thumb-screw 39, which works in a threaded aperture in the outer casing, with its inner end fitting in a longitudinal recess 40, formed in the outer side of the sleeve 11. The sleeve 11 is formed with two such longitudinal recesses, and the outer casing has two thumb-screws 39. When the guide-arms are turned down to the right, the right-hand thumb-screw is screwed down to enter the right-hand recess 40, while when the guide-arms are turned to the left the left-hand longitudinal recess 40 will register with the left-hand thumb-screw 39, which is screwed down to enter the said recess. It will thus be seen that the guide-arms can be changed to either side by first screwing back one thumb-screw, only one of the screws being in use at a time, while the screw thus in use effectually prevents the sleeve 11 from turning or twisting in the outer casing when adjusted in or out. The pin 24 prevents the inner shaft 13 from turning or twisting around in the cylindrical sleeve 11 when it is being adjusted back or forth, as will be readily understood.

Both the top and bottom halves of the drum or outer casing are recessed on their inner sides at 41, forming in the middle part of the drum an oil-chamber, which encircles and extends completely around the cylindrical sleeve 11, the outer casing being formed on top with a feed-opening 42, through which the oil is introduced into the machine. The space at both ends of the oil-chamber in the drum 4 4^a is preferably babbitted, both in the upper and lower halves of the drum, which is of great importance, as it effectually prevents rust and corrosion, which would prevent the machine from working smoothly. The cylindrical sleeve 11 is formed both top and bottom with a central oil-hole 43, through which the oil passes from the chamber 41 to lubricate the shaft 13, and also the threaded rod 15 and adjusting-sleeve 18. By this arrangement the entire inner working parts within the outer casing are kept effectually oiled and in perfect working order, and one filling with oil will keep the machine oiled for six or eight days in perfect working order, thus effecting a saving in time, labor, and oil.

If the outer casing is found to fit too tightly around the cylindrical sleeve 11, packing can be placed between the meeting edges of the two halves 4 and 4^a of the casing, and as the cylindrical sleeve wears loose in the casing the packing is gradually removed and the screw-bolts which hold the two halves of the casing together tightened, thus taking up wear.

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

1. The combination, with the outer casing, of the cylindrical sleeve having the threaded rear end and the guide-arm, the shaft having

the threaded rear end and the guide-arm, the threaded adjusting-sleeve and rod, the shaft having the eccentric-disk, the ring having the ball-and-socket joint connecting the end of rod 15 with the eccentric, the hand-lever having the spring-catch, and the curved rack, substantially as set forth

2. In a saw-guide, the combination, with the outer cylindrical casing, of the reversible sleeve 11 and shaft 13, having the guide-arms 12 and 14 at their forward ends, and the L-shaped reversible support 37, pivotally secured at its upper end by the set-screw 38 to one of the said guide-arms 14 12, substantially as set forth.

3. In a saw-guide, the combination of the outer cylindrical casing having the two set-screws 39 39 passing through it from its outer side, the reversible cylindrical sleeve 11, extending through the said casing, having the guide-arm and the threaded rear end and having the two longitudinal recesses 40 40 in its outer side, the shaft 13, fitting in the sleeve 11 and having the guide-arm and the threaded rear end, and the threaded sleeve 18 and threaded rod 15, substantially as set forth.

4. In a saw-guide, the combination, with the adjustable cylindrical sleeve and inner shaft, of the guide-arms having at their ends the registering apertures, the metal pin passing through said apertures, and the thumb-screw, substantially as set forth.

5. The combination of the outer casing formed with the annular oil-chamber and the top feed-opening, the cylindrical sleeve having the oil-holes, the threaded rear end, and the guide-arm, the inner shaft having the threaded rear end and the guide-arm, and the threaded adjusting-sleeve and screw, substantially as set forth.

JOHN E. BILL.

Witnesses:
PETER MAIER,
MATTHEW DALZELL.