S. L. HARWOOD.

SHEARING DEVICE.

APPLICATION FILED NOV. 15, 1909.

972,189. Patented Oct. 11, 1910.

Fig. 1.

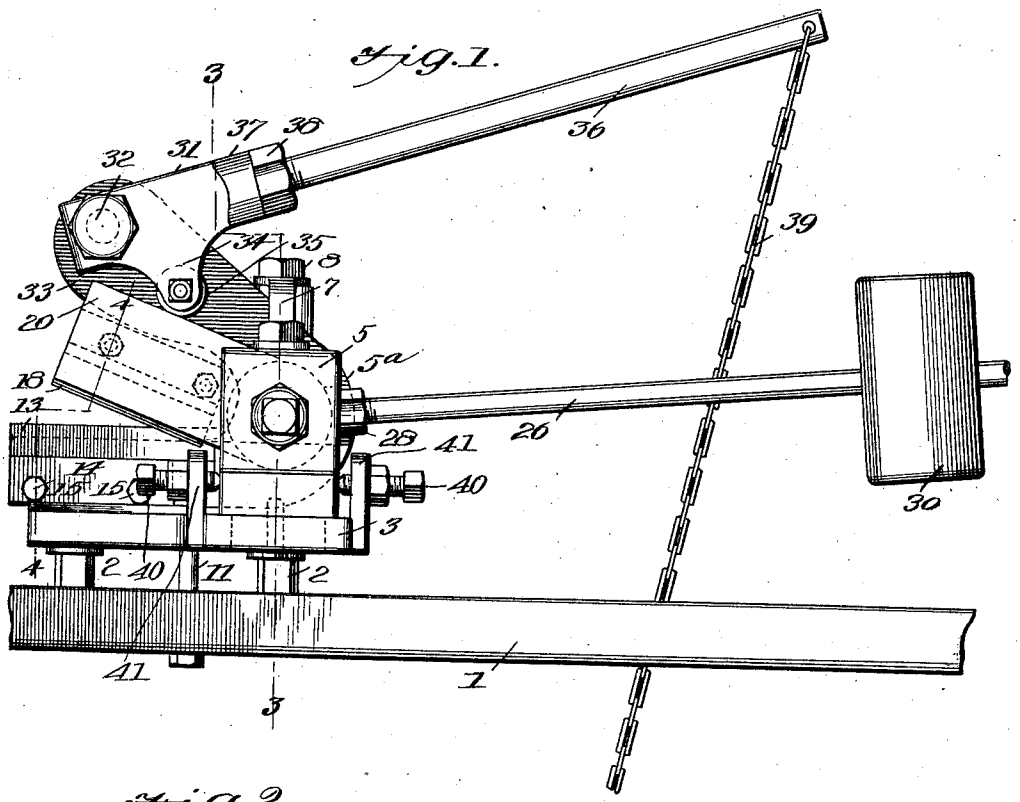


Fig. 2.

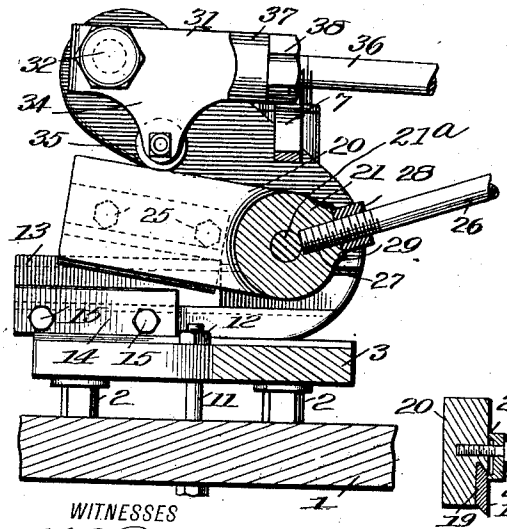


Fig. 3.

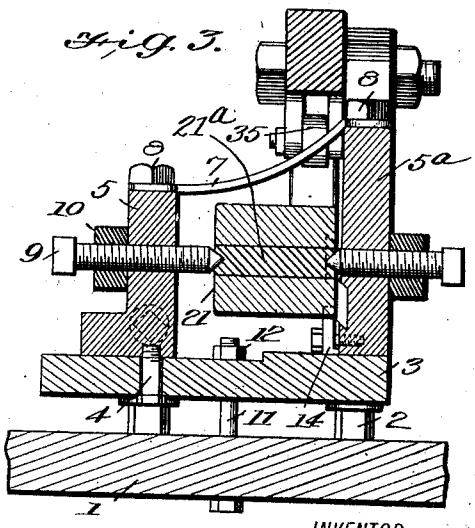
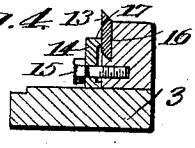


Fig. 4.



WITNESSES

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SHEARING DEVICE.

972,189. Specification of Letters Patent. **Patented Oct. 11, 1910.**

Application filed November 15, 1909. Serial No. 528,169.

To all whom it may concern:

Be it known that I, SUMPTER LEA HARWOOD, a citizen of the United States, and a resident of Dublin, in the county of Laurens and State of Georgia, have invented certain new and useful Improvements in Shearing Devices, of which the following is a specification.

My invention is an improvement in shearing devices, and consists in certain novel constructions, and combinations of parts, hereinafter described and claimed.

The object of the invention is to provide a device of the character specified, especially designed for cutting heavy work by light power, and which will be simple in construction but efficient, and not liable to get out of order easily.

A further object is to provide a reversible and interchangeable blade, which may be easily inserted in place and removed, and which when one edge is dulled, may be reversed to bring the other edge into cutting position.

Referring to the drawings forming a part hereof, Figure 1 is a side view of the improvement, Fig. 2 is a sectional view of a portion of Fig. 1, and Figs. 3 and 4 are sections on the lines 3—3 and 4—4 respectively of Fig. 1.

The embodiment of the invention shown in the drawings consists of a base plate 1, upon which is supported, in spaced relation, by means of stud bolts 2, a plate 3, the bolts being connected with the base plate in any suitable manner, and having threaded extensions 4 extending through the plate 3 and engaging threaded openings in the plate 3, and brackets 5, 5ª, on the said plate 3.

The bracket 5 is provided with an angular flange 6 resting on the plate 3, and is of lesser length than the bracket 5ª, and the two brackets are connected by a strap 7, secured to the free edges of the brackets by screws 8 and set screws 9 having a pointed end are threaded through each bracket, and each screw is provided with a lock nut 10. The plate 3 is held on the base 1 by a bolt 11, extending through both plates and secured in place by a nut 12.

A ledger blade 13 is seated in a transverse recess 16 in the bracket 5ª, and is held therein by a strap or holder 14, which is provided with a lateral flange 17 pressing against the side of the ledger blade, and the strap is detachably connected with the bracket by set screws 15.

A movable blade 18 is mounted in a recess 19 in an arm 20, which is provided with trunnions 21, having end recesses 22, which are engaged by the set screws 9 before mentioned, and the blade is held in place by a strap or holder 23, having a lateral flange 24 engaging the blade, and detachably connected to the arm by cap screws 25.

A lever 26 is threaded into the trunnions as at 27, and a lock nut 28 is threaded onto the lever and engages a square face 29 on the periphery of the trunnions, and a weight 30 is slidable on the lever.

The blades as will be evident from an inspection of Fig. 4 are approximately diamond shaped, each side edge being beveled on one side, the beveled sides being parallel. By this construction the blades may be reversed, and either edge used.

The movable blade is operated by means of a lever 31, pivoted by a bolt 32, to an extension 33, from the bracket 5ª. The lever is provided with a lateral extension 34 on which is journaled a roller 35 which engages and rolls upon the upper edge of the arm 20. A rod or handle 36 is threaded into a socket 37 on the lever, and secured in place by a lock nut 38, and a chain 39 is connected with the end of the lever. The chain 39 may be connected with any suitable treadle, and is operated by the foot of the operator. The movable blade may be adjusted toward and from the fixed ledger blade, by means of the set screws 9, and when in proper position may be locked by the lock nuts 10.

In operation, when the handle 36 is depressed by means of the chain 39, the roller 35 moves along the back of the arm and depresses the same, moving the said blade alongside the fixed blade with a shearing action, and the blade is returned to its original position by the weight. When the blades become dull, they may be reversed by lowering the holders. The bracket 5 is slidable longitudinally of the plate 3, and is retained in adjustable position by set screws 40. The screws 40 are arranged on each side of the bracket, being threaded through lugs 41 on the plate. The blade is returned to cutting position as soon as the chain 39 is released, and the weight may be adjusted on the rod to properly balance the arm and blade.

The machine is especially devised for cutting cotton ties, but is equally efficient for heavier work. The arrangement of the operating lever greatly augments the power applied to the chain, thus permitting heavy cutting with light power.

It will be observed that a spindle 21ª is arranged in the axis of the trunnion, and the said spindle is of hard metal, so that the openings in the ends thereof for receiving the set screws will not become worn.

In cutting cotton ties, the cutting is done chiefly at one point in the length of the blade, the intersection of the blades, and consequently the knives become dull at this point first. With the improved construction, the knives may be moved longitudinally, thus bringing every portion of the blade into use.

I claim—

1. A device of the class described, comprising a base, a pair of spaced brackets on the base, one of said brackets having a transverse groove, a cutting blade in the groove, a holder for the blade detachably connected with the bracket, an arm between the brackets, said arm having trunnions, set screws threaded through the brackets and engaging the trunnions, said arm having a groove, a blade in the groove, a holder for the blade detachably connected with the arm, a weight normally holding the arm in an elevated position, a lever pivoted by one end and having a lateral extension, and a roller on the extension engaging the arm.

2. A device of the class described, comprising a base, a pair of spaced brackets on the base, one of said brackets having a transverse groove, a blade seated in the groove, a holder for the blade detachably connected with the bracket, an arm pivoted between the brackets and provided with a longitudinal groove, a blade seated in the groove, a holder for the blade detachably connected with the arm, a counterbalance connected with the arm, means for moving the arm transversely of the base and means for swinging the arm, said means comprising a lever pivoted to the bracket and provided with a lateral extension, a roller journaled on the extension and engaging the arm, and means for swinging the lever.

3. A device of the class described, comprising a base, a pair of spaced brackets on the base, one of said brackets having a transverse groove, a blade seated in the groove, a holder for the blade detachably connected with the bracket an arm pivoted between the brackets and provided with a longitudinal groove, a blade seated in the groove, a holder for the blade detachably connected with the arm, a counterbalance connected with the arm, means for moving the arm transversely on the base, and means for swinging the arm, said means comprising a lever pivoted to one of the brackets and having a lateral extension engaging the arm.

4. A device of the class described, comprising a base, a pair of spaced brackets on the base, one of said brackets having a transverse groove, a blade seated in the groove, a holder for the blade detachably connected with the bracket, an arm pivoted between the brackets and provided with a longitudinal groove, a blade seated in the groove, a holder for the blade detachably connected with the arm, a counterbalance connected with the arm, means for moving the arm transversely of the base and means for swinging the arm.

5. A device of the class described, comprising a base, a pair of spaced brackets thereon, one of said brackets having a groove, a blade removably held in the groove, an arm pivoted between the brackets, means for moving the arm transversely, a blade removably connected with the arm and cooperating with the other blade, a counterbalance for the arm, and a lever pivoted to one of the brackets and having a lateral extension engaging the arm.

6. A device of the class described, comprising a frame, a blade detachably connected therewith, an arm pivoted thereto, a counterbalance in connection with the arm, a blade detachably connected thereto and cooperating with the first blade, and a lever pivoted to the frame and having a lateral extension for engaging the arm.

7. In a device of the class described, a pair of spaced brackets, a ledger blade held on one bracket, an arm pivoted between the brackets, means for moving the arm transversely of the brackets, a blade on the arm and coöperating with the ledger blade, and means for depressing the arm, said means comprising a lever pivoted to one of the brackets and having a lateral extension, a roller on the extension engaging the arm, and a weight for raising the arm.

8. In a device of the class described, a pair of spaced brackets, a ledger blade held on one bracket, an arm pivoted between the brackets, means for moving the arm transversely of the brackets, a blade in the arm and coöperating with the ledger blade, and means for depressing the arm, said means comprising a lever pivoted to one of the brackets and having a lateral extension, a roller on the extension engaging the arm.

9. In a device of the class described, a pair of spaced brackets, a ledger blade held on one bracket, an arm pivoted between the brackets, means for moving the arm transversely of the brackets, a blade on the arm and coöperating with the ledger blade, and means for depressing the arm.

10. In a device of the class described, a bracket having in one edge a transverse

groove, a blade fitting therein, an arm pivoted to the bracket and having in its lower edge a transverse groove, a blade seated therein and coöperating with the first blade, a holder for each blade, and means for depressing the arm, said means comprising a lever pivoted to the bracket and having a lateral extension for engaging the arm, and means for lifting the blade.

11. In a device of the class described, a bracket having in one edge a transverse groove, a blade fitting therein, an arm pivoted to the bracket and having in its lower edge a transverse groove, a blade fitting therein and coöperating with the first blade, a holder for each blade, and means for depressing the arm, said means comprising a lever pivoted to the bracket and having a lateral extension for engaging the arm.

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