

H. D. SLAGLE.
ANGLE IRON SHEARS.

No. 174,926.

Patented March 21, 1876.

Fig. 1.

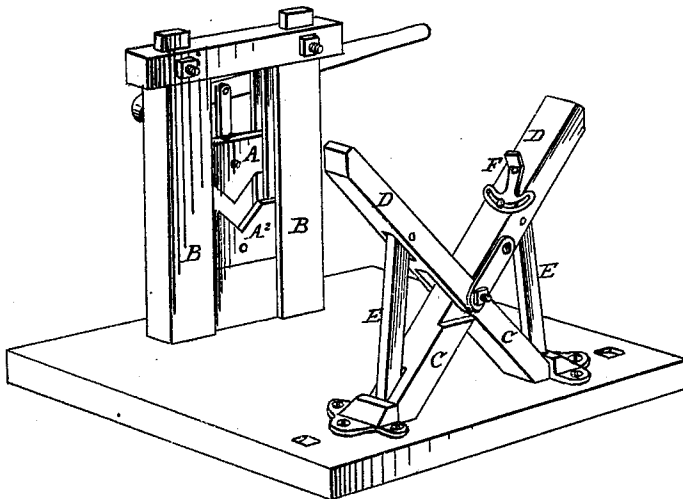


Fig. 2.

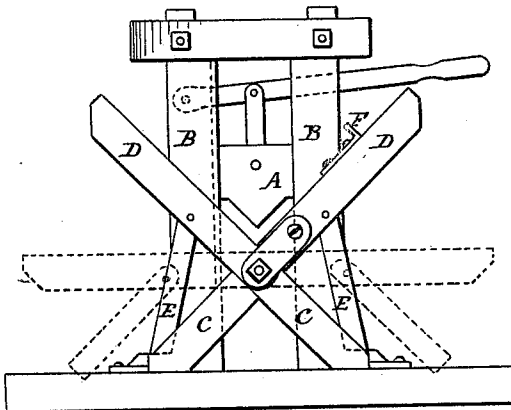


Fig. 3.

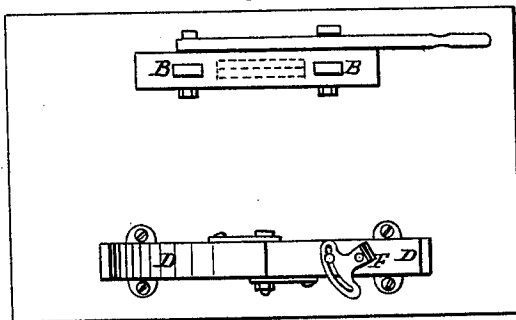


Fig. 4.

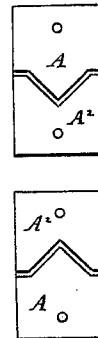
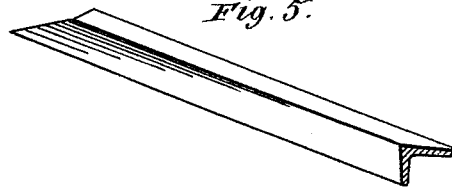


Fig. 5.



Attest:

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UNITED STATES PATENT OFFICE.

HENRY D. SLAGLE, OF EASTON, PENNSYLVANIA.

IMPROVEMENT IN ANGLE-IRON SHEARS.

Specification forming part of Letters Patent No. **174,926**, dated March 21, 1876; application filed February 12, 1876.

To all whom it may concern :

Be it known that I, HENRY D. SLAGLE, of Easton, in the county of Northampton and State of Pennsylvania, have invented certain Improvements in Machines for Shearing Angle-Iron or Flanged Iron, of which the following is a specification:

This invention has for its object the cutting of either one or both of the flanges of angle-iron or flanged iron; and to this end, therefore, it consists of the devices and combinations of devices hereinafter described and claimed.

Most of the machines heretofore constructed for cutting angle-iron have only cut it at right angles to its length; and when, in the numerous structures in which it is used, it became necessary to cut it at other angles than right angles, resort was had to hammer and chisel—a slow and laborious process, and, as a necessary consequence, costly. By this invention the angle-iron or flanged iron can be cut at any desired bevel by knives or shears of the ordinary shape. The means for accomplishing this result are clearly illustrated in the accompanying drawing, forming part of this specification, in which—

Figure 1 is a perspective view of a shears, with a cross-guide, trestle, or skid attached for supporting the angle-iron intended to be cut. Fig. 2 is an end elevation of the guide end of the machine, in which the dotted lines represent the guides forming a horizontal skid. Fig. 3 is a plan of the cross-guide or trestle. Fig. 4 illustrates the reversible knives forming the shears of the machine, and Fig. 5 shows the bevel cut at the ends of an angle-bar by the knives when in position the reverse of that shown in Fig. 1.

In these figures, A A² are the reversible knives for shearing the flanged or angle bars. The said knives are secured between suitable guides in or upon the upright frames B B, the lower knife simply resting upon a suitable foundation. The upper knife is attached by a connecting rod or link to an arm or lever, to be actuated by any suitable power. The upright frames B B may be secured to any suitable foundation or bed-plate, to which bed-plate may also be secured the cross-guide or trestle C, provided with the hinged arms D D. The

said arms, hinged at their center or angle, can be thrown down to any suitable angle between ninety degrees (the angle at which they cross each other) and the horizontal. The folding legs or struts E E retain the arms D D securely in position. F is an adjustable stop secured to one of the arms D D. A slotted sector permits it to traverse upon a pin. It thus acts as a rest for turning upon and supporting an angle-bar when being cut by the knives A A². Other stops of any suitable shape or pattern may be secured at any desired point on either arm, if required. In machines for shearing angle-iron, as usually constructed, the knives A A² are not reversible, but are permanently secured in the machine with the knife A², forming the lower knife, so that the angle-bar will rest squarely therein. In this machine, while no claim to novelty is made to the form of the knives, the said knives are fitted in the machine, so that they are mutually interchangeable, the lower knife taking the place of the upper knife, and vice versa. Each knife is fitted to be suspended and operated by the same connecting-rod or equivalent device. The reason for this interchangeability of knives will be explained as soon as the general operation of the machine is described.

A bar of angle-iron, being put under the shears and held perfectly level and "out of wind," will be cut squarely across its length; but by the use of the cross-guide or trestle C the bar can be presented and firmly held at such angle to the knives as will cause them to cut either one or both flanges of the bar at any desired bevel, the cross-guide supporting and steadying the bar, and giving support and protection to the hands of the person manipulating the bar. For certain bevels, (shown by the ends of the bar illustrated in Fig. 5,) the knives A A² will be required to be reversed; then the exterior angle of the bar will be presented to the A-shaped upper knife, instead of the re-entrant angle of the bar being presented to the V-shaped upper knife, the V-shaped knife having taken the place of the A-shaped knife. Not only, therefore, is the cutting of numerous bars of flanged and angle iron accomplished by this invention at a greatly-reduced cost compared with hand labor, or with

the work performed by any other machine heretofore constructed, but, by virtue of the interchangeability of the knives, one machine can perform the work which could otherwise only be performed by the joint operation of two machines.

A working machine embodying the improvements herein described has been erected, and practical experience with it has satisfactorily proven its value as an adjunct to the machines usually found in the machine-shop.

Having thus fully described these improvements in machines for shearing angle-iron, as of my invention I claim—

1. In combination with an angle-iron shears or shearing-machine, a cross-guide or trestle formed substantially as described, whereby the flanged or angle bar, as fed to the machine, is guided to be cut at varying bevels,

as required, in the manner substantially as hereinbefore set forth.

2. The cross-guide or trestle C, provided with hinged arms D D and legs E E, substantially in the manner hereinbefore described, for the purposes set forth.

3. The adjustable stop F, in combination with the cross-guide C, for the purpose hereinbefore set forth.

4. The combination, in a machine for shearing flanged or angle iron, of shearing-knives fitted to be mutually interchangeable, substantially in the manner hereinbefore described, for the purposes set forth.

HENRY D. SLAGLE.

Witnesses:

JOHN D. SIGMAN,
H. E. HARMONY.