

UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN SHEARS FOR CUTTING METAL.

Specification forming part of Letters Patent No. 122,270, dated December 26, 1871; antedated December 23, 1871.

To whom it may concern:

Be it known that I, GEORGE M. MARSHALL, of New Haven, in the county of Adams and State of Wisconsin, have invented a new and useful Improvement in Shears for Cutting Metal; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is a side elevation of a shears constructed to embody my invention. Fig. 2 is a front elevation of the same; and Fig. 3 is an elevation of the other side.

Like letters of reference made use of in the several figures indicate like parts.

Nature of the Invention.

This invention relates to that class of shears made use of to cut heavy metal, and chiefly employed by blacksmiths; the object being to furnish a strong durable shears at a comparatively small cost, and such, at the same time, as will enable the operator to sever heavy bar-iron at a very sharp angle. The frame or jaw-shaped support is so contrived as to not interfere with the adjustment of the bar to the desired angle; and my invention consists of a novel construction and arrangement of parts, as hereinafter more fully described.

To enable those skilled in the art to make and use my invention, I will proceed more to describe the same with particularity, making use in so doing of the aforesaid drawing.

General Description.

A jaw-shaped standard, A, arranged to be attached or affixed to a proper supporting-frame, holds the lower or stationary blade B of the shears. The upper or moving blade B¹ is carried by a strong metal plate or frame, C, placed side by side with the jaw-shaped standard A, the contiguous sides of the plate and standard being planed or properly fitted to move upon one another with the least possible friction, and the plate secured to the standard by interchanging connections, as will be presently explained. The bearing of the plate consists of a trunnion, T, projecting from the standard A into a cavity within the said plate; this trunnion is indicated upon the drawing in dotted lines. The head of the standard or upper extremity of the upper jaw thereof, above the point

of the shears, is fitted with a cogged segment, D, while the corresponding point of the moving plate affords the pivot, fulcrum, or bearing of a lever, E, having a geared segmental head, G, the teeth of which engage the geared segment D. A pin, L, or lug, projects from the standard at a point above the trunnion, and a second pin or lug, M, below the moving-plate. The pin or lug L extends through a curved slot, K, cut through the moving plate at this point. A tie or retaining-bar, N, extends from one of the above-mentioned pins or lugs to the other, serving to hold the plate firmly to its work; this bar being secured to the lugs by proper bolts passing therinto. The pin or lug L and slot K serve as a check or stop against a too-extended movement of the shear in either direction, and is a safeguard against the breaking of the trunnion while the shear is under severe labor. The bearing of the lever E is constructed so that there may depend therefrom an arm, n, with a lateral continuation, p, thereof extending through an opening, r, in the standard head and connected to the body of the plate for the purpose of adding strength. The steel blades B B¹ are attached to the moving plate and standard in the following manner: The inner end of the blade is beveled and fitted into a beveled recess within the metal of the standard or plate; the whole blade is contained in a "set-off" or recess within the metal; being, in brief, countersunk. The outer end of the steel blades are made plain, and a single bolt or screw, s, serves to hold them in place; the screw being applied at this point is easily gotten at, and when it is removed the whole blade may be detached readily without taking the shears apart. This proves to be a great convenience in view of the frequent sharpening required.

Now, the operation of my invention is, briefly, as follows: Power is applied to the lever E to bring the same down, which rotates the segmental head C, and changes constantly the point of resistance along the segmental gear D of the standard; or, in other words, the segmental head of the lever is rolled along said gear, carrying with it the plate attached thereto, which moves upon the trunnion T with a rotating or rocking forward motion, bringing the upper blade of the shear therewith to produce the cut. From the back of the blades the opening or jaw in the standard is cut away, in an angling direction, through the material of the standard, forming a prolongation, O, of said jaw.

GEO. M. MARSHALL

Iron Shear

No. 122,270.

Patented Dec. 26, 1871.

Fig. 1

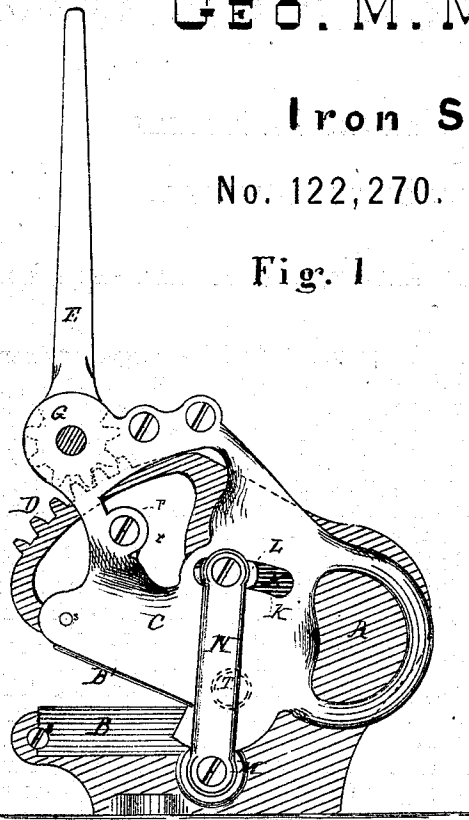


Fig. 2

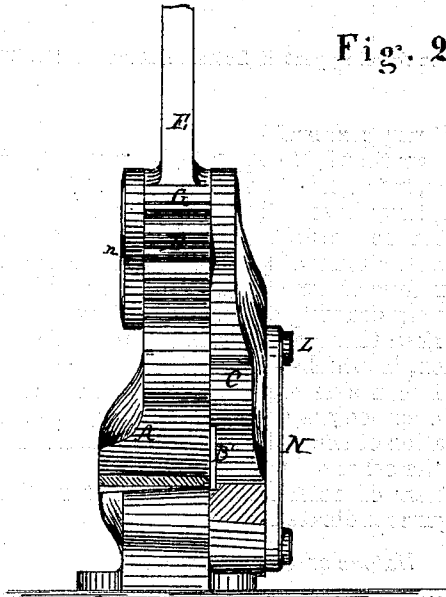
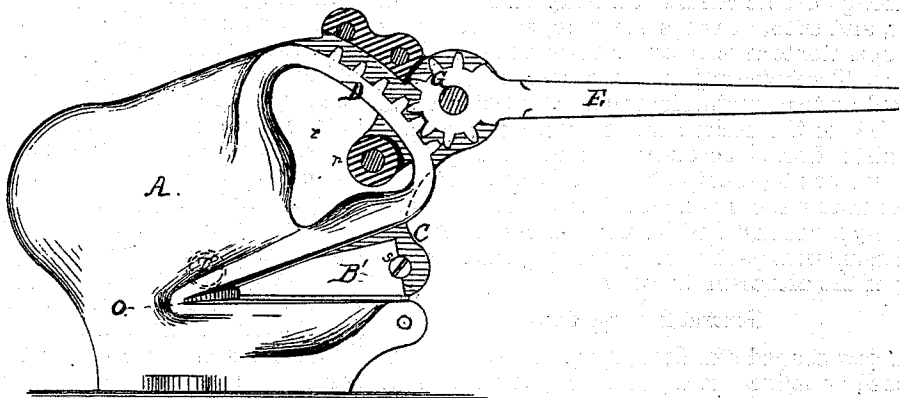


Fig. 3



Witnesses:

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by *Thos S. Sprague*
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