(No Model.)

W. SMITH.

ADJUSTABLE DRILL FRAME.

No. 422,648. Patented Mar. 4, 1890.

Fig. 3.

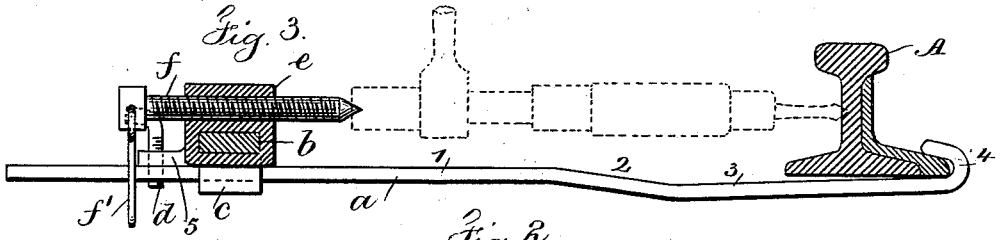
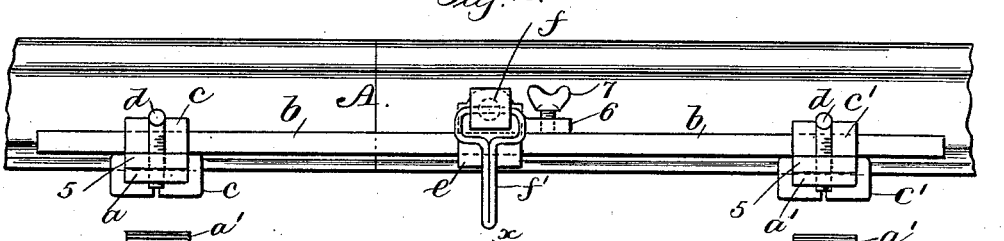


Fig. 2.



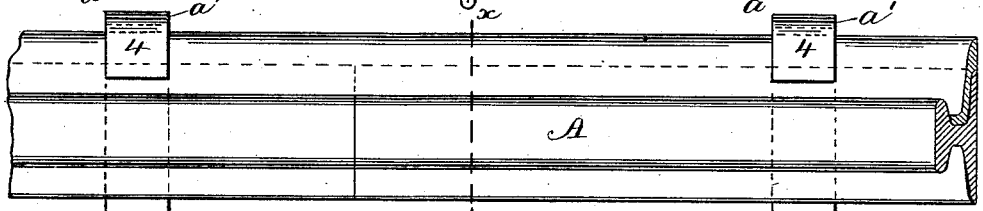


Fig. 1.

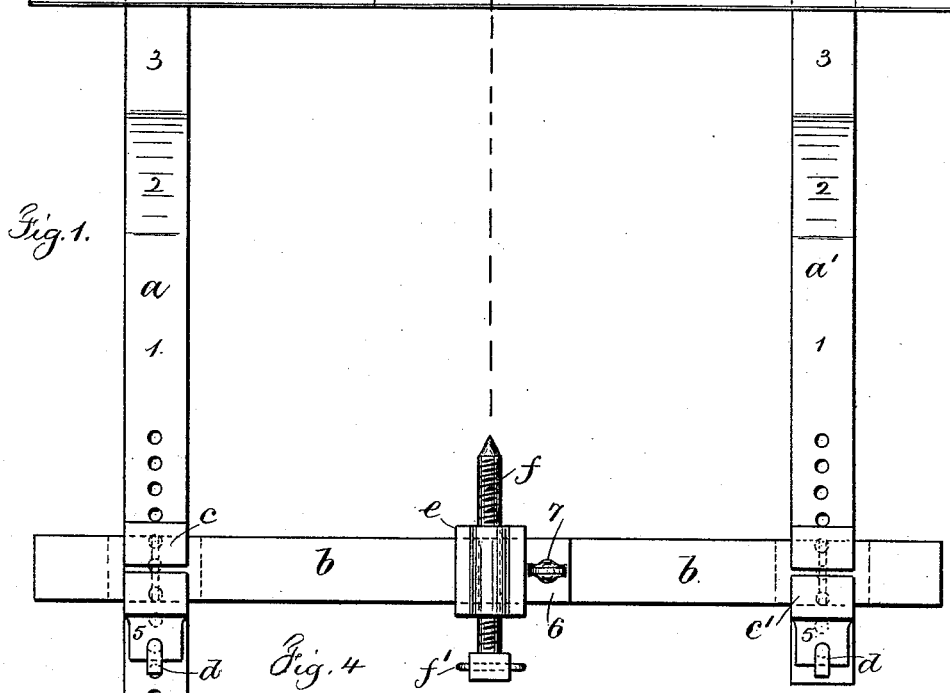
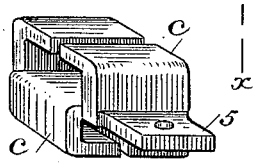


Fig. 4



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UNITED STATES PATENT OFFICE.

WILLIAM SMITH, OF BROOKLYN, NEW YORK.

ADJUSTABLE DRILL-FRAME.

SPECIFICATION forming part of Letters Patent No. 422,648, dated March 4, 1890.

Application filed September 30, 1889. Serial No. 325,588. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SMITH, a citizen of the United States, residing at Brooklyn, E. D., in the county of Kings and State of New York, have invented a new and useful Improvement in Adjustable Drill-Frames; and the following is declared to be a full, clear, and exact description thereof.

In the laying of railroad-tracks and the joining up of rails by the usual fish-plate it becomes frequently necessary to bore holes through the web of the rail. Especially is this the case where the ordinary length of rail has to be cut to fit in or join up a length of track. These holes have heretofore been bored with an ordinary ratchet-drill held in place against the rail by a metal frame; but these frames have not been conveniently constructed or adjusted for the varying conditions and locations under which the same are to be employed.

My improvement consists in a drill-frame that is adjustable to the track in the varying conditions of use and is also adjustable vertically to accommodate rails of different height; and the same consists in hook-ended tension-bars to engage the rail, a sliding brace-bar placed at right angles to the tension-bars, and two clip-pieces through which both the tension-bars and brace-bars pass. These clip-pieces are held in place and their movement limited by L-shaped screw-bolts, and I provide an adjustable screw presser-bar movable upon the sliding brace-bar, said screw-bar being adapted to engage one end of the ratchet-drill and to press the same against the rail through which the hole is to be made.

In the drawings, Figure 1 is a plan of my improved device and part of a rail. Fig. 2 is an end view of the same. Fig. 3 is a cross-section at the line $x\,x$ of Fig. 1, the ratchet-drill being approximately shown in Fig. 3 by dotted lines; and Fig. 4 is a perspective view of one clip-piece.

$a\ a'$ represent the hook-ended tension-bars. These bars are of bent form, as will be seen in Fig. 3, there being in each bar a straight portion 1, an angle or bend at 2, an inclined portion at 3, and a hooked end at 4, the bars passing beneath the rail A at the inclined portion 3 and the hooked ends 4 being adapted to engage either the rail itself or the edge of the fish-plate. The bars $a\ a'$ may be bent more or less, as desired. Their outer ends are supported upon blocks resting on the ground or in any other manner.

b represents the sliding brace-bar placed at right angles to the bars $a\ a'$, and $c\ c'$ represent the two-part clip-pieces, through the lower parts of which the bars a pass, the brace-bar b passing through the upper portions, and said brace-bar b can slide through the upper portion of either clip-piece, and either clip-piece slides lengthwise of the bars $a\ a'$, thereby making the parts adjustable, so that the bars $a\ a'$ can be brought closer together or farther apart along the bar b, as desired, and so that the bar b can be located along the bars $a\ a'$ at any desired distances from the rail A. I prefer to make these clip-pieces $c\ c'$ with perforated lugs at 5, and I employ L-shaped screw-bolts or thumb-screws d, which are adapted to pass through the perforations of the lugs 5 and engage the threaded holes in the bars $a\ a'$, thereby securing the clip-pieces $c\ c'$ and the brace-bar b at any desired position lengthwise on the bars $a\ a'$.

I provide a sliding clip-piece e upon the brace-bar b, and the same has a lug at 6 and a clamping or thumb screw at 7, and through the upper portion of this sliding clip e is a screw presser-bar f with a loop wire handle f', and the same is adjustable lengthwise in said clip e. This screw presser-bar f is pointed and adapted to engage the cup-shaped seat provided in the end of a ratchet-drill, and said bar f is employed to bring the drill in contact with the rail A, and may also be employed to feed the drill as the same penetrates the rail. I prefer to make one tension-bar a' shorter than the other to effect a saving in material, and because the parts are interchangeable, it being possible to reverse the positions of the bars $a\ a'$ according to the location where the frame is employed, as there are locations in connection with curves on the tracks or the proximity of frogs or switches where it is desirable and perhaps necessary that one bar should be longer than the other, the shorter of the two bars being always long enough so that the frame can accommodate any ratchet-drill. The screw-bar f and clip-

piece *e* may not be employed when an ordinary ratchet-drill is used, in which case the bearing will be directly against the edge of the bar *b*.

In the position shown in Fig. 3 the rail A is supposed to be small, in which case it will be noticed that the inclined portion 3 does not lie parallel with the under side of the rail, but is below it. Should the rail A be large, the bars *a a'* will be elevated, so as to bring the center of the screw-bar *f* in line with the center of the rail, and in this case the inclined portion 3 will be parallel with and touch the under side of the rail.

My improved frame is not only adjustable for varying lengths of rails and for the various conditions and locations of a track upon which the same would be employed, but can readily be taken to pieces and the bars *a*, *a'*, and *b* laid parallel with each other, thereby compacting the article and lessening the space required in transporting the frame about from place to place.

I claim as my invention—

1. The drill-frame composed of the hook-ended bars *a a'*, the clip-pieces *c c'*, adjustably secured upon the bars *a a'*, and the sliding brace-bar *b*, passing through the clip-pieces, substantially as set forth.

2. The drill-frame composed of the hook-ended tension-bars *a a'*, the sliding brace-bar *b*, the two-part clip-pieces *c c'*, their perforated lugs 5, the L-shaped screw-bolts or thumb-screws *d*, and the screw-bar *f*, and a connection for adjustably holding the bar *f* to the brace-bar *b*, substantially as set forth.

3. The drill-frame composed of the hook-ended tension-bars *a a'*, the sliding brace-bar *b*, the two-part clip-pieces *c c'*, their perforated lugs 5, the L-shaped screw-bolts or thumb-screws *d*, and the adjustable screw-bar *f*, the sliding clip *e*, its lug 6, and thumb-screw 7, connected adjustably to the brace-bar *b*, substantially as set forth.

4. The combination, with the sliding brace-bar *b*, the clip-pieces *c c'*, and the screw-bolts *d*, of the tension-bars *a a'*, each tension-bar having a straight portion at 1, a bent portion at 2, an inclined portion at 3, and hook end 4, substantially as set forth.

Signed by me this 25th day of September, 1889.

WILLIAM SMITH.

Witnesses:
GEO. T. PINCKNEY,
WILLIAM G. MOTT.