N RR v. Turrill 94 US 13 r 24

COPY SPECIFICATION OF CAWOOD PATENT.

The Schedule referred to in these Letters Patent, and making part of the same.

To all whom it may concern:

Be it known that I, Joseph D. Cawood, of the town of Marshall, County of Calhoun, and State of Michigan, have invented a new and useful improvement in the common anvil, or swage block, for the purpose of welding up and reforming the ends of railroad rails, when they have exfoliated or become shattered, from unequal wear, occasioned by the inequalities of the road, (six inches or so of the extreme end of the rail being frequently destroyed, while the remainder is perfectly sound,) and I do hereby declare that the following is a full, clear and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification and giving a perspective view of the machine: *A*, representing the bed-sill on which the anvil is placed; *B*, the anvil or swage block of cast iron; *C*, *C*, recesses or dies across the face, the shape of the side of the rail; *D*, solid block making a part of anvil, with its side shaped to the side of rail, while placed in its natural position; *E*, a movable press-block, held down to anvil by dove-tail tongue, *a*, on the anvil and grooves in the movable press-block, and operated by two eccentric cams, *F*, back and forth in a longitudinal direction, to press the rail together, while forming its end, and with sufficient travel to extricate the rail without altering its verti-

5 US 945 CAW

cal position; *G*, a rail of the T form in its position, between the press blocks.

I usually make my improved anvil and swage-block of cast-iron, between four and five feet long, and sixteen inches wide across the face, with two forms or recesses, *c*, *c*, at one end, right and left, of a form corresponding with the side of the rail; close to these is cast a raised block, *D*, nearly as high as the rail, and with its farthest edge also shaped to fit the side of the rail when it lies across the anvil in its natural position. Next this, I attach to the face of the anvil, by dove-tail tongues and grooves or any other convenient manner, what I call a movable press-block, *E*, with a similar but reverse-shaped edge, lying opposite the other so as to enclose the rail between the two, as in the jaws of a vise. This block I work by two eccentric cams, *F*, on a shaft which is attached to the anvil by two standards, *H*, *H*, with bearings *i*, *I*, either cast on or bolted to the edge of the same, so that half a turn of the crank will move the press-block over a space a little more than the extreme width of the rail. The mode of using the machine is extremely simple, and effective. A piece of iron (being of a size suitable to the deficiency of the rail) having been prepared and put into the fire, the rail being suspended by its middle to the level of the anvil, is brought to a welding heat, and then swung around from the fire into the space between the two blocks, where it is, by a half-turn of the crank, pinched together by means of the cams, *F*; the welding piece is then laid on the top of the rail, and welded to the rail in the usual way, and leveled up, and shaped by a swage, held by the smith, of the form of that section which projects above the blocks, thus accomplishing at one heat what usually requires three or more.

Should any imperfections remain, which is not usual if the first operation is properly gone through with, they can be removed by proper hand-swages, after placing the rail in the recesses, *C*, *C*, for that purpose.

I do not claim the *anvil block*, *nor its recesses*, but what I do claim as my invention, and desire to secure by Letters Patent, is the *movable press block*, *E*, having its edge formed to the side of the rail, *G*, *in combination with another block*, *D*, with its edge of a similar but reversed form (the movable blocks to be operated by two cams, or in any other convenient manner) for the purpose of pressing between them a T, or otherwise shaped rail, thereby greatly facilitating the difficult operation of welding and renewing the ends of such rails after they have been damaged in the manner herein described and set forth.

JOSEPH D. CAWOOD.

Witnesses:

GEORGE JOHNSON,

JAMES A. WAY.