(No Model.)

# J. REESE.

## ROLLS FOR ROLLING DECK BEAMS.

No. 371,360. Patented Oct. 11, 1887.

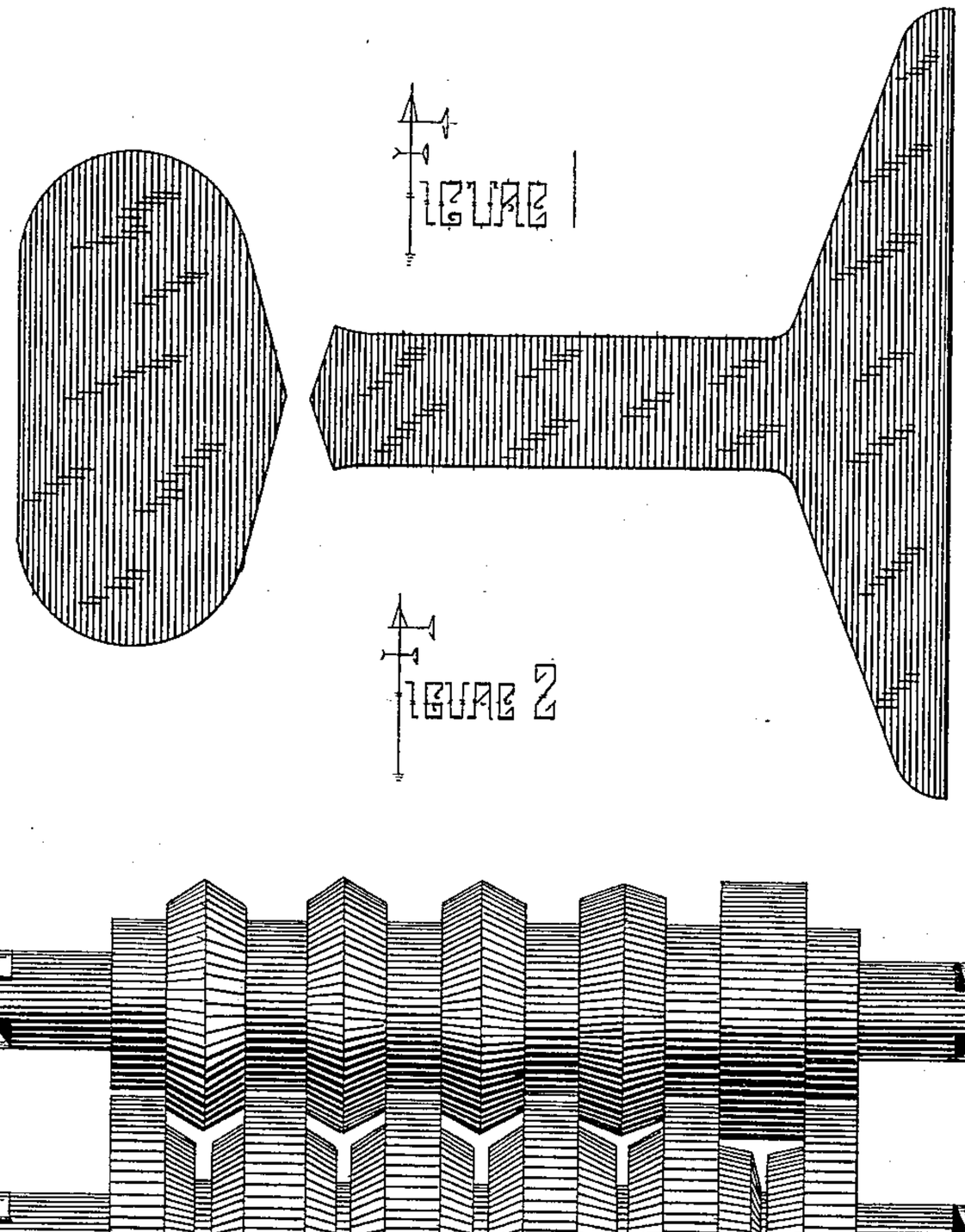

FIGURE 1

FIGURE 2



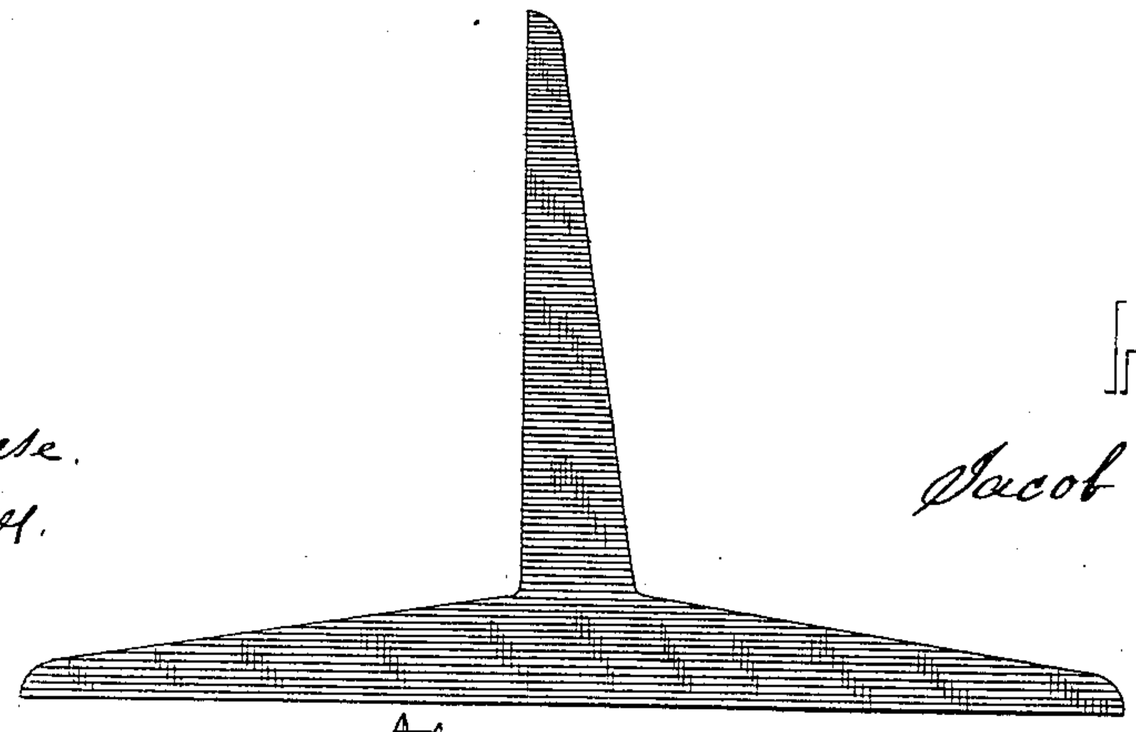

FIGURE 3

WITNESSES.

Walter Reese.

Frank M Reese.

INVENTOR

Jacob Reese

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# UNITED STATES PATENT OFFICE.

JACOB REESE, OF PITTSBURG, PENNSYLVANIA.

## ROLLS FOR ROLLING DECK-BEAMS.

SPECIFICATION forming part of Letters Patent No. 371,360, dated October 11, 1887.

Application filed February 18, 1884. Serial No. 121,205. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB REESE, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in the Utilization of Old Rails in the Manufacture of Deck-Beams; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 indicates a cross-sectional view of a rail with the head slit from the web and flange. Fig. 2 indicates a front elevation of a set of rolls provided with a series of grooves adapted to reduce the web and flange into the form of a finished deck-beam. Fig. 3 indicates a cross-sectional view of a finished deck-beam.

Like letters of reference indicate like parts wherever they occur.

A deck-beam is of peculiar shape, having a flanged base and a web projecting from the inside of the flange. The web is generally located at the center of the flange, with one side or the web center at a right angle with the base of the flange. In other cases the web projects up obliquely from the center or from a point near the center of the flange. The web varies in height, and is sometimes tapered on one and sometimes on both sides, and in some cases is provided with a bead on its top.

Deck-beams have been manufactured from blooms and piles, which cost at present from thirty-five to fifty ($35 to $50) dollars per ton, according to quality, while old iron and steel rails may be had at twenty-two to twenty-three dollars per ton. My invention is especially adapted for the manufacture of the steel beams at a low cost, as the steel rails cost less than iron rails, and the steel deck-beams will command a higher price than those made from iron.

My invention consists, essentially, in first slitting the rail-head from the flange and web, and then subjecting the web and flange to the reducing action of a set of rolls provided with grooves adapted to gradually reduce the metal in the central portion of the flange and taper the web to the form desired; secondly, in the particular means shown for accomplishing this reduction.

In the practice of my invention old rails are properly heated and passed through a slitting-mill adapted to remove the head from the web and flange, as is indicated by Fig. 1. The web and flange portion is then passed into the first groove, which reduces the height of the web as may be desired, and at the same time reduces the central portion of and dishes the flange, thus producing a bar composed of three arms united at and radiating at equal angles from their common center. The object of this action is to produce a blank which may be turned to bring each arm successively down into the lower portion of the succeeding grooves, in order that it may be edged after being reduced in the preceding groove. In other words, when the blank is entered flange side up into the first groove, the tongue of the upper roll reduces the central part of the flange, and the inclined walls of the upper part of the groove in the lower roll force the wings of the flange upward, thus producing a blank of suitable shape to admit of being turned from time to time for edging during its subsequent passage through succeeding grooves. When the blank has thus been shaped in the first groove, it is turned one-third of a revolution and entered into the second. The action of this groove compresses the metal in the upper part of the blank and forces a portion of it down into the lower part. The blank is again turned one-third of a revolution and passed through the third groove, which also thins the upper and edges the lower arms of the blank, distributing the metal evenly in the three sections. The blank is then passed through the remaining grooves, which bevel one of the arms and bring the others at right angles with it and reduce the metal to the shape and size desired.

In the manufacture of deck-beams as described the head of the rail is not utilized in making beams; but it may be rolled down into rounds, flats, squares, &c., and is worth thirty dollars per ton as billets for such purposes.

Deck-beams having a five-inch flange and a five-inch web may be made from old iron or steel rails by the use of my improvement, and the cost of producing this and all smaller sizes will

not exceed thirty-five ($35) dollars per ton when old rails are selling at twenty-three dollars per ton.

The distinguishing features of my invention are that I form deck-beams from old rails by slitting the head from the web and flange, then subject the web and flange to the reducing action of rolls provided with a series of grooves adapted to equalize, distribute, and edge the metal in the three wings of the blank and reduce it to the particular shape and size desired.

The advantages of the invention are mainly, first, the utilization of a low-priced stock, and a consequent saving of from twelve to twenty dollars per ton in manufacture; secondly, I dispense with roughing-rolls, &c., and obtain all the direct and incidental advantages which result therefrom.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

A pair of rolls having passes, the first conforming to the shape of the base and flange of a rail and the last to the shape of a deck-beam, and the intervening passes shaped substantially as described.

JACOB REESE.

Witnesses:
FRANK M. REESE,
WALTER REESE.