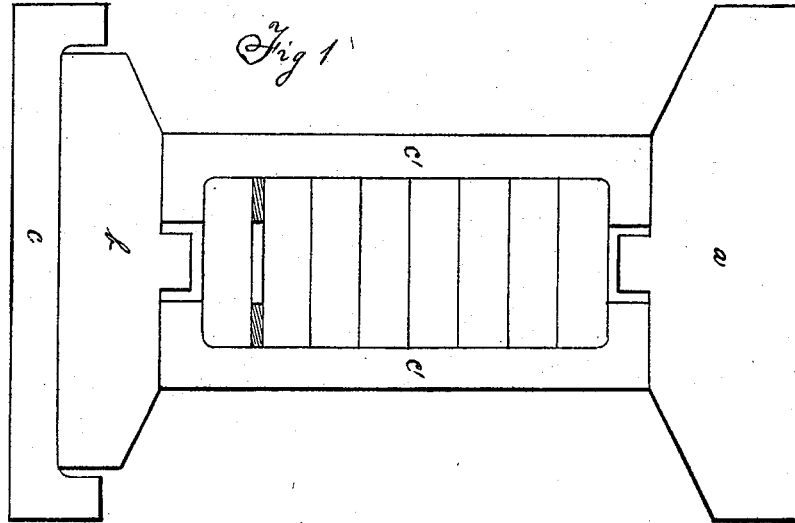


*J. Stokes,*  
*File for Beams.*

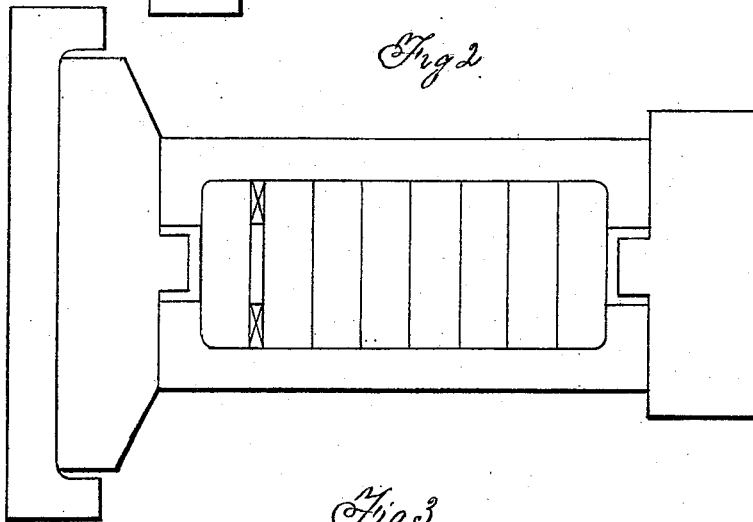
*No. 109,850.*

*Patented Dec. 6 1870.*

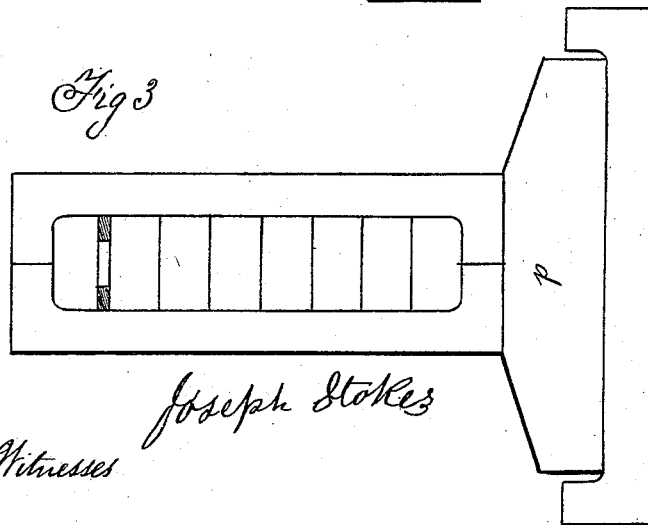
*Fig 1*



*Fig 2*



*Fig 3*



*Fred. J. Hyde*  
*Edward Cooper*

*Witnesses*

*Joseph Stokes*

# United States Patent Office.

JOSEPH STOKES, OF TRENTON, NEW JERSEY.

Letters Patent No. 109,850, dated December 6, 1870.

## IMPROVEMENT IN PILES FOR BEAMS.

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

I, JOSEPH STOKES, of Trenton, county of Mercer, and State of New Jersey, have invented an Improvement in the manner of forming the piles from which  $\Gamma$ -bars or wrought-iron girders, T-bars, deck beams, and other similar shapes are rolled, of which the following is a specification.

To facilitate the rolling of such bars it is desirable to give the pile a shape approximating to that of the finished bar, but at the same time it is necessary that the pile should have sufficient stability and coherence to be manipulated in the furnace without falling apart. These objects I secure by forming that part of the pile which is to form the stem of the finished bar of two trough-bars, with their lips turned inward or toward each other, thus inclosing a rectangular space, in which I lay bars of iron of the same width as this space, and bind the whole together by wedges driven between any of the bars, thus making this part of the pile sufficiently firm to bear the necessary handling.

Upon the part of the pile so formed I lay flange-pieces, which may be of any convenient form, either tongued, as shown at *a*, Fig. I of the drawing, or plain, as at *d*, Fig. III.

They may be made in one piece, as shown at *a*, Fig. I, or may be made up of separate bars, as shown at *b c*, in the same figure.

As drawn in this case, the same bar *c*, slightly thickened, is used for the top of the flange, as for

the stem at *c'*, which facilitates the preparation of the iron for the piles.

If thought desirable, the edges of the trough-bars used in the stem may be slightly bent together, and the bars inclosed between them be grooved, so as to assist in holding the trough-bars together.

In the drawing accompanying this specification—

Figure I shows a pile suitable for an  $\Gamma$ -bar;  
Figure II, one suitable for a deck-beam; and  
Figure III, one for a T-bar.

### Disclaimer.

I do not claim any particular form of flange-piece, nor any method of securing the flange-pieces to the body of the pile, either by using grooved or tongued bars and wedges, or otherwise.

### Claim.

I claim as my invention—

The improved pile for the stem or web of a beam, composed of the two flanged-pieces *c' c'*, the flanges of the one being turned toward those of the other, the filling-bars interposed between said flanged pieces and the wedges by which said flanged pieces and the filling-bars are fastened together, substantially in the manner described.

Witnesses:

JOSEPH STOKES:

FRED. J. SLADE,  
GEO. W. VANKIRK.