

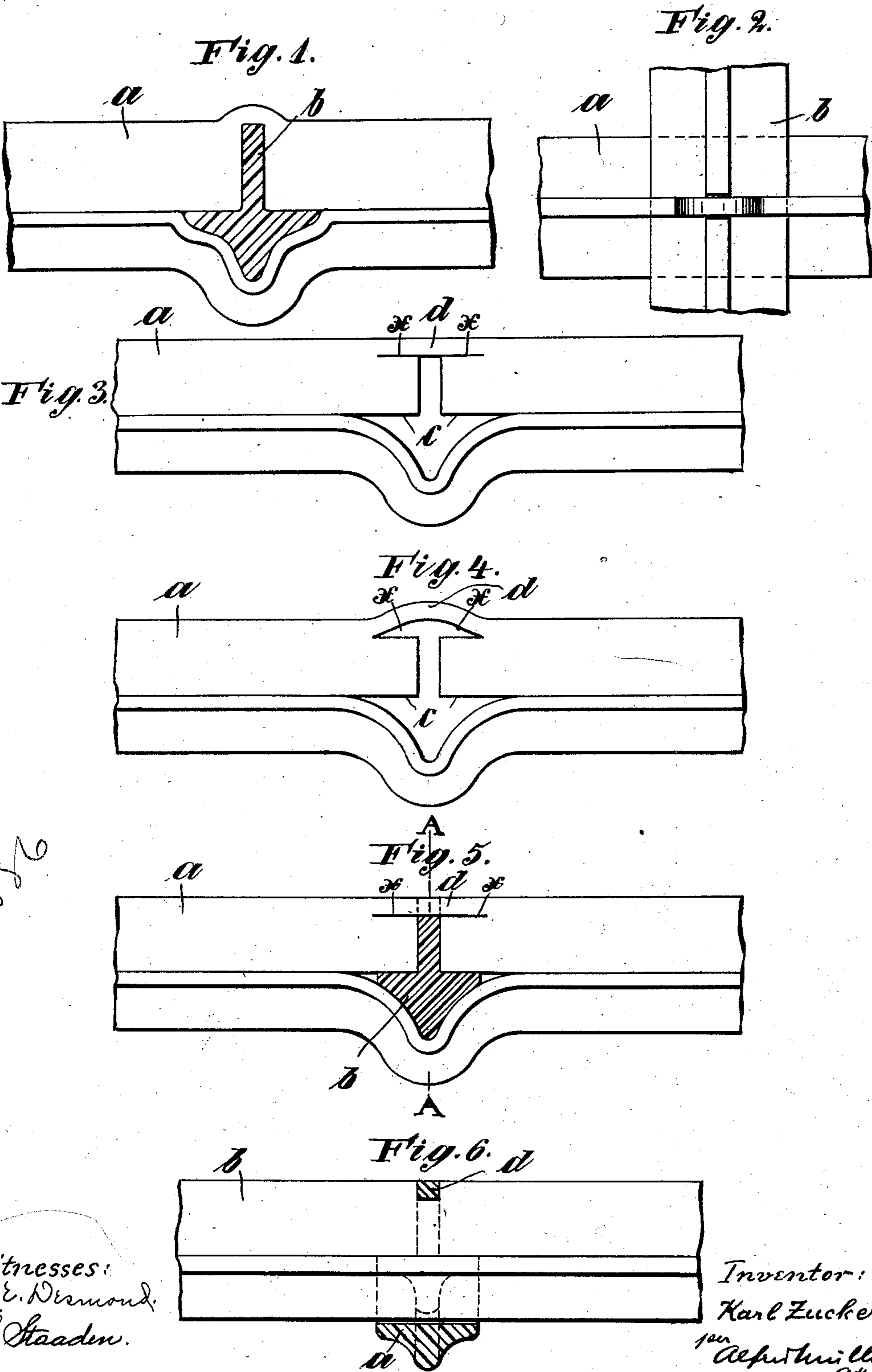
No. 746,230.

PATENTED DEC. 8, 1903.

K. ZUCKER.  
CROSS JOINTED IRON BARS.

APPLICATION FILED MAR. 31, 1903.

NO MODEL.



# UNITED STATES PATENT OFFICE.

KARL ZUCKER, OF MANNHEIM, GERMANY.

## CROSS-JOINTED IRON BARS.

SPECIFICATION forming part of Letters Patent No. 746,230, dated December 8, 1903.

Application filed March 31, 1903. Serial No. 150,395. (No model.)

*To all whom it may concern:*

Be it known that I, KARL ZUCKER, a subject of the Grand Duke of Baden, residing at Mannheim, in the Grand Duchy of Baden, German Empire, have invented certain new and useful Improvements in Cross-Jointed Iron Bars, of which the following is a specification.

My invention relates to improved cross-jointed iron bars of any particular section. In the improved cross-jointed bars the web of the one bar for the purpose of receiving the other bar of equal section is slotted, forced out, and widened, a portion of the web being left abridging the slot, and the bridge-piece is subsequently hammered into a recess in the inserted bar.

According to prior methods of uniting crosswise iron bars of equal section the web is completely cut through, which has the serious disadvantage of greatly diminishing the strength. In inserting a smaller bar through a larger one this defect is avoided; but other inconveniences arise, in particular the impossibility of fitting casements and the difficulty of fixing glass panes, owing to the differing height of the bar to which the putty is applied. These disadvantages are overcome by means of my invention, which relates to cross-jointed iron bars of equal cross-section. One of the bars is provided with a bridged slot, and the slot being forced out and widened the second bar is pushed there-through, whereupon the bridge portion of the web is hammered down into a recess in the inserted bar. The forcing out and widening of the slot—that is, the pressing or driving up of the strip remaining above the slot—can be done in the cold state, so that the hammering down of this portion of the web into the recess of the inserted bar is facilitated.

The accompanying drawings illustrate one form of the cross-jointed iron bars according to my invention.

Figure 1 is a sectional view of the two bars connected with each other with the web in elevated position—*i. e.*, before being hammered into a recess of the inserted bar. Fig. 2 is a plan of Fig. 1. Fig. 3 is an elevation of the slotted bar prior to the bridge portion above the slot being driven up. Fig. 4 shows the same bar after the bridge has been forced up. Fig. 5 shows two bars connected crosswise with the bridge above the slot driven into a recess in the inserted bar. Fig. 6 is a section on the line A A of Fig. 5.

One bar, *a*, of the two bars *a b* of equal cross-section is provided with a slot or aperture *c*, which is so enlarged that the other bar, *b*, can be inserted through it. Laterally of this slot slits *x* are made. In this manner the bridge *d* of the web of the slotted bar can be driven or pressed up without the application of heat, as has formerly been necessary, and the so forced-up portion *d* can then subsequently be more readily driven down into the recess in the inserted bar, as shown in Figs. 5 and 6. It will be understood that the bars may have other cross-section than the one illustrated.

What I claim as my invention, and desire to secure by Letters Patent, is—

Cross-jointed iron bars of equal cross-section, consisting of a bar the web of which has a bridged aperture with lateral slits, and a second bar inserted through the said aperture and having a recess in its web which receives the said bridge, essentially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

KARL ZUCKER.

Witnesses:

JACOB ADRIAN,  
H. W. HARRIS.