

A. A. WILDER.  
Improvement in Bolt-Machines.  
No. 133,135. Patented Nov. 19, 1872.

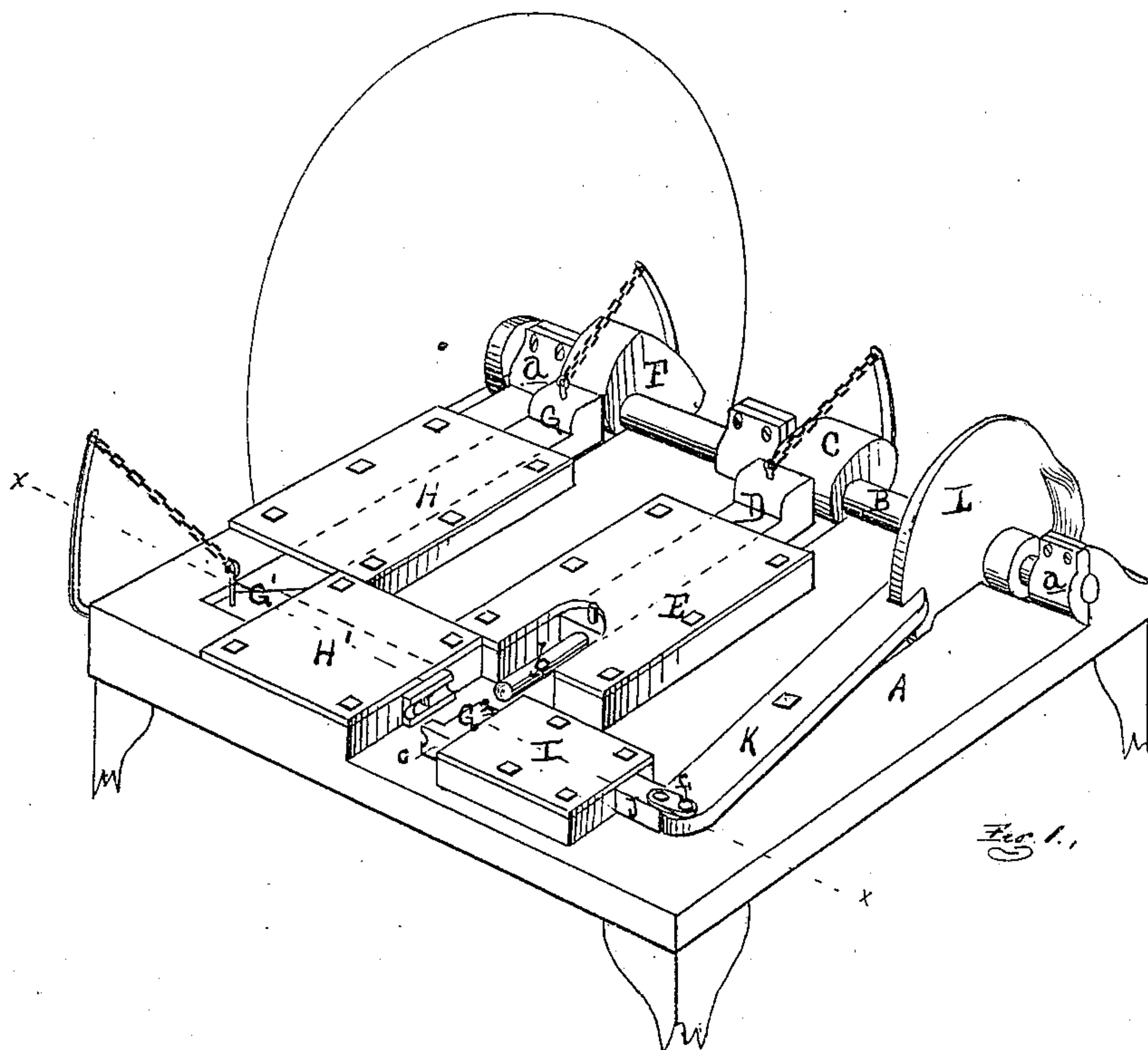


Fig. 1.

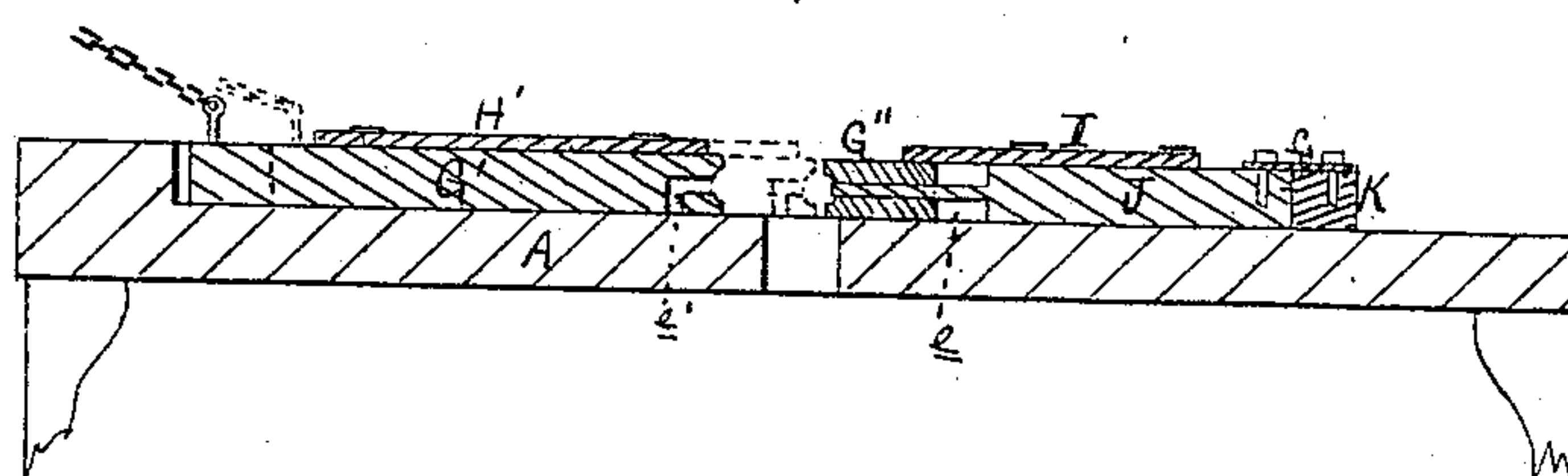


Fig. 2.

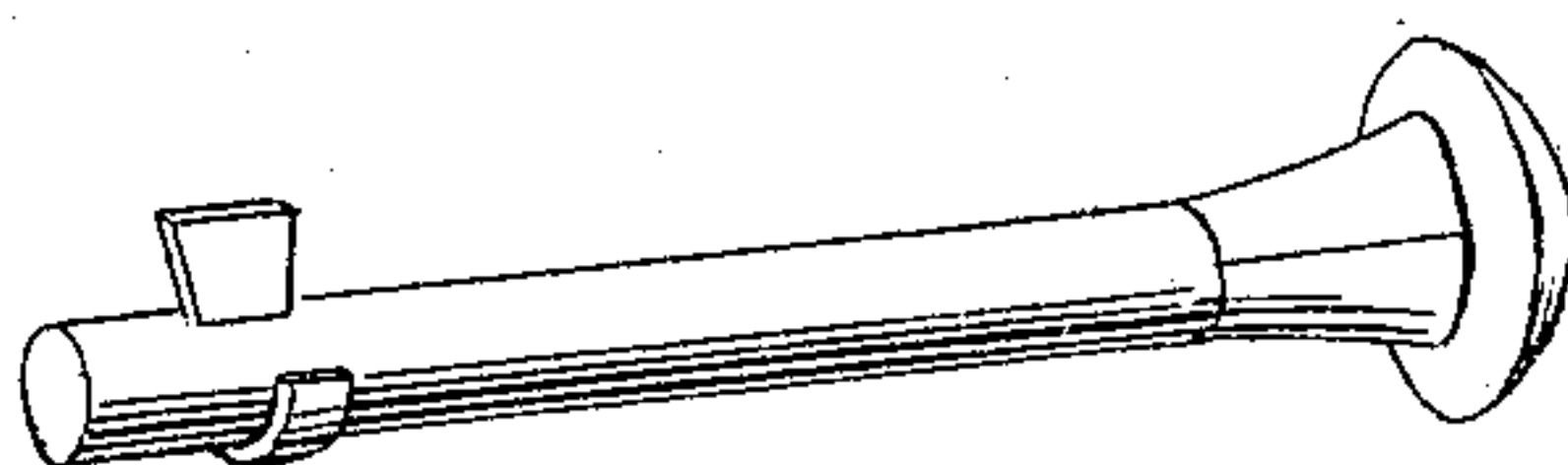


Fig. 3.

ATTEST:  
N. S. Sprague  
H. F. Clark

INVENTOR:  
A. A. Wilder  
By atty -  
N. S. Sprague

# UNITED STATES PATENT OFFICE.

ARETUS A. WILDER, OF DETROIT, MICHIGAN, ASSIGNOR TO HIMSELF AND  
GEORGE E. STEVENS, OF CLEVELAND, OHIO.

## IMPROVEMENT IN BOLT-MACHINES.

Specification forming part of Letters Patent No. 133,135, dated November 19, 1872.

*To all whom it may concern:*

Be it known that I, ARETUS A. WILDER, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in a Machine for Forging and Slotting Track-Bolts; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon, and being a part of this specification, in which—

Figure 1 is a perspective view of the machine in position to receive the end of a heated rod of iron, from which is to be cut and forged a track-bolt; Fig. 2 is a transverse section taken on the line *x x* in Fig. 1; and Fig. 3 is a perspective view of the slotted track-bolt made by this machine, with the key inserted in the slot thereof.

Like letters refer to like parts in each figure.

The nature of my invention relates to an improvement in machines for forging bolts used in securing railway fish-joints, of that class in which a wedge-shaped key is driven through a transverse slot in the bolt near the point for drawing the fish-plates to the bar; and it consists in providing the said bolt-forging machine with a punch for forming the key-slot in the bolt, the said punch being actuated at the proper time by a cam-wheel on the driving-shaft of the machine while the bolt is being headed, as more fully hereinafter set forth.

In the drawing, A represents the table of the machine. B is the driving-shaft, journaled transversely across the back edge of the table in boxes *a*. C is a cam on the shaft which throws forward a bar, D, in guides E. The bar D carries a prolongation, *b*, which forms the head of the bolt. A spring and chain are provided to draw back the bar D when released by the cam. F is a cam near the left-hand end of the shaft B which throws forward a wedge-ended bar, G, in guides H, and which bar, in turn, forces to the right a second wedge-ended bar,

G<sup>1</sup>, reciprocating in guides H'. A spring and chain are also provided for retracting the bar G<sup>1</sup>, and others for the bar G. The extremity of the bar G is shaped to form one-half of the bolt, and the latter is completely formed by a stationary former, G<sup>2</sup>, projecting from the adjacent end of a guide, I. A projecting lip, *c*, on the near corner of the former G<sup>2</sup> serves as a shear, against which the requisite length of metal to form a bolt is cut from a heated rod introduced between the formers.

The foregoing parts are well known, so that their operation need not be described, and I disclaim any invention therein.

In the guide I reciprocates a bar, J, terminating in a flat punch, *e*, which plays through a transverse slot in the stationary former G<sup>2</sup>. Directly opposite the end of this punch there is formed in the movable former G<sup>1</sup> a transverse angular slot, *e'*, Fig. 2, through which the metal punched out of the bolt passes and is discharged. The outer end of the punch-bar J is pivoted by a link, *f*, to one end of a lever, K, pivoted at or near its middle to the table A. The rear end of this lever is slotted or bifurcated to embrace the periphery of a cam-wheel, L, on the driving-shaft. This cam is so timed that just before the finished bolt is discharged from the formers the punch will be forced forward and punch out a transverse slot in the bolt for the reception of a wedge or key, as seen in Fig. 3.

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

The combination of the cam-wheel L, lever K, bar J, and punch *e*, arranged and operating with relation to the bolt-formers *b* G<sup>1</sup> G<sup>2</sup> and shaft B, all constructed as shown and described, and for the purpose specified.

ARETUS A. WILDER.

Witnesses:

H. F. EBERTS,  
H. S. SPRAGUE.