B. F. Gossin.

Track Iron Machine.

No. 36,778. Patented Oct. 28, 1862.

Fig. 1

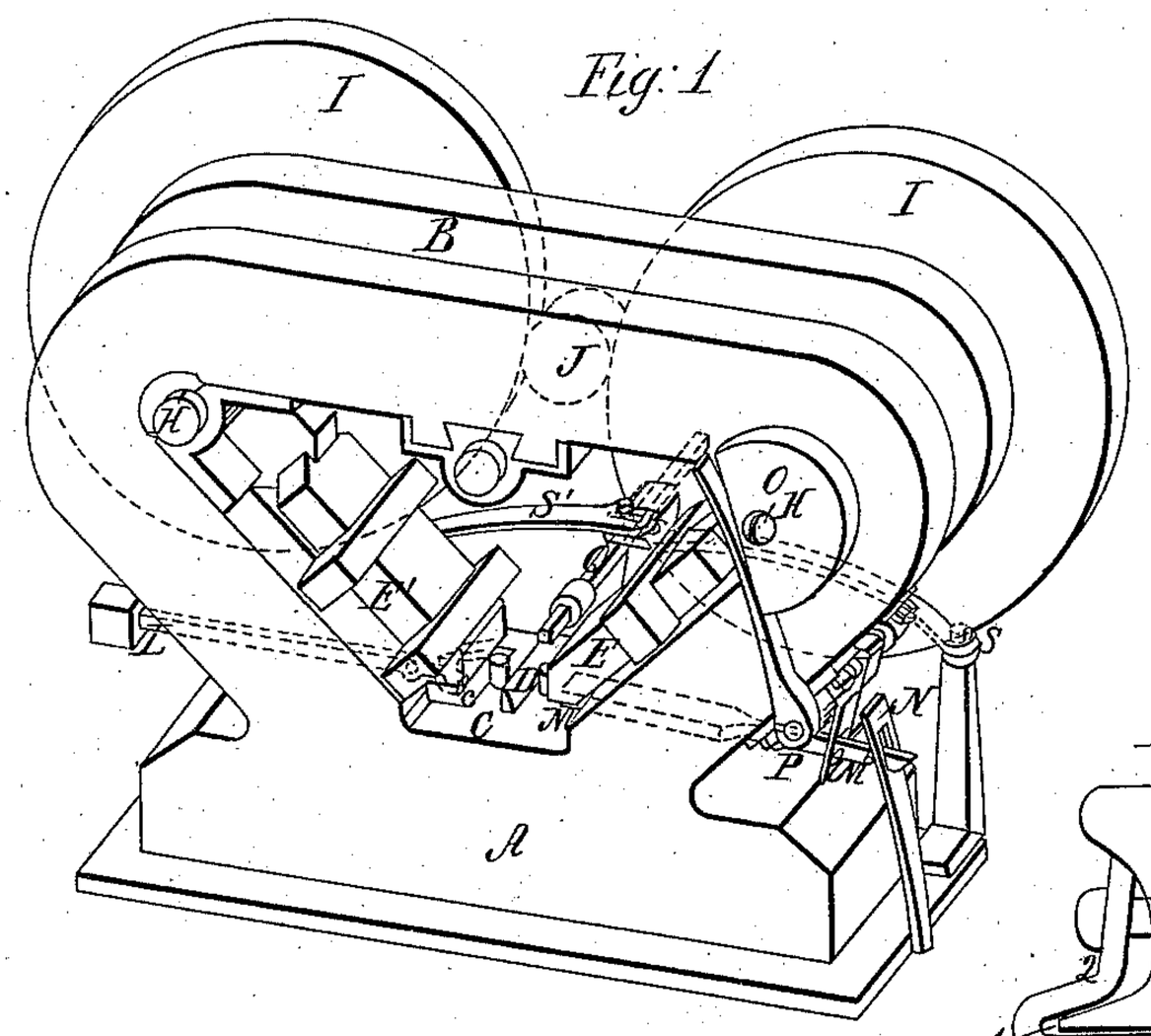


Fig. 3.

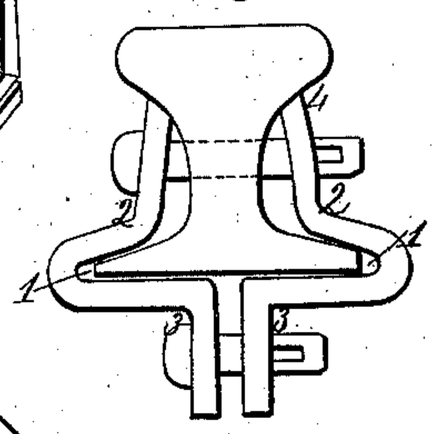
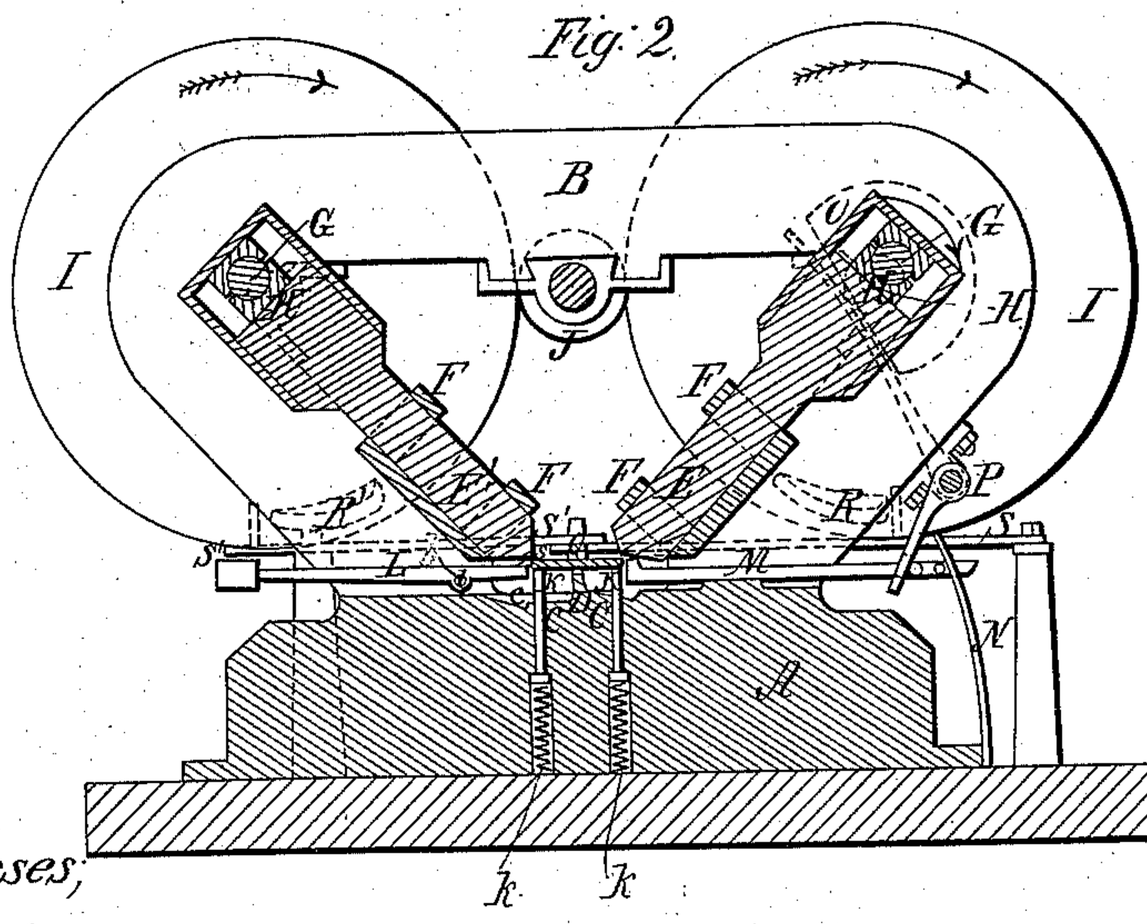


Fig. 2.



Witnesses;
J. L. Melcher
I. F. Perry

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B. F. Gossin
by Knight Bros

UNITED STATES PATENT OFFICE.

BENJAMIN F. GOSSIN, OF CINCINNATI, OHIO.

IMPROVEMENT IN MACHINES FOR MAKING JOINT-FASTENINGS FOR RAILROAD-RAILS.

Specification forming part of Letters Patent No. **36,778**, dated October 28, 1862.

To all whom it may concern:

Be it known that I, BENJAMIN F. GOSSIN, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Machine for Making Railway-Joint Fastenings, of which the following is a full, true, and exact description, reference being had to the annexed drawings, making part of this specification.

The improvement relates to a provision for shaping thick plates of wrought-iron into a crimped form adapted to fit and embrace the side of a railroad-rail; and my invention consists, essentially, in an arrangement of two or more convex swages or dies adapted to simultaneously approach both each other and a convex counter-die, so as to crimp without straining or dragging the metal.

Figure 1 is a front view of my machine. Fig. 2 is a longitudinal section of the same. Fig. 3 is a transverse section showing two forms of fastening.

The positions of the parts in Figs. 1 and 2 are those immediately following the insertion and clamping of a blank for the bending action.

A B is a stout cast-iron frame. A fixed or counter die, of corresponding shape to the inner surface of the fastening, is formed by a nearly level bed, C, which may be of one piece with the frame, or of steel let into the same, and an elevated ridge, D, called the "mandrel" or "hardy," corresponding in its transverse section to that of the rail-base on one side, and which is composed wholly, or at least as to its upper section, of steel. The office of the hardy D is to form the middle receding angle, 1, of the crimped plate.

E E′ are two dies or swages, whose operative ends have the represented salient or convex forms corresponding to the outer receding angles, 2 and 3, of the desired crimp. For a curved portion of the fastening, as from 2 to 4, Fig. 3, the corresponding faces of the die must be slightly depressed.

The dies E E′ may be wholly of cast-iron.

Boxes F guide the dies E E′ in two oblique and converging paths coincident, or nearly so, with planes bisecting the receding angles 2 and 3.

The dies E E′ are simultaneously advanced and retracted by cranks G upon shafts H H′, whose cog-wheels I derive simultaneous and equal motion from a driving-wheel, J. Yielding supports or poppets K, upheld by springs *k* to the level of the hardy D co-operate with the latter in supporting the blank until the bending action commences, and then retire into their sockets as the blank is forced down. A rod, L, resting near its inner end upon a fulcrum, *l*, acts as a stop or gage for one edge of the blank. A cavity, *c*, in the bed permits of the descent of said stop before the die.

M is a sliding jaw, which, after the insertion of the blank, is pressed forward by spring N, so as to clamp and hold the blank firmly against the stop L.

The shaft H carries a cam, O, which, at the instant the dies engage the blank, impinges against a rocker, P, so as to strike and hold back the jaw M until the proper instant for clamping a fresh blank.

Q is a discharging-rod, which at the proper moment is projected along the top of the hardy D, so as to dislodge and eject the crimped plate. The advancement and retraction of the rod Q may be effected by cams R R′ of the wheels I operating levers S S′, connected to the rod Q.

Operation: The machine being set in motion, the operator, the instant he observes the dies reaching their extreme retraction, takes a red hot blank and introduces it upon the tops of the hardy D and supports K. (See red lines in Fig. 2.) The jaw M, now advancing, clamps the blank firmly against the stop L and holds it there until caught by the descending dies E E′. The jaw M then recedes to make way for the dies, which, approaching each other and the hardy as they descend, act to compress the blank into the receding angles between the bed and the sides of the hardy without stretching the material or starting the fibers of the metal. The crimping having been effected, the dies reascend, and the crimped plate is ejected by the discharger Q.

I claim as new and of my invention herein—

1. The arrangement of stationary bed and hardy C D, clamping-gage L M, and simultaneously-converging dies E E′, or devices substantially equivalent, the whole being combined and operating together as set forth.

2. The yielding supports K, for the temporary support of the blank, in the manner set forth.

In testimony of which invention I hereunto set my hand.

BENJ. F. GOSSIN.

Witnesses:
GEO. H. KNIGHT,
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