

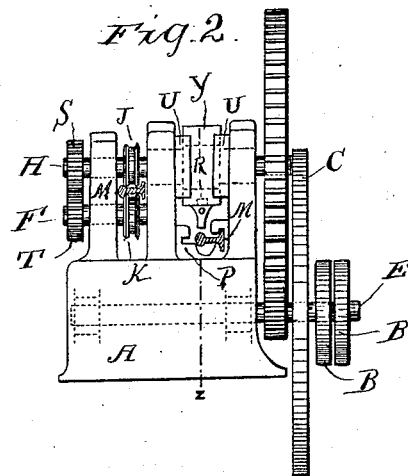
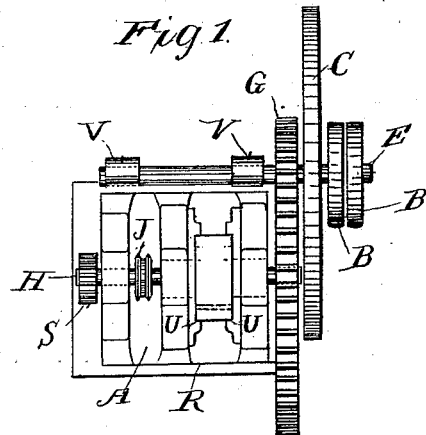
(No Model.)

2 Sheets—Sheet 1.

H. BRITTEN.  
RAIL SLITTING MACHINE.

No. 303,699.

Patented Aug. 19, 1884.



*Witnesses*  
*George Lilghman*  
*W. R. Haight*

*Inventor*  
*Henry Britten*  
*by W. H. Babcock*  
*Attorney*

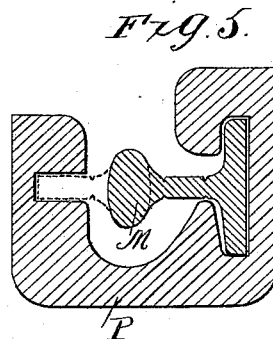
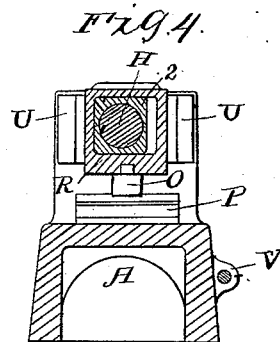
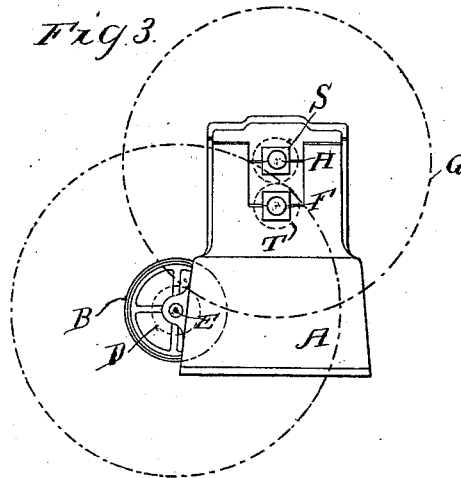
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# UNITED STATES PATENT OFFICE.

HENRY BRITTEN, OF SHEFFIELD, COUNTY OF YORK, ENGLAND.

## RAIL-SLITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 303,699, dated August 19, 1884.

Application filed April 10, 1884. (No model.) Patented in England June 19, 1883, No. 3,024; in France January 18, 1884, No. 159,791, and in Belgium January 21, 1884, No. 63,907.

*To all whom it may concern:*

Be it known that I, HENRY BRITTEN, a citizen of Great Britain, residing at Sheffield, in the county of York, England, have invented a new and useful Rail-Slitting Machine, (for which I have obtained a patent, No. 3,024, bearing date June 19, 1883,) of which the following is a specification.

My invention relates to machines for slitting rails; and it consists, chiefly, in a machine for that purpose provided with rotating cutters for nicking the rails, and also provided with a reciprocating press for breaking the rails after they have been nicked, both being operated by the same shaft.

The said invention further consists in the combination of two parallel shafts with the circular nicking-cutters carried thereby, a press reciprocated by one of said shafts, and a bed which holds the rail against which said press operates.

Figure 1 is a front view in elevation of the entire machine. Fig. 2 is a top view of the machine. Fig. 3 is an end view of the machine (looking from left to right of Figs. 1 and 2) with the wheels shown in dotted lines. Fig. 4 is a vertical section of the machine as taken through the dotted line Y Z, Fig. 1, looking from right to left. Fig. 5 is an enlarged cross-section of the bed for holding the nicked rail while being broken.

Similar letters refer to similar parts throughout the several views.

The base with three standards, A, constitute the frame-work of the machine. In the bosses V V turns the shaft E, carrying a fly-wheel, C, pinion D, and fast and loose driving-pulleys B B'. The pinion D turns the wheel G and shaft H, fixed thereto. The shaft H has a cam, I, formed therewith, and has fixed thereto the upper cutter, J, of the pair of circular cutters J K, and also has fixed thereto the wheel S. The wheel S turns the wheel T and short shaft F, to which it is fixed. The shaft F has fixed to it the lower cutter, K, of the pair of circular nicking-cutters J K. The shafts H and F rotate in bearings in the standards of the frame of the machine. The cutters J and K are placed such a distance apart

as to nick the rail on each side an eighth of an inch in depth, or thereabout, as it is passed through them. The shaft H, provided with cam I, turns in the sliding bearing Q, and reciprocates the ram R in guides U U, forming a press for breaking the rail. The ram R is provided with a punch, O, which strikes the head of the nicked rail M as it descends. The nicked rail to be slit is placed in the bed P.

In using the machine the cold rail is pushed up to the revolving cutters J and K, which draw it through and nick it in four places, as shown in Fig. 5. The nicked rail is then placed in the bed P, under the ram R, as shown in Fig. 5, and the ram R, with punch O, descending thereon, the head and web of the rail are broken off close to the flange where nicked. The web and head of the rail are then placed in the other side of the bed P, as shown in dotted lines in Fig. 5, and on the ram R and punch O descending the head of the rail is broken from the web where nicked.

It is obvious that forms of rails differing from the rail M can be operated on in like manner by this machine. For instance, a double-headed rail can be nicked in four places by the cutters J and K, and broken where nicked by the ram R and punch O; or a double-headed rail can be slit in the center thereof into two parts by nicking it in the center with one pair only of cutters, the bed P being made to fit the double-headed rail as the bed P fits the flanged rail M.

It is obvious that the circular cutters and the bed P can be made and adjusted so as to nick and slit any section of rail in the manner described in reference to the flanged rail M.

Hitherto rails have been slit by heating them in a furnace and operating upon them by a pair of slitting-rolls in a rolling-mill, the disadvantages of this system being, first, the cost of heating the rails, and, secondly, the absence of a fracture, by which the temper and quality of the rail can be ascertained.

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

1. A machine for slitting rails, provided with rotating cutters for nicking the rails and

a reciprocating press for breaking the rails after the latter have been nicked, said press and said cutters being operated by the same shaft.

- 5 2. The shafts F and H, arranged parallel to one another, in combination with circular cutters J K, carried thereby, cam I on said shaft H, ram R, and punch O, reciprocated by said

cam, bed P, which holds the rail for the punch to operate on, and the necessary gearing, substantially as set forth.

HENRY BRITTEN.

Witnesses:

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