Aug. 11, 1925. 1,548,876

E. FISCHER

RAIL GRIPPER

Filed April 2, 1924

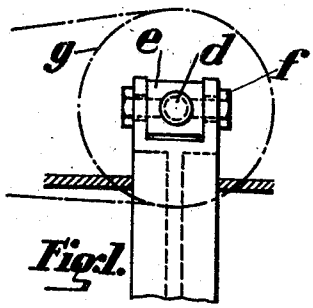


Fig:1.

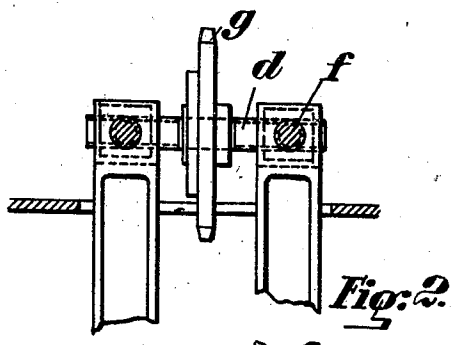
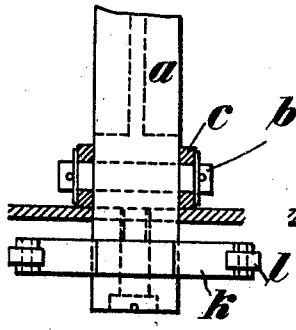


Fig:2.



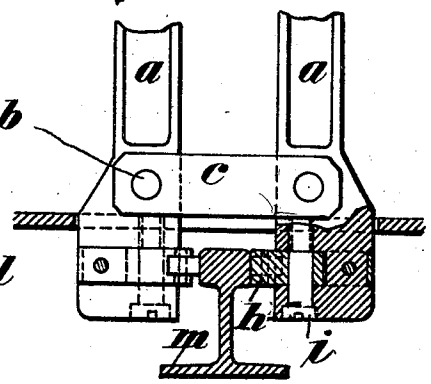
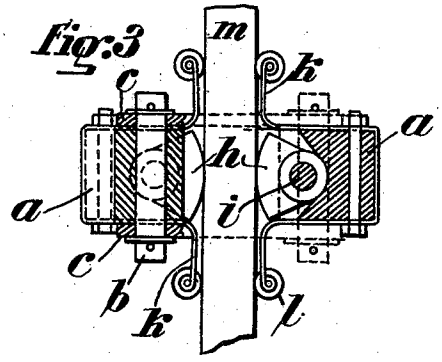


Fig:3



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UNITED STATES PATENT OFFICE.

ERNST FISCHER, OF NIEDERSCHONHAUSEN, NEAR BERLIN, GERMANY, ASSIGNOR TO THE FIRM BERLINER ACTIEN-GESELLSCHAFT FÜR EISENGIESSEREI UND MASCHINENFABRIKATION, OF CHARLOTTENBURG, GERMANY.

RAIL GRIPPER.

Application filed April 2, 1924. Serial No. 703,831.

To all whom it may concern:

Be it known that I, ERNST FISCHER, engineer, a citizen of Germany, residing at 8 Carowerstrasse, Niederschonhausen, near Berlin, Germany, have invented certain new and useful Improvements in Rail Grippers, of which the following is a specification.

This invention relates in general to rail grippers and more particularly to devices of this kind comprising a tongs.

In the operation of travelling cranes, doors of sheds, halls and the like accidents have often happened on account of the fact that the travelling or sliding structure was not sufficiently secured against shifting due to sudden blasts of wind etc. In cases in which safety devices in the shape of rail grippers or rail seizing tongs were provided, that are closed and opened by a screw spindle provided with left hand and right hand screw threads, the closing operation of the tongs generally required considerable time and power. These arrangements do not operate with certainty so as to hold the structure against movement, because in the case of strong blasts of wind the jaws of the tongs that engage with the rails are apt to slip on the latter.

Safety devices for locking such structures against movement caused by sudden external impulses have also been provided in which an eccentric clamping action is employed to anchor the travelling crane or the like to the rails when a movement is imparted to the crane by undesired external impulses such as a blast of wind. In these devices an excentric is employed by which the anchoring or locking action is secured only in one direction of travel so that to secure the desired effect in both directions two separate excentrics or clamping or locking members are necessary. As these excentrics co-operate with sheet metal members that embrace the rail heads and are attached to the ends of the crane the resulting safety device is of considerable length.

In order to remove these drawbacks the rail gripper in accordance with the invention comprises a tongs each of whose jaws are provided with an excentric that act in both directions of travel of the crane, the arms of the tongs being moved so as to close or apply the jaws to the rail by means of a screw spindle provided with a right hand and left hand thread. By this means a simple anchoring device which locks the travelling structure, such as a crane or the like, with certainty in both directions of travel and which does not subject the rails to unfavorable stresses, is obtained.

The rail gripping tongs which are attached to the travelling structure, may be arranged in a vertical, horizontal or oblique position.

The invention is shown by way of example in the drawing.

Figs. 1 and 2 being two different side views and

Fig. 3 a horizontal section on a line running partly through a pivot and partly through a jaw of the rail gripping tongs.

The arms *a* of the tongs are pivoted by pivots *b* in side plates *c* on which a pull is exerted when the jaws of the tongs seize the rails. The upper ends of the arms *a* are forked and nuts *e* are arranged between the prongs so as to oscillate on pivots F. The nut *e* in one arm has a right handed thread while the nut in the other arm has a left handed thread. These threads take the right and left handed male screws of a spindle *d*. The spindle threads are low pitched so that the nuts are self-locking. By turning the spindle, as by means of a sprocket wheel G, the forked ends of the arms may be moved apart or towards each other so as to open or close the jaws, or to apply the latter to the sides of the rail head or to cause them to disengage the same. The tongs or rail gripper is mounted in the travelling structure such as crane or the like, that is to be secured against movement by external impulses. Whenever the travelling structure is to be safe-guarded against undesirable movements the jaws of the tongs are closed sufficiently to bring the excentrics *h*, journalled by pivots *i* in the jaws, into contact with the sides of the rails. This is effected by means of the sprocket wheel *g*. Any movement of the crane subsequent to the application of the excentric *h* results in rotation of the excentrics *h* about their pivots *i* so that the excentrics *h* exercise a clamping action which increases as the excentrics *h* are turned away from their middle position.

Attached to the jaws are springs *k* which, when the tongs are opened, move both jaws

away from the sides of the rail head and ensure symmetrical positions of both jaws with respect to the rail. The ends of the springs may be provided with rolls *l*.

I claim:—

A rail gripper comprising a tongs provided with jaws, self-locking means for moving the arms of the tongs so as to apply the jaws to the sides of the rail and to lock them in their applied positions, a pivot pin in each of the said jaws, eccentrics rotatably mounted on both of the said pivot pins and exercising an increasing clamping action when turned away from their middle position in either direction, and U-shaped flat metal springs arranged with their legs at either side of each of the said eccentrics and adapted to contact with the said eccentrics when they are rotated out of their middle position.

In testimony whereof I affix my signature in presence of two witnesses.

ERNST FISCHER.

Witnesses:
Dr. HANS ZIMMERMANN,
GUSTAV WITTENHAUZEN.