

A. BEURRIER.  
AUTOMATIC COUPLING FOR RAILWAY CARRIAGES.  
APPLICATION FILED APR. 18, 1903.

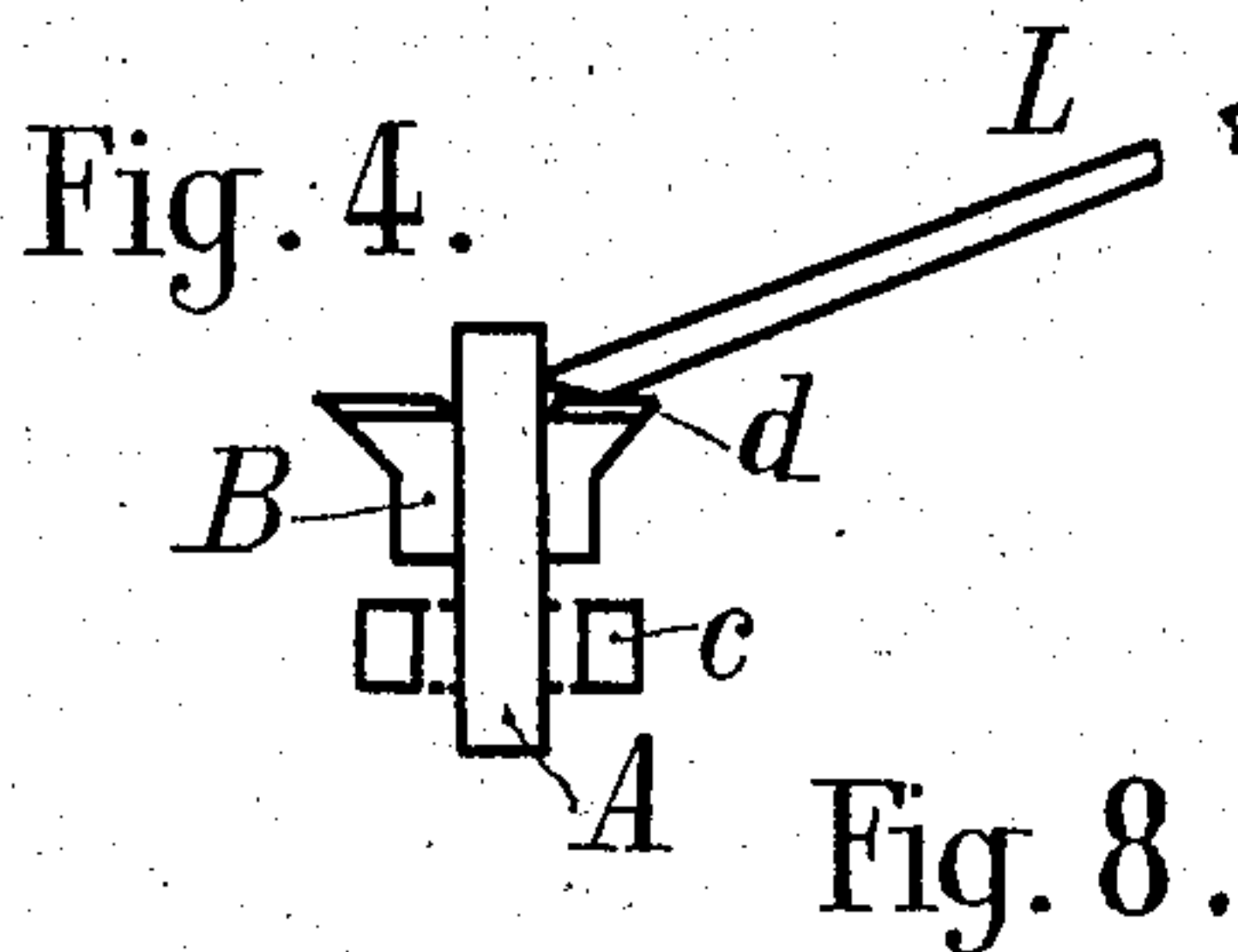
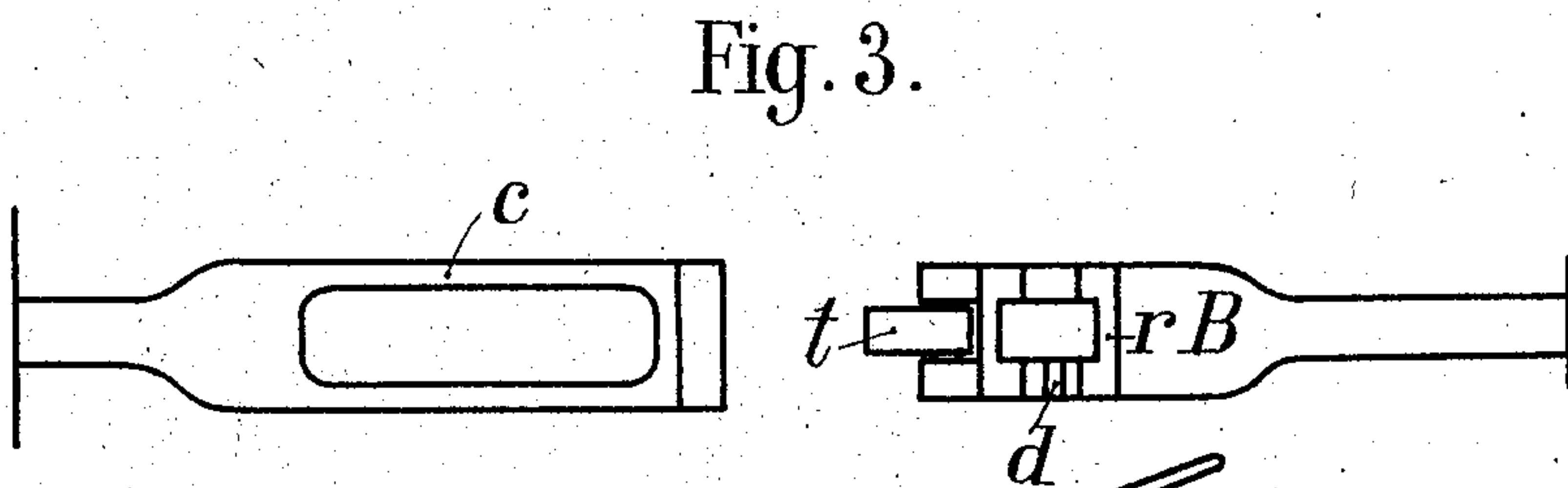
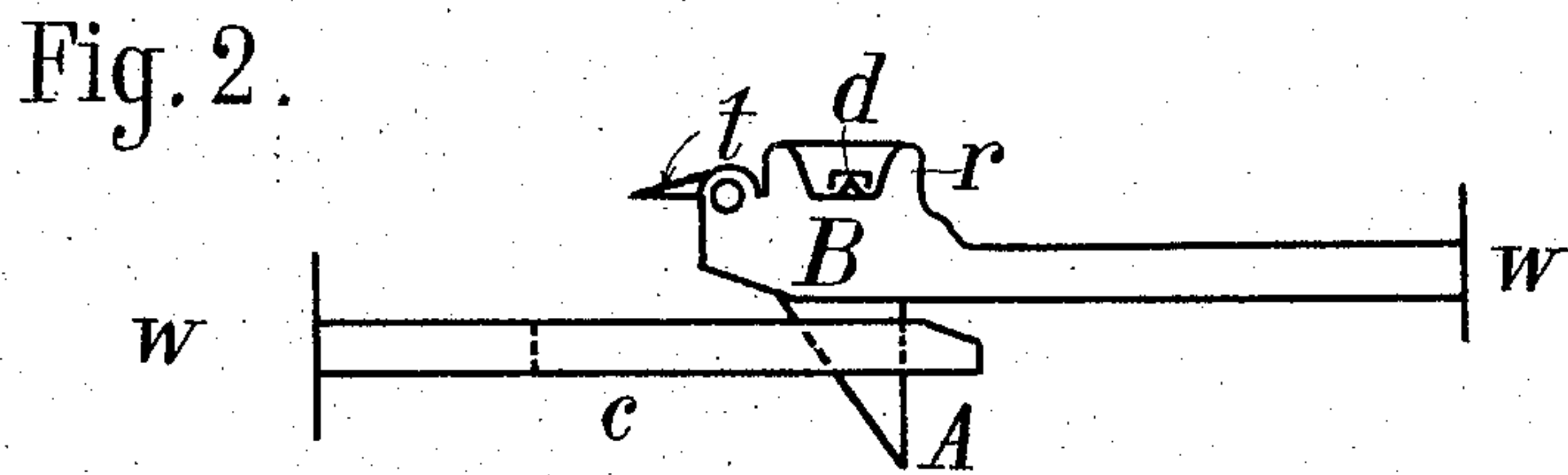
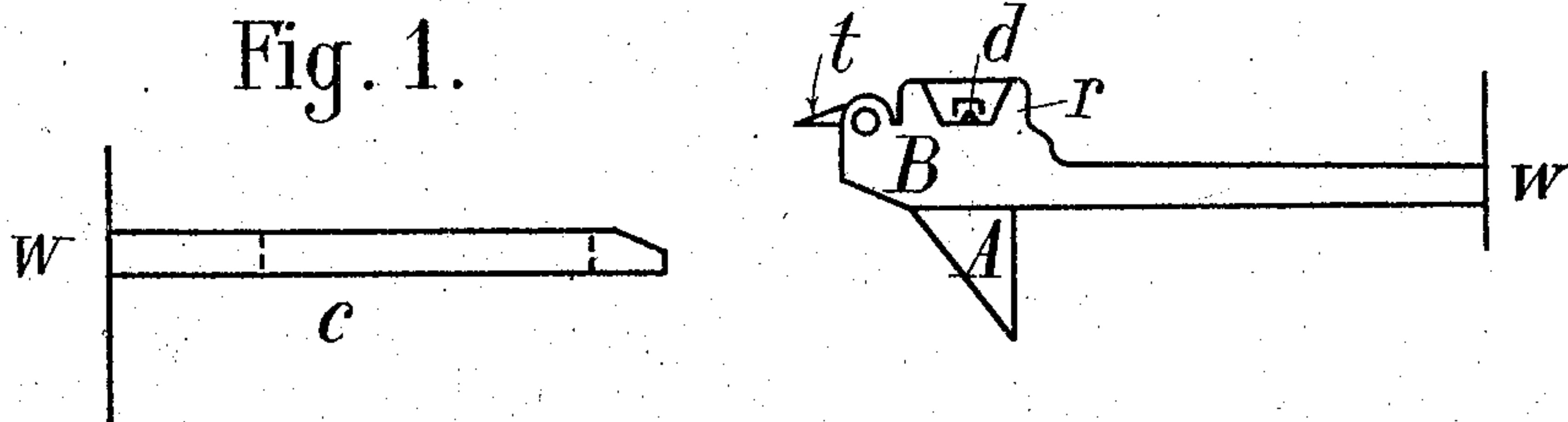
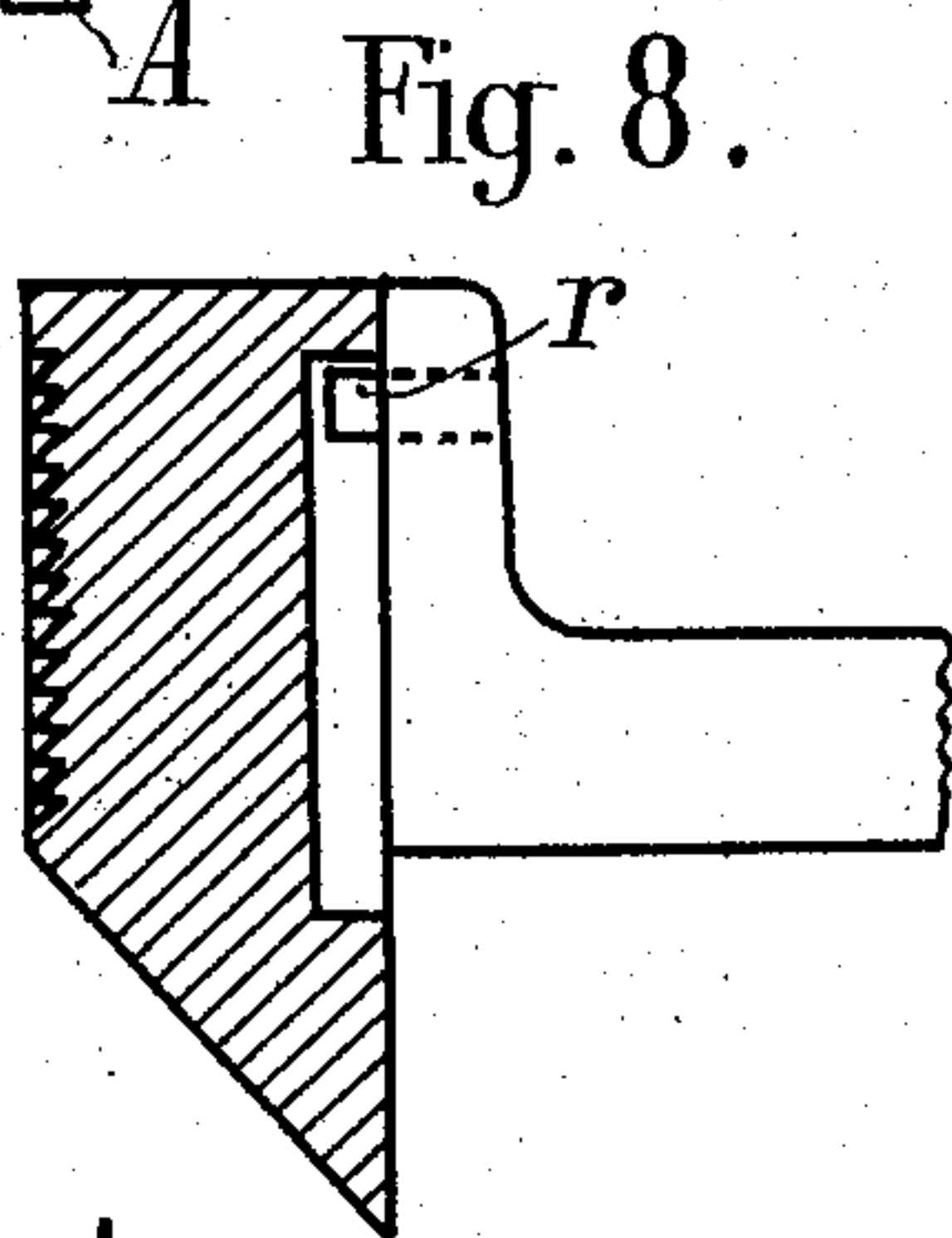
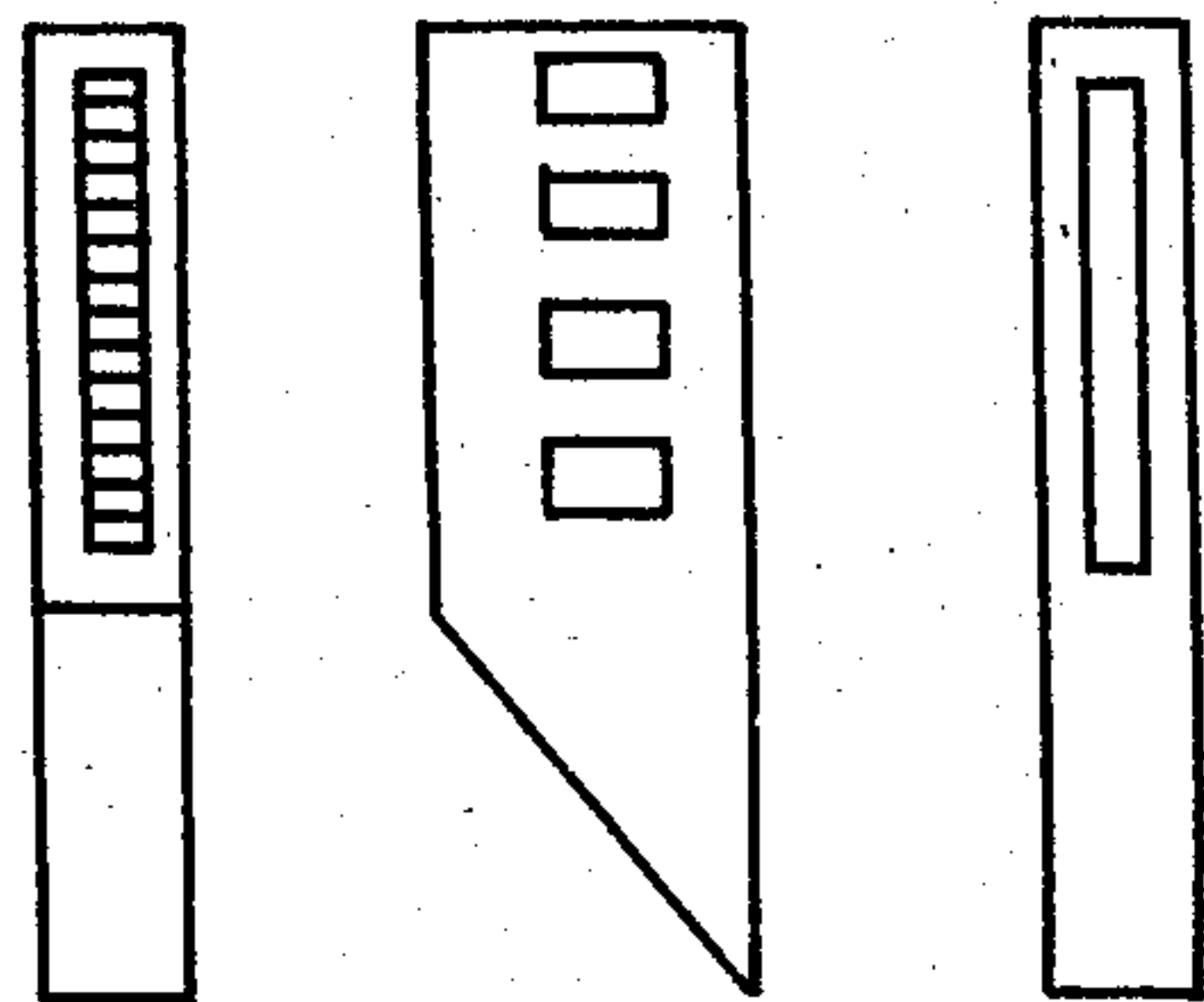


Fig. 5. Fig. 6. Fig. 7.



Witness

*Roussignol*  
*Eng. Labouree*

*Alais Beurrier*  
*Inventor*

# UNITED STATES PATENT OFFICE.

ALEXIS BEURRIER, OF MONTGUYON, FRANCE.

## AUTOMATIC COUPLING FOR RAILWAY-CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 791,445, dated June 6, 1905.

Application filed April 18, 1903. Serial No. 153,269.

*To all whom it may concern:*

Be it known that I, ALEXIS BEURRIER, of Montguyon, Charente Inférieure, in the Republic of France, have invented new and useful Improvements in Automatic Couplings for Railway-Carriages, of which the following is a specification.

The method of coupling railway-carriages is, as is well known, very imperfect, and, moreover, involves a considerable amount of work, besides being difficult and dangerous for the man to whom it is intrusted.

The object of the present invention is to produce an automatic coupling which is instantaneous, sure, simple, and free from danger to those who work it.

The invention consists in an automatic railway-coupling comprising, first, the means of effecting the coupling by a simple wedge-shaped block carried on a bar at the end of one carriage and moving downward by its own weight in its bearer and entering the coupling member at the end of an adjacent carriage; secondly, the means of uncoupling, consisting in a lever which engages notches in the block for raising the same.

In the drawings, Figure 1 shows the coupling device in side view before the coupling has been effected, Fig. 2 being a side view thereof after the coupling has been effected. Fig. 3 is a plan of the coupling; Fig. 4, a vertical transverse section of the apparatus, showing the disengaging-lever. Fig. 5 is a front view of the wedge-block. Fig. 6 is a side view of the wedge-block. Fig. 7 is a back view of the wedge-block. Fig. 8 is a vertical section through the middle of the wedge-block.

The construction of the apparatus is as follows: Without in any way altering the coupling means at present employed by railway companies, such as buffing devices and safety-chains, each coupling instead of being effected by double-hooking with tightening up by a double screw is carried out in the following manner: At the end of each carriage the draw-bar terminates in a head *c*, having an elongated opening forming one coupling member. At the opposite end of the carriage the draw-bar terminates in a head B, slotted vertically

to receive a wedge-shaped block A, which can move freely in the slot, but not drop entirely out of same, being retained by a small pin *n*, fixed and riveted to the head B after the insertion of the wedge-block A. The head of this pin slides in a groove formed in one side of the block A, the whole being invisible and effectually prevents the block from falling or being jolted out of its slot by the shock caused by two vehicles coming together. The lower front part of the wedge-block A is cut obliquely, so as to enable it to slide and to rise on coming against an inclined end of the member *c*. In addition to the groove aforesaid the block A is formed with notches on one of its sides, Figs. 5, 6, and 8, to enable it to be raised for uncoupling, as hereinafter described. In front of the head B, which bears the block A, a small pawl *t* is mounted, which normally occupies the position as shown in Figs. 1, 2, and 3, but is capable of being turned about its pivot so as to engage with the teeth in the wedge-block for the purpose of facilitating the uncoupling.

In order to couple two carriages, all that is necessary is to bring them together. The block A, Fig. 1, in coming against the inclined end of the member *c* is raised and falls again automatically by the action of gravity when it is over the slot in the head, taking the position as shown in Fig. 2. The tightening up of the carriages one against the other is absolutely regular instead of being, as in the methods employed at present, subject to the varying judgment of the man who is intrusted with the tightening of the screw-couplings. In fact, the width of each coupling-rod is calculated according to the degree of tightness desired. If it be desired that the buffers should be in constant contact or very slightly compressed, the length of the coupling-rod from the long face of the block A to the carriage is just the same as that from the face of the buffers to the carriage, the key is completely raised when the buffers touch each other. If it be desired to effect a greater degree of compression, the draw-rod is made shorter to the extent desired; but in every case the tightening is always precisely and invariably determined beforehand by the



engineers and not according to the judgment of each person who may operate the coupling.

The coupling is always certain and reliable, the buffer-springs yielding to the shock to a greater extent than the tightening to be effected, and the action of the block is absolutely automatic and instantaneous. The coupling having been effected, accidental uncoupling is impossible.

10 In order to uncouple the carriages, the linesman furnished with the lever L, Fig. 4, being on the platform outside the track turns over the small pawl *t* with one movement on the lever, when it engages the teeth in the block  
15 A. He then places his lever on the small ledge *d* of the head B, with the point in one of the notches in the block, Fig. 6, presses the lever, raises the block with two or three movements of the lever, the block is com-  
20 pletely raised and the uncoupling effected, the small pawl *t* preventing the block from falling, as its end always engages the teeth, Fig. 5, in the block. The uncoupling being effected, care must be taken to replace the  
25 small pawl *t* in front, allowing the block to fall into its lowest position, when it is ready for a fresh coupling action.

Under this arrangement—

30 First. The coupling is absolutely automatic and instantaneous without the assistance of a man. All that is necessary is to push the carriages one against the other.

Second. The uncoupling is effected in a few moments by a single small lever-rod, the same  
35 as with trains operated by one man placed outside the track.

Third. There is economy compared with the

former arrangements, the apparatus being very simple, no spring, no screw, no nut, all made of steel cast in a single block, three 40 pieces only, two of which are extensions of the draw-bars and form part therewith. These three pieces made with little trouble do not require any precise adjustment. The absolutely automatic action is due solely to 45 the weight of the block.

If it be desired to employ this arrangement simultaneously with the old system without disturbing the latter, all that is required is to fix this simple apparatus on the draw-bars by 50 a strong hinge capable of opening to the extent of the fourth of a circle. The apparatus acts as stated above, and if it be desired to use the old system the new device may be simply put up against the carriage. 55

I claim—

In an automatic coupling for railway-carriages the combination of a simple wedge-shaped block carried on a bar at the end of one carriage and moving downward by its 60 own weight in a bearer, and entering the coupling member at the end of an adjacent carriage, with an uncoupling-lever which engages notches in the block for raising the same, a pawl mounted adjacent to the block 65 and adapted to engage same, substantially as and for the purpose described.

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

ALEXIS BEURRIER.

Witnesses:

LOUIS J. TRICOT,  
EUG. LABOUE.