

No. 713,729.

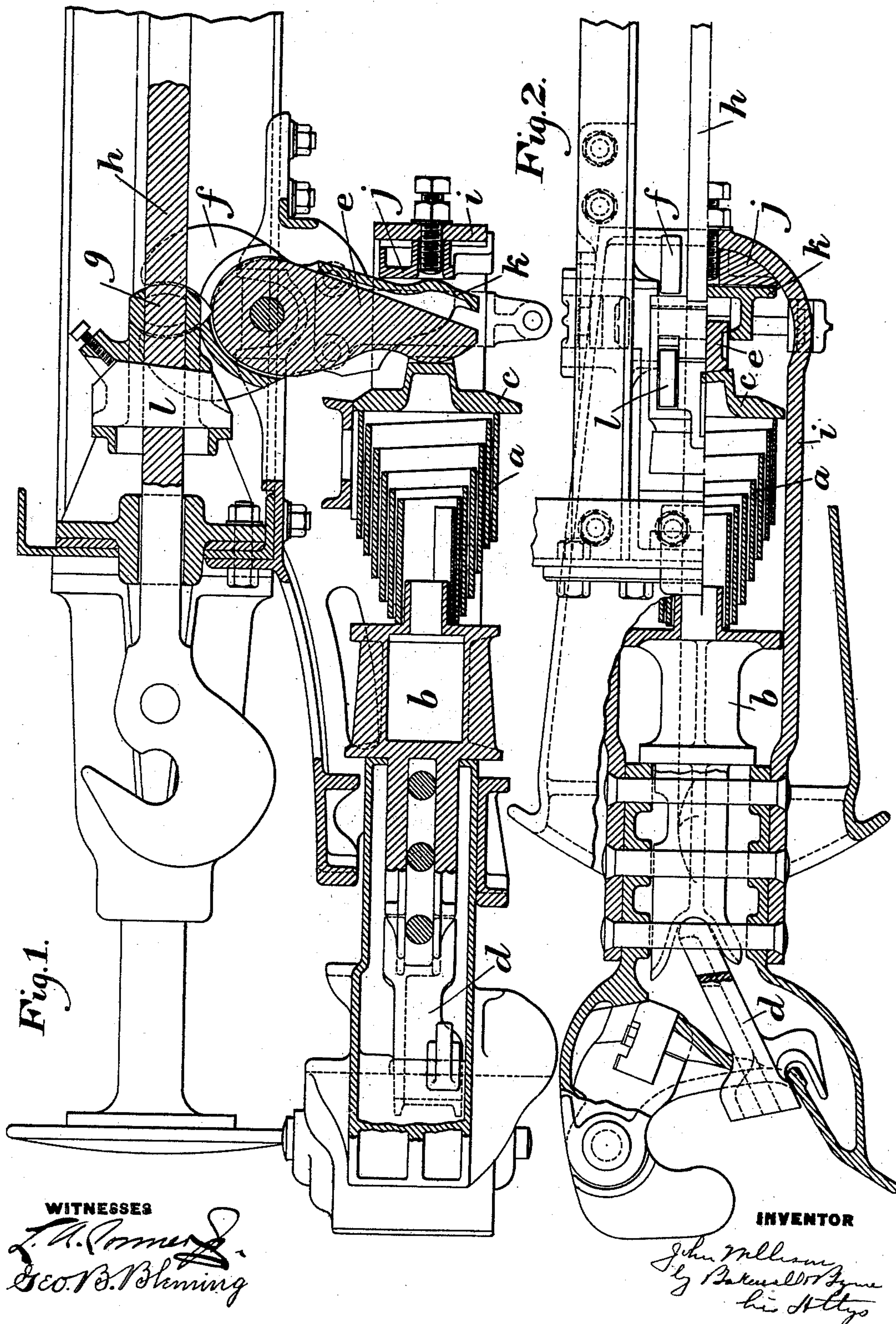
Patented Nov. 18, 1902.

J. WILLISON.

AUTOMATIC COUPLING FOR RAILWAY CARRIAGES.

(Application filed Mar. 17, 1902.)

(No Model.)



UNITED STATES PATENT OFFICE.

JOHN WILLISON, OF DERBY, ENGLAND.

AUTOMATIC COUPLING FOR RAILWAY-CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 713,729, dated November 18, 1902.

Application filed March 17, 1902. Serial No. 98,474. (No model.)

To all whom it may concern:

Be it known that I, JOHN WILLISON, a citizen of England, residing at No. 1 Olney Villas, Clarence road, Derby, in the county of Derby, England, have invented certain new and useful Improvements in and Relating to Automatic Couplings for Railway-Carriages, (for which application has been made for a patent in Great Britain, dated December 11, 1901, No. 25,283; France, December 12, 1901; Germany, December 12, 1901; Belgium, December 16, 1901; Austria, December 14, 1901; and Hungary, December 14, 1901,) of which the following is a specification.

My invention relates to automatic couplings for railway-carriages; and it consists in a construction and arrangement of the buffers and draw-bars and their springs and working parts in such a manner that the coupling-knuckles are held tightly together without shake or loose play in their coupled condition, that the coupler when free is always urged toward a central position, and that when the coupling-head is subjected to drawing action it operates on the ordinary draw-spring; but when it is subjected to buffing action not only the buffing-spring, but also the draw-spring is acted on, so that the buffer can yield through a longer stroke than if it acted on a single spring.

I shall describe my invention, referring to the accompanying drawings.

Figure 1 is a vertical longitudinal section of the end part of the carriage-frame, showing the automatic coupler and its buffer-spring in section and some parts above in elevation. Fig. 2 is a plan of the end part of the frame, the front and half the rear part being shown in section.

a is the buffer-spring, placed between a front follower *b* and a rear follower *c*. In a gap of the front follower is engaged the rounded end of a piece *d*, which extends through the body of the coupler and projects in front of it. When in coupling two carriages the knuckle of the coupler of the other carriage meets the end of the piece *d*, it pushes it back, compressing the spring *a*, and when the two knuckles of the couplers are engaged the pressure of the pieces *d* against them, due to their respective springs *a*, prevents any loose play of the engaged knuckles. The

rear follower *c* bears against the lower arm of a lever *e*, which forks into two upper arms *f*, that bear against the rear face of a stop *g*, formed in a sleeve fixed on the draw-bar *h*, which draw-bar is provided with the ordinary draw-spring, situated generally in some rear part of the under frame. The coupling is attached to a yoke *i*, which has its rear bent to half-round form, embracing a block *j*, which bears against the lower arm of a lever *k*, which is made hollow to accommodate the lever *e* within it and which forks into two upper arms *l*, that bear against the front face of the stop *g*. The hinder face of the lower arm of lever *k* is made of considerable width, bearing against the block *j*, so that when the coupling and yoke *i* are deflected to either side of the middle line the rear of the lever *k* is canted to an angle with the face of the block *j*, and the spring *a* is thus compressed. The spring tends to expand and to force the lever *k* close to *j* over its whole width, thus urging the coupling and yoke back to the middle position. When there is a drag of the coupling, the block *j* pushes forward the lower arm of the lever *k*, causing its upper arm *l* to push back the stop *g* and draw-bar *h*, compressing the usual draw-spring. When the coupler is subjected to buffing action, the spring *a* is compressed. Also the lower arm of the lever *e* is pushed back, and its upper arm *f*, acting on the stop *g*, draws forward the draw-bar *h*, compressing its spring, this spring being arranged in the usual way, so as to be compressed whether it is pressed or pulled. Thus the movement of the coupler when subjected to buffing action is that due not only to the compression of the spring *a*, but also to compression of the ordinary draw-spring.

Having thus described the nature of this invention and the best means I know of carrying the same into practical effect, I claim—

1. In combination with an automatic coupler and its buffer-spring, a piece urged forward by the spring so as to project beyond the body of the coupler and bear against the engaged knuckle of the other coupler, substantially as described.

2. In combination with the buffer-spring and yoke of an automatic coupler, a pair of levers having their lower arms engaged be-

tween the spring and a block in the rear of the yoke, and having their upper forked arms engaging between them a stop formed in a sleeve fixed on the ordinary draw-bar, substantially as and for the purpose set forth.

3. The formation of the lower arm of the rear lever, and of the block against which it bears with wide flat faces so that the one takes an angular position relatively to the other
10 when the coupler and yoke are deflected from

the middle line, and the buffer-spring is thus compressed, and urges the parts back to middle position, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN WILLISON.

Witnesses:

T. HEATH,

GEO. WOODHOUSE.