

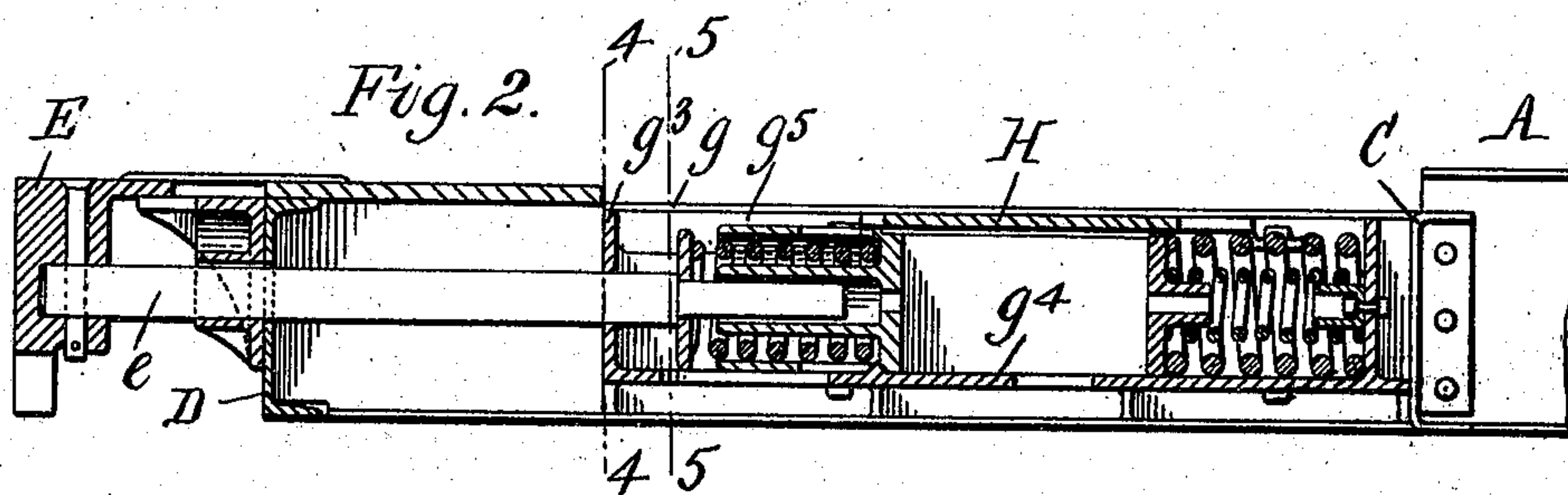
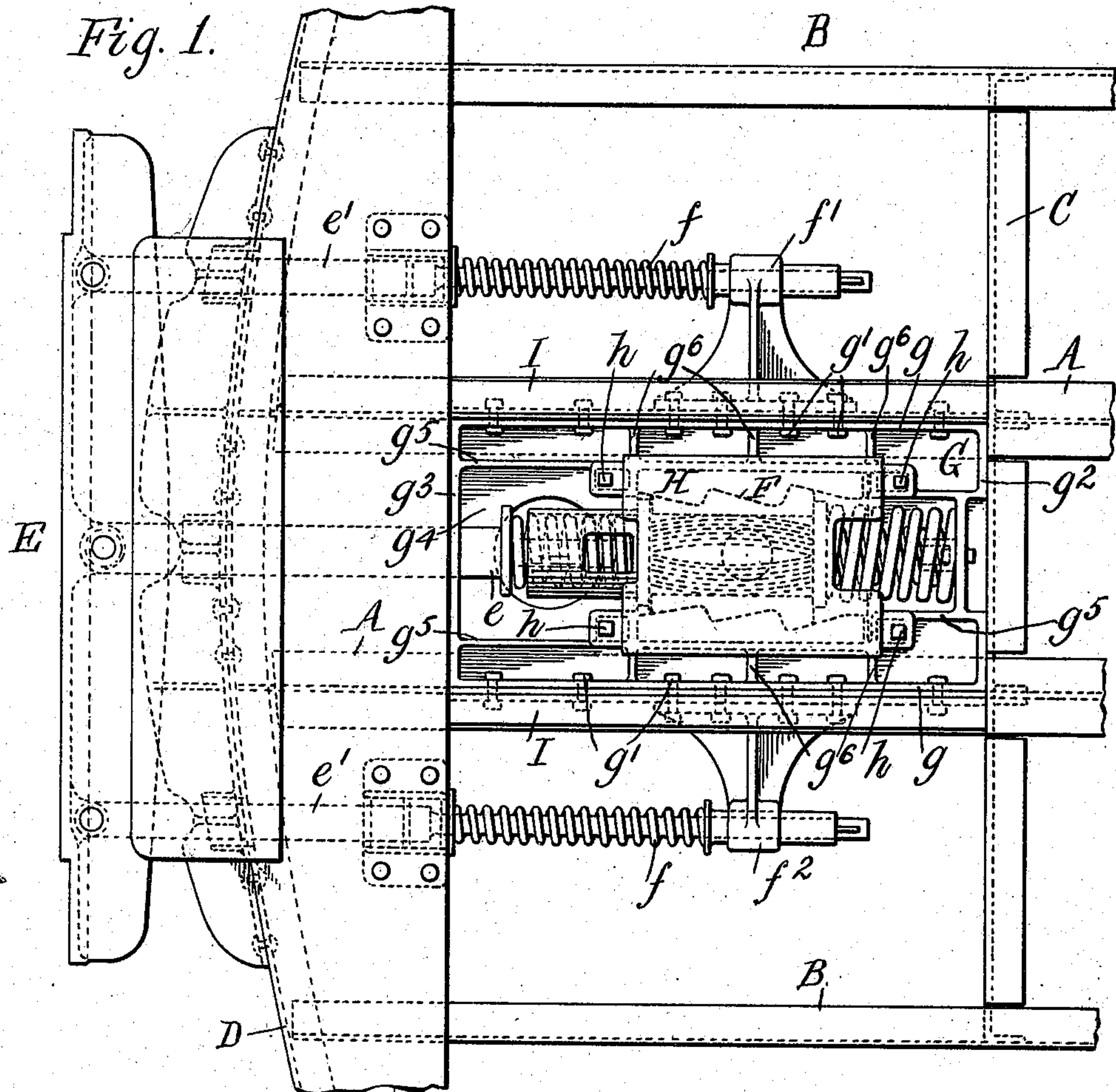
No. 866,967.

PATENTED SEPT. 24, 1907.

W. F. RICHARDS.
CAR UNDERFRAME.

APPLICATION FILED JAN. 31, 1907.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

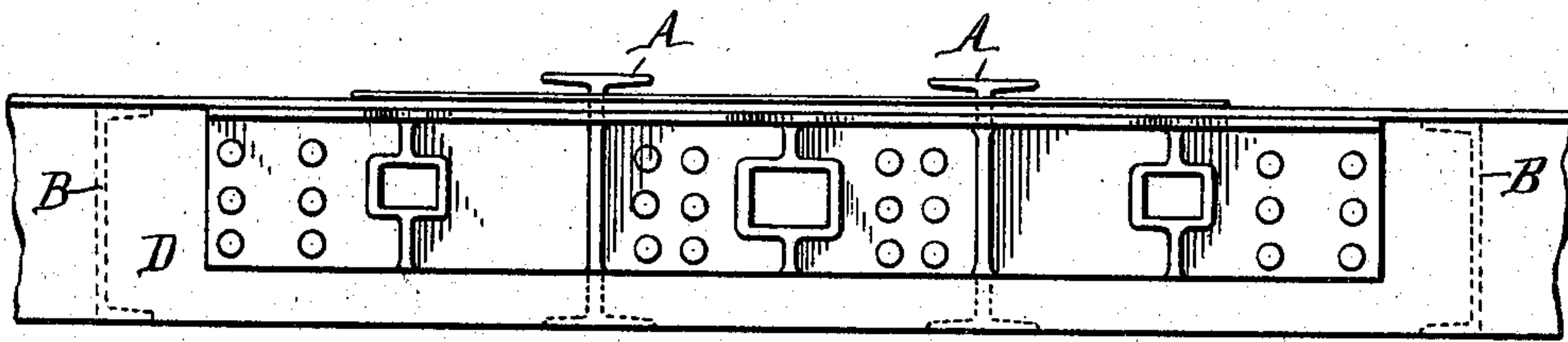


Fig. 4.

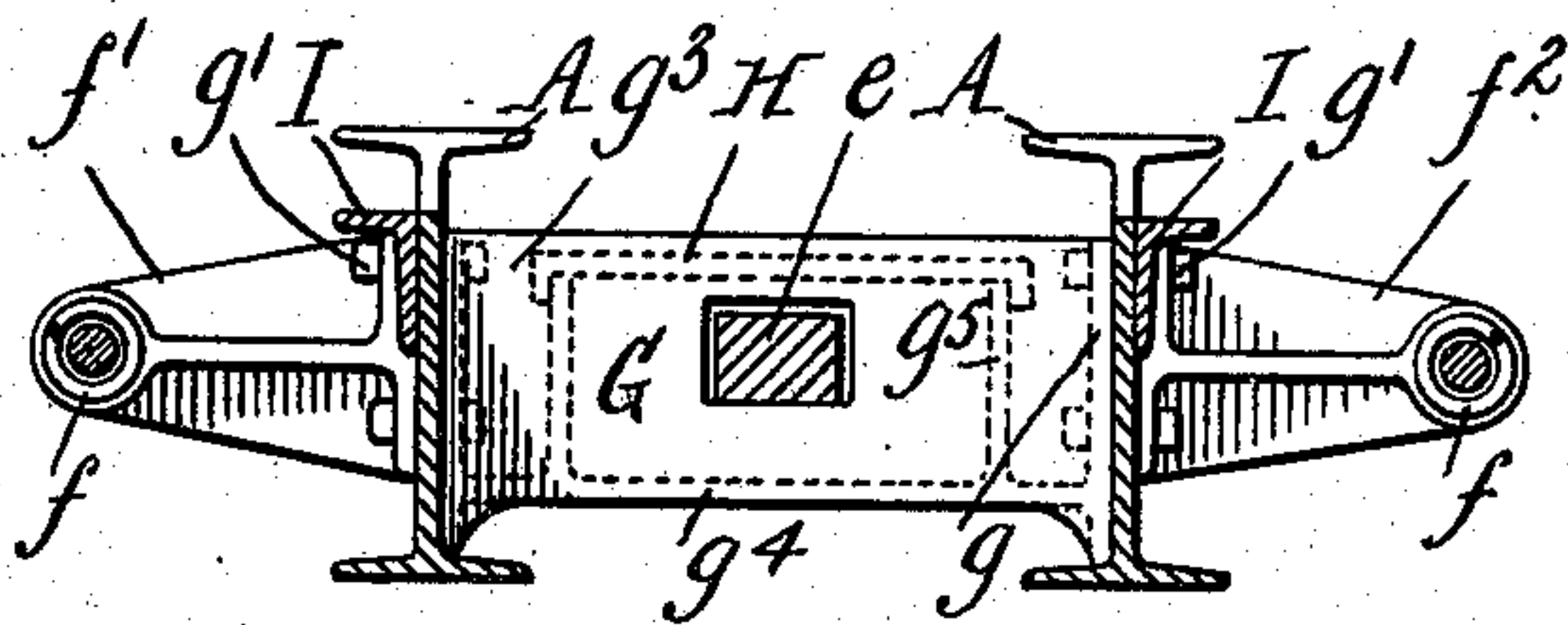
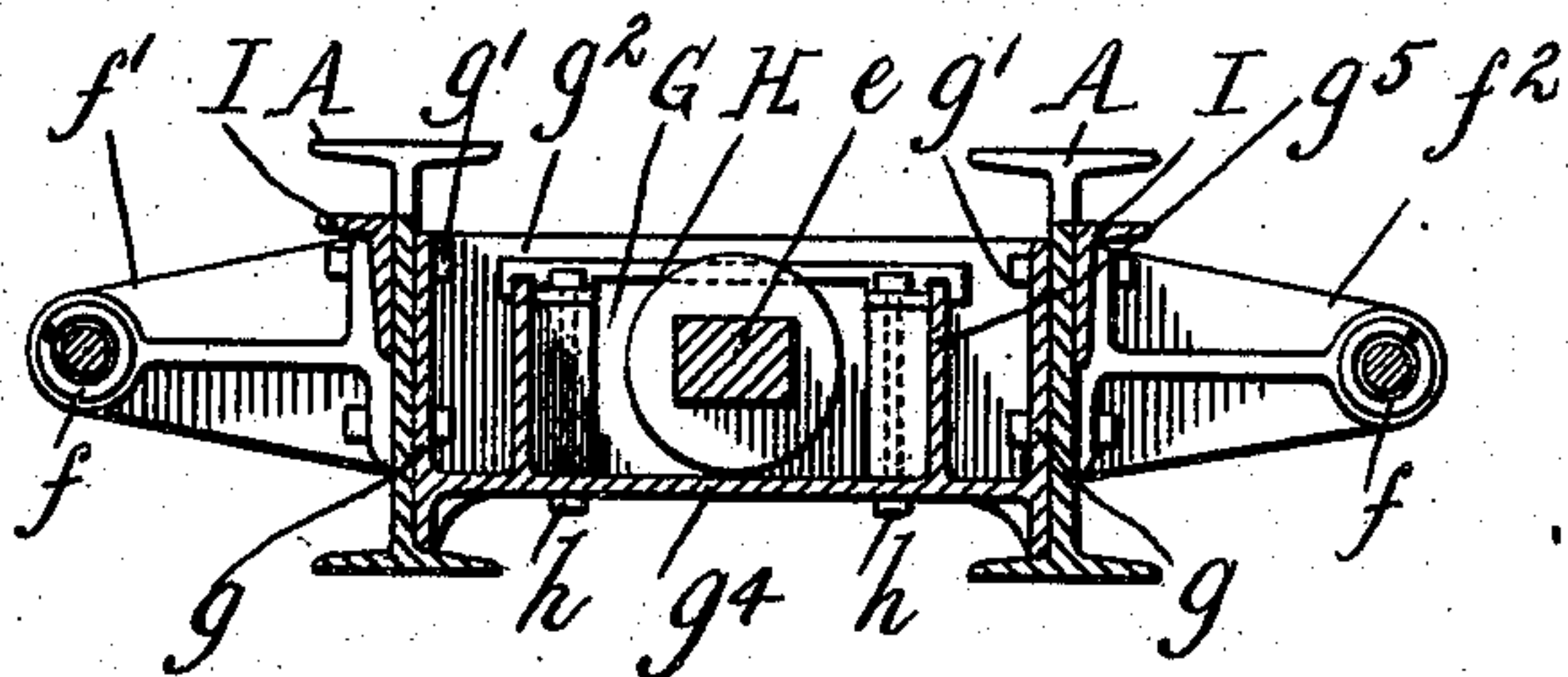


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLARD F. RICHARDS, OF BUFFALO, NEW YORK, ASSIGNOR TO GOULD COUPLER COMPANY,
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CAR-UNDERFRAME.

No. 866,967.

Specification of Letters Patent.

Patented Sept. 24, 1907.

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To all whom it may concern:

Be it known that I, WILLARD F. RICHARDS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Car-Underframes, of which the following is a specification.

This invention relates more especially to metallic under-frames for railway passenger cars in which the buffing gear or resistance mechanism for the car buffer is arranged between and supported by the longitudinal supporting sills or beams of the car platform. The car platform is ordinarily arranged on a lower plane than the floor of the car body, and in order to secure this result if the center sills of the under frame extend continuously to the outer ends of the platforms, the portions thereof which support the platforms must be reduced in height, and where flanged-metal beams are employed for the center sills it is necessary to cut away the upper flanges of the sills, which greatly weakens them and unfits them for withstanding the strains thrown upon them by the buffing gear which they support. This is especially so in the case of buffing mechanisms which produce lateral or sidewise strains in resisting the impacts or shocks on the buffer which are primarily in a longitudinal direction of the car. Such action is true of friction buffers having wedge blocks to resist the longitudinal movement of the buffer by the lateral pressure and consequent friction thereof on cooperating friction surfaces.

The object of this invention is to provide a structure for supporting the buffing gear which will have great strength and rigidity and will prevent the deflection of the longitudinal platform sills under the lateral strains of the buffing gear. To this end a frame or box, preferably an integral casting, is employed between the longitudinal center sills beneath the platform which is firmly fastened to these sills and securely ties them together, at the same time furnishing a containing box or housing for the buffing gear. This gear frame or box is also preferably supplemented by flanged or angle bars arranged longitudinally on the outer sides of the center sills at their upper portions and securely fastened to the sills and said gear frame or box.

In the accompanying drawings, consisting of two sheets: Figure 1 is a fragmentary plan view of one end of a car under-frame and buffing apparatus embodying the invention. Fig. 2 is a longitudinal central sectional elevation thereof. Fig. 3 is an end elevation thereof, omitting the buffer head. Figs. 4 and 5 are transverse sectional elevations thereof in lines 4—4 and 5—5, respectively, Fig. 2.

Like letters of reference refer to like parts in the several figures.

A and B represent, respectively, the two center sills and intermediate longitudinal sills, C the car end sill,

and D the platform end sill of a metallic under-frame or structure for railway passenger cars; E the car buffer head, and F the main buffing gear or resistance mechanism of the buffer.

The sills of the floor frame are constructed, arranged and connected at their joints in the ordinary or any suitable manner, I-beams being employed for the center sills and channel beams for the intermediate longitudinal and cross-sills. The particular flanged shapes employed for the sills, however, are not of consequence so far as the invention is concerned. The center sills, however, which are of greater height between the car end-sills than the other sills, have the upper portions of their webs and upper flanges cut away between the car-end-sill and platform-end-sill, so that the plane of the platform floor will be lower than the floor of the car body.

The buffer head, as usual, is supported by center and side stems e and e' , respectively, which are pivoted to the buffer head and pass through suitable guide bearings on the under-frame. The buffing gear or resistance mechanism acts upon these stems to resist the inward movements of the buffer head and to normally hold the head straight or at right angles to the length of the car while allowing it to assume an oblique position. The buffing gear shown comprises the main friction resistance mechanism F, before mentioned, located between the center sills and cooperating with the central or main buffer stem e , and the usual springs f surrounding the side buffer stems e' between the guide brackets f' f^2 for said side stems.

The main friction mechanism employed is of known construction and it is sufficient for the purpose of this invention to state that it embodies cooperating wedge blocks in frictional contact, one or more of which move with the central buffer stem when it is forced inwardly, thereby creating lateral pressure on the cooperating block or blocks and producing friction which resists the movement of the buffer. This lateral pressure is enormous and must be resisted by the frame or structure supporting the buffer gear.

As already stated, the center sills, between which the friction mechanism is located, are weakened by the removal of their upper flanges and, unless braced, will be sprung or deflected by the lateral pressure of the friction mechanism. The center-sills are therefore braced or tied together in the following manner: G represents a frame, box or housing, preferably made in a single integral casting, which is located in the rectangular space between the center sills and the platform and car end sills. This gear box or frame supports and contains the main or friction resistance mechanism, being made of suitable form for this purpose, depending upon the construction of the resistance mechanism. The gear box or frame illus-

trated rests on the bottom flanges of the center sills, it has side walls g which are securely fastened by bolts or the like g' to the vertical webs of the center sills, upright end walls g^2 g^3 which abut against the car and platform end sills, and a bottom g^4 joining these upright walls. The box also has upright longitudinal and transverse intermediate walls or webs g^5 and g^6 which are located so as to give the requisite strength and rigidity to the box or frame and provide chambers of the proper shape, size and location for the parts of the resistance mechanism. The disposition of these walls or webs will be determined by the construction of the resistance mechanism which is employed. This gear box or frame transmits the shocks due to buffing to the longitudinal and transverse sills of the under-frame but at the same time ties the center sills together, thus preventing any deflection thereof and greatly adding to the strength and rigidity of the platform portion of the structure. A cover plate H is preferably provided for the box or frame G on which it is removably retained by suitable vertical bolts h , Figs. 1 and 5, so as to prevent displacement of the parts of the resistance mechanism but afford ready access thereto. The reduced portions of the center sills are further strengthened by flanged bars I , preferably angle-bars, secured on the outer sides thereof along the upper edges of the beam webs. As shown, these angle bars are secured by the bolts g' used for connecting the center sills and the gear box or frame G . The rear guide brackets f^2 for the buffer side stems are also shown as secured on the outer sides of the center sills by a portion of these same bolts.

The under-frame constructed as described will afford a desirable supporting structure for any friction or other buffing gear which propagates strains in a lateral direction, it being only necessary to alter the shape and size of the box or frame G to adapt it to the particular buffing gear employed. In fact, the

construction would be desirable for any buffer and platform support where great strength and rigidity are essential.

I claim as my invention:

1. In an under-frame for cars, the combination with the car end-sill and platform end-sill, of center-sills having integral portions thereof between said car and platform end-sills reduced in height, and a supporting frame or box for a buffing gear arranged between and rigidly secured to said reduced portions of the center-sills, substantially as set forth.

2. In an under-frame for cars, the combination with the car end-sills, of metal center-sills extending continuously from one end to the other of the under-frame beyond the car end-sills, and a frame or box between and rigidly secured to said center-sills beyond the car end-sills for supporting a buffing gear, substantially as set forth.

3. In an under-frame for cars, the combination with the car end-sills, of metal center-sills extending continuously from one end to the other of the under-frame and having end portions beyond the car end-sills reduced in height, and a frame or box between and rigidly secured to said reduced end portions of the center-sills for supporting a buffing gear, substantially as set forth.

4. In an under-frame for cars, the combination with the car end-sills and the platform end-sills, of metal center-sills extending continuously from one to the other of the platform end-sills and having portions between said car and platform end-sills reduced in height, and a supporting frame or box for a buffing gear between and rigidly secured to said reduced portions of the center-sills and abutting at opposite ends against said car and platform end-sills, substantially as set forth.

5. In an under-frame for cars, the combination with the car end-sill and platform end-sill, of center-sills having integral portions thereof between said car and platform end-sills reduced in height, a supporting frame or box for a buffing gear arranged between and rigidly secured to said reduced portions of the center-sills, and flanged bars rigidly secured on the outer sides of said reduced portions of the center-sills, substantially as set forth.

Witness my hand, this 26th day of January, 1907.

WILLARD F. RICHARDS.

Witnesses:

EDWARD C. HARD,
C. W. PARKER.