

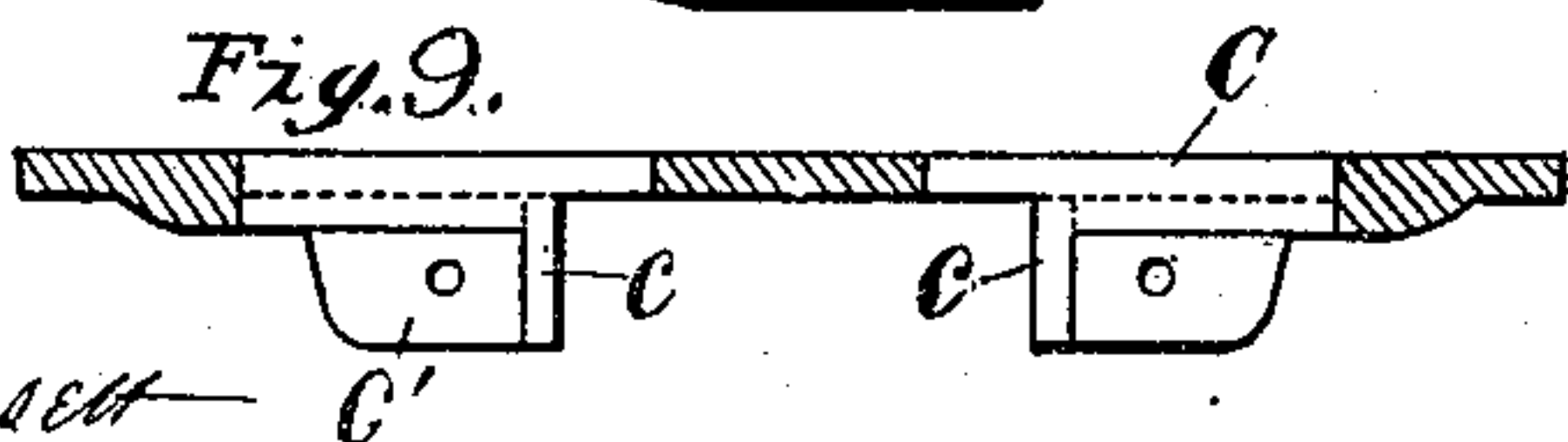
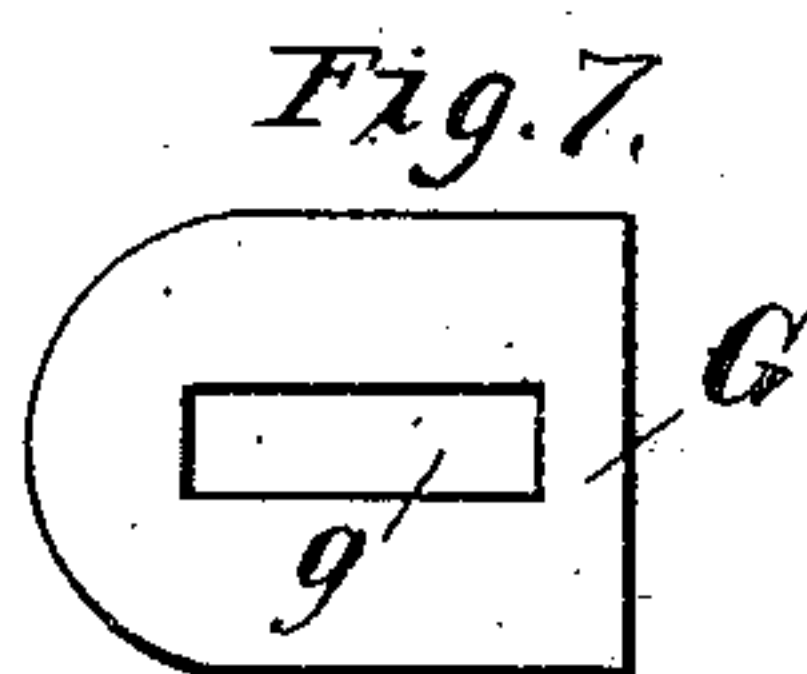
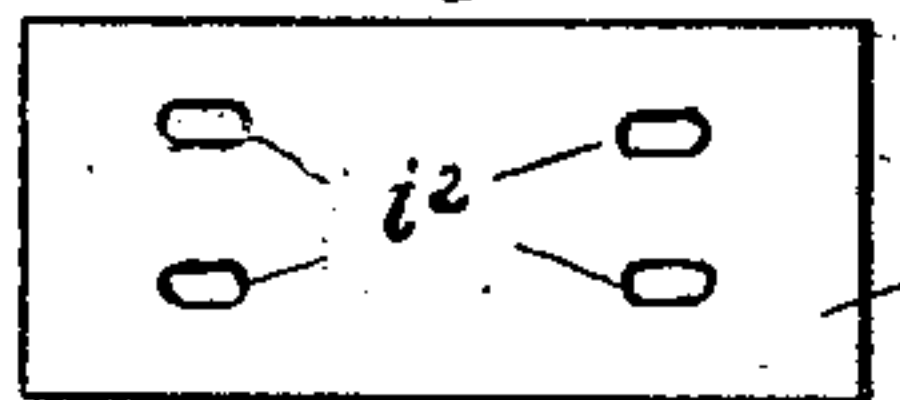
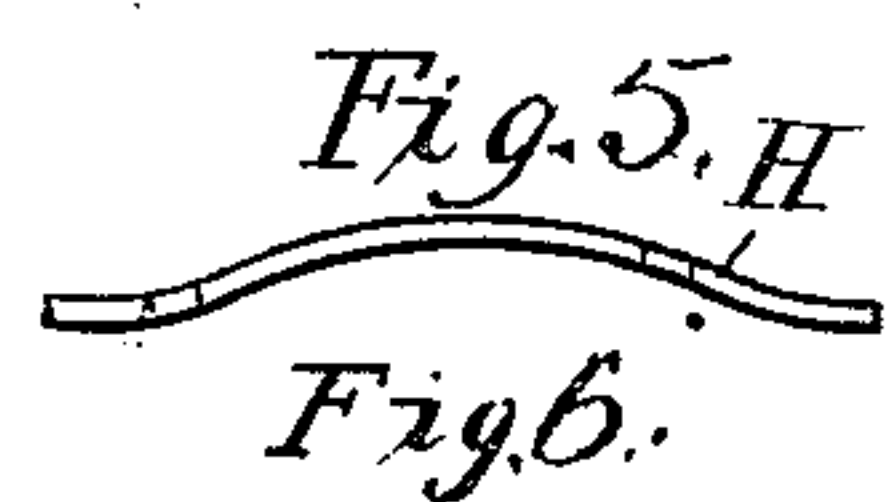
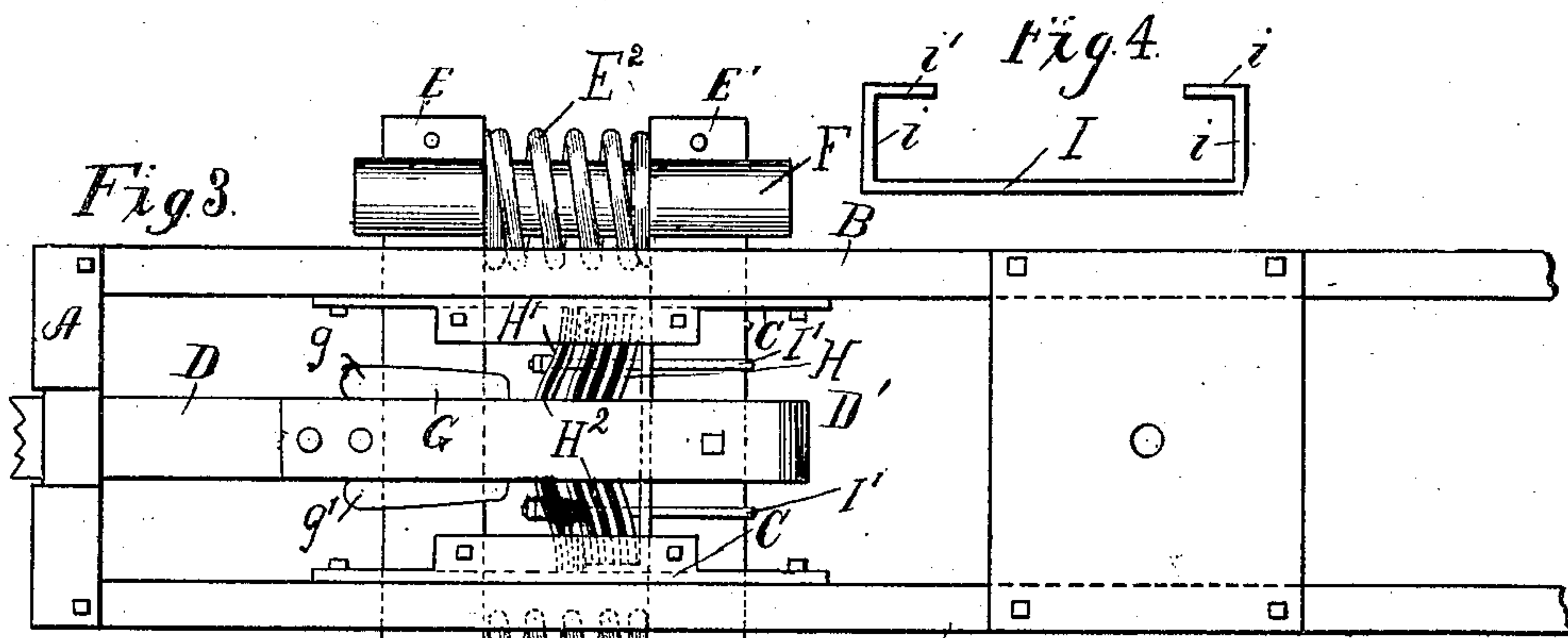
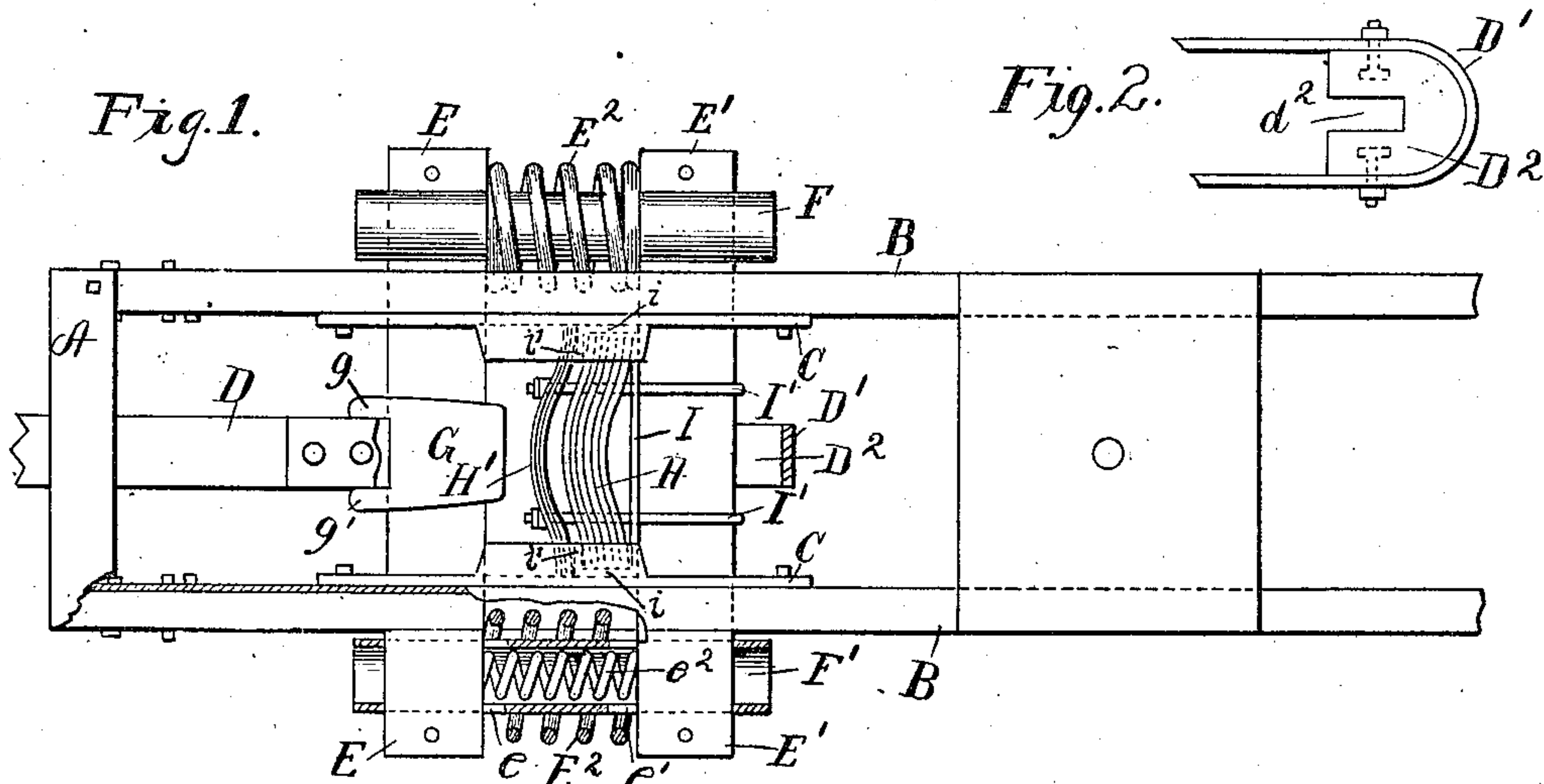
No. 820,012.

PATENTED MAY 8, 1906.

H. C. PRIEBE.

DRAFT GEAR.

APPLICATION FILED SEPT. 15, 1905.



WITNESSES

Chas. F. Bassett

B. A. Schriver

INVENTOR

H. C. Priebe

ATTY.



# UNITED STATES PATENT OFFICE.

HERMAN C. PRIEBE, OF BLUE ISLAND, ILLINOIS.

## DRAFT-GEAR.

No. 820,012.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed September 15, 1905. Serial No. 278,542.

*To all whom it may concern:*

Be it known that I, HERMAN C. PRIEBE, a citizen of the United States, residing at Blue Island, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Draft-Gears, of which the following, taken in connection with the drawings, is a description.

My invention has for its object the production of a draft-gear adapted to be used more particularly upon cars having metal underframing, and is designed to afford different graduations of resistance under the pull and buffing strains in the operation of the cars.

The novel features and advantages of my invention will be hereinafter pointed out in the following description.

In the accompanying drawings, in which I have used like letters of reference to indicate like or corresponding parts, I have illustrated what I now consider the preferred form of my invention.

In the drawings, Figure 1 is a bottom plan view, partly in section, representing the underframing of a car, showing my draft-gear applied thereto. Fig. 2 is a fragmentary view of the draw-bar yoke and rear casting. Fig. 3 is a top plan view of the same, illustrating also the manner of assembling the springs in passenger-car service. Fig. 4 is an edge view of the plate supporting the transverse springs. Figs. 5 and 6 are respectively edge and side views of the transverse springs. Fig. 7 is a side view of the draw-bar casting or centering device. Fig. 8 is an inside elevation of the reinforcing-plate. Fig. 9 is a cross-section of the same, taken on the line 10 10 of Fig. 8 looking in the direction of the arrows. Fig. 10 illustrates the U-bolts holding the transverse springs in line with the follower-bar.

Referring to the drawings, A indicates the end sill of a car of steel construction, and B B longitudinally-extending center sills. The center sills in the construction here shown are steel channel-plates, such as are usually employed in steel-car construction, and form in themselves the draft-sills hereinafter referred to. Riveted or otherwise secured to the inner faces of the draft-sills B B are the reinforcing-plates C C, which may be of any length desired, but preferably as shown in the drawings. Extending through the draft-sills B B and the reinforcing-plates C C are coincident forward slots *b* and rear slots *b'*,

elongated in the longitudinal direction of the draft-sills.

D is a draw-bar, movable in the usual way through the end sill A and provided at the rear end thereof with the yoke D'. Projecting through the forward and rear openings *b b'* in the draft-sills B B and reinforcing-plates C C are the forward and rear follower-bars E E', respectively. These bars E E' extend a suitable distance beyond the channel or draft sills upon opposite sides thereof. Disposed inside of the draw-bar yoke D', at the rear or circular end thereof, is the end casting D<sup>2</sup>, which is provided with an open-ended slot *d*<sup>2</sup>, through which the rear follower-bar E' passes. Supported upon the outer ends of the follower-bars E E' are hollow tubes F F', which tubes are provided with elongated openings *e e'*, through which the follower-bars pass. A coiled spring *e*<sup>2</sup> is arranged inside of each of the tubes F F', and an outer coiled spring E<sup>2</sup> is arranged outside of each of said tubes, the outer coils of each of said springs abutting against the follower-bars E E'. The reinforcing-plates C C are secured to the draft-sills B B and are provided on their inner faces with inwardly-projecting flanges *c c'*. To the flanges *c'* is secured a plate *c*<sup>2</sup>, which, together with the inwardly-projecting flanges *c c'*, provide a frame within which the transverse springs, hereinafter referred to, are supported.

A casting G, having an elongated opening *g*, is supported upon the forward follower-bar E directly in rear of the draw-bar D. Upon opposite sides of the forward end of the casting G are projections *g g'*, which extend upon either side of the shank of the draw-bar. In the operation of the cars any sidewise movement of the draw-bar, such as is often caused by a sudden buffing or pulling strain, more particularly when the cars are rounding curves, is prevented by the projections *g g'* on the casting G, which hold the draw-bar to a center, said casting being sustained at the same time by the follower-bar E.

A plurality of leaf-springs H H' are transversely arranged between the draft-sills B B, the ends of said springs being supported inside of the frame formed by the inwardly-projecting flanges *c c'* and the plate *c*<sup>2</sup>. The springs H are preferably heavier than the springs H' and when assembled as here shown cause greater resistance than the forward springs H'. In passenger-car service,



and more especially upon sleeping - cars, where it is desirable to deaden the noise incident to cars bumping together, &c., I prefer to assemble the transverse springs, as  
 5 illustrated in Fig. 3, by placing between the springs a layer of insulating material  $H^2$ , which may be leather, rubber, paper, or any other material suitable for the purpose.

A plate I (shown in Fig. 4) is disposed in-  
 10 side the yoke  $D'$  and in proximity to the rear follower-bar  $E'$ . The sides  $i i$  of said plate are bent at right angles to the length thereof. The ends  $i' i'$  of said plate are bent inwardly at right angles to the sides and parallel to  
 15 the length thereof. The inwardly-bent ends  $i' i'$  in this instance extend between the transverse springs  $H H'$  and divide said springs into two sets, as shown more clearly in Fig. 1. While this plate I is desirable in the con-  
 20 struction here shown, yet such plate may be entirely dispensed with without sacrificing any of the desirable features of my invention. The springs  $H$  are provided with elongated openings  $i^2$ , Fig. 7. U-bolts  $I'$  are passed  
 25 through these openings  $i^2$  and coincident openings in the plate I and around the rear follower-bar  $E'$ , thereby supporting the transverse springs  $H H'$  in proper position in rear of the centering device  $G$ .

30 In the construction of these gears it has been found practical to utilize the plate I to divide the transverse springs into sets, as shown, or the ends  $i' i'$  thereof may embrace all of the transverse springs, thus dispensing  
 35 entirely with the U-bolts, or the springs may be maintained in position by means of the U-bolts without the plate I. As is obvious, in the construction of the transverse springs I contemplate constructing and assembling  
 40 them either in a plurality of sets or in one set, as best suited for the service to which they are to be applied and the resistance required. I contemplate also using different sizes of transverse springs in the same construction  
 45 where it is desirable to secure a graduated resistance against either the pulling or buffing strain.

The operation is, briefly stated, as follows: With the construction shown in the draw-  
 50 ings the initial buffing strain is received by the forward follower  $E$  and transmitted to the outside cushioning-springs  $E^2$ . As the draw-bar continues to move backwardly the casting or centering device  $G$  comes into con-  
 55 tact with the springs  $H'$ , compressing them until they come into contact with the heavier springs  $H$ , which afford sufficient resistance to take up any strain to which they may be subjected. When the draw-bar is pulled  
 60 forward, the casting  $D^2$ , fitting inside of the yoke of the draw-bar, is brought into contact with the rear follower-bar  $E'$ , which in turn forces the springs  $H$  and  $H'$  against the cast-  
 65 ing  $G$ , which operation has compressed the outside cushioning-springs  $E^2$  against the

forward follower-bar, thereby holding all of the springs under tension, but in reversed position to that occupied upon the buffing strain.

The advantages of my invention will be 70 apparent to those skilled in the art. While I have herein described my construction quite in detail, yet I do not desire to be limited to the precise construction herein shown, as many changes might be made without de- 75 parting from the spirit of my invention, which consists, essentially, in providing a friction-gear so constructed as to afford different graduations of resistance by the arrangement of the outside and inside cushion- 80 ing-springs, the inside springs being assembled either in one set or in a plurality of sets, said sets to be separated by a dividing-plate or by insulating material placed between the springs, as shown, depending upon the serv- 85 ice in which the car is placed.

I claim—

1. In a draft-gear the combination with draft-sills, a draw-bar movable in said sills, cushioning-springs at the rear of and nor- 90 mally out of contact with the draw-bar, said cushioning-springs arranged transversely of the draft-sills, and means for limiting the movement thereof in either direction.

2. In a draft-gear, the combination with 95 draft-sills, a draw-bar movable in said draft-sills, cushioning-springs supported transversely of the draft-sills at the rear of the draw-bar said springs normally out of con- 100 tact with the draw-bar, and insulating material between said cushioning-springs, substantially as described.

3. In a draft-gear, the combination with draft-sills provided with elongated forward and rear openings, a draw-bar movable in 105 said draft-sills, follower-bars extending through the aforesaid openings, and cushioning-springs supported transversely of the draft-sills, substantially as described.

4. In a draft-gear, the combination with 110 the draft-sills having elongated forward and rear openings, a draw-bar movable in said draft-sills, follower-bars extending through the aforesaid openings, and a plurality of sets of cushioning-springs supported transversely 115 of the draft-sills and between the follower-bars, substantially as described.

5. In a draft-gear, the combination with draft-sills having elongated forward and rear openings, a draw-bar movable in said draft- 120 sills, follower-bars extending through the aforesaid openings, coiled springs supported between said follower-bars outside of the draft-sills, and leaf-springs supported in line with the follower-bars upon the inside of the 125 draft-sills, substantially as described.

6. In a draft-gear, the combination with draft-sills having elongated forward and rear openings, a draw-bar and yoke movable in 130 said draft-sills, follower-bars extending



through the aforesaid openings, a plurality of cushioning-springs disposed transversely of the draft-sills, means for separating said cushioning-springs into sets, and U-bolts passing through said cushioning-springs and around the rear follower-bar, substantially as described.

7. In a draft-gear, the combination with the draft-sills forming part of the underframing of a car, a draw-bar and yoke movable in said draft-sills, a reinforcing-plate provided with flanges upon the inner face thereof, coincident elongated openings through said draft-sills and reinforcing-plates, follower-bars extending through said openings, and a plurality of cushioning-springs transversely disposed between said draft-sills and reinforcing-plates, substantially as described.

8. In a draft-gear, the combination with the draft-sills, a draw-bar and yoke movable in said draft-sills, reinforcing-plates secured to the inner faces of said draft-sills, inwardly-projecting flanges upon said reinforcing-plates, coincident openings through said draft-sills and reinforcing-plates, follower-bars extending through said openings, cushioning-springs supported between said follower-bars outside of the draft-sills, and a plurality of sets of cushioning-springs supported transversely of the draft-sills inside of the reinforcing-plates, substantially as described.

9. A draft-gear comprising in combination the draft-sills with reinforcing-plates secured thereto, a draw-bar and yoke movable in said draft-sills, coincident openings through said draft-sills and reinforcing-plates, follower-bars extending through said openings, cushioning-springs supported transversely of the draft-sills, and means for separating said springs into sets, substantially as described.

10. A draft-gear comprising in combination draft-sills with reinforcing-plates secured thereto, a draw-bar and yoke movable therein, coincident openings through said draft-sills and reinforcing-plates, follower-bars extending through said openings, a plurality of sets of cushioning-springs supported transversely of the draft-sills, and insulating material between the aforesaid springs, substantially as described.

11. A draft-gear comprising in combination the draft-sills and reinforcing-plates secured thereto, a draw-bar and yoke movable therein, inwardly-projecting flanges upon said reinforcing-plates, coincident openings through said plates and draft-sills, follower-bars extending through said openings, cushioning-springs supported between said follower-bars outside of the draft-sills, a plurality of sets of cushioning-springs supported

transversely of the draft-sills and inside of the reinforcing-plates, and means for holding said transverse springs in line with the rear follower-bar, substantially as described.

12. A draft-gear comprising channel-shaped draft-sills, a draw-bar and yoke movable in said sills, reinforcing-plates upon the inside of said draft-sills, inwardly-projecting flanges upon said reinforcing-plates, cushioning-springs transversely disposed between said reinforcing-plates and means for limiting the movement of said cushioning-springs and normally out of contact with the draw-bar, the end of said springs supported by the aforesaid inwardly-projecting flanges, substantially as described.

13. A draft-gear comprising channel-shaped draft-sills, a draw-bar and yoke movable in said sills, reinforcing-plates upon the inside of said draft-sills, inwardly-projecting flanges upon said reinforcing-plates, cushioning-springs transversely disposed between said reinforcing-plates and normally out of contact with the draw-bar, the ends of said springs supported by the aforesaid flanges, and insulating material between the aforesaid transverse cushioning-springs, substantially as described.

14. In a draft-gear comprising channel-shaped draft-sills, a draw-bar and yoke movable therein, reinforcing-plates upon the inside of the draft-sills, inwardly-projecting flanges upon said reinforcing-plates, coincident openings through said plates and draft-sills, follower-bars extending through said openings, a draw-bar-centering device supported upon the forward follower-bar, transverse cushioning-springs supported between said reinforcing-plates, and means for maintaining said cushioning-springs in line with the rear follower-bar, substantially as described.

15. A draft-gear comprising draft-sills having elongated forward and rear openings, a draw-bar and yoke movable in said draft-sills, follower-bars extending through the aforesaid openings, a draw-bar-centering device supported upon the forward follower-bar, springs transversely disposed between said draft-sills inside of the aforesaid yoke, and U-bolts passing through said cushioning-springs and around the rear follower-bar, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HERMAN C. PRIEBE.

Witnesses:

JENNIE L. FISKE,  
C. A. SCHRIVER.