

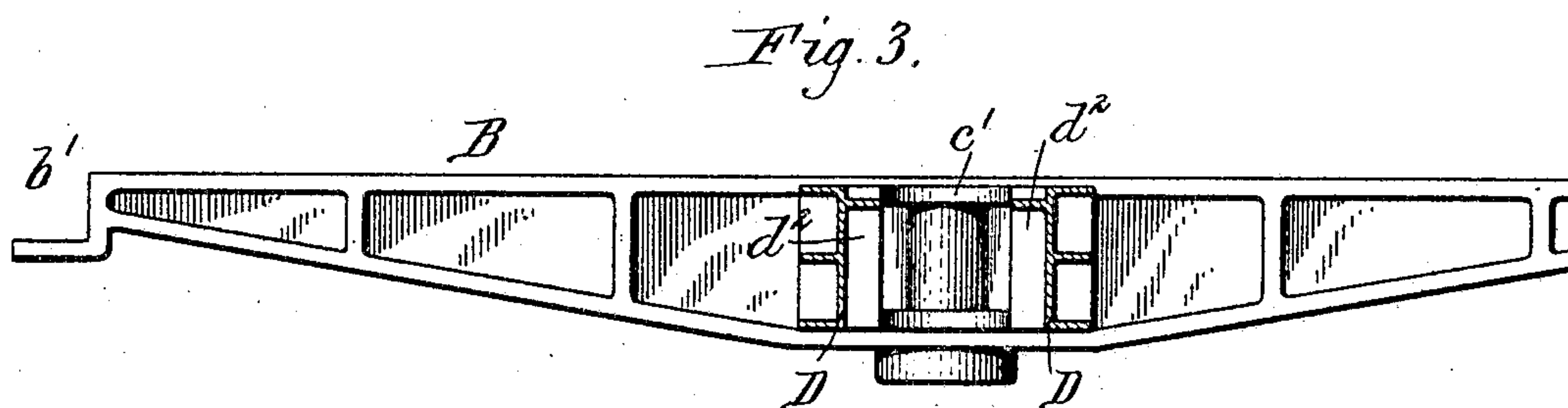
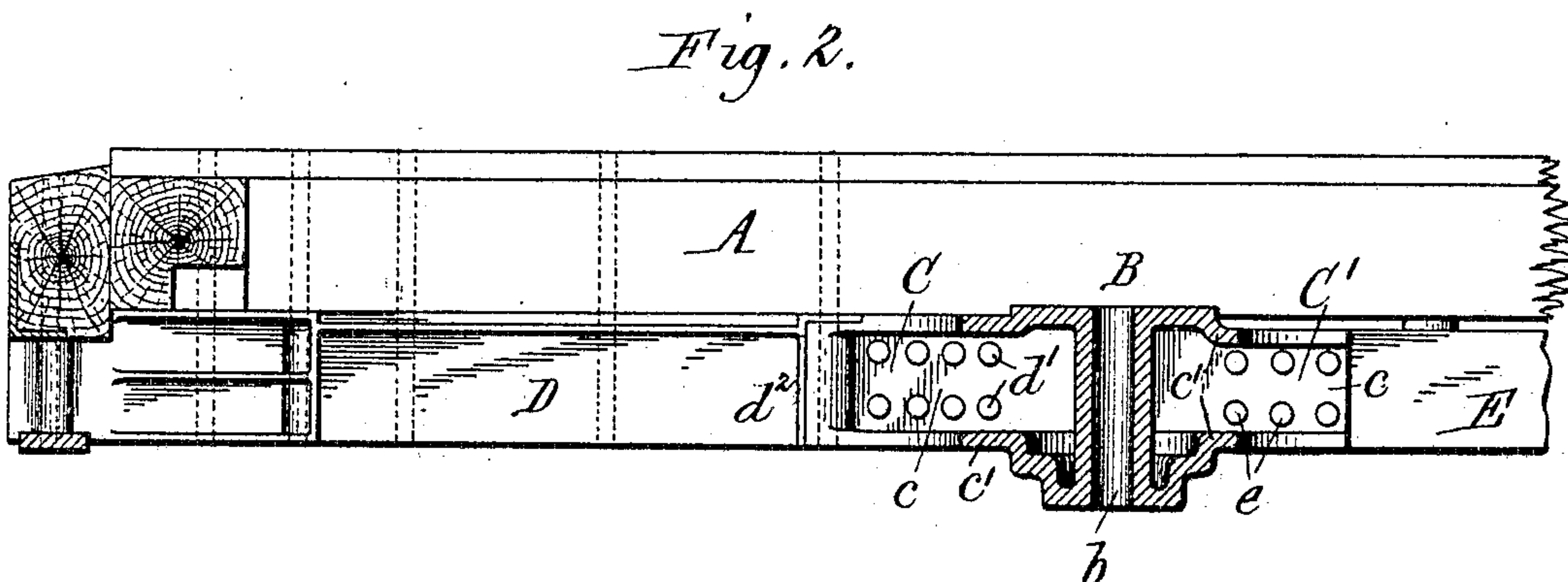
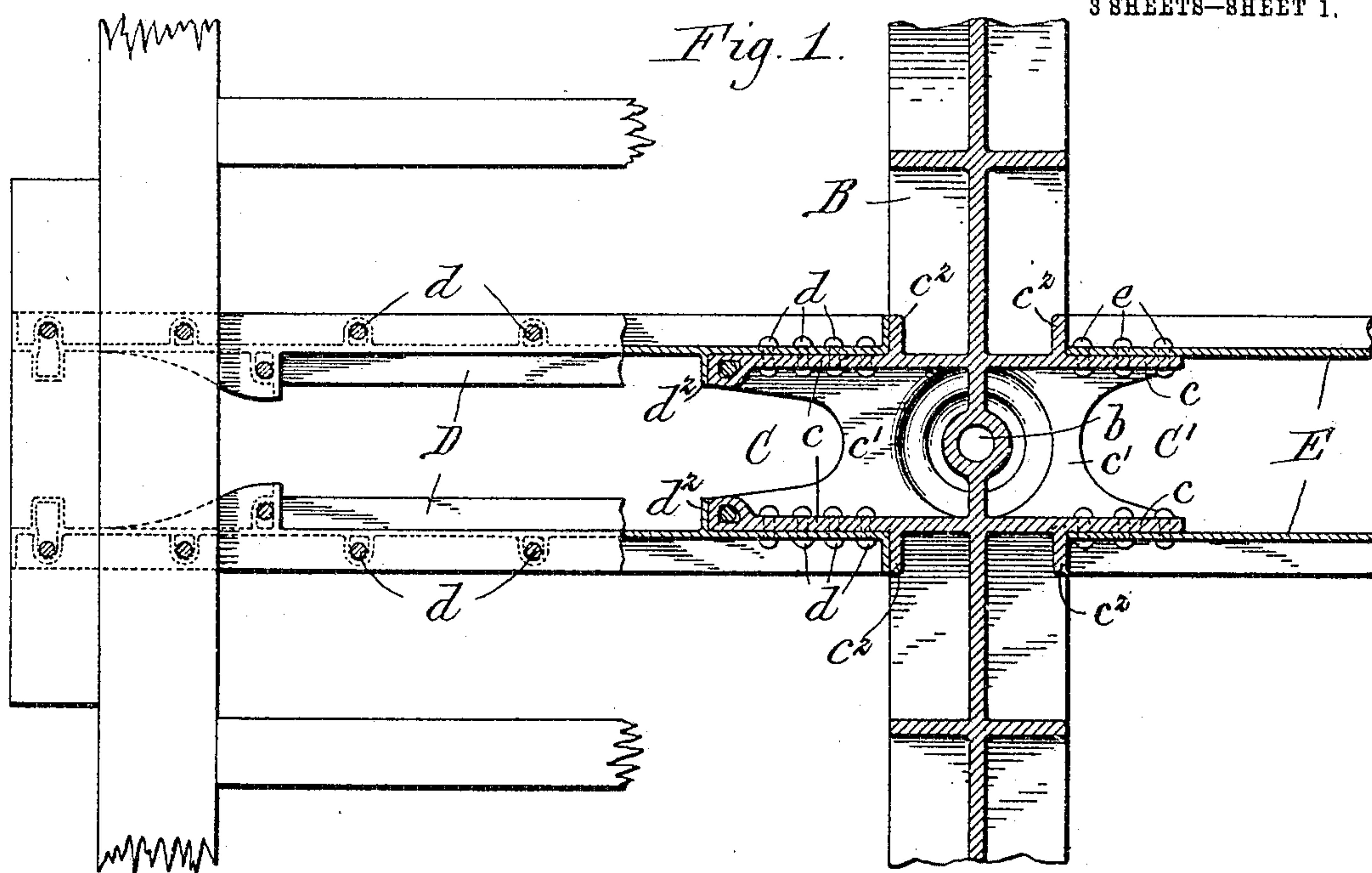
No. 788,125.

PATENTED APR. 25, 1905.

H. H. VAUGHAN.
CAR STRUCTURE AND BOLSTER.

APPLICATION FILED DEC. 9, 1903.

3 SHEETS—SHEET 1.

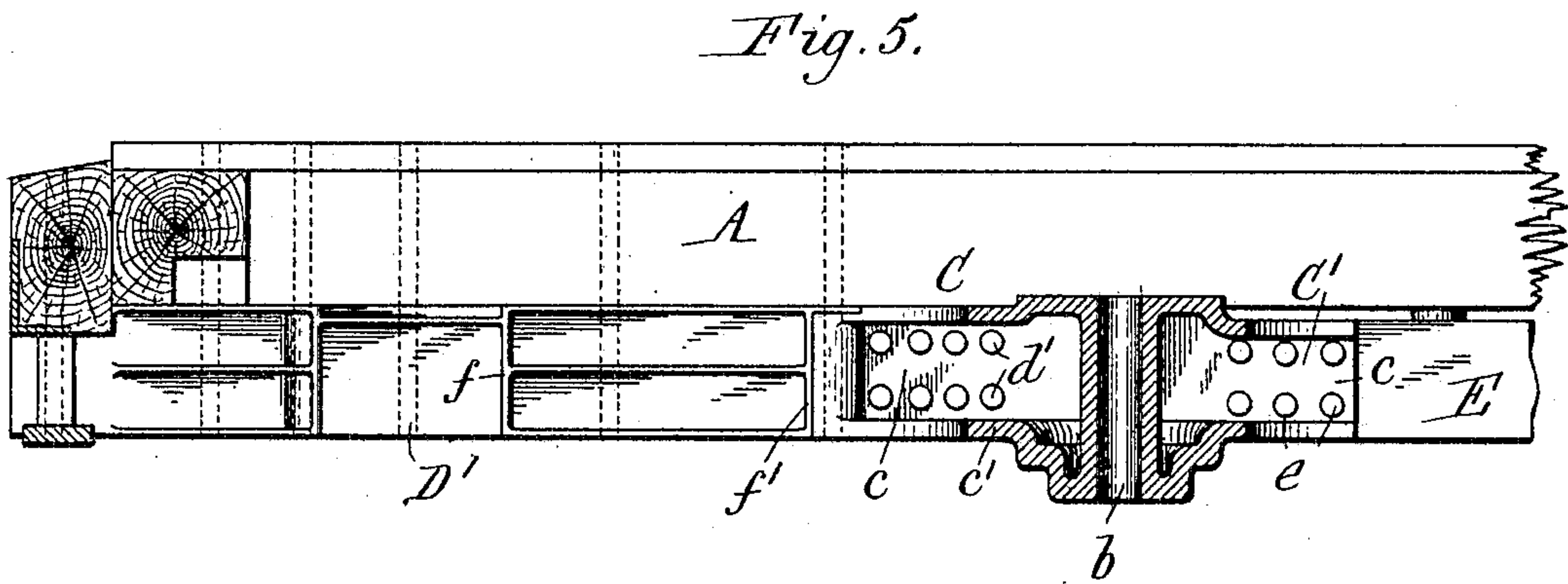
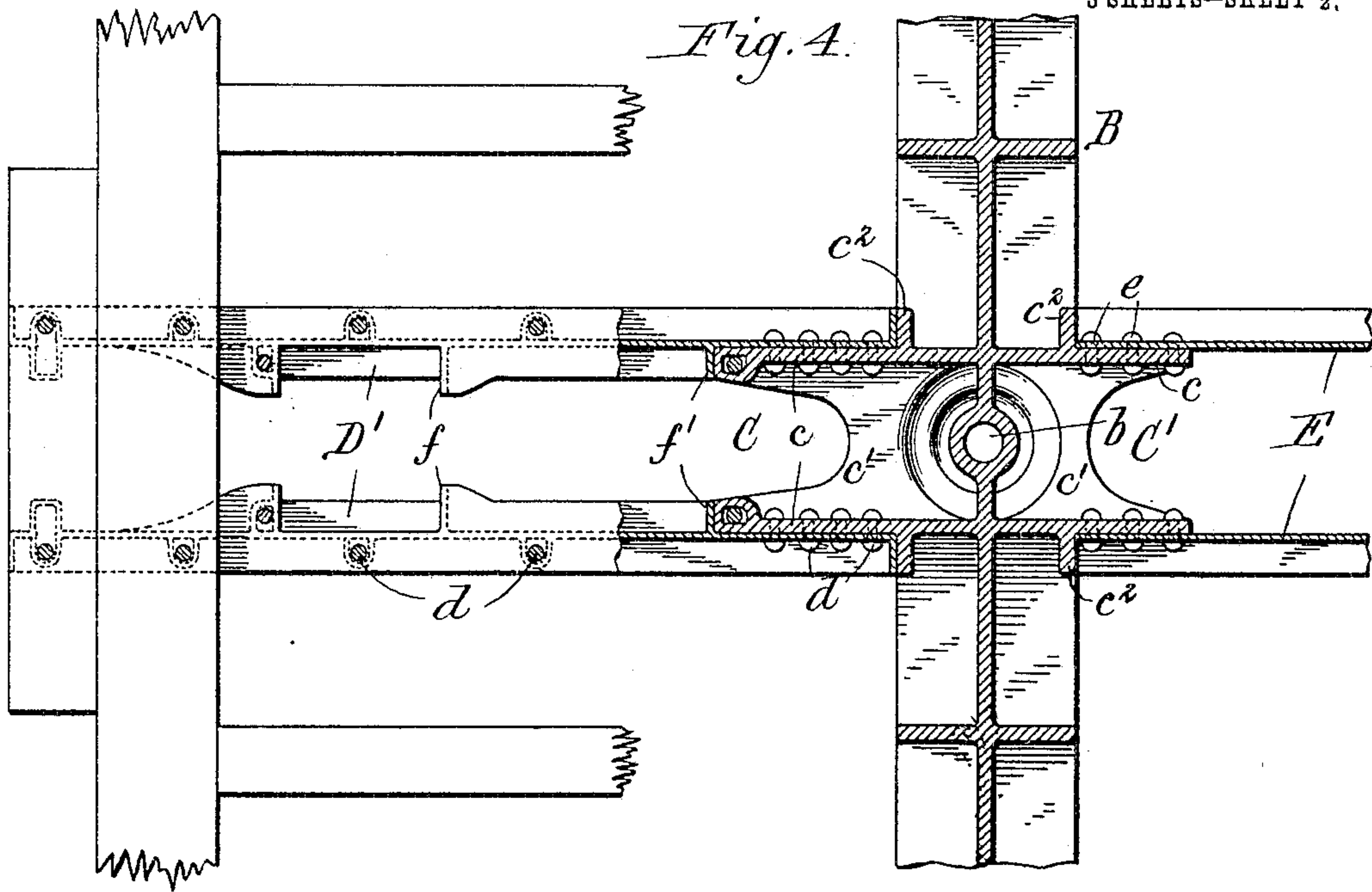


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3 SHEETS—SHEET 2.



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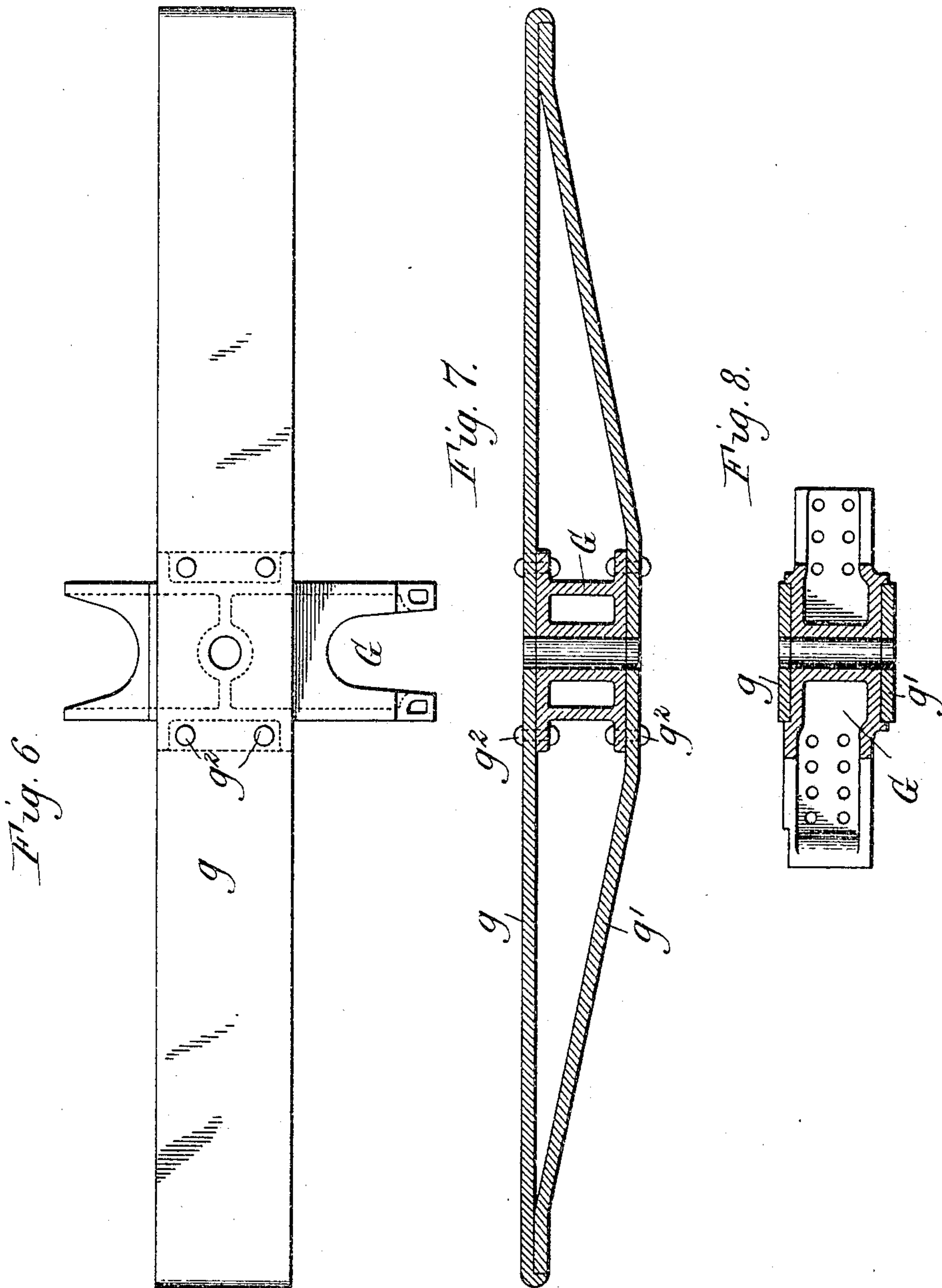
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

HENRY H. VAUGHAN, OF CLEVELAND, OHIO.

CAR STRUCTURE AND BOLSTER.

SPECIFICATION forming part of Letters Patent No. 788,125, dated April 25, 1905.

Application filed December 9, 1903. Serial No. 184,369.

To all whom it may concern:

Be it known that I, HENRY H. VAUGHAN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Car Structures and Bolsters, of which the following is a specification.

This invention relates more particularly to a substructure or draft and buffing frame for railway-cars and a car-bolster.

In car constructions the draft and buffing gears are generally carried by draft-beams which are connected to the longitudinal sills of the car, and these connections are ordinarily relied upon to resist a large part, if not all, of the severe draft strains and buffing shocks to which the car is subjected in use. As a consequence the draft-beams or their connections with the car-frame are broken or strained.

One object of this invention is to provide a substructure or draft and buffing frame in which the draft-sills are connected to the car-body bolsters in such a manner that the bolsters rigidly brace the draft-beams and constitute strong abutments to receive and transmit the draft and buffing strains and shocks.

Another object is to provide a strong rigid substructure or frame, comprising the body-bolsters, draft-beams, and connecting-beams, which will transmit the strains and shocks from one draft and buffing gear to the other, thereby largely or entirely relieving the car-frame.

A further object of the invention is to provide a car structure in which the draft-beams are rigidly and securely attached to the body-bolsters in such manner that they can be readily removed and replaced separately without disturbing the bolsters or removing any part of the latter.

In the accompanying drawings, consisting of three sheets, Figure 1 is a fragmentary view, partly in plan and partly in horizontal section, showing a portion of one end of a structure or frame embodying the invention. Fig. 2 is a central longitudinal vertical section thereof. Fig. 3 is a transverse vertical sectional elevation of the bolster and draft-beams. Fig. 4 is a view similar to Fig. 1,

showing a slightly different construction. Fig. 5 is a central longitudinal vertical section of the construction shown in Fig. 4. Fig. 6 is a plan view of a bolster of modified form. Figs. 7 and 8 are respectively a longitudinal and transverse vertical section of the bolster shown in Fig. 6.

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

The floor-frame, a portion of which is shown in the drawings, may be of the usual or any suitable construction and includes the usual center sills A.

B represents one of the transverse body-bolsters, which are arranged over the trucks and extend transversely beneath the longitudinal car-sills. In the construction shown in Figs. 1 to 5 the bolster is of the cast-steel type and is provided centrally with the vertical king-bolt hole *b* and at its ends with seats *b'*, Fig. 3, for the side sills of the car.

The bolster is provided with attaching portions or lugs C C', which project longitudinally of the car from opposite sides of the central portion of the bolster and are preferably cast integrally therewith. The attaching-lugs are cored out for the sake of lightness, having vertical side walls *c* and upper and lower horizontal connecting and strengthening webs *c'*. Each lug is preferably provided at opposite sides with laterally-projecting vertical ribs or abutments *c''*, Figs. 1 and 4.

D represents the draft-beams, which extend from the bolster toward the adjacent end of the car. They may be of any usual or suitable construction adapting them to the type of draft-gear employed. The draft-beams are arranged beneath the center sills of the car, to which they are preferably connected by vertical bolts *d*, with their inner ends rigidly secured to the outwardly-projecting lug C of the bolster, preferably as follows: The draft-beams extend outside of and beside the vertical side walls of the lug to which they are connected by rivets or the like *d'*, and their inner ends abut against the lateral abutments *c''* on the lug. The draft-beams shown in the drawings are provided on their inner sides with projections *d''*, forming stops or abutments for the usual movable followers of the

draft and buffing gear. (Not shown.) The stops d^2 for the inner or rear follower of the draft-gear in the construction shown in Figs. 1 and 3 bear directly against the front end of the outwardly-projecting lug on the bolster, which thus backs up and braces the stops on the draft-beams and prevents the breaking of said stops. Manifestly the stop projections d^2 can be omitted, in which case the vertical outer end portions of the bolster-lug itself constitute the abutments for the rear follower of the draft-rigging. In either case the bolster-lug takes the buffing shocks and relieves the attaching devices for the draft-beams. The draft-beams are held rigidly from inward thrust or movement when buffing by the engagement of their inner ends with the abutments c^2 on the bolster-lug, and the bolts d and rivets d' , connecting the draft-beams to the center sills and lug of the bolster, are relieved from strain and shear.

The inwardly-projecting attaching-lugs C' of the two bolsters at the opposite ends of the car are connected by longitudinally-abutting beams or members E , portions of which are shown in the drawings. These connecting or abutting beams are preferably arranged in alinement with the draft-beams, with their ends at opposite sides of the inwardly-projecting bolster-lugs, to which they are secured by rivets or the like e . The ends of the connecting-beams abut against the laterally-projecting vertical ribs c^2 on the bolster-lugs, which relieve the rivets e from shear when buffing. The connecting or abutting beams rigidly connect the two bolsters and transmit the draft and buffing strains and shocks from one to the other of the bolsters. The connecting-beams may be of channel or other suitable form.

The construction shown in Figs. 4 and 5 is the same as that above described except that the draft-beams D' shown are intended for use with draft-gear in which the movable followers are arranged nearer together. As the stops or abutments f for the rear follower are located too far from the bolster to abut directly against the bolster-lug without unduly lengthening the lug, the draft-beams D' are provided with additional abutments f' , which bear directly against the end of the bolster-lug.

While the drawings show draft-beams cast with integral stops or abutments, it will be understood that the abutments may be omitted, as above explained, or beams of other form may be employed, having stops or abutments riveted or otherwise secured thereto.

As shown in Figs. 1 to 5, the entire bolster and attaching-lugs are formed in one integral part or casting. The bolster may, however, be differently constructed and produce good results. For instance, in Figs. 6 to 8 the bolster is of truss form, consisting of a central casting G , having the attaching-lugs for the

draft and connecting beams formed therewith, and upper and lower truss-chords g g' , joined at their ends and connected centrally to the upper and lower portions of the casting by rivets or the like g^2 , passing through the chords and laterally-projecting flanges on the central casting.

Should one of the draft-beams of a car equipped with the described improvement become broken or otherwise injured, it may be readily replaced by a new beam by merely removing the fastening devices connecting the beam with the bolster-lug and car-sill and securing the new beam in place. The fixed relation of the bolsters, connecting-beams, and uninjured draft-beams need not be disturbed, as it is not necessary to remove the bolster or any part thereof to replace the broken beam.

I claim as my invention—

1. In a car structure, the combination of a bolster, a lug rigidly connected to and projecting from the bolster in a direction longitudinally of the car, draft-beams secured to said lug, and parts on said draft-beams which abut against lateral portions of said lug, substantially as set forth.

2. In a car structure, the combination of a bolster, a lug rigidly connected to and extending from the bolster in a direction longitudinally of the car, and draft-beams secured to said lug, said lug projecting between the beams to provide a rigid abutment of the buffing-gear, and having at opposite sides lateral abutments for the inner ends of said draft-beams, substantially as set forth.

3. In a car structure, the combination of a bolster, a lug rigidly connected to and extending from the bolster in a direction longitudinally of the car, draft-beams secured to the outer sides of said lug and having on their inner sides projections which abut against the end of said lug, and said lug having at opposite sides lateral abutments for the inner ends of said draft-beams, substantially as set forth.

4. In a car structure, the combination of a bolster, rigid lugs projecting from opposite sides of said bolster in a direction longitudinally of the car, draft-beams secured to the lug on one side of said bolster, and abutting beams secured to the lug on the other side of the bolster, said draft-beams having parts which abut against lateral portions of said lugs, substantially as set forth.

5. In a car structure, the combination of bolsters each provided with lugs projecting outwardly and inwardly therefrom in a direction longitudinally of the car, draft-beams secured to said outwardly-projecting lugs, and abutting beams secured to said inwardly-projecting lugs of the bolsters, said inwardly-projecting lugs having lateral abutments for the ends of said abutting beams, substantially as set forth.

6. As an article of manufacture, a bolster provided with rigid lugs integral with the cen-

tral portion of the bolster and which project
from the opposite sides of the bolster in a di-
rection longitudinally of the car to which the
bolster is applied, for the attachment of draft
5 and abutting beams, said lugs having lateral
abutments for parts of the draft and abutting
beams, substantially as set forth.

Witness my hand this 28th day of Novem-
ber, 1903.

HENRY H. VAUGHAN.

Witnesses:

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