

No. 867,720.

PATENTED OCT. 8, 1907.

G. L. HARVEY.  
DRAFT RIGGING.

APPLICATION FILED DEC. 20, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

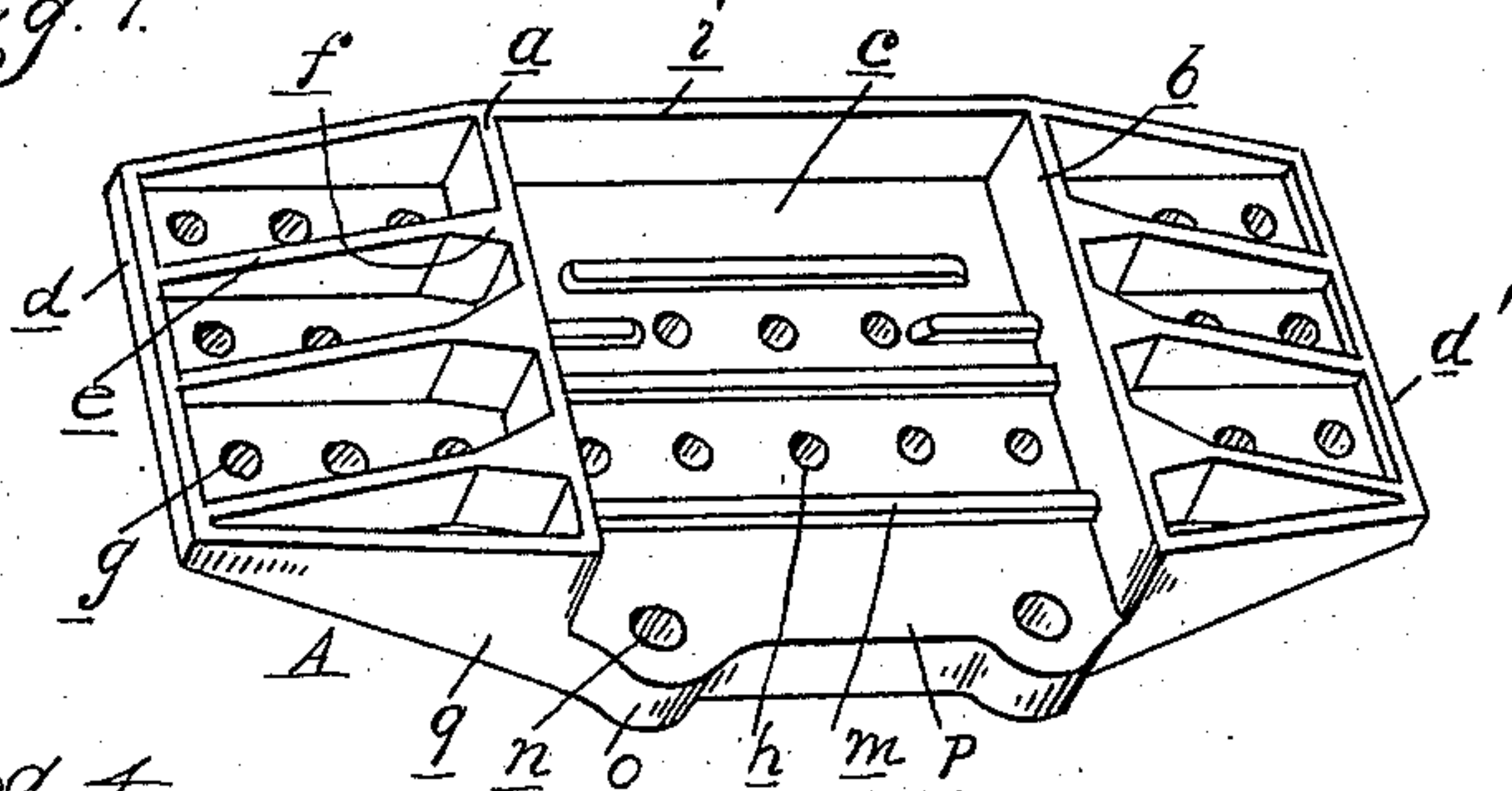


Fig. 4.

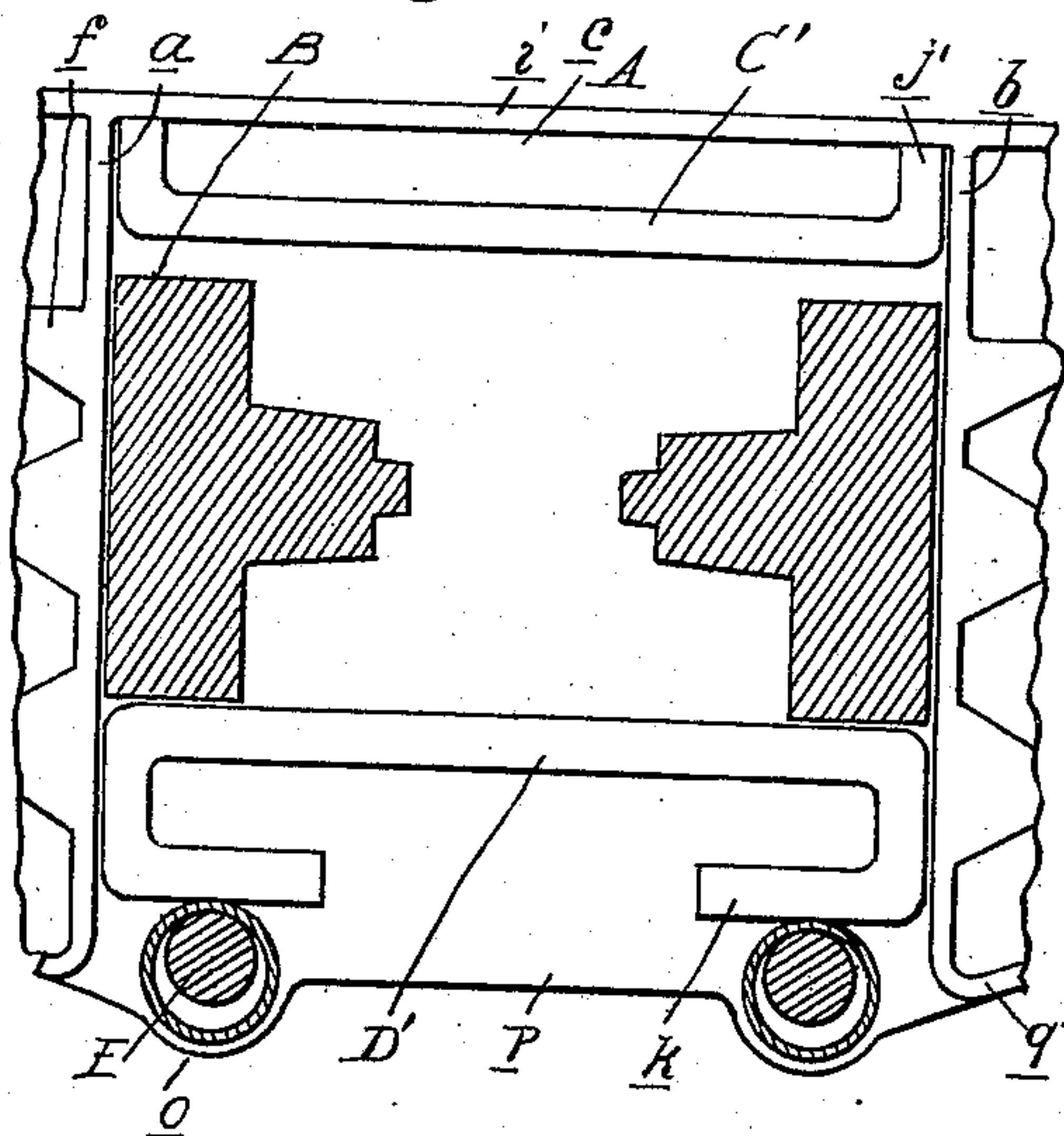


Fig. 5.

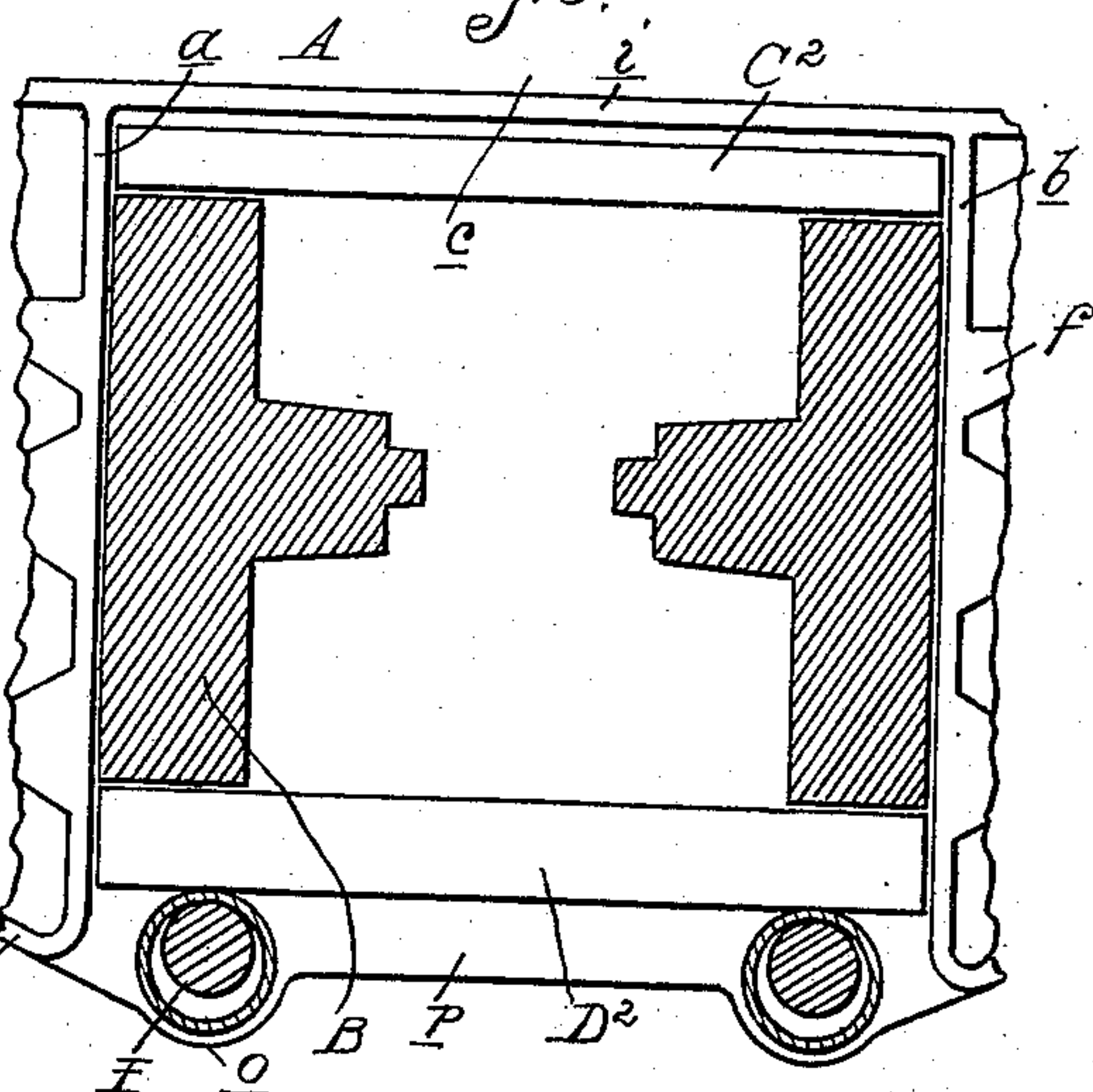
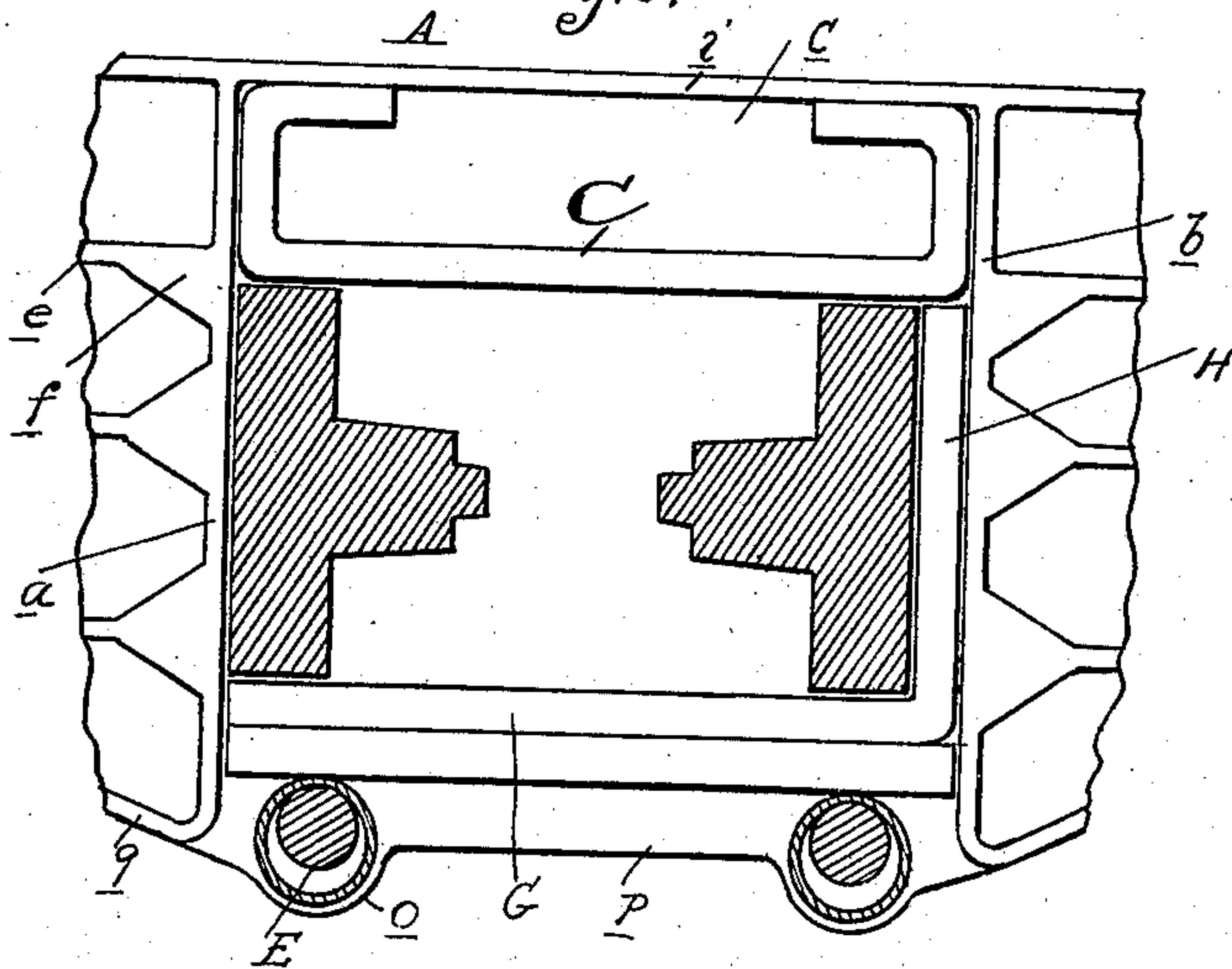


Fig. 6.



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2 SHEETS—SHEET 2.

Fig. 3.

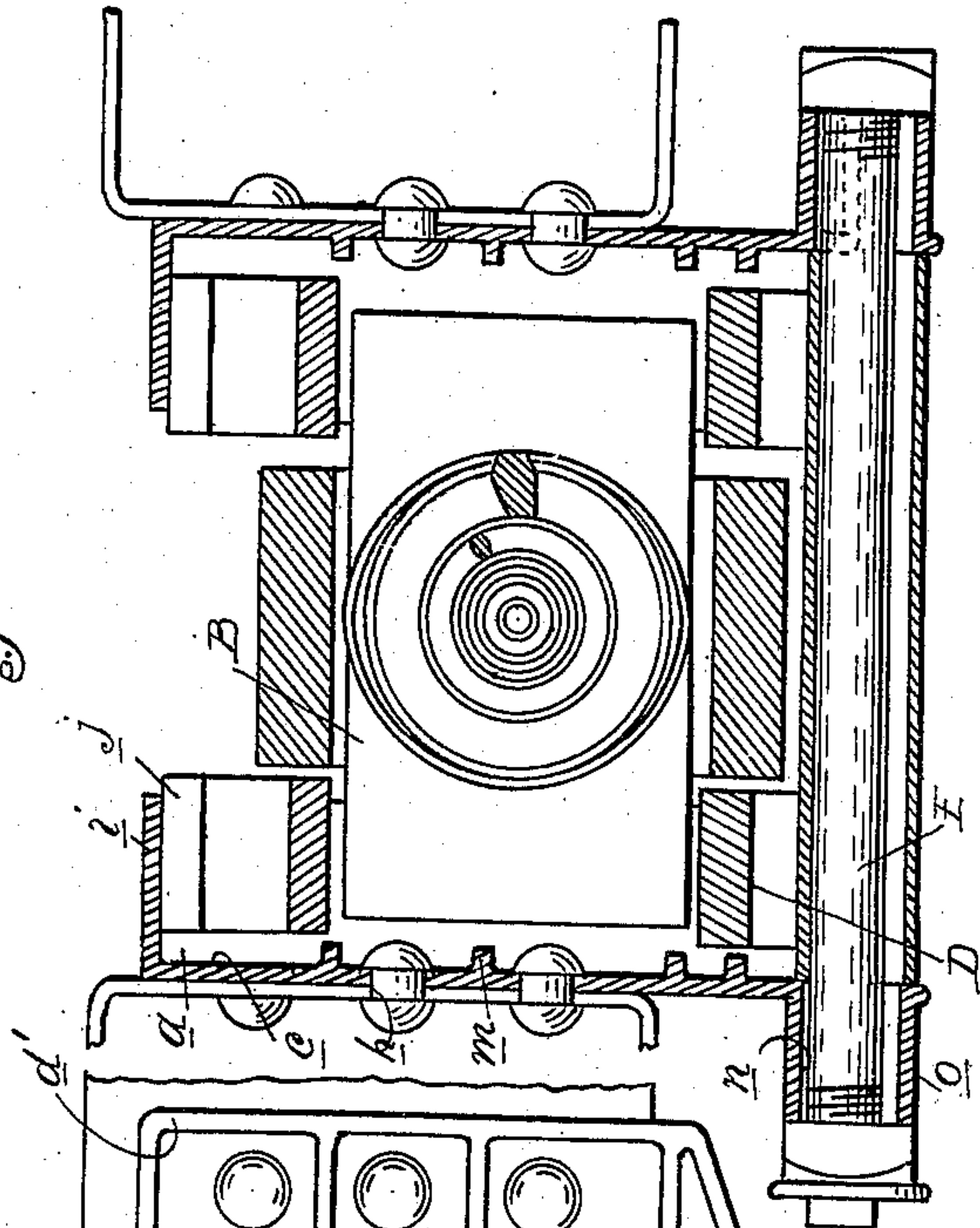
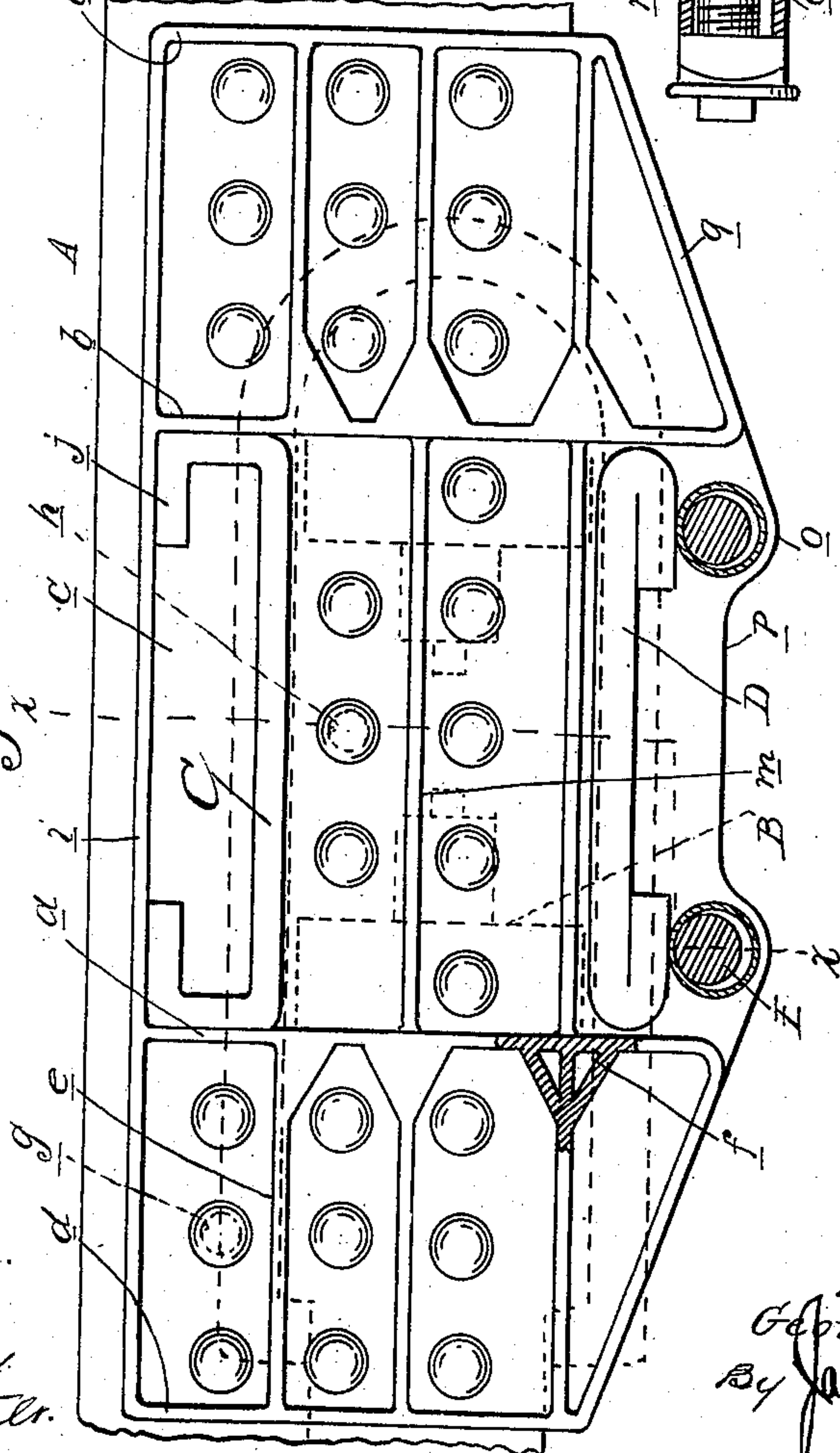


Fig. 2.



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# UNITED STATES PATENT OFFICE.

GEORGE LYON HARVEY, OF CHICAGO, ILLINOIS.

## DRAFT-RIGGING.

No. 867,720.

Specification of Letters Patent.

Patented Oct. 8, 1907.

Application filed December 20, 1905. Serial No. 292,569.

*To all whom it may concern:*

Be it known that I, GEORGE LYON HARVEY, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Draft-Rigging, of which the following is a specification, reference being had therein to the accompanying drawings.

In the present state of the art, there is a considerable range of variation in the construction of the framework of railway cars, which necessitates variation in the construction of the draft rigging. In particular, there are variations in the depth of the sills and also in the height of the floor above the rails and, inasmuch as the center line of draft is a standard height above the rails, the same construction of rigging cannot be used with these various constructions of cars. Moreover, the depth or thickness of draft bars used is varied.

It is one of the objects of the present invention to obtain a construction of draft rigging which is capable of use on any of the various car constructions and may be easily and quickly adjusted to any particular construction, so as to position the draw-bar at standard height.

To this end, the invention consists in the peculiar construction of a cheek-plate; and further in the peculiar construction, arrangement and combination of associated parts, as hereinafter set forth.

In the drawings, Figure 1 is a perspective view of the cheek-plate; Fig. 2 is a side elevation thereof as attached to the sill of a car, illustrating one adjustment of the guides for the draft bar and indicating the position of the latter in dotted lines; Fig. 3 is a cross section on line  $x-x$ , Fig. 2; Fig. 4 is a view similar to Fig. 2, illustrating a modified adjustment of the guides; and Figs. 5 and 6 are similar views, showing still other modifications.

In carrying out my invention I employ a construction of cheek-plate having both the forward and rear stops or abutments for the draft springs formed integral therewith. This plate is further made of such a height as to be suitable for use with draw-bars of maximum thickness and have the greatest range of adjustment of the center line of draft relative to the sills or floor of a car.

In detail, A is the cheek-plate having the separated vertically-extending stops  $a$   $b$  forming between the same a well or pocket  $c$ .  $d$   $d'$  are extensions of the plate beyond this abutment at opposite ends, and  $e$  are reinforcing webs or flanges for the abutments extending longitudinally of the extensions  $d$   $d'$  and suitably spaced from each other. I preferably employ three of these strengthening webs and taper the same from the height of the abutment at their inner ends to near the surface of the plate at their outer ends. To still further reinforce the abutment, I preferably pro-

vide diagonal bracing webs  $f$  extending between the webs  $e$  and the abutments. The spaces between the webs  $e$  have formed therein series of apertures  $g$  for the rivets or bolts which secure the plate to the sill and further securing means is provided by forming series of apertures  $h$  in the portion of the plate extending between the two stops  $a$   $b$ . Thus, a very large number of rivets or bolts may be used and the plate securely attached to the sill without danger of shearing its connections. The usual followers or spring abutments B of the draft bar extend into the pocket  $c$  and, as has been stated, this pocket is of sufficient depth to receive the abutments of the maximum thickness of draw-bar and also to provide a range of vertical adjustment thereof relative to the sills or floor of the car. To hold these cross bars in position and to guide them during their longitudinal movement, when the draft spring is under compression guides are provided and these guides are adjustable in position, so as to bring the center line of draft at standard height, the construction being as follows:—

$i$  is a horizontal flange or stop extending longitudinally of the plate at its upper edge between the stops  $a$   $b$ . This flange may, under certain conditions, directly form the guide for the upper edge of the follower but, where this would not bring the proper positioning of the draft bar, a detachable guide is placed beneath this flange in the pocket  $c$ . As illustrated in Figs. 2 and 3, the guide is formed of a bar C which extends between the stops  $a$   $b$  and is bent to form upwardly-extending spacing flanges  $j$ . These guides are carried by the tops of the followers and between the stops  $a$   $b$ . The construction illustrated in these figures also shows a lower guide D for the follower, which is formed of a bar having its ends return-bent and resting upon the cross bolts E which connect the cheek-plates on opposite sides of the draft bar. Both of these guides C D form in effect filling blocks which diminish the size of the pocket  $c$  so as to be suitable for the thickness of the draft bar.

In Fig. 4, a construction is illustrated in which the center line of draft relative to the cheek-plate is higher than in Fig. 2, the thickness of the draft bar being the same. This adjustment is produced by employing a lower guide D' which constitutes a filling block of greater thickness and, as shown, it is formed by a bar having its ends return-bent at  $k$  to rest upon the bolts E a suitable space from the main portion of the bar. The necessary height of pocket  $c$  is provided in this construction by using the upper guide C', having the flanges  $j'$  thereof of lesser height.

In Fig. 5 a construction is shown where the thickness of the draw bar is greater than that shown in the other figures and narrow guide strips C<sup>2</sup> D<sup>2</sup> are arranged respectively above and below the followers B.

It will be observed that with all of these construc-



- tions, the adjustment is made by employing guides or filling blocks of slightly modified form and which may be made in any suitable shape without materially increasing the cost of the construction. For certain uses,
- 5 it is necessary also to provide a change in the distance between the forward and rear stops of the cheek-plates, and such an adjustment is illustrated in Fig. 6. As shown, the lower guide G is formed of a bar which has one end thereof bent up at H to lie adjacent to the stop
- 10 b. The distance between the opposite stops is thus diminished by the thickness of this member H and, by changing the thickness of the bar, any desired adjustment may be secured in this manner.

- To guide the ends of the followers and, at the same
- 15 time, provide clearance for the heads of the rivets, longitudinally-extending shallow ribs *m* are arranged on the portion of the cheek-plate between the stops. The lower edge of the cheek-plate is provided with apertures *n* for the passage of the bolts E and reinforcing
- 20 hubs *o* surrounding these apertures. The plate is further strengthened by a longitudinally-extending web *p* between these hubs and the tapering webs *q* at opposite ends thereof, the whole constituting a truss which imparts greater rigidity to the plate.

- 25 What I claim as my invention is:—

1. In a draft rigging, integral cheek-plates, shoulders thereon and detachable top guide members entirely between said shoulders.
2. In a draft rigging, integral cheek-plates, shoulders thereon, inwardly-extending flanges at the top of the plates
- 30 between the shoulders and detachable top guides below the flanges.
3. In a draft rigging, integral cheek-plates having pockets formed between shoulders and top flanges on the plates, said pockets being deeper than the vertical height of the
- 35 followers, whereby the center line of draft may be changed without changing the plates and detachable top guides below the flanges.
4. In a draft rigging attachment, a cheek-plate, separated abutment shoulders, ribs on the ends of the plate connecting to the shoulders, and fillets or braces from the
- 40 sides of the ribs to the shoulders.

5. In a draft rigging attachment, a flat cheek plate, vertical flanges or shoulders on the inner face thereof, the end portions of the plate tapering upwardly from said vertical flanges, and a horizontal flange at the top on the inner
- 45 side of said plate and tapering from said vertical flanges to the ends of the plate, said horizontal and vertical flanges forming a pocket, for the purpose described.

6. In a draft rigging, the combination with cheek-plates
- 50 formed with follower end stops, of a stop integral with said cheek-plate for limiting the vertical movement of said follower and a guide interposed between said last mentioned stop and the follower.

7. In a draft rigging, the combination with a cheek-
- 55 plate having an end stop for the follower, of a stop integral with the cheek-plate for limiting vertical movement of the follower and interchangeable guides for the follower, forming spacers of varying width between said follower and the last mentioned stop for limiting vertical movement.
- 60

8. In a draft rigging, stops secured to the sills for the abutment of the followers, the stops projecting above the followers and a top guide member entirely between the stops.

9. In a draft rigging, stops secured to the sills for the
- 65 abutment of the followers, said stops being greater in height than the followers and adjustable top and bottom guides secured between the stops for raising and lowering the center line of the draw-bar.

10. In a draft gear, horizontal stops secured to the sills,
- 70 the followers and a filler between the followers and stops.

11. In a draft rigging, horizontal stops secured to the sills, the followers and a guide having a bent extension forming a filler between the followers and stops.

12. In a draft rigging, cheek-plates, shoulders thereon
- 75 for the abutment of the followers, lower guides carried by the tie bolts between the cheek-plates and top guide members above the followers between the shoulders.

13. In a draft rigging, the combination with follower
- 80 end stops and a stop for limiting vertical movement, of a follower guide, the end of said guide being return-bent to form a spacer between said follower and the last mentioned stop for limiting vertical movement.

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

GEORGE LYON HARVEY.

Witnesses:

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WM. G. FOSTER.