

No. 770,771.

PATENTED SEPT. 27, 1904.

D. McCAUSLAND.  
FIFTH WHEEL.

APPLICATION FILED MAR. 16, 1903.

2 SHEETS—SHEET 1.

NO MODEL.  
Fig. 1.

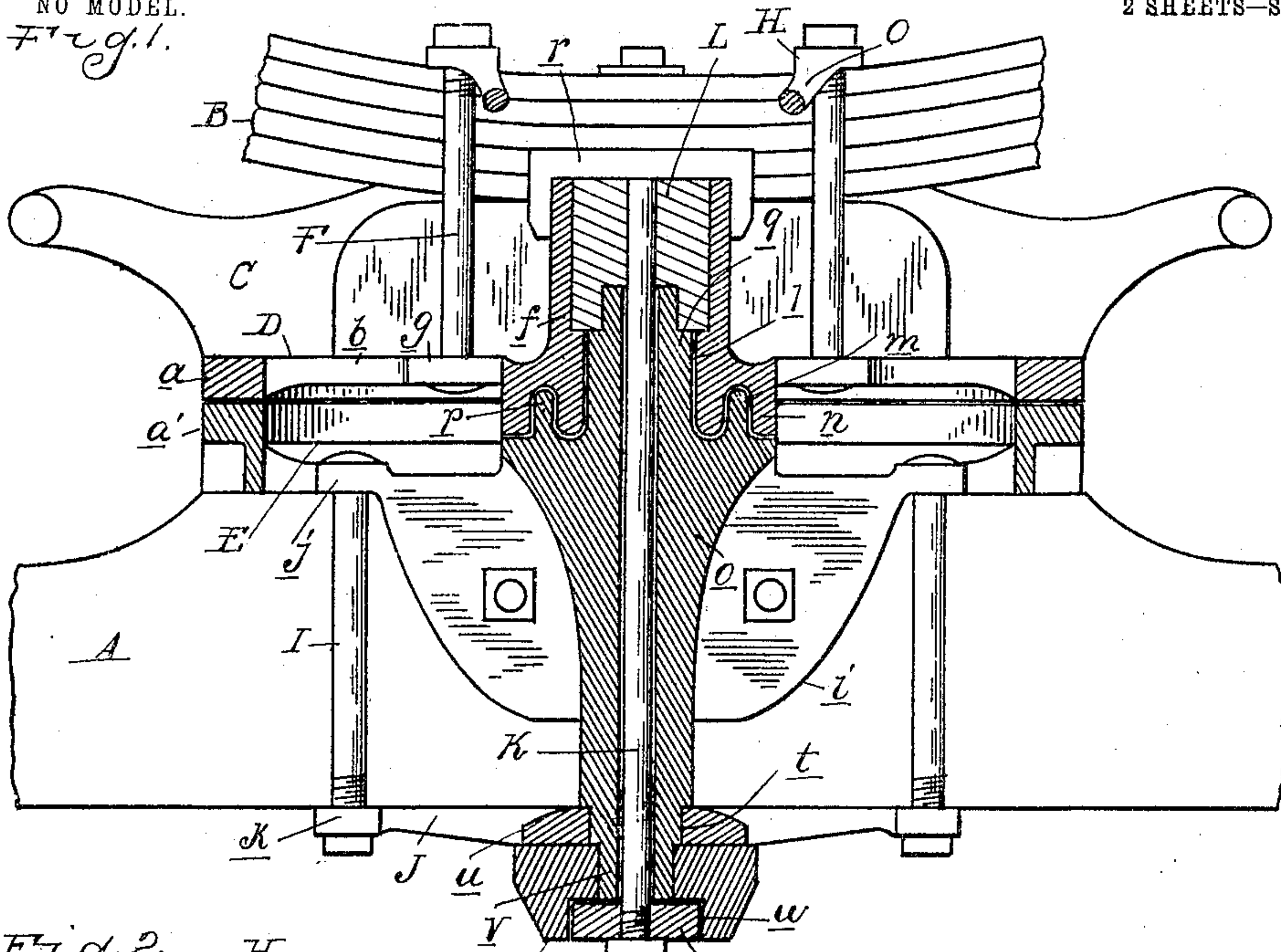
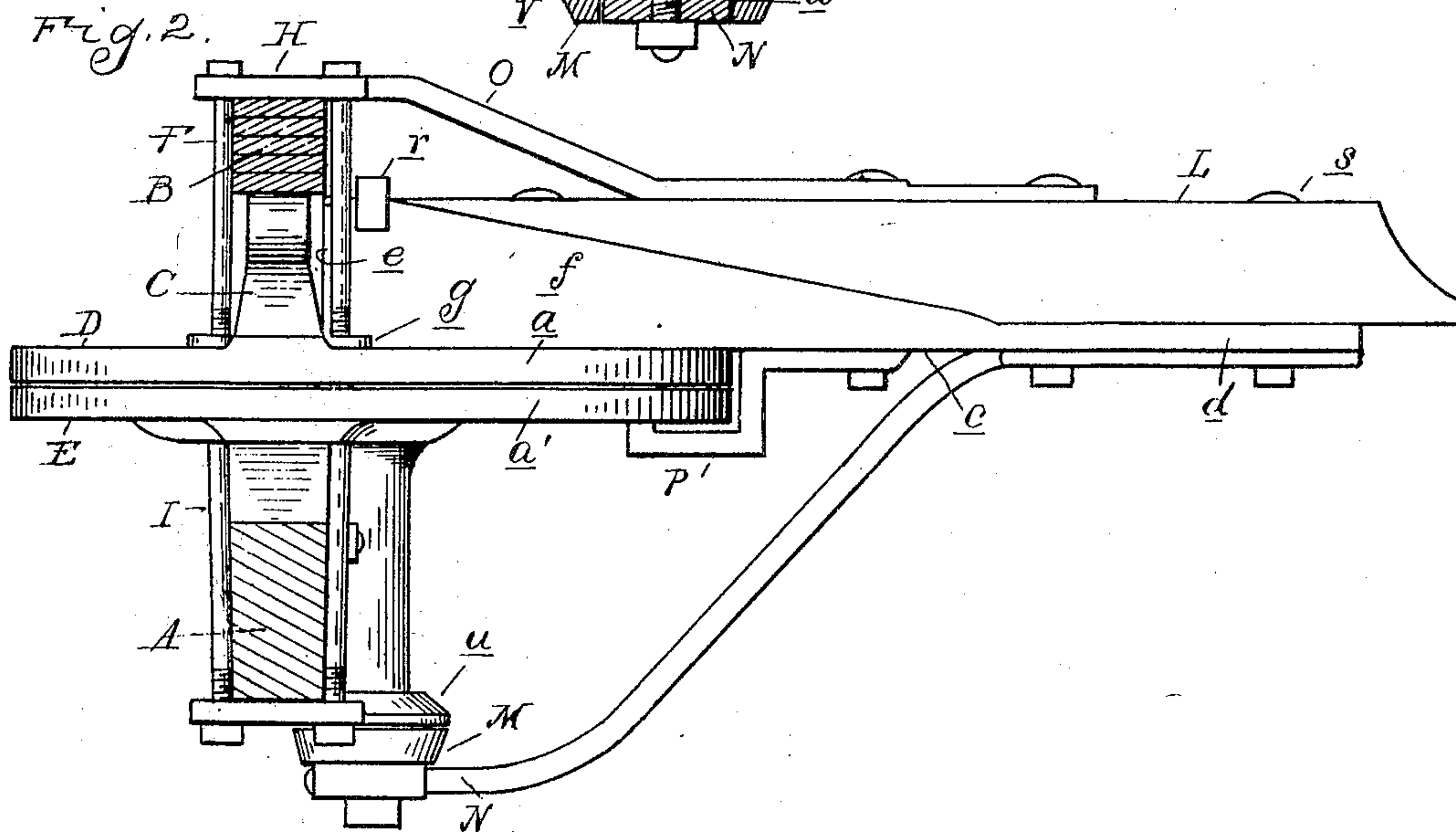


Fig. 2.



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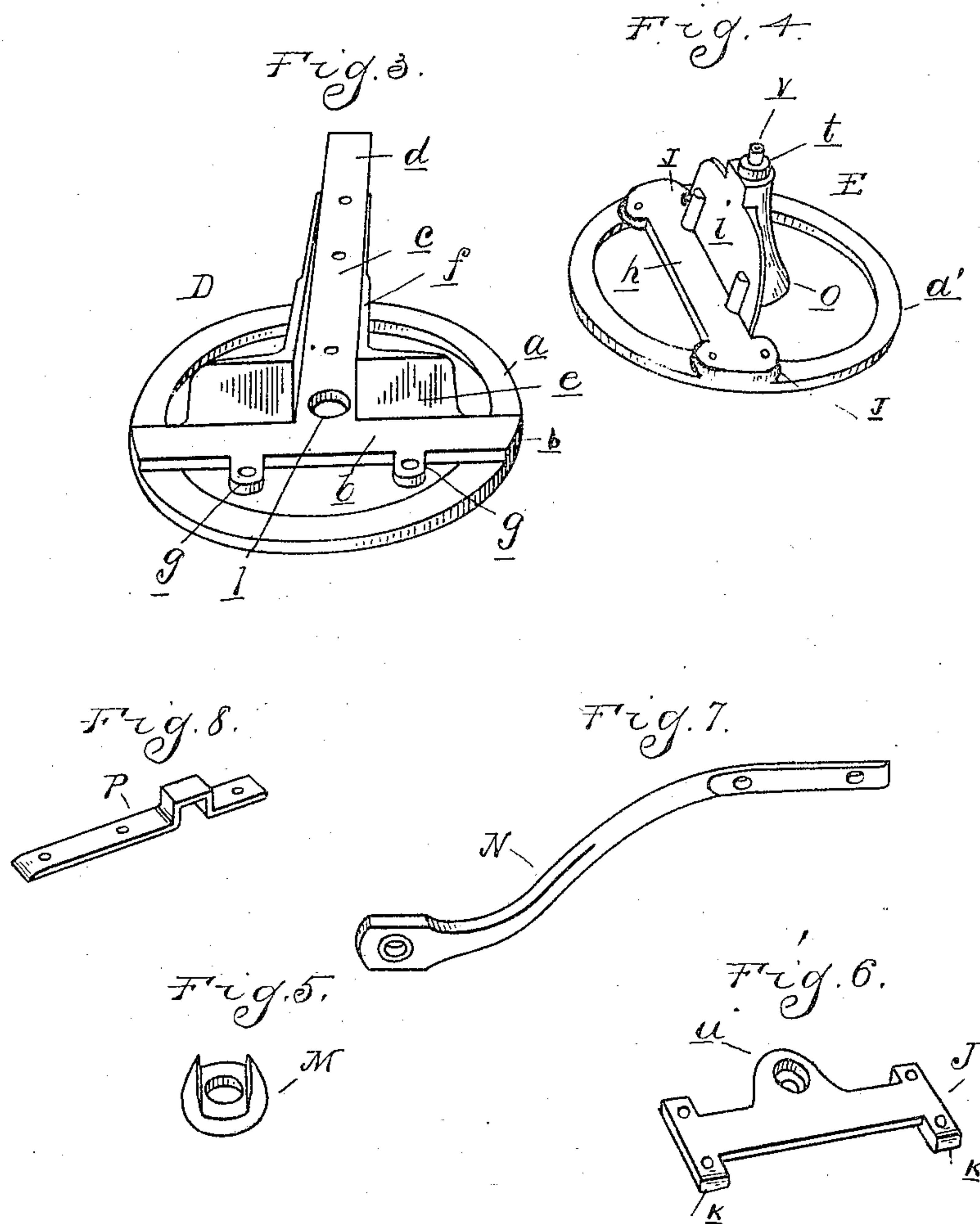
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

DAVID McCAUSLAND, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF  
TO ROBERT J. McCLELLAN, OF DETROIT, MICHIGAN.

## FIFTH-WHEEL.

SPECIFICATION forming part of Letters Patent No. 770,771, dated September 27, 1904.

Application filed March 16, 1903. Serial No. 148,023. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID McCAUSLAND, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Fifth-Wheels, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to improvements in fifth-wheels for vehicles, and has for one of its objects the obtaining of a construction in which all strain is removed from the king-bolt.

It is a further object to avoid the necessity of passing the king-bolt through the axle and spring-block; further, to obtain a strong connection between the upper circle-plate and the reach or perch.

With these objects in view the invention consists in the peculiar construction, arrangement, and combination of parts, as hereinafter described and claimed.

In the drawings, Figure 1 is a vertical section taken slightly in rear of the axle and spring and in a plane of the king-bolt. Fig. 2 is a side elevation, and Figs. 3 and 4 perspective views, respectively, of the upper and lower circle-plates. Fig. 5 is a perspective view of washer. Fig. 6 is a perspective view of plate. Fig. 7 is a perspective view of brace member, and Fig. 8 is a perspective view of bearing.

A is a vehicle-axle, B the spring, and C the spring-block, all of which may be of any suitable construction.

D is the upper circle-plate, and E the lower circle-plate, of improved constructions, which in detail are constructed as follows: The upper circle-plate D is provided with the flange or bearing *a*, which is preferably a complete circle. Formed integral with the flange is a cross-bar *b*, arranged slightly in front of the center of the circle. The plate is also provided with the rearwardly-extending integral arm or bar *c*, arranged at right angles to the bar *b* and having a portion *d* extending some distance rearward beyond the flange *a*. The bars *b*, *c*, and *d* are provided with upwardly-projecting flanges *e* and *f*, which preferably

join each other to form an angle-flange. The effect of this construction is to form a rigid brace or strengthening-web for the bars *b*, *c*, and *d*. When the plate D is placed in position, the bar *b* and flanges *e* will fit against the lower and rear faces of the spring-block C. To secure the plate to the block, bolts F are arranged upon opposite sides of the block, which pass through apertured ears *g*, formed on opposite sides of the cross-bar *b*. The bolts F pass upward adjacent to the block and the spring supported thereon and at their upper ends engage with clip-plates H, extending across the top of the spring. The lower circle-plate E is also provided with a cross-bar *h*, arranged forward of the center of the circle, and this bar is provided with the angle-flange *i*. The plate is placed upon the axle with the bar *h* and flange *i*, respectively, adjacent to the upper and rearward faces of said axle and is then secured thereto by bolts I engaging the ears *j* upon opposite sides of the cross-bar *h* and ears *k*, which are preferably formed integral with a plate J.

The engagement between the two circle-plates D and E is formed by providing one with a projecting pin and the other with a corresponding socket. As preferably constructed, the plate D forms the socket member and is provided with the central recess *l* and the surrounding concentric groove-bearing *m*. The recess and the surrounding groove-bearing are formed in the central hub member *n*, which is formed integral with the cross-bars *b* and *c* and the flanges *e* and *f*, projecting slightly downward below the plane of said cross-bars. The lower plate E is provided with a hub portion *o*, which is formed adjacent to and integral with the flange *i*. At its upper end this hub portion is enlarged to form a bearing for the portion *n* of the plate D and is also fashioned to form an annular flange *p*, engaging with the groove *m*, and a pin portion *q*, engaging the recess *l*. The hub *o* is centrally apertured for the passage of the king-bolt K, and this bolt is preferably formed with a T-shaped head *r* at its upper end and has a threaded portion at its lower end.

L is the perch or reach member, which is se-



cured to the plate D between the flanges  $f$  of the bar  $c$  and extension  $d$ . The forward end of the perch abuts against the spring-block C. For securing the perch to the plate a series of bolts  $s$  pass therethrough and through the bar  $c$  and extension  $d$ . The king-bolt K also serves to hold the perch in position and passes through an aperture in the rear end thereof, while the T-shaped head  $r$  serves to hold it from upward movement.

The hub member  $o$  of the plate E extends downward slightly below the axle and has a bearing portion  $t$ , which engages with the socket  $u$  in the plate J. Beyond this bearing portion  $t$  and the hub is a portion  $v$ , which engages with the head or washer M below the plate J. This head or washer has a recess  $w$  for receiving the end of a brace member N, which member is secured in position by the king-bolt K. The brace N passes rearward and is secured to the bar  $c$  and perch by the bolt  $s$ .

O is a brace connection between the perch and the springs, which is of a forked or Y shape, the ends of the fork forming the clip-plates H. The rear end of this brace is also secured by the bolts  $s$ .

The parts being constructed as shown and described, it will be understood that the pivot for the fifth-wheel is formed by the bearing  $p$  and  $q$  engaging with the corresponding groove-bearing  $m$  and recess  $l$ . The function of the king-bolt is merely to secure the parts in engagement without receiving any lateral strain. It will also be seen that the king-bolt is arranged in rear of the axle and spring and in a position where it may be readily removed and replaced without disengagement of other parts. The lower brace member N has a swivel engagement with the lower end of the hub member  $o$  through the medium of the head or washer M, and at the same time it is rigidly secured in position by the king-bolt K. The angle-flanges of both the lower and upper circle-plate impart great strength to each part, while they also form means of securing the plates, respectively, to the axle and the spring-block. The flanges  $f$  also rigidly brace the bar  $c$  and its extension  $d$ , said bars, together with said flanges, forming the perch-iron to which the perch is secured in the manner previously described. To further strengthen the construction, a U-shaped bearing P is clamped to the lower face of the perch-iron and embraces the flange  $a'$  of the lower circle-plate E. This will serve to hold the two circle-plates together and will relieve the strain upon the center bearing.

What I claim as my invention is—

1. A fifth-wheel comprising upper and lower circle-plates, a cross-bar connected at its ends to the annular portion of the upper circle-plate, and having at one side thereof an elongated transverse portion extending beyond the annular portion of the circle-plate,

incline flanges upon the opposite sides of said elongated portion, said elongated portion extending a slight distance beyond said flanges, a reach resting upon said extended portion and extending between said incline flanges and a king-bolt passing through complementary apertures in said lower circle-plate, elongated portion of the upper plate, and said reach.

2. A fifth-wheel, comprising upper and lower circle-plates, secured respectively to the axle and spring-block, with their center slightly in rear thereof, a cross-bar connected at its ends to the annular portion of the upper circle-plate and having at one side thereof an elongated transverse portion extending beyond the annular portion of the circle-plate, incline flanges upon the opposite sides of said elongated portion terminating a slight distance in advance thereof, a reach extending between said incline flanges, and a king-bolt passing through complementary apertures in said lower circle-plate, elongated portion of the upper circle, and said reach, said apertures being arranged in the rear of said cross-bar and between said inclined flanges.

3. In a fifth-wheel, an upper circle-plate provided with an annular portion, a cross-bar integral therewith and extending slightly in front of the center of the circle-plate, angle-flanges on said bar adapted to embrace the reach and to extend adjacent to the spring-block, in combination with a lower circle-plate having a similarly-arranged cross-bar and a flange on said cross-bar adjacent the axle.

4. In a fifth-wheel, an upper circle-plate comprising an outer annular portion, a cross-bar, extending slightly in front of the center of the circle-plate, a bar extending rearward centrally from said cross-bar and perpendicular thereto, and angle-flanges projecting upward from the intersecting sides of said bars adapted to embrace the reach and spring-block, in combination with a lower circle-plate having a similarly-arranged cross-bar, and a downwardly-extending flange on said cross-bar engaging the rear portion of the axle.

5. In a fifth-wheel, an upper circle-plate comprising an annular flange, a cross-bar extending slightly forward of the center of said plate, a transverse bar extending rearwardly from said cross-bar intermediate its ends, flanges extending upwardly from the rear edge of said cross-bar and engaging respectively flanges on the opposite sides of the transverse bar, in combination with a lower circle-plate, comprising an annular flange, a cross-bar extending slightly forward of the center of said plate, downwardly-extending flanges at the rear edge of said bar, and a pivotal connection between said plates in the rear of the respective cross-bars.

6. A fifth-wheel, comprising upper and



lower circle-plates, cross-bars extending between the annular portion of the plates at a point slightly in front of their center, flanges on said cross-bar for securing said plates respectively to the spring-block and axle, and arranged forward of the center of said circle, a reach extending rearward from the upper circle, a central hub projecting downward from the under plate and integral with the cross-bar and flange, a brace having a swivel engagement with the lower end of said hub

and extending to said reach, and a bifurcated brace extending forward from said reach and forming clip-plates for securing the upper plate to the spring.

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

DAVID McCAUSLAND.

Witnesses:

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ROSA LEONA MORGAN.