

No. 682,262.

Patented Sept. 10, 1901.

J. H. MANN.

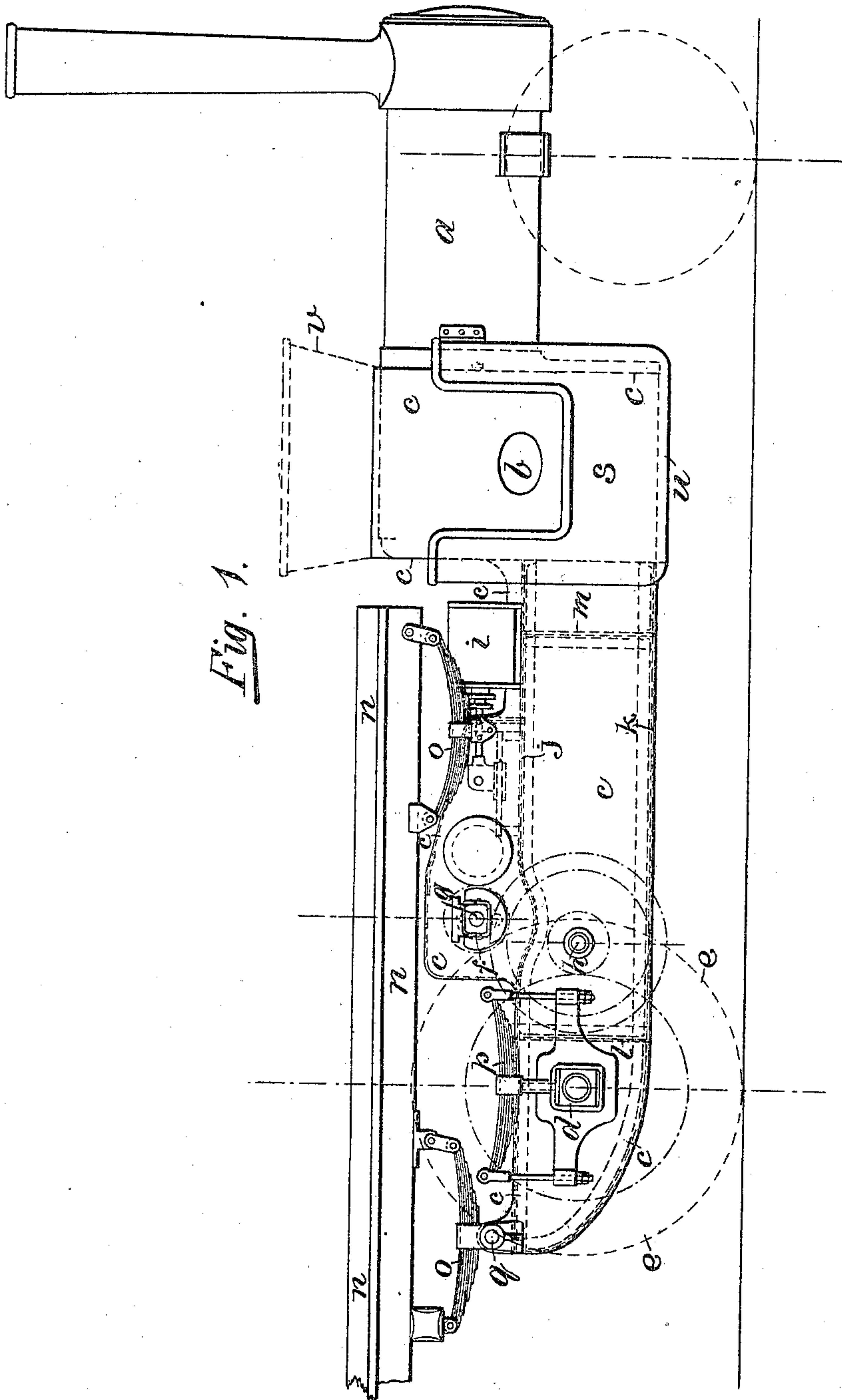
STEAM VEHICLE FOR COMMON ROADS.

(Application filed Feb. 18, 1901.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



J. Clark Jefferson
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James Hutchinson Mann
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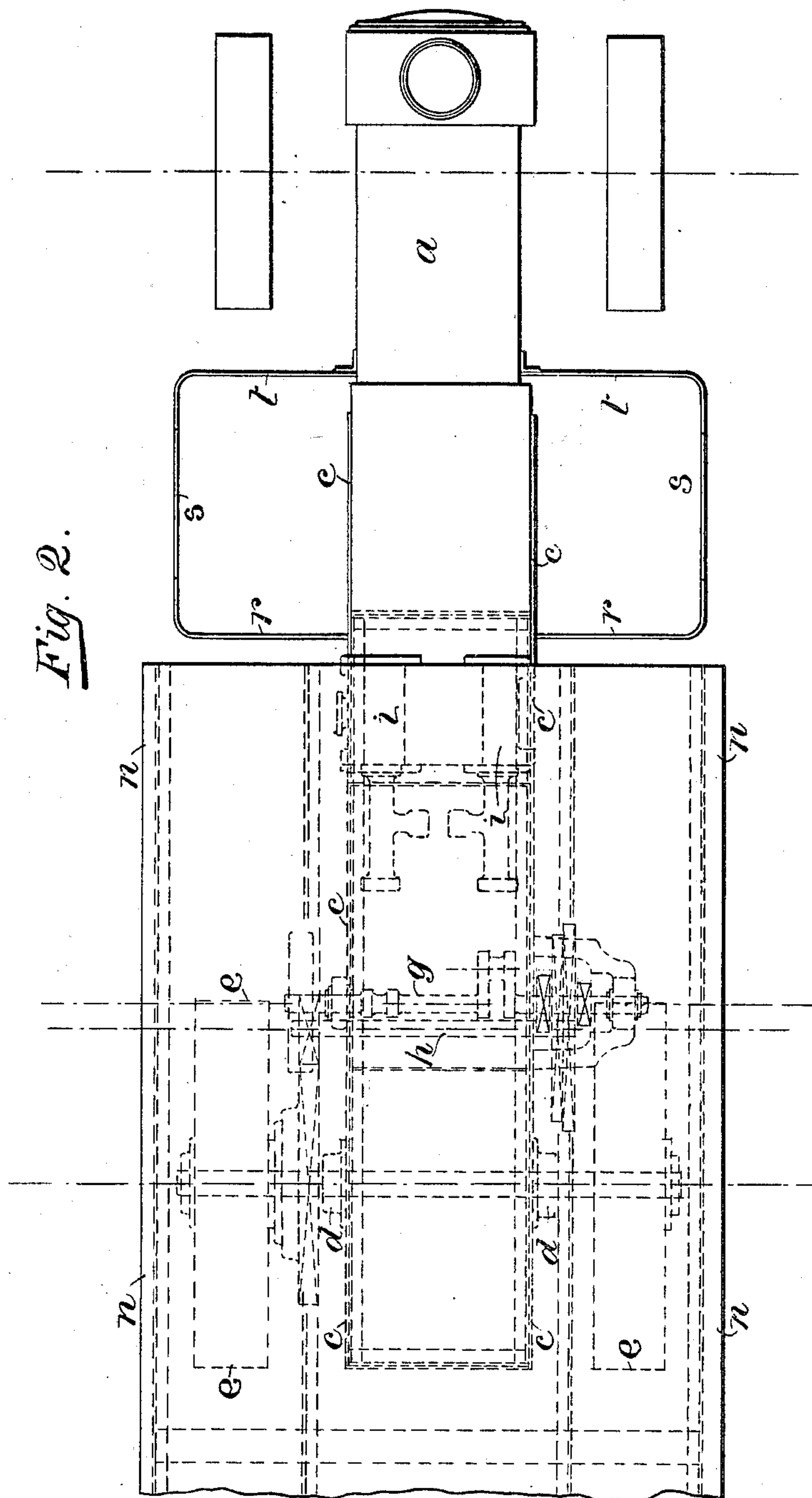
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Witnessed

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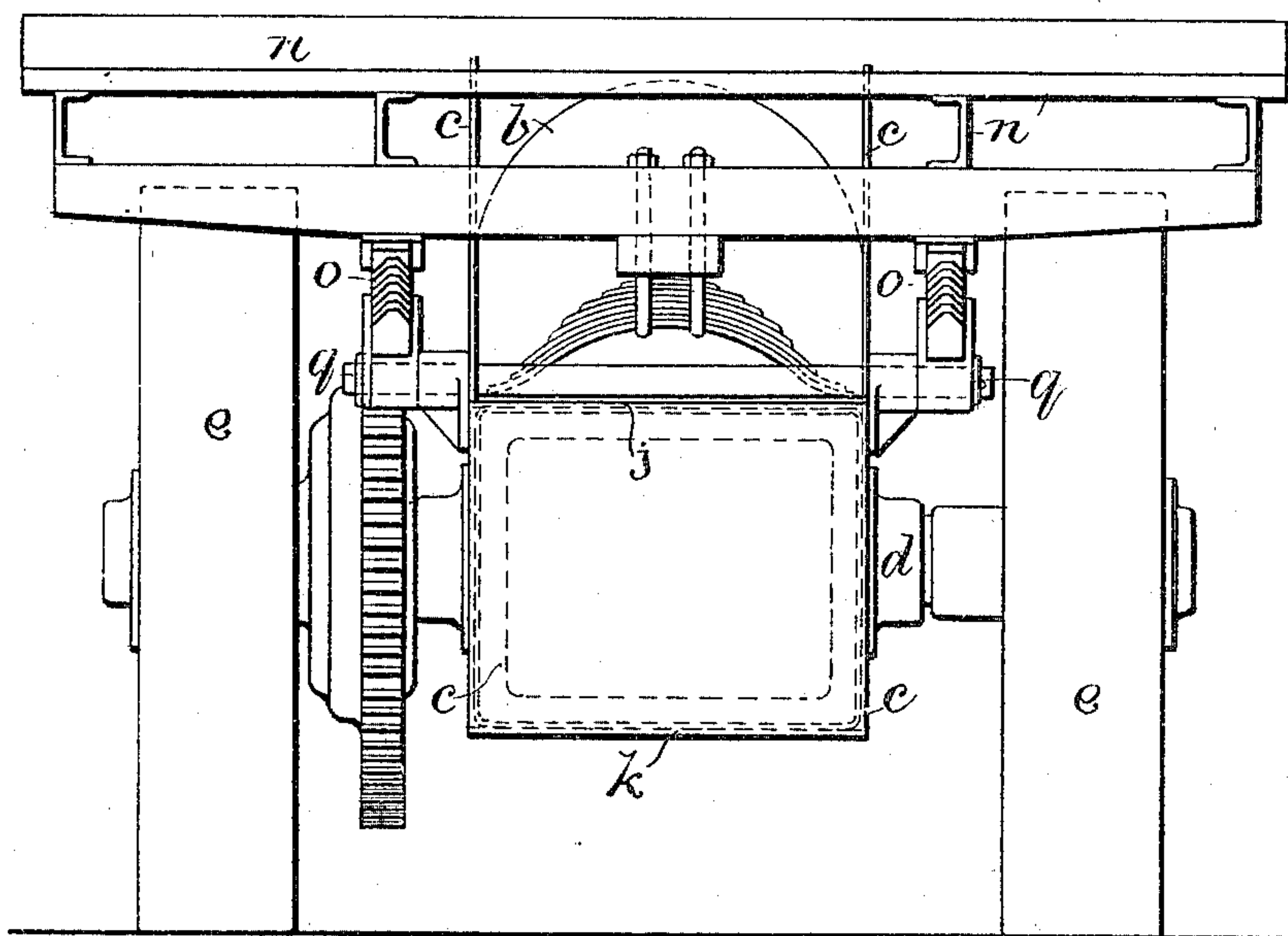
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(No Model.)

3 Sheets—Sheet 3.

Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES HUTCHINSON MANN, OF LEEDS, ENGLAND.

STEAM-VEHICLE FOR COMMON ROADS.

SPECIFICATION forming part of Letters Patent No. 682,262, dated September 10, 1901.

Application filed February 18, 1901. Serial No. 47,866. (No model.)

To all whom it may concern:

Be it known that I, JAMES HUTCHINSON MANN, a subject of the Queen of Great Britain and Ireland, residing at Leeds, in the county of York, England, have invented new and useful Improvements in Steam Wagons or Vehicles for the Conveyance of Goods and Passengers on Common Roads, (for which I have applied for Letters Patent in Great Britain and Ireland, No. 21,085, bearing date November 22, 1900,) of which the following is a specification.

The objects of my invention are to obtain such a construction that vehicle-bodies suited for carrying different classes of goods or passengers may be readily substituted the one for the other and combined therewith; to obtain great carrying capacity in the space occupied by the combination of engine and vehicle-body; to utilize the weight of the vehicle and its load on the road driving-wheels, so as to increase the tractive power; to prevent any strain from the engine or driving-gear coming on any part of the body of the vehicle, and in the case of the more powerful engines to provide accommodation for two attendants, one on each side of the engine, either or both of whom can attend to the firing of the boiler. These objects I attain by the following construction.

The construction is illustrated in side elevation in Figure 1; in plan in Fig. 2, and in back elevation in Fig. 3.

In all the figures the same reference-letter indicates the same or corresponding part.

A steam wagon or vehicle constructed in accordance with my invention comprises a steam-boiler *a* of the locomotive type, with a firing-hole *b* in one side of the fire-box or with two firing-doors, one in each side of the fire-box. The side plates *c* of the fire-box shell are of pieces of boiler-plate of comparatively great length, so that they extend considerably to the rear of the boiler and carry the bearings *d* for the axle or axles of the rear or road driving-wheels *e*, the bearings *f* for the engine-shaft *g*, and bearings for any intermediate shaft *h* which may be provided. These extended fire-box-shell side plates *c* readily permit of the engine cylinder or cylinders *i* being carried on the top of them by a cross-plate *j*, or the engine cylinder or cyl-

inders and slide-bars may be carried directly from one or other of the side plates *c*, or a cylinder may be carried on each side plate *c*. The extended part of the fire-box-shell side plates *c* also readily permits of being boxed in above and below by top and bottom plates *j* and *k* and joined across with cross-plates *l* and *m* to form a water-tank. The intermediate gearing is most conveniently carried outside the side plates *c*.

The nature of my invention is not altered if the full extension of each side of the fire-box shell to the rear is made up of two plates joined together instead of all in one piece.

n indicates the body of the vehicle, which is shown in the drawings of the surrey type, and is carried entirely by said rear extension of the fire-box-shell sides. I do not limit myself, however, to the shape of the vehicle-body as shown, it being one of the objects of my invention to be readily able to fit one or other of different types of vehicle-body to the engine and carrying part or frame. For example, the body of the vehicle may be made with sides to form a truck or wagon or provided with seats char-a-banc fashion to carry passengers, or when the cylinder or cylinders are carried from the side plates instead of on the top the vehicle may have the bottom dropped along the center between the road-wheels, so as to lower a portion of the floor or platform or form a vehicle for passengers of the wagonette or omnibus type. The vehicle-body may be carried directly from the rear road driving-wheels *e* or only indirectly from the same, being carried from the rear extension of the fire-box-shell sides *c* by means of springs *o*, and said extension from the axle of the road driving-wheels *e* by springs *p*, an arrangement which greatly conduces to reduce the vibration of the body of the vehicle. When it is desirable to be able to tip the body of the vehicle, the body of the vehicle may be carried by bearings pivoted either on the axle of the road driving-wheels or on a cross-shaft or pins fitted at the point indicated in Fig. 1 by the letter *q*. It will be noticed that in all cases since the engine and gearing are carried by the rearward extension of the fire-box-shell side plates *c* the strains caused by these are not transmitted to any part of the body of the

vehicle. Moreover, in order to avoid the use of universal joints to prevent the teeth of the gear-wheels coming too far out of pitch or gear the road-wheel-axle springs carrying the extension are of considerable stiffness and of limited range, while the springs carrying the vehicle-body on such extension may be of greater flexibility and range, and the vehicle-body, with its load of goods or passengers carried therein, derives the benefit of the double set of springs.

The space immediately on each side of the fire-box is inclosed by three vertical plates *r*, *s*, and *t*, the outer one of which, *s*, has a doorway cut out, as shown in Fig. 1, for entrance for the driver. The space is closed in at the bottom by a bottom or foot plate *u*.

The coal-bunker is conveniently placed on the top of the fire-box, as indicated in dotted lines at *v* in Fig. 1.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a steam wagon or vehicle for the conveyance of goods and passengers on common roads, the combination of a boiler *a* of the locomotive type having a firing-hole *b* in one of the sides of the fire-box, rearward extension of the fire-box-shell sides *c*, engine *i* *g*, bearings *d* for the axle of the road driving-wheels *e* and vehicle-body *n*, said engine, bearings and vehicle-body carried by or secured to said rearward extension of the fire-box-shell sides substantially as set forth.

2. In a steam wagon or vehicle for the conveyance of goods or passengers on common

roads the combination of a boiler *a* of the locomotive type having a firing-hole *b* in one of the sides of the fire-box, rearward extension of the fire-box-shell sides *c*, top and bottom and end cross-plates *j*, *k* and *l* and *m* forming a tank between said extension of the fire-box-shell sides *c*, engine *i* *g*, bearings *d* *f* and *h* for the axle of the road driving-wheels *e* for the engine-shaft *g* and for any intermediate shaft respectively all carried by or secured to said rearward extension of the fire-box-shell side plates *c* and vehicle-body *n* carried by said rearward extension *c* substantially as set forth.

3. In a steam wagon or vehicle for the conveyance of goods or passengers on common roads, the combination of a boiler *a* of the locomotive type with firing-hole *b* in one of the sides of the fire-box, a rearward extension of the fire-box-shell sides *c*, water-tank *j* *l* *k* *m*, engine *i* *g*, intermediate gear-shaft *h*, road wheel-axle bearings *d* carrying the said extension on springs *p* and vehicle-body *n* carried on said extension by springs *o*, said water-tank engine intermediate shaft and axle bearings all attached to or carried by said rearward extension of the fire-box-shell sides substantially as herein set forth and illustrated by the accompanying drawings.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

JAMES HUTCHINSON MANN.

Witnesses:

J. CLARK JEFFERSON,
FREDERICK ATKINSON.