

(No Model.)

C. E. EATON.

CAR AXLE.

No. 305,378.

Patented Sept. 16, 1884.

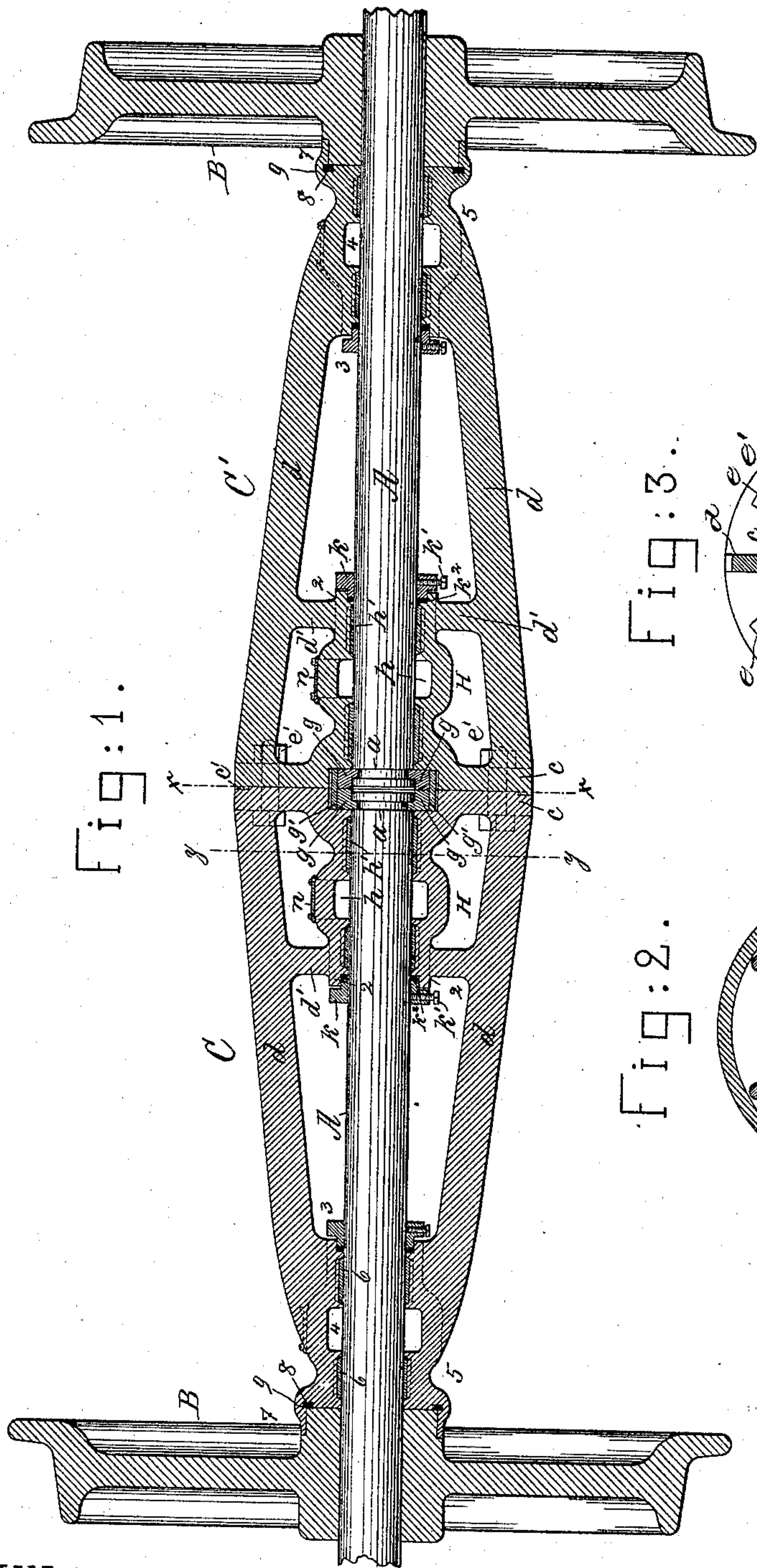


Fig:1.

Fig:3..

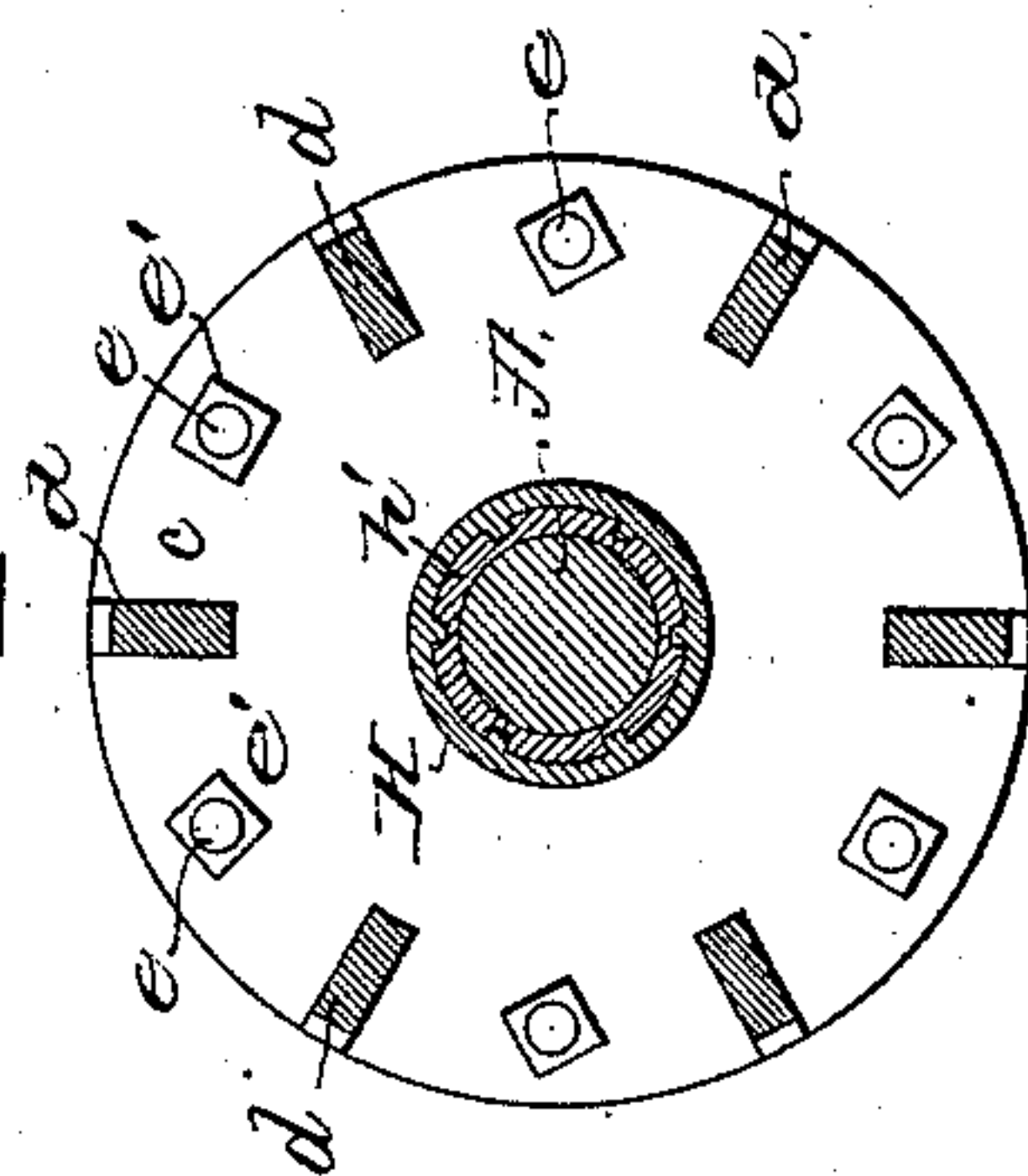
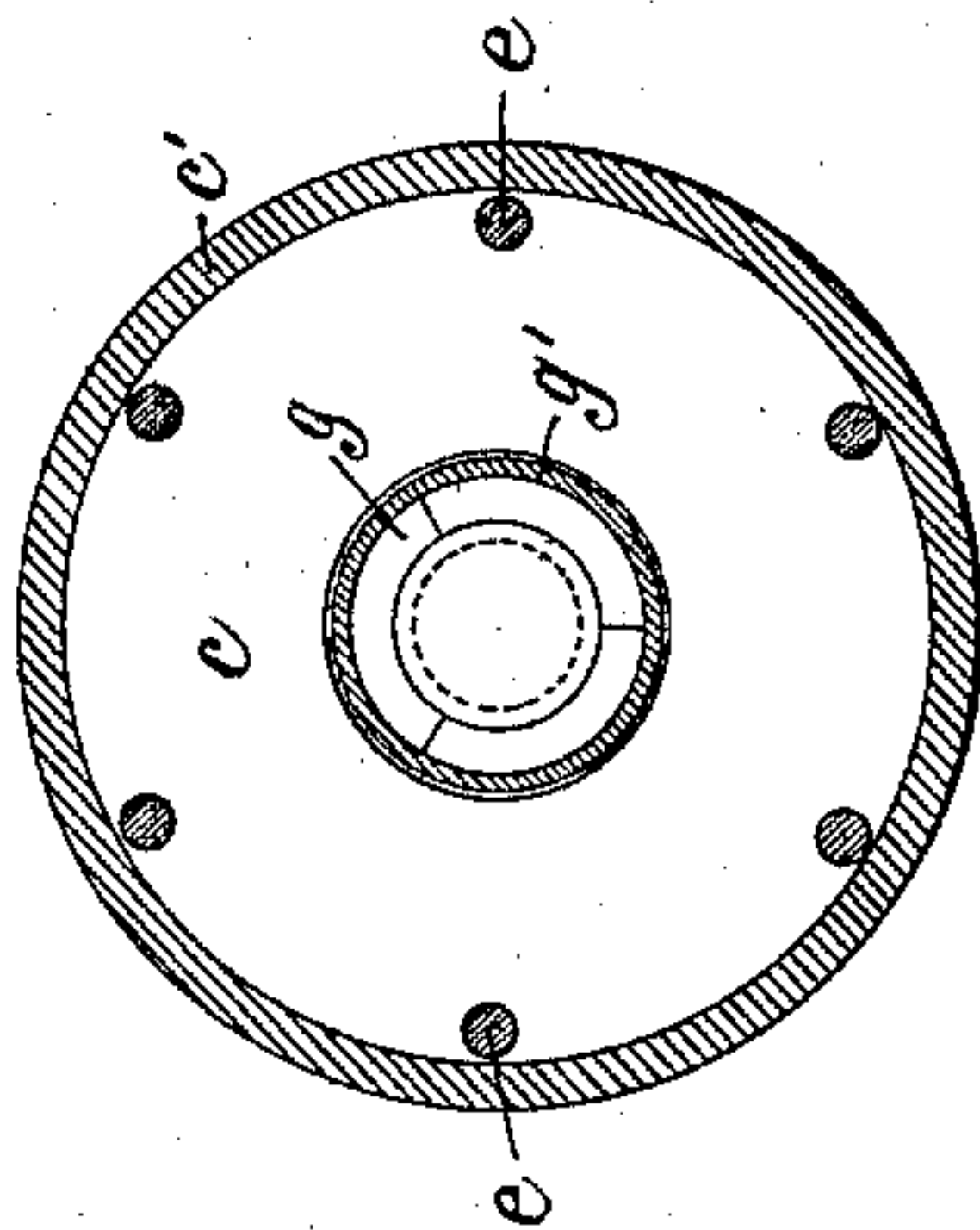


Fig:2.



Witnesses.

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UNITED STATES PATENT OFFICE.

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CAR-AXLE.

SPECIFICATION forming part of Letters Patent No. 305,378, dated September 16, 1884.

Application filed April 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. EATON, of Chelsea, county of Suffolk, State of Massachusetts, have invented an Improvement in Car-Axles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to improvements on that class of axles described in Letters Patent No. 284,194, granted to me on the 4th day of September, 1883, and has for its object to simplify and perfect the invention described in said patent.

The nature of my present invention is clearly set forth in the following description, and is particularly pointed out in the claims.

Figure 1 is a longitudinal vertical section of a truss or axle-support made in accordance with my invention, it containing a divided axle, which is shown in full lines, wheels being added to the axle; Fig. 2, a cross-section on line *x x*, Fig. 1; and Fig. 3, a similar section on line *y y* of said figure.

The divided axle A and car-wheels B are of usual construction, except that the inner ends thereof are provided with annular grooves *a*, to receive collars *g*.

The axle-supporting truss is formed in two sections, C C', each section having a disk, *c*, and bearings for the inner and outer portions of the divided axle, and bars or braces *d*, preferably formed or cast in one piece, as shown. One of the disks is provided at its face, near its periphery, with an annular projection, *c'*, which fits into a corresponding depression in the face of the other disk, so that when the sections of the axle-supporting truss are connected together by means of the bolts *e*, passing through the disks below or within the projection *c'* and secured with nuts *e'*, the said projection fits into the depression, to make a more perfect and stronger connection between said disks, and to prevent any possible vertical play of the parts by reason of wear on the bolts or other contiguous parts. By this construction, also, the projection and depression are located at the portion of the disks that receives the greatest support from the arms or braces *d*, and the bolts *e* are passed through bolt-holes in said disks, where the latter are of even thickness and strength, whereby the

severe strain to which such parts are subjected is evenly distributed throughout both disks. The faces of the disks *c* are cut away centrally about the axle-receiving orifices, to receive the collar *g*, L-shaped in cross-section, and made up of several parts or sections (see Fig. 2) to form in effect sectional collars with inner flanges, which latter project into the annular grooves *a* in the divided axle A, to hold the ends of the axle slightly apart, and prevent possible grinding of one on the other when in use. When the sectional collars are brought together, as shown in Fig. 1, their combined outer surfaces or peripheries form a smooth cylindrical face to permit a metal ring, *g'*, to be placed between it and the cut-away portions of the disks in which said sectional collars rest, the cut-away portions being made of sufficient depth to enable the insertion of said metal ring.

The bearings H, for the inner or adjacent ends of the divided axle A, besides being cast with the disks *c*, are braced and connected with the arms *d* by means of the braces *d'*, and are provided with reservoirs *h* to contain suitable lubricants for the axle-bearings, which latter have linings *h'*, of Babbitt or other suitable soft metal, secured therein. The reservoirs are provided with supply-orifices (not shown) and closing caps or lids *n*. The truss-sections are prevented from lateral movement on the divided axle and in the direction of the wheels B by means of collars *k*, secured on the axle with set-screws *k'*, and having shoulders *k''* fitting within the projecting rims 2 of the bearings H, as clearly illustrated in Fig. 1, while said truss-sections are likewise prevented from movement on the divided axle away from the wheels by similar collars, 3, fitting within the outer bearings, 5, in recesses, as shown. The outer bearings, 5, have oil-reservoirs 4 and linings of Babbitt metal, 6, as in the case of bearings H, and are further provided with outwardly-projecting rims 7, fitting onto turned portions of the hubs of the wheels B, to strengthen and perfect the relation of parts, and provide against the passage of dust or sand and the like into the bearings. A packing-annulus, 8, fitted into an undercut groove, 9, in the bearings 5, further insures against the entrance of dust, makes a tight joint, and prevents the otherwise abutting surfaces of the hubs and

bearings from end-grinding. Besides serving the primary purpose of preventing end-play of the truss-sections on the divided axle, the collars *k* and 3 also prevent dust from entering the bearings where they are placed.

By the construction of parts described either wheel and its axle-section is capable of rotation independently of the other, the parts are strongly and perfectly connected to obviate end-play, they are strengthened where strength of parts is most required, the entrance of dust into the bearings is thoroughly provided against, the lubrication of the parts is provided for in a simple and effectual manner, and surplus metal is avoided.

I claim—

1. An axle-supporting truss formed in two sections, having axle bearings or supports, and provided with disks *c*, united together as specified, said disks having the recesses about the axle-opening, combined with the divided axle having the annular grooves *a*, and the sectional collars *g*, resting in the recesses of the disks and fitting into the grooves *a* in the divided axle, substantially as specified.

2. The combination, with the divided axle and attached wheels, of an axle-supporting truss formed in two sections, having disks *c* firmly secured to each other, as specified, and provided with bearings for the divided axle, which is free to rotate in said truss, and the retaining-collars *k* and 3, secured on each half of the divided axle and engaging each truss-section at two points, to prevent end-play of either truss-section on the divided axle in either direction, substantially as specified.

3. An axle-supporting truss formed in two sections, having disks *c* firmly secured to each other, as specified, and provided with bearings *H*, integral with the disks *c*, for the support of the divided axle, which is free to rotate in said truss, each of the bearings *H* having a projecting rim, 2, combined with the divided

axle *A*, the wheels *B*, and the retaining-collars *k*, secured on the divided axle and having set-screws *k'* and shoulders *k''*, fitting within the rims 2 of the bearings *H*, substantially as described.

4. An axle-supporting truss formed in two sections, having disks *c*, united together as specified, and provided with bearings for the support of the divided axle, combined with the divided axle *A*, the attached wheels *B*, having hubs with turned portions, as specified, the projecting rim 7, formed with the truss and fitting the turned portions of the hubs, and the collars 3, fitting on the axle and having a set-screw and a shoulder fitting a recess in the outer bearing of the truss, for the purpose set forth.

5. An axle-supporting truss formed in two sections, united together substantially as specified, and having inner and outer bearings for the support of the divided axle, the outer bearing having oil-reservoirs with closed orifices, the projecting rims 7, and packing-annulus, as specified, combined with the divided axle *A*, having retaining-collars 3, with shoulder fitting recesses in the outer bearings, as described, and the wheels *B*, with hubs having the turned portions, as and for the purpose set forth.

6. The combination, with a divided axle and an axle-supporting truss having bearings for the support of the axle, of two collars secured to each part of the divided axle and engaging the truss, to prevent end-play of the divided axle in either direction in said truss, substantially as specified.

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

CHARLES E. EATON.

Witnesses:

G. W. GREGORY,
B. J. NOYES.