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E. R. HEWITT ET AL

CASING FOR TRANSMISSIONS AND THE LIKE

Filed July 15, 1926

Fig. 1.

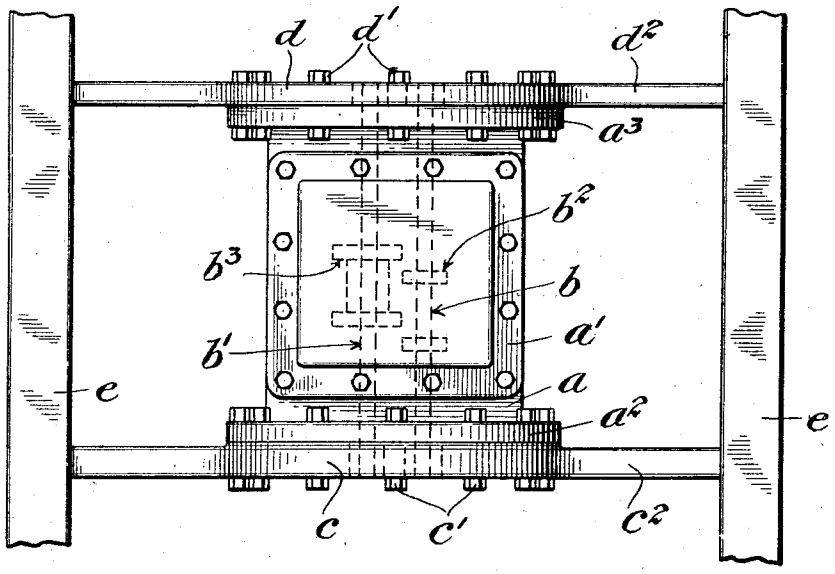
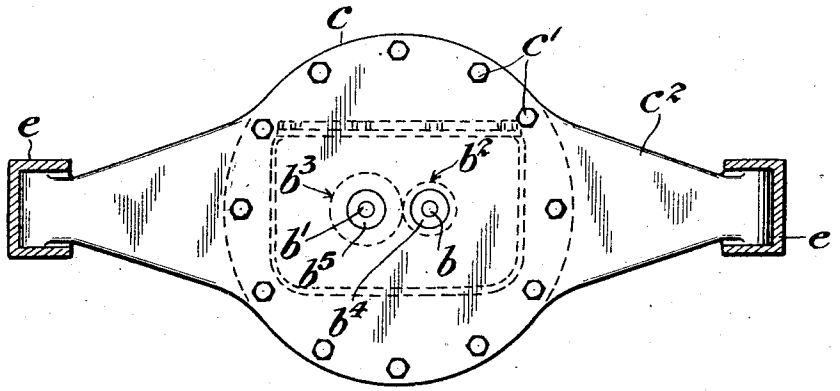


Fig. 2.



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UNITED STATES PATENT OFFICE.

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CASING FOR TRANSMISSIONS AND THE LIKE.

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Transmission cases and the like particularly for use in automotive practice are now usually made of cast aluminum having the end walls integral with the side walls. The shafts within the case are usually journaled in bearings carried by the end walls. This assembly of parts necessitates the provision of substantial webs of metal between the bearings in the interest of strength and this brings the centers of the shafts further apart than would otherwise be necessary or desirable. The object of the invention is to provide an improved case which embodies very important advantages in manufacture and use. The case is proposed to be sectional and the parts are of such construction and so related that greater compactness is secured, the center distance between shafts is materially reduced enabling smaller gears to be used and improved facilities for mounting the case on its support are provided. More particularly, the invention proposes to provide a case which has open ends and separate end walls of suitable material such as steel adapted to be secured to the body of the case these steel end plates being well adapted to support the bearings for the shafts without the necessity of affording substantial webs between the bearings to give strength. In the preferred embodiment it is further proposed to extend these end plates for the case laterally forming supporting arms integral therewith adapted to be secured to the supporting frame.

The improvements will be described more particularly hereinafter in connection with the embodiment illustrated in the drawings, wherein:

Figure 1 is a view in plan of an improved transmission case for motor vehicles embodying the improvements.

Figure 2 is a view in end elevation thereof.

In manufacture, the body of the case a may be of cast aluminum having bolted thereon a detachable top plate a' to afford ready access to the shafts b, b', and gears b^2, b^3, carried thereon, respectively. In the preferred form the ends of the case a are open but circular end flanges a^2, a^3, are cast integral therewith. The end walls proper of the case comprise separate plates c, d, which conform generally in outline to the flanges a^2, a^3, and are bolted thereto by means of bolts c', d', respectively. The end plates c, d, are made of a suitable tough material such as steel well adapted by strength and rigidity to support bearings b^4, b^5, for the shafts b, b', respectively. The openings for these bearings may be as close as physical proximity and the ratios of the gears b^2, b^3, permit. These openings for the bearings need not be separated by webs of metal in order to give strength to the end plates as is the case where the end walls are of aluminum or similar metal because the end plates have adequate strength to take all of the stresses impressed thereon by the bearings b^4, b^5. A further feature of the invention which the improved structure affords is that the plates c, d, being of strong rugged form and material may have embodied integral therewith laterally extending supporting arms c^2, d^2, respectively, which may extend to and be supported on frame members e. Heretofore, where such cases have had the end walls cast integral therewith it has not been possible for considerations of manufacture and use to form the supporting arms integral with the case.

The invention is not limited to the particular application of the improvements nor to the particular metals employed so long as the improved results are obtained by parts bearing substantially the relationship herein described.

What we claim is:

1. In a case of the character described having a body portion with open ends, detachable end plates secured thereto and having laterally extending arms substantially in the plane of the plates by which the case is supported.

2. A cast aluminum gear case formed with open ends and having peripheral flanges around the openings in the ends, steel end

plates bolted to said peripheral flanges and adapted to support bearings for shafts within the case and having integral arms extending laterally therefrom to support the case.

3. A casing of the character described in which is disposed a revolving shaft and having unitary detachable end walls of a strong metal in which the shaft is journaled, said end walls being formed with laterally extending arms to support the casing, the remaining walls of the casing being formed of another metal of low strength.

This specification signed this 8th day of July, A. D. 1926.

EDWARD R. HEWITT.
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