

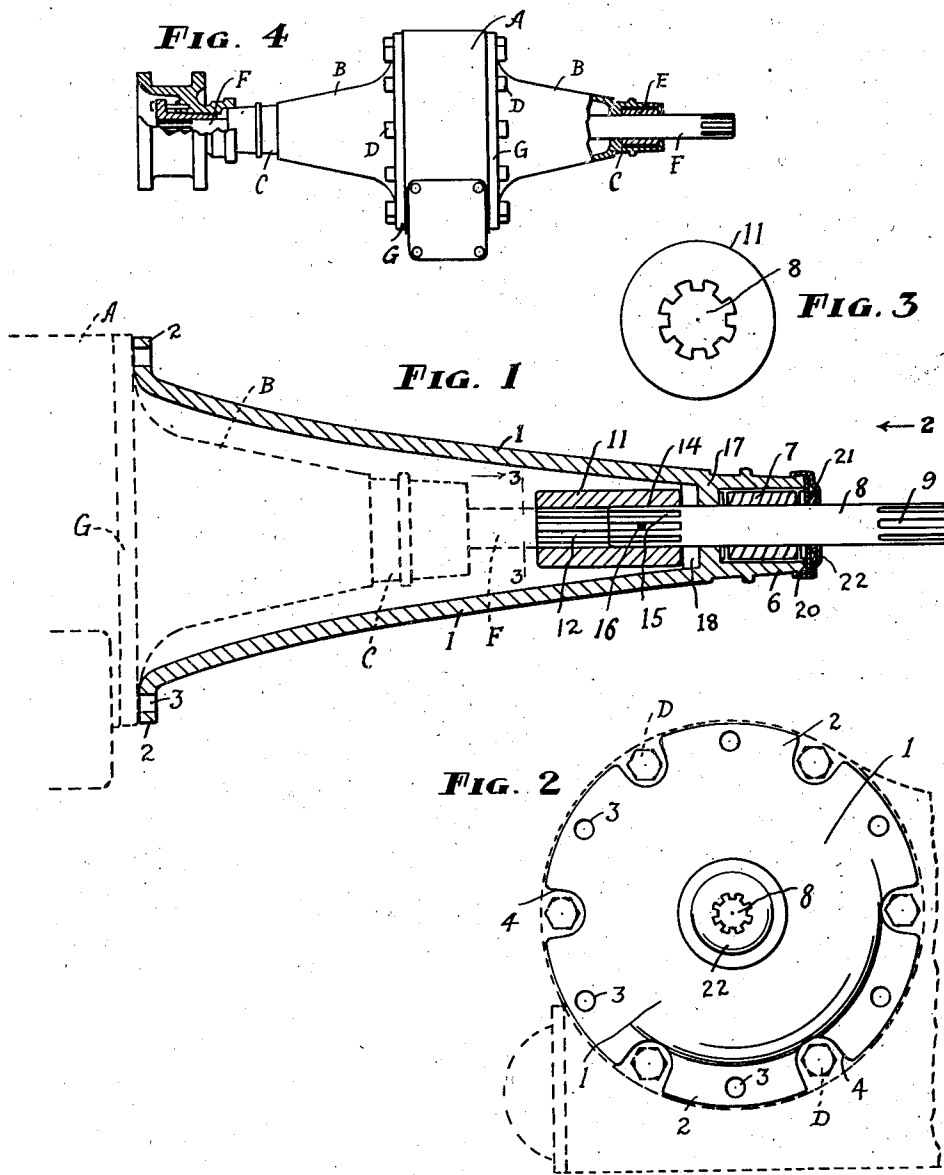
Feb. 5, 1935.

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1,990,344

AXLE EXTENSION

Filed April 21, 1933



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UNITED STATES PATENT OFFICE

1,990,344

AXLE EXTENSION

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Application April 21, 1933, Serial No. 667,274

1 Claim. (Cl. 180—75)

This invention relates to improvements in tractors.

In the use of a wheeled vehicle of this class, especially in agricultural pursuits, it is often desirable that the driving wheels may be spaced a distance greater than the measure of the standard gauge. On account of the severe bending and torque strains imposed upon the axle shafts, it is necessary that such shafts may be effectively supported at points at the end portions of the housings therefor, and adjacent to the driving wheel hubs.

The object of my invention is to provide an attachment which is capable of being combined with the standard structural equipment of rear axle assemblies, and whereby an extension of the axle shaft may be had without removing any of the interior parts or disturbing the functions thereof.

The said general object, and also more specific aims having for their purpose the providing of a device of the kind described which is economical of construction, durable, and easy to install, are accomplished by, and the invention is embodied in the new construction, combination, and arrangement of parts illustrated in the accompanying drawing, and described in the following specification.

The several parts of the invention are identified by suitable characters of reference applied to them in the different views in the drawing, in which

Figure 1 is a central longitudinal sectional view of the invention.

Figure 2 is an end view taken in the direction of arrow 2 in Figure 1.

Figure 3 is an enlarged view taken in the direction of arrow 3 in Figure 1.

Figure 4 is a view on reduced scale showing a rear axle assembly of conventional form.

A rear axle assembly of the kind to which the present invention is especially applicable, appears as illustrated in Figure 4. It comprises a main or central housing A, having the opposed body sections B and B, and necks C and C. The body sections are secured to the central housing A by means such as cap screws D. In suitable bearings, such as at E, in the necks C, are retained the outer or extended portions of the shafts F and F. The position of the wheel hub when secured to the shaft F is as shown in the drawing.

I provide a support device consisting of a hollow casting of elongated formation, the inner end of whose body portion 1 is of formation constitut-

ing a flange 2. This flange is of diameter and formation to abut directly against the outer surface of the flange G of the assembly housing B. Holes 3 in the said flange 2 are so spaced as to alternate with the positions of the cap screws D of the axle assembly housing. The portions 4 of said flange between the said holes 3 are inwardly offset so as to clear the intervening cap screws D. The outer end of said support device is of formation to constitute a cylindrical neck 6. The length of the body portion 1 of said support device is such that the neck 6 is in position a desired distance beyond the said neck C of the axle assembly proper, as shown in Figure 1.

To install the said body structure, each alternate cap screw D is removed from the axle assembly housing. The body structure is then disposed in position with the holes 3 thereof in registration with the threaded holes in the assembly housing. With the replacement then of the said cap screws and the tightening of same, the said body structure will have been secured in position.

Retained in the said neck 6 is a conventional roller bearing 7. In this bearing, a member which I designate as an extension or stub shaft 8 is journaled. Usual splineways 9 are provided at the outer end of said extension shaft. A coupling sleeve 11 is provided with interior longitudinal splineways 12 that are spaced to register with the splineways of the shaft F. The said coupling sleeve also has splineways 14 which are spaced to accord with the splineways 15 that are provided at the inner end of the said extension shaft. The said coupling sleeve is fastened against longitudinal movement on the shaft 8, by a cross pin 16. Between the said coupling sleeve and the annular wall 17 of the neck 6, is retained a suitable ring 18 which constitutes a take up and thrust bearing.

At the outer end of the neck 6 I provide a retainer ring 20, felt washer 21, and a closure ring 22, which several parts constitute a suitable closure of the bearing. The said bearing ring 18 may be varied in thickness to compensate for such variation in length of the shaft F as may be present.

My invention, embodying as it does, the extension or stub shaft 8 and bearings therefor and coupling member 11 carried in an individual housing structure that is capable of encasing the axle housing proper, and of being readily fastened to a conventional assembly housing, constitutes a practicable attachment. It affords to the user of a tractor of conventional gauge,

the benefit of the elongated axle arrangement. The applying of the attachment to use involves simply the removal of the wheel hub from axle F and the removing of each alternating cap screw 5 D of the assembly housing; then disposing the attachment in connection with the flange of the assembly housing, and then the replacing of the screws.

10 Inasmuch as the installation does not involve modification of the tractor equipment or parts, the removal of the attachment, and the return to the standard axle F length is practicable.

Whereas the invention is shown in connection with a tractor rear axle housing, the invention is 15 applicable to axle assemblies generally which embody a central housing. Also it is to be understood that minor changes may be made in the structural features of the invention without departing from the spirit or principle thereof.

What I claim as my invention, is—

An attachment for an axle assembly of the kind described, comprising an elongated open support-housing to enclose the axle assembly 5 housing and having an enlarged inner end whose flange is of offset formation to clear each alternate cap screw of the flange of the assembly housing and having holes for the other cap screws, and the outer end of the said housing 10 being provided with an open neck, an anti-friction bearing in said neck, a stub shaft journaled in said bearing and each of its ends having splineways, and a coupling member splined on said stub shaft and secured thereon against longitudinal movement, and having splineways 15 to engage those of the axle shaft, and a closure ring between the outer end of said housing and the said stub shaft.

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