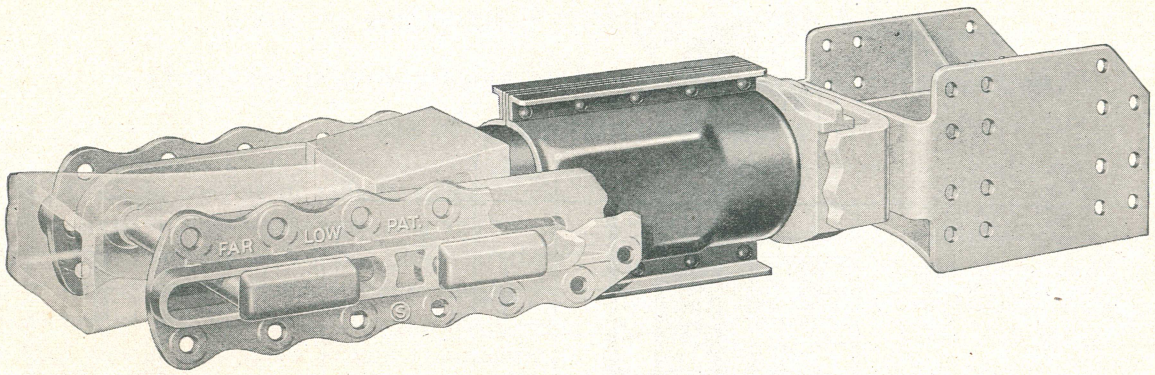


Fig. 10.45—Edgewater Ring Spring Draft Gear as applied with Farlow attachments.

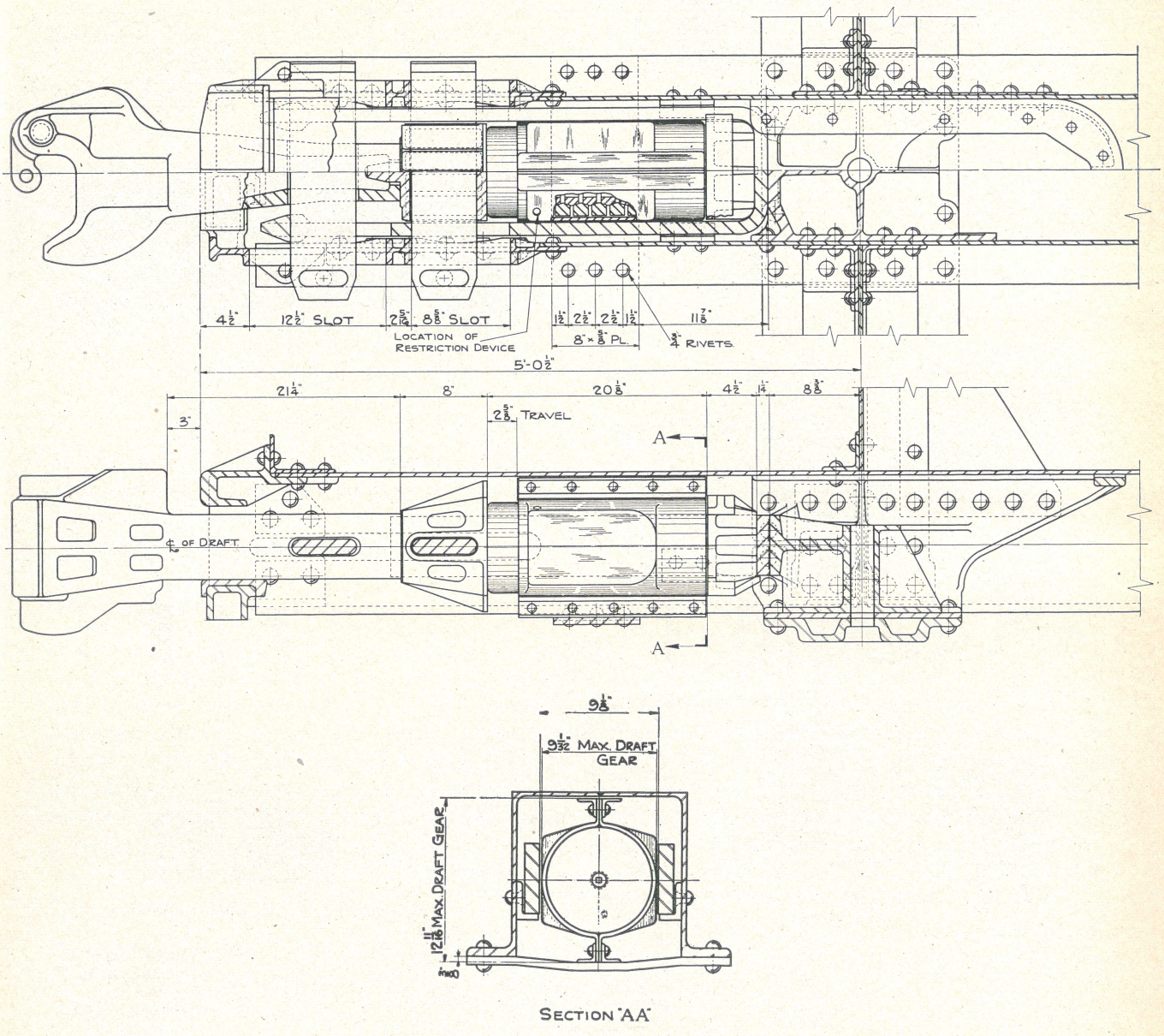


Fig. 10.46—Edgewater B-32-KA Draft Gear as applied to A.A.R. car with standard horizontal yoke attachment.

Edgewater Steel Company

(*See also Page 937*)

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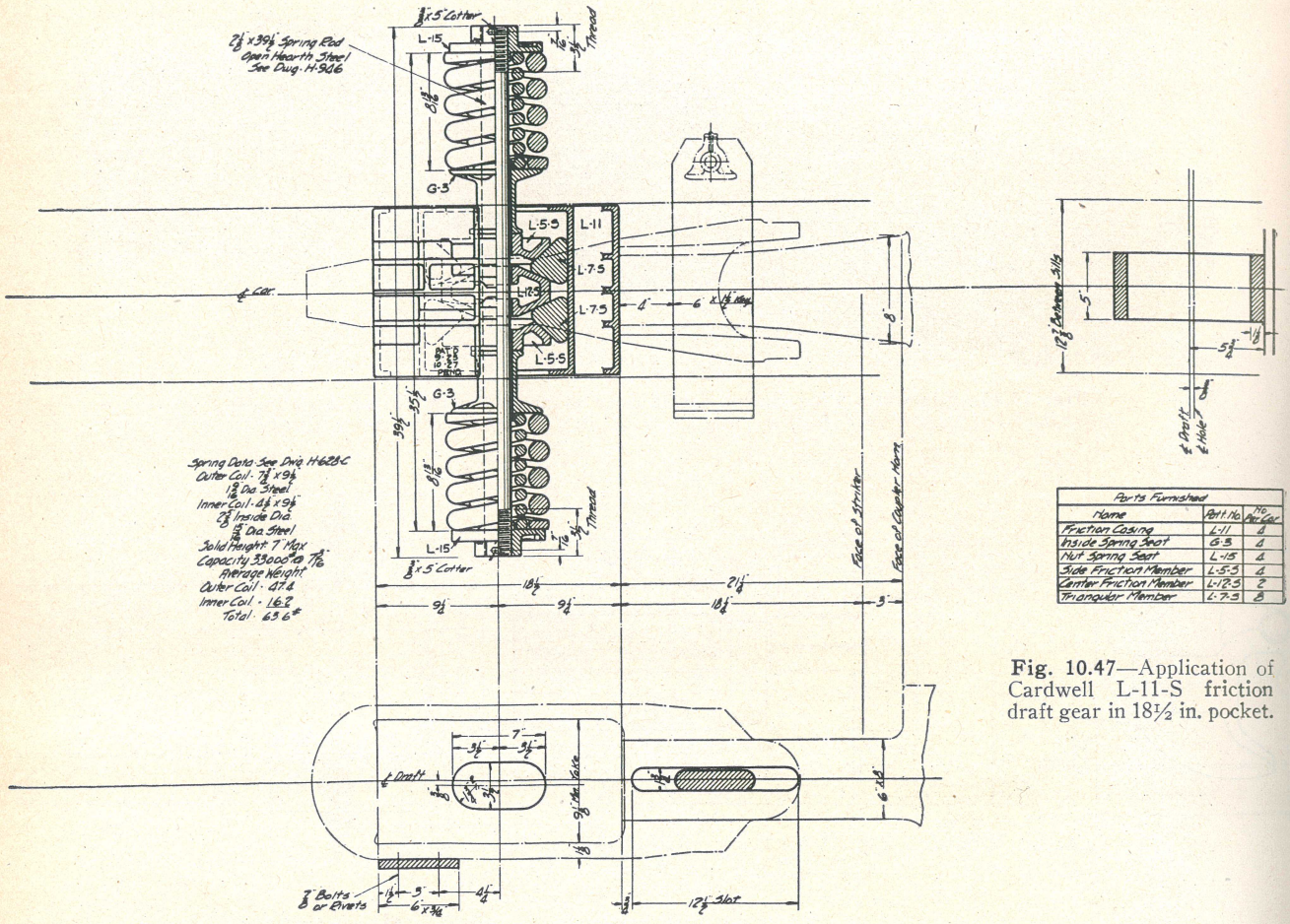


Fig. 10.47—Application of Cardwell L-11-S friction draft gear in 18½ in. pocket.

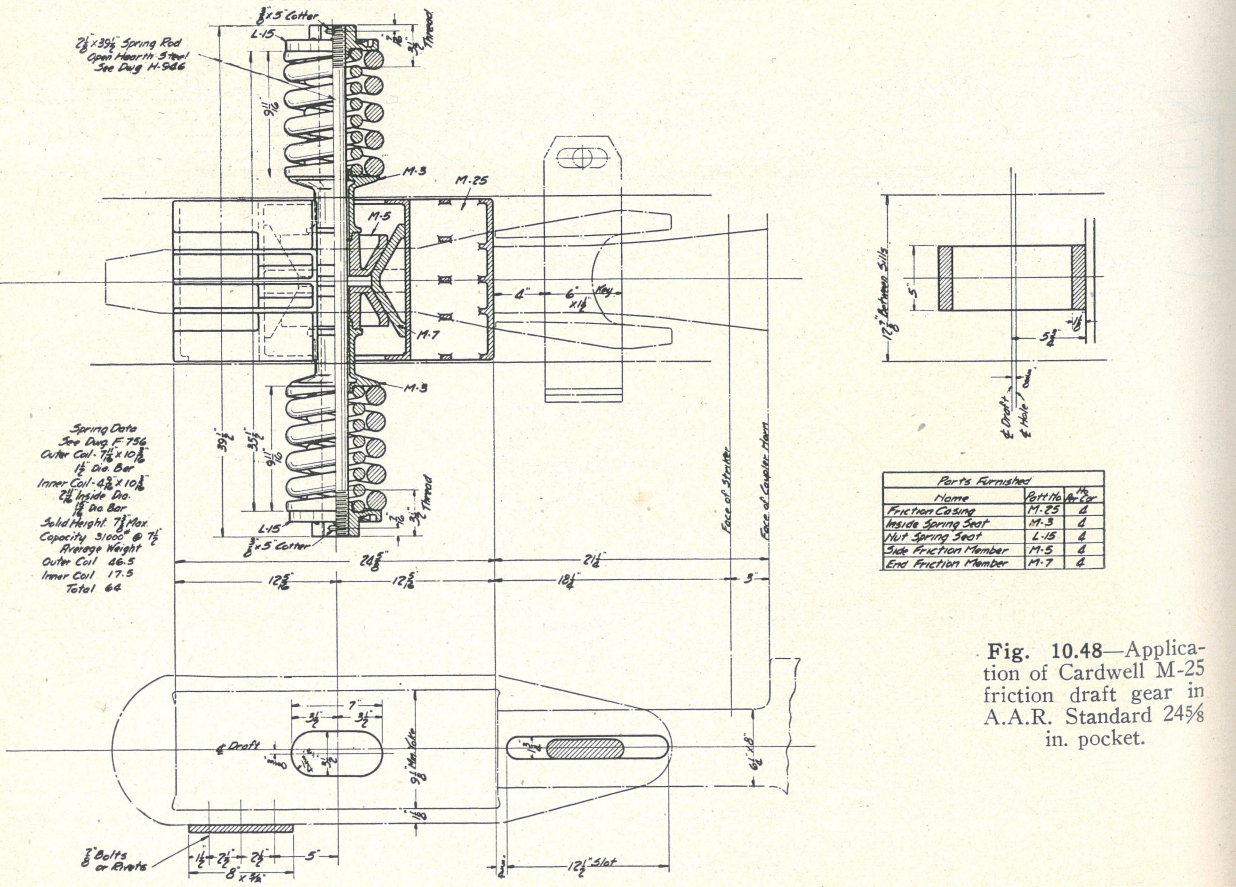


Fig. 10.48—Application of Cardwell M-25 friction draft gear in A.A.R. Standard 24⅝ in. pocket.

Cardwell Westinghouse Company

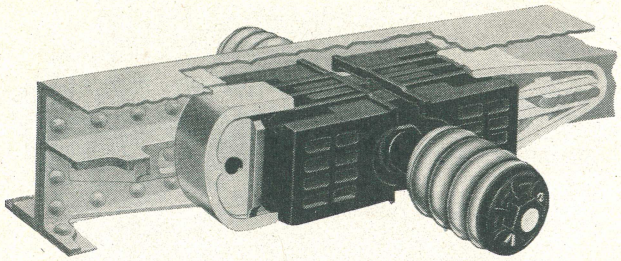
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The Cardwell Friction Draft Gear

Features include invariable high capacity, rugged construction, ease of inspection and repairs

INCREASES in weights of railway rolling stock, and in speed of operation, were long ago recognized by this company as normal progress which would continue into the future. Consequently, the capacity of Cardwell Friction Draft Gears has always been kept well in advance of current requirements. Cardwell Draft Gears provide a degree of protection to cars and lading which is not only ample for the present, but for a considerable future increase in the severity of service. To determine the condition of a Cardwell Friction Draft Gear, it is only necessary to inspect the spring and spring rod; and this is done with the gear on the car and without disassembling. Friction parts are easily replaced to restore the gear to its high initial efficiency.



Cardwell M-25 draft gear, certified A.A.R.

The Cardwell Friction Draft Gear

The manufacturers of this gear were among the first to adopt the friction principle as a means of dissipating the energy of moving cars. This principle is now followed in practically all draft gears. The design of the Cardwell Friction Draft Gear itself, however, is radically different from others. It can be easily restored to high efficiency, after years of service, resulting in considerable economy.

Improvements Give Greater Protection

Incorporated in the Cardwell series of gears, are the results of investigations and tests which are being carried on continuously.

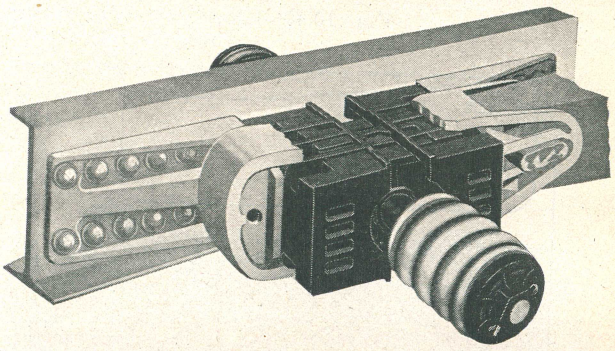
While the basic design remains unchanged, additional capacity and sturdiness make this gear, with standard attachments, capable of withstanding as great final forces as any other known combination.

Design Details

The friction members of this gear are encased in two housings. The spring rod supports coil springs which hold the friction members under compression. The coupler yoke encircles the two housings.

Cardwell Friction Draft Gear Is Distinctive in Design

The feature which distinguishes the Cardwell Friction Draft Gear is the arrangement of its springs which are crosswise of the sills. Its working mechanism is so disposed that its condition may be determined in an instant, by an inspection from the outside. This arrangement of springs allows the gear to be made longitudinally compact, which is a decided advantage in nearly all cases and particularly so in short cars.



The Cardwell type L-11-S draft gear

Summarizing, the distinguishing features of the Cardwell Draft Gears are high work capacity, simplicity, long efficient life, positive release and ability to restore its capacity. This gear can be repaired by regular car repair men.

The Cardwell M-25 Draft Gear is designed for the A. A. R. Standard 24⅝-in. pocket.

The Cardwell L-11-S Draft Gear has the same capacity as the M-25 but is designed for an 18½-in. pocket.

Important instructions for inspecting Cardwell Friction Draft Gears and keeping these gears working at their full capacity are contained in the Cardwell Draft Gear Chart which will be sent to interested railroad men upon request.

CARDWELL WESTINGHOUSE COMPANY, CHICAGO, ILL.
CANADIAN CARDWELL CO., LTD., MONTREAL

Products and Branch Offices Are Listed in the Classified Indexes

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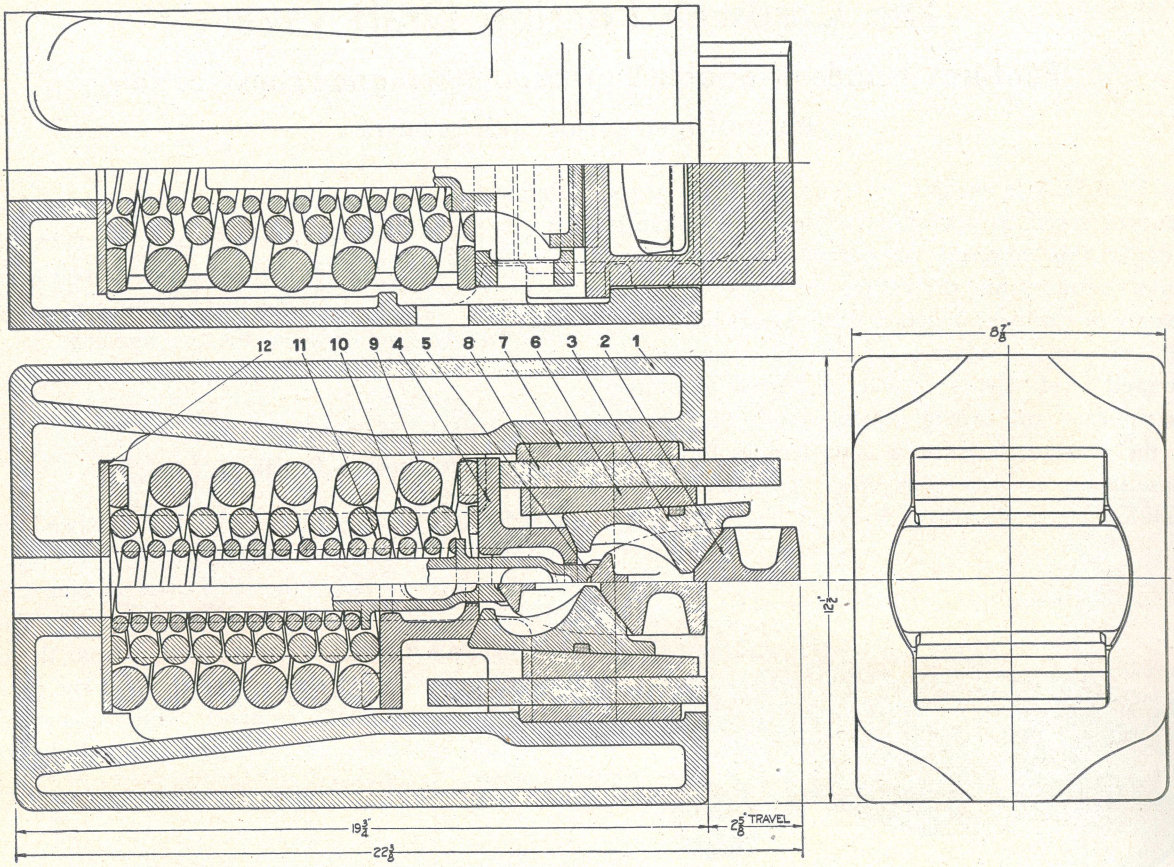


Fig. 10.49—Cross sections of Westinghouse Type NY-11-F friction draft gear.

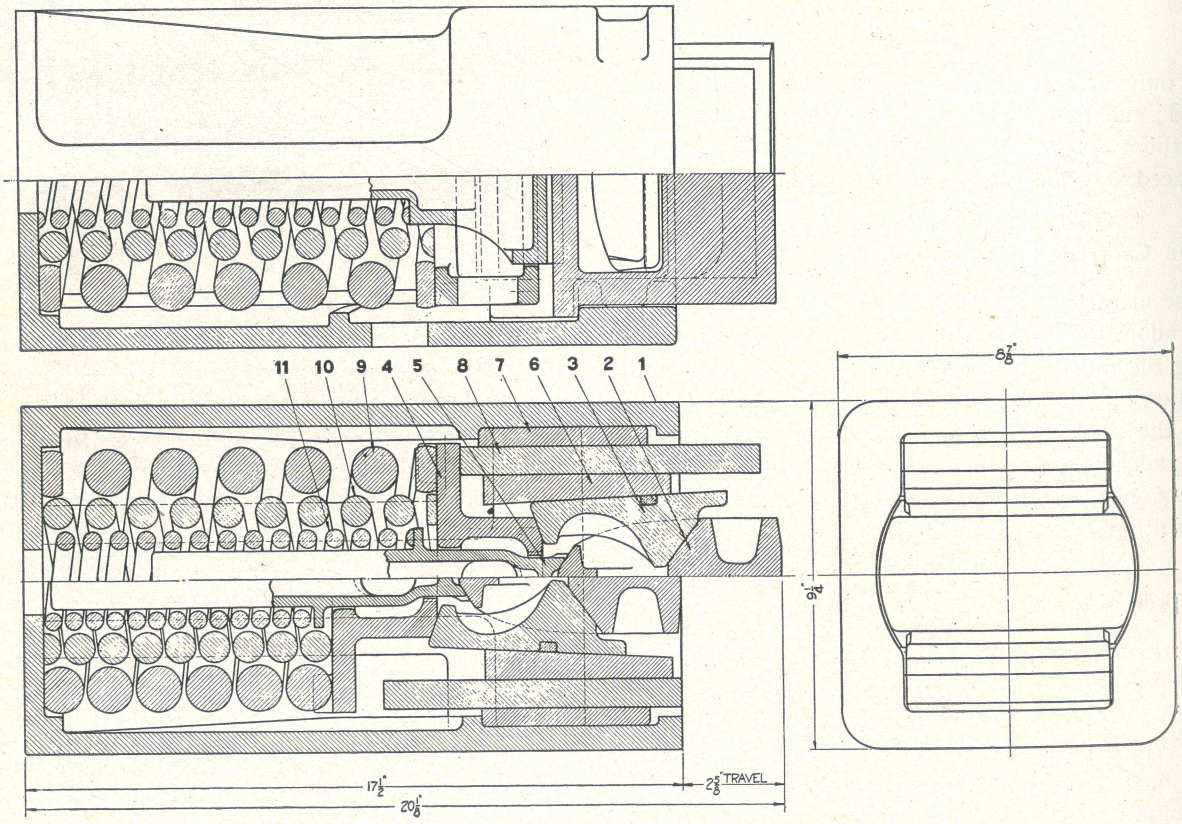


Fig. 10.50—Cross sections of Westinghouse Type NZ-11-F friction draft gear.

Cardwell Westinghouse Company

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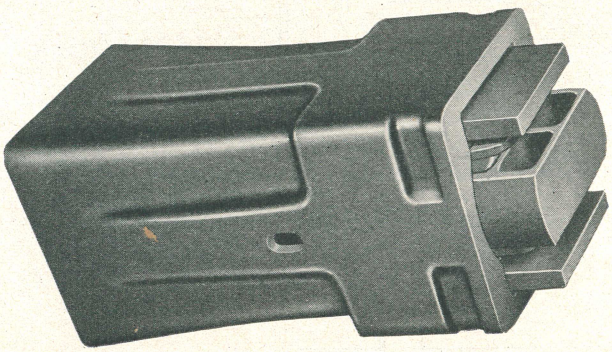
Westinghouse Friction Draft Gears

Feature strength and shock-absorbing capacity

THE Westinghouse Type NY-11-F and Type NZ-11-F Draft Gears give the increased car protection necessitated by the heavy loads and high speeds of present-day traffic. The gears are designed to give ample capacity, strength and durability for the shocks encountered in hump-yard or other switching, or in the severe service to which they are subjected in high-speed trains, with a minimum maintenance. The friction members are made of a metal especially suited to the stresses and wear to which they are subjected.

Westinghouse Type NY-11-F and NZ-11-F Draft Gears

The Type "N" Westinghouse Draft Gears are unusually rugged, with special high-duty characteristics which lower maintenance costs and give an unusual degree of protection to attachments, car structure and lading.



Westinghouse type NZ-11-F draft gear, certified A.A.R.

The gear consists essentially of a multiple arrangement of friction members, in combination with springs, which furnish the elastic resistance and the means for releasing the gear. Its movable parts are encased in a housing of rectangular cross-section, and held together under initial compression by a self-locking arrangement.

The construction throughout is substantial and of the best materials. The housing is a heat-treated steel casting of highest quality. The friction members are of hardened alloy steel, a combination which offers high resistance with minimum wear.

Low Initial Resistance

The operating advantages include a low initial resistance to provide the necessary movement for starting long trains.

Positive Release

These gears are so designed and constructed as to insure prompt and certain return to normal position in readiness for subsequent duty up to full capacity.

Minimum Recoil

One of the desirable features of this Gear—minimum recoil—is effected by the proper design, proportioning and arrangement of the frictional and spring elements.

Installation

These gears can be applied with proper follower plates to any standard 24⅝-in. pocket using either vertical or horizontal Yoke attachments.

Gear Travel

The soft starting action and ultimate high capacity are obtained with a travel of 2⅝ in.

The Gear Is Self-Contained

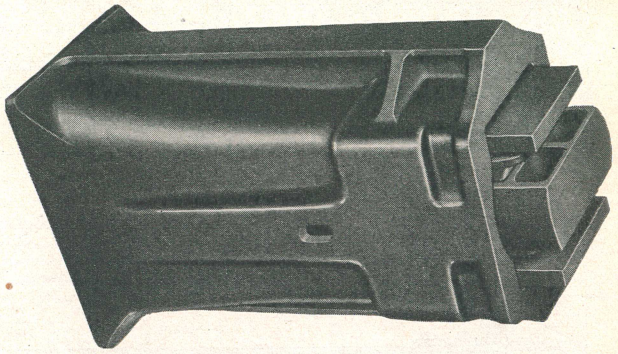
The fact that the various members of the gear are held together under initial compression insures, first, that all parts are always in their proper relation; and second, that the gear can be handled as a single unit.

No Friction Wear on Housing

There is no wear on the housing—the most expensive single part to replace—which insures that no repairs will be required from this source. This is achieved by so designing the gear that the wear affects the removable elements only. Exceptionally large frictional surfaces are provided, which distribute the work over a large area, consequently the rate of wear is low. The housing is strong enough to withstand, safely, blows far in excess of the capacity of the coupler.

Two Types of Gears

Within these two classes of gears, details are similar, and operate to produce the same excellent performance.



Westinghouse type NY-11-F draft gear, certified A.A.R.

The NY-11-F has a capacity and ruggedness which make it adequate for the great majority of applications. The NZ-11-F has equal capacity and both are designed for cars and locomotives subjected to severe service.

Both gears meet all A.A.R. requirements. If further information is desired, the Cardwell Westinghouse Company will be pleased to have one of their experienced draft gear men call and discuss specific draft gear requirements to suit any individual case.

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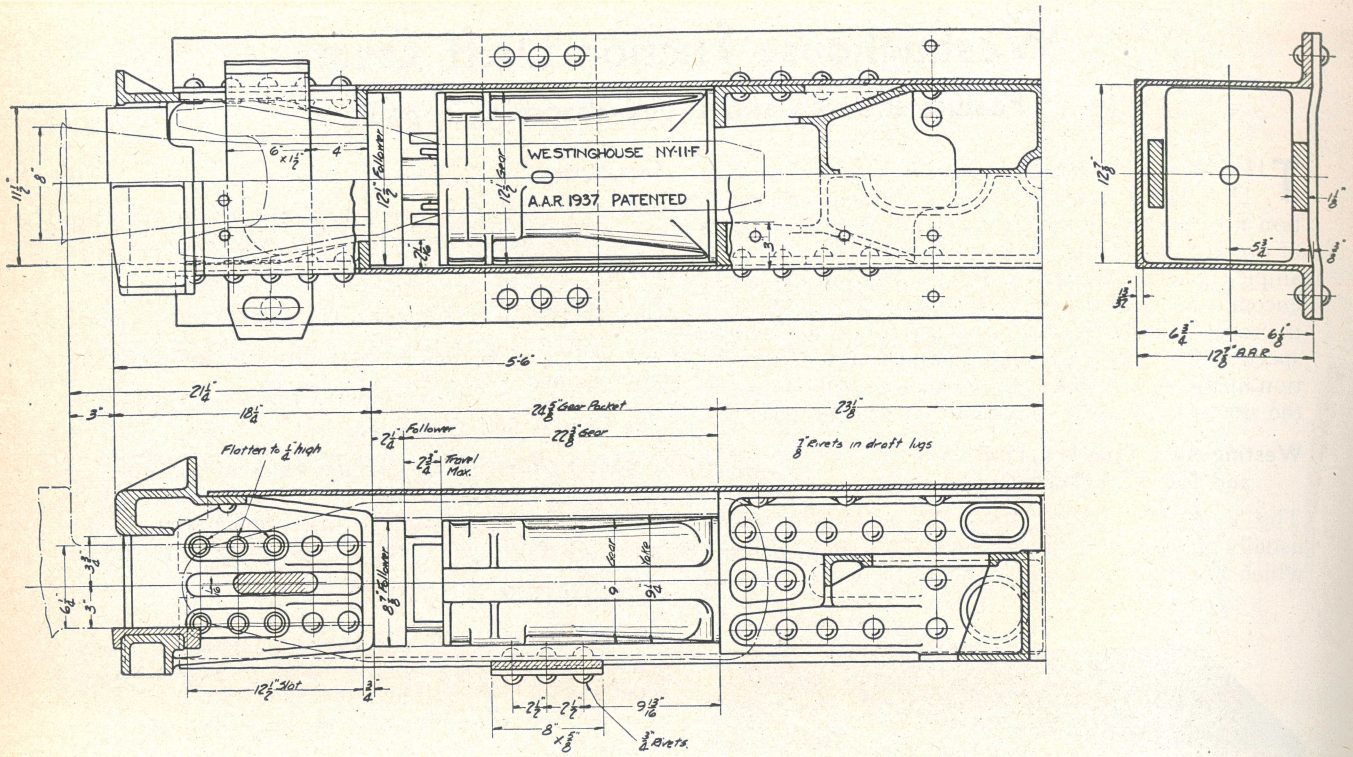


Fig. 10.51—Application of Westinghouse Type NY-11-F friction draft gear with vertical yoke.

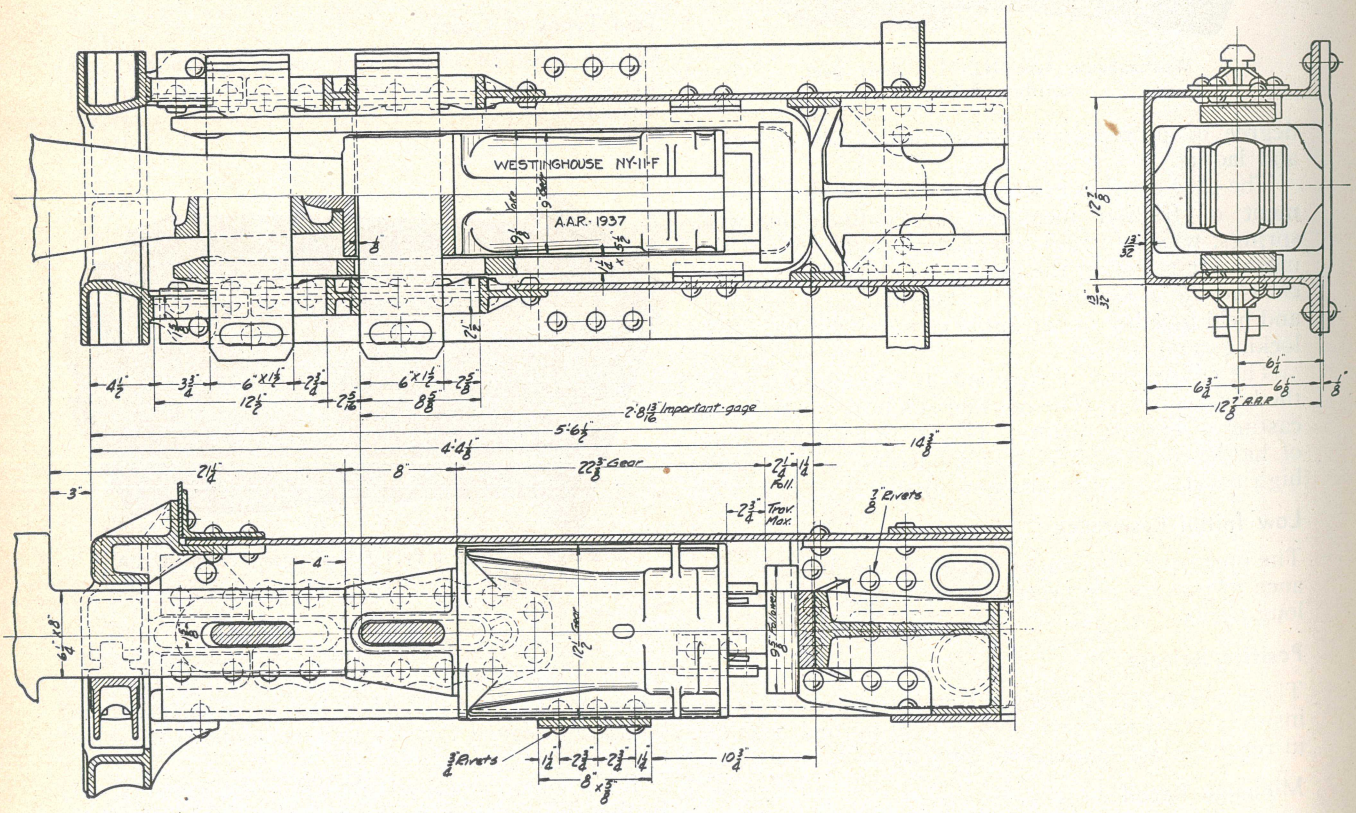


Fig. 10.52—Application of Westinghouse Type NY-11-F friction draft gear with horizontal yoke.

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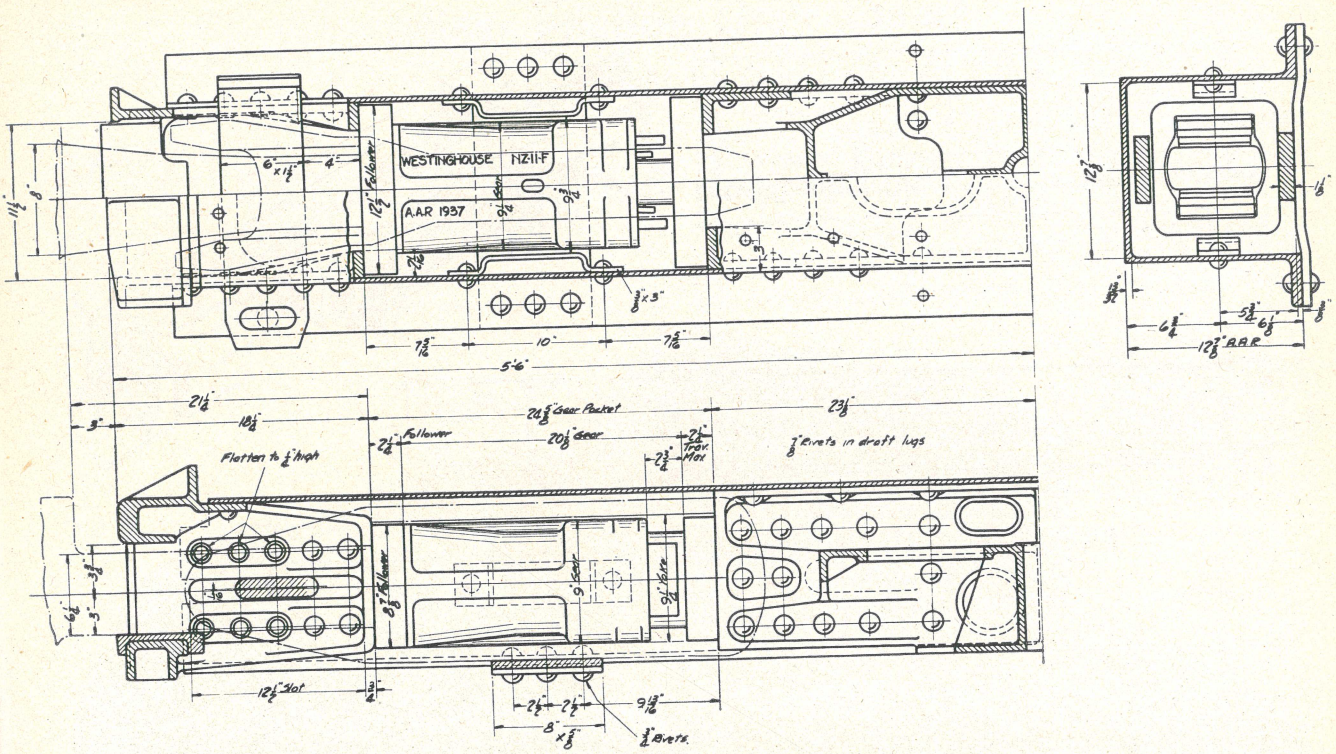


Fig. 10.53—Application of Westinghouse Type NZ-11-F friction draft gear with vertical yoke.

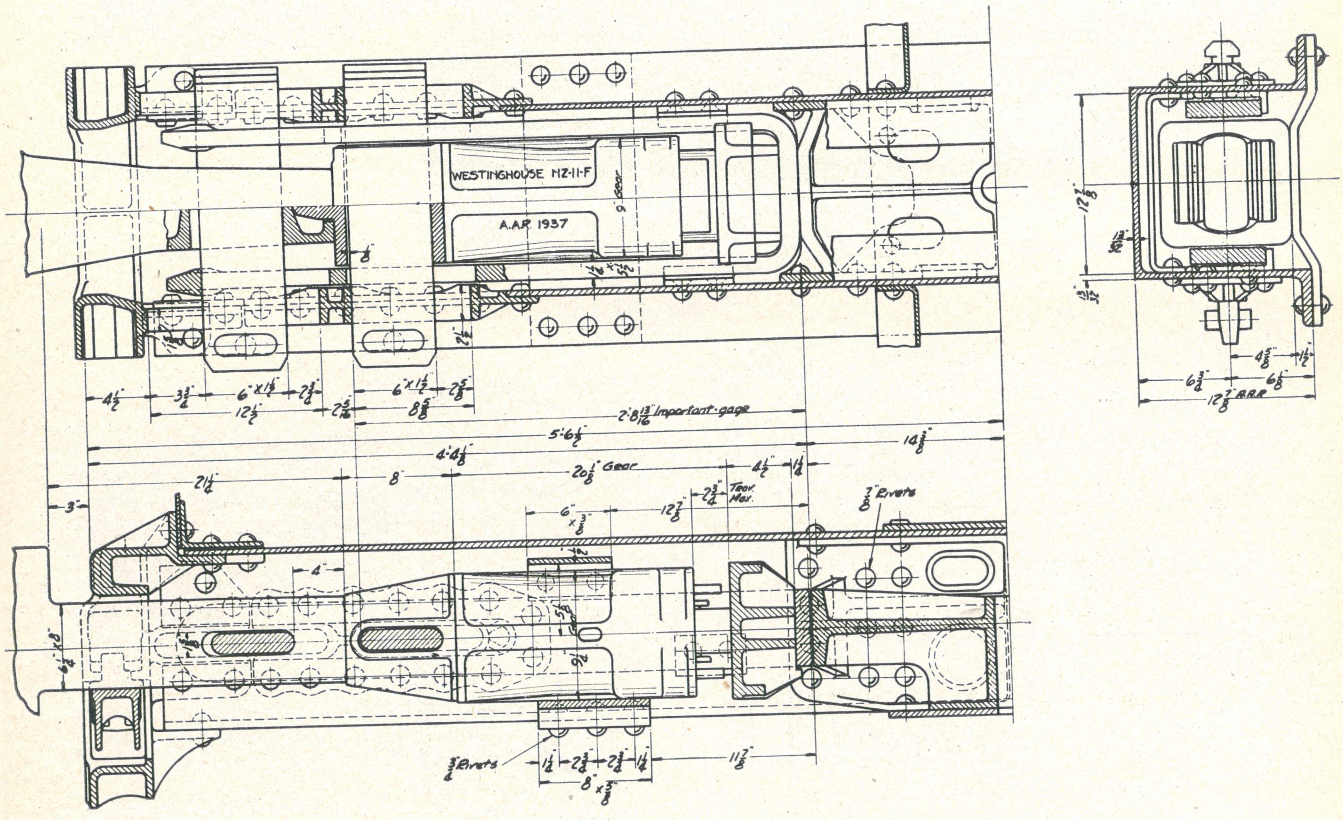


Fig. 10.54—Application of Westinghouse Type NZ-11-F friction draft gear with horizontal yoke.

Cardwell Westinghouse Company

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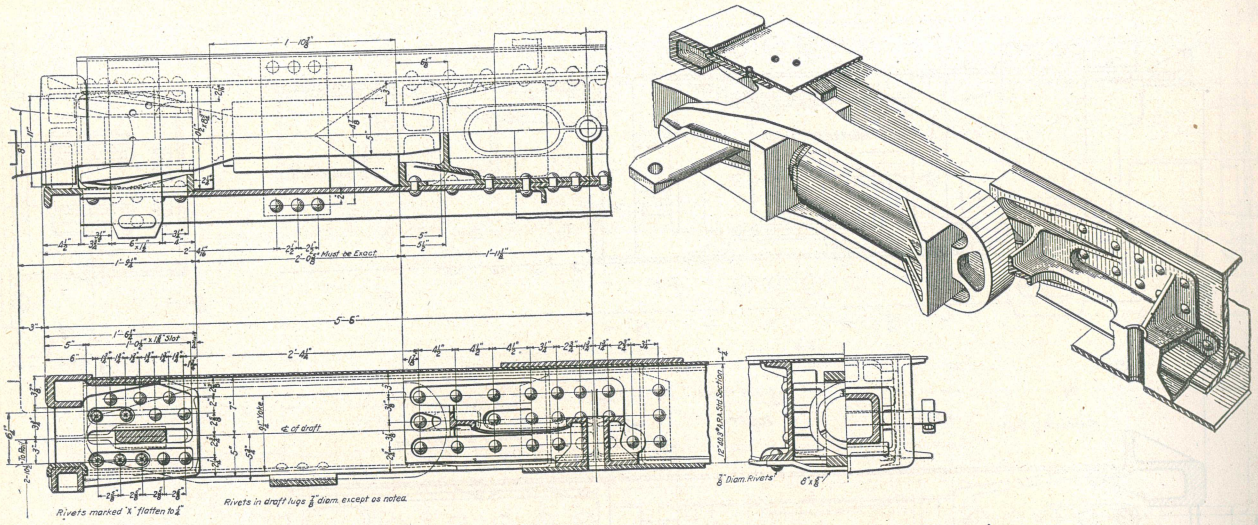


Fig. 10.55—Miner Class A-22-XB friction draft gear applied to freight equipment.

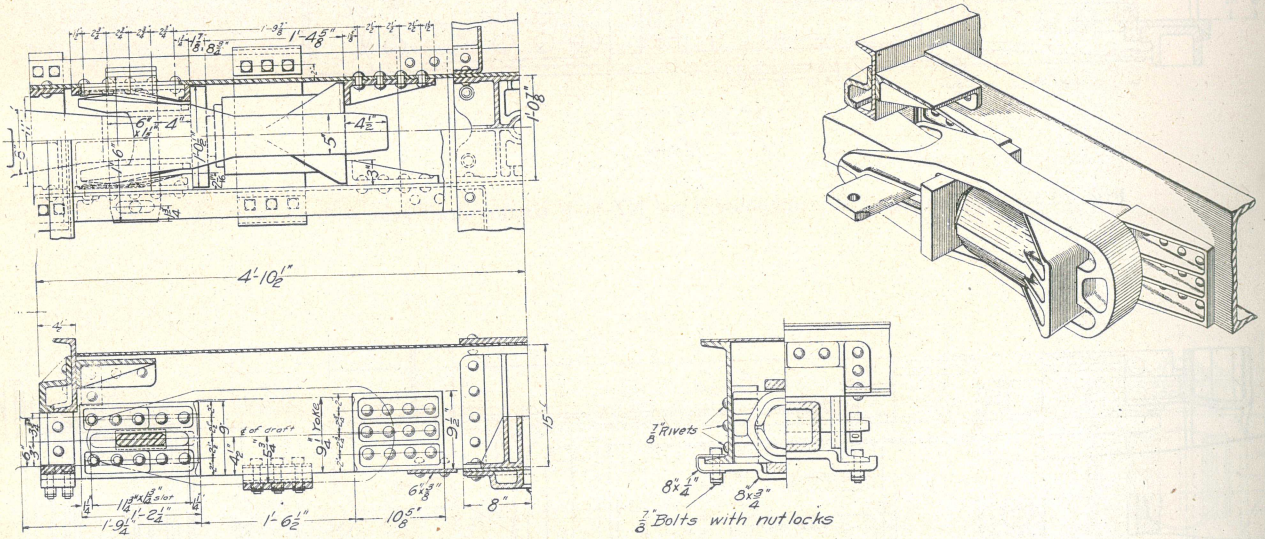


Fig. 10.56—Miner Class A-69-XB friction draft gear applied to freight equipment.

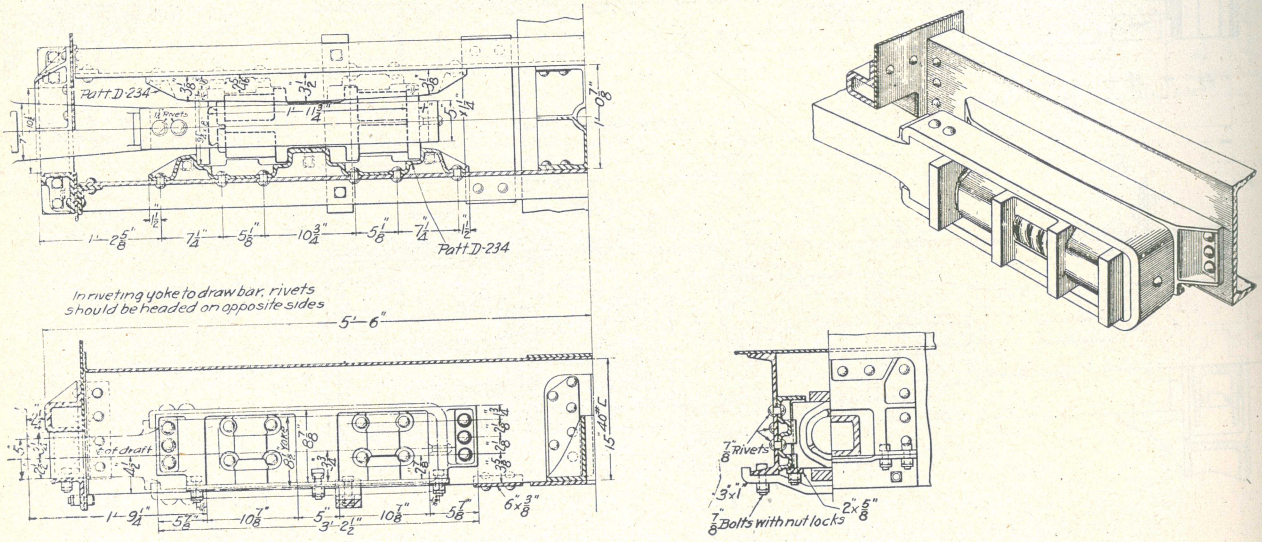


Fig. 10.57—Miner Class A-19-XB friction draft gear applied to freight equipment having Miner tandem draft attachments.

W. H. Miner, Inc.

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