



(22) **Date de dépôt/Filing Date:** 2014/05/30

(41) **Mise à la disp. pub./Open to Public Insp.:** 2015/11/30

(51) **Cl.Int./Int.Cl.** *B60G 21/00* (2006.01)

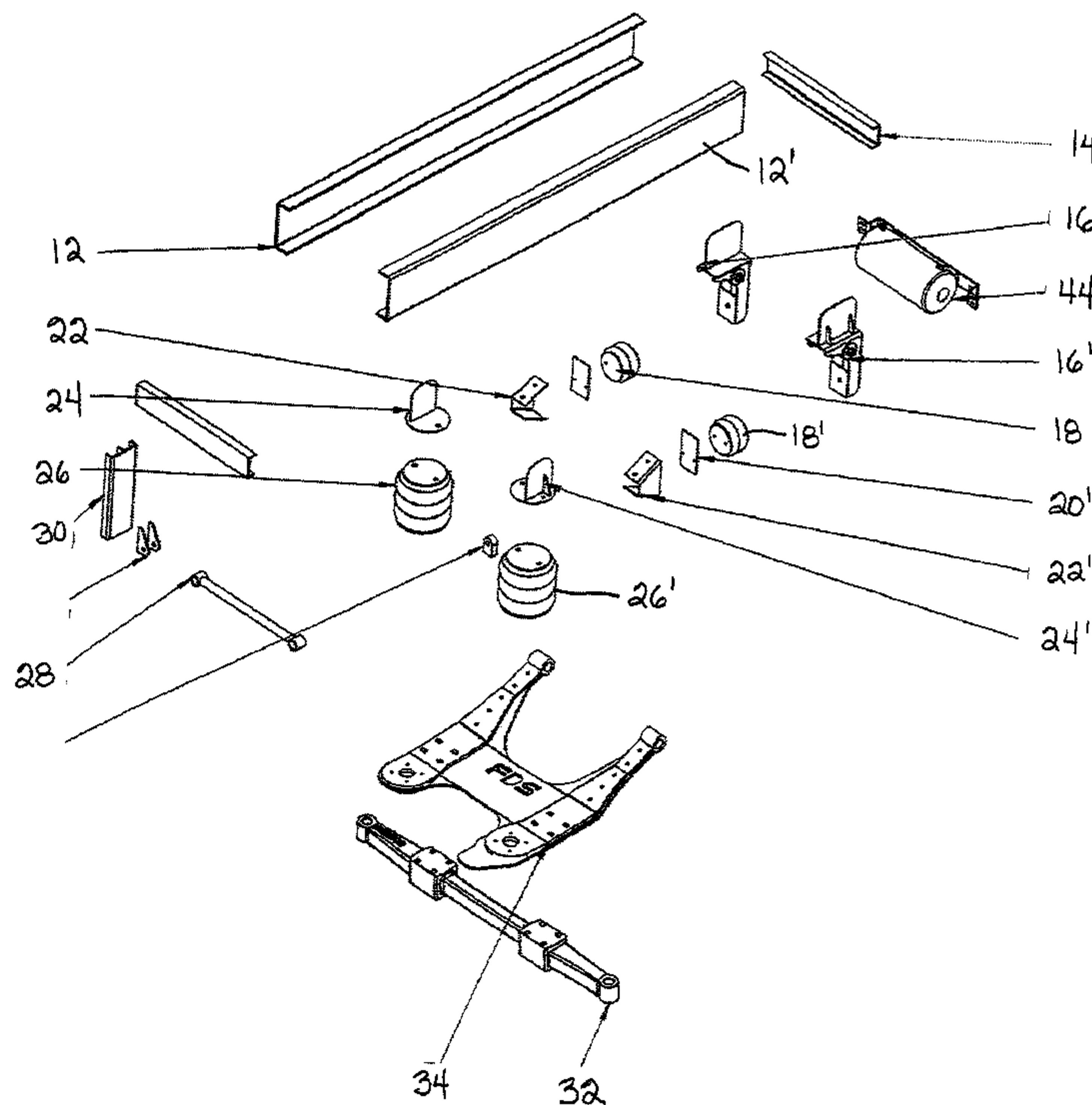
(71) **Demandeur/Applicant:**
EQUIPEMENTS FDS INC., CA

(72) **Inventeur/Inventor:**
DRAPEAU, DANIEL, CA

(74) **Agent:** FINCHAM, ERIC

(54) **Titre : MECANISME DE SUSPENSION POUR VEHICULES A MOTEUR**

(54) **Title: SUSPENSION SYSTEM FOR MOTOR VEHICLES**



SUSPENSION SYSTEM FOR MOTOR VEHICLES

FIELD OF THE INVENTION

The present invention is related to an axle suspension for wheeled motor vehicles.

SUMMARY OF THE INVENTION

The present invention relates vehicle suspension systems, and more particularly to axle stabilizing systems.

BACKGROUND OF THE INVENTION

Truck suspension systems provide isolation of passengers and cargo from road shock while keeping the vehicle stable and preserving operator control. Generally, these objectives are met using various combinations of springs, motion dampening devices and auxiliary axle positioning elements.

The central element of any suspension system is the spring and there are many different types of suspension systems. The basic types of suspension systems used on trucks include leaf spring systems, equalizing beam systems, torsion bar systems and air spring systems. Hybrid combinations of these are also used.

Leaf spring based systems are relatively popular and have been applied to both steering and non steering axles as well as driven and non driven axles. In an air based system, air bellows known as convoluted air springs are positioned with respect to an axle vehicle frame to support the frame from the axle. Air spring systems are known to provide excellent load and vibration isolation compared to traditional leaf spring systems. Air springs usually have a lower deflection rate than a leaf spring exerting the same force giving the system greater capacity for absorbing shocks for a given displacement between the axle and the frame. Air spring pressure can also be adjusted to compensate for vehicle load changes

by adding air to or exhausting air from the spring.

One weakness of air spring suspension systems is that they require more auxiliary stabilization to maintain the proper location and attitude of the axle with respect to the vehicle and to prevent excessive vehicle roll. Absent stabilization, air springs can extend to their maximum lengths or widths in the direction of least resistance and can cause an unevenly loaded vehicle to tip over to one side. Full leaf springs do not suffer from this disadvantage.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a stabilization arrangement for air spring based suspension systems.

BRIEF DESCRIPTION OF THE DRAWINGS

Having thus generally described the invention, reference will be made to the accompanying drawings illustrating an embodiment thereof, in which:

Figure 1 is a perspective view of one side of a suspension system illustrating the present invention;

Figure 2 is a side elevational view thereof;

Figure 3 is a top perspective view thereof;

Figure 4 is an exploded view of the components forming a portion of the suspension system;

Figure 5 is an exploded view of a portion of the suspension system;

Figure 6 is a perspective view of a portion of the suspension system; and

Figure 7 is a perspective view illustrating both sides of the suspension system.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings in greater detail and by reference characters thereto, there is illustrated a suspension system which is generally designated by reference numeral 10.

Referring initially to Figure 4 which illustrates the components in an exploded view, there is provided a pair of frame members 12, 12'. A connecting member 14 extends therebetween. Brackets 16, 16' are provided for connecting double convoluted air springs 18, 18'. Bracket components 20, 20', 22, 22' and 24, 24' are then utilized for connecting to a main connecting plate 34 which will be described hereinbelow.

The air suspension includes a pair of triple convoluted air springs 26, 26'. The air springs are connected to connecting plate 34 and to frame members 12, 12'. As shown, a reinforcing bar 28 may extend transversely and be secured at one end by a rear attachment 30.

Connecting plate 34 includes a base center portion 36 which has extensions 38, 38'. Reinforcing legs 40, 40' are secured to base center portion 36 while connecting arms 42 are provided. Connecting arms 42 can act as bushings.

In the illustrated embodiment, an air tag assembly 44 is provided.

It will be understood that changes and modifications may be made to the above described embodiment without departing from the spirit and scope of the invention. The various components will be made of suitable material and in the case of connecting plate 34, material of an adequate thickness (between ½ inch and one inch) may be utilized for each portion thereof including the reinforcing legs 40, 40' and connecting arms 42.

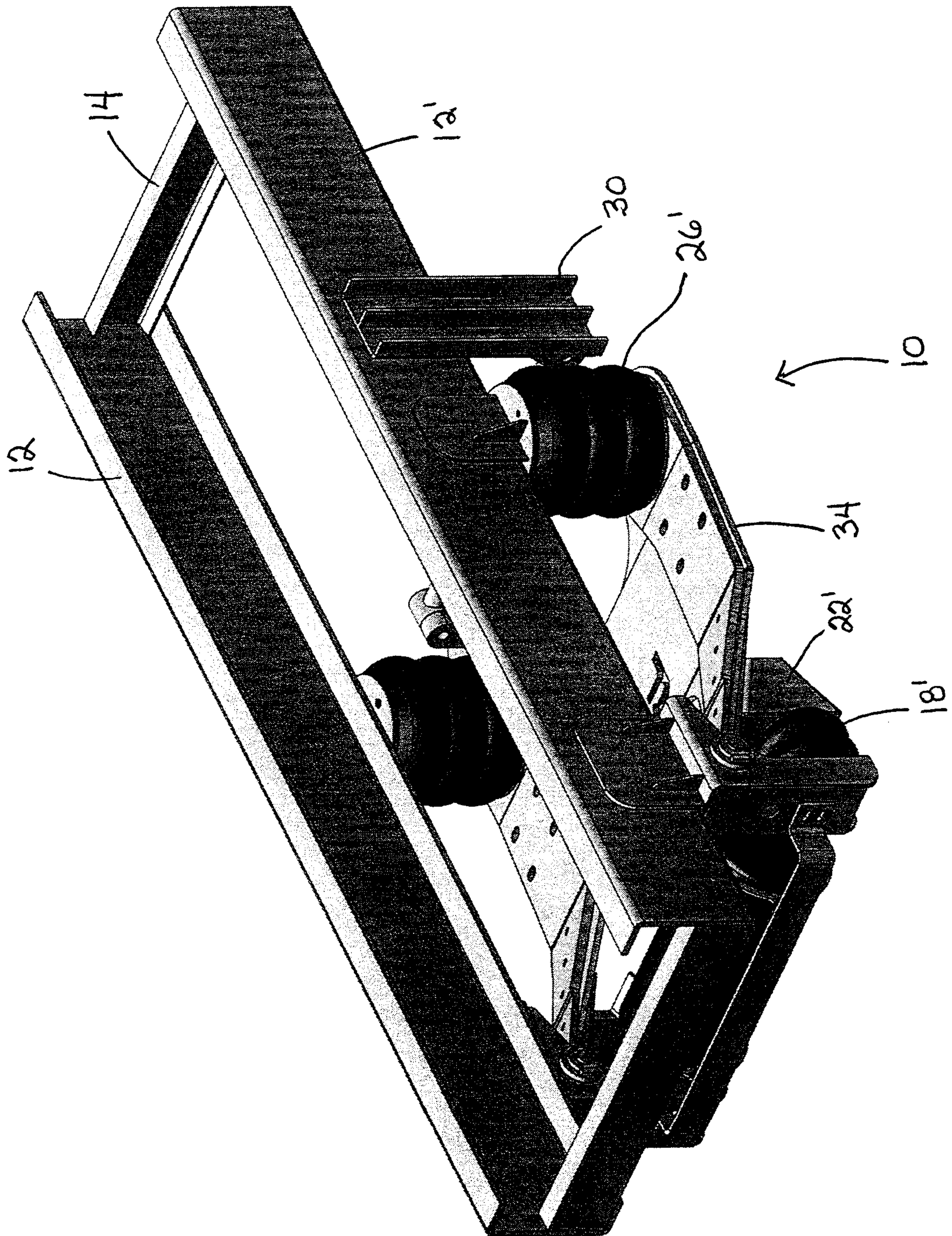


Fig 1

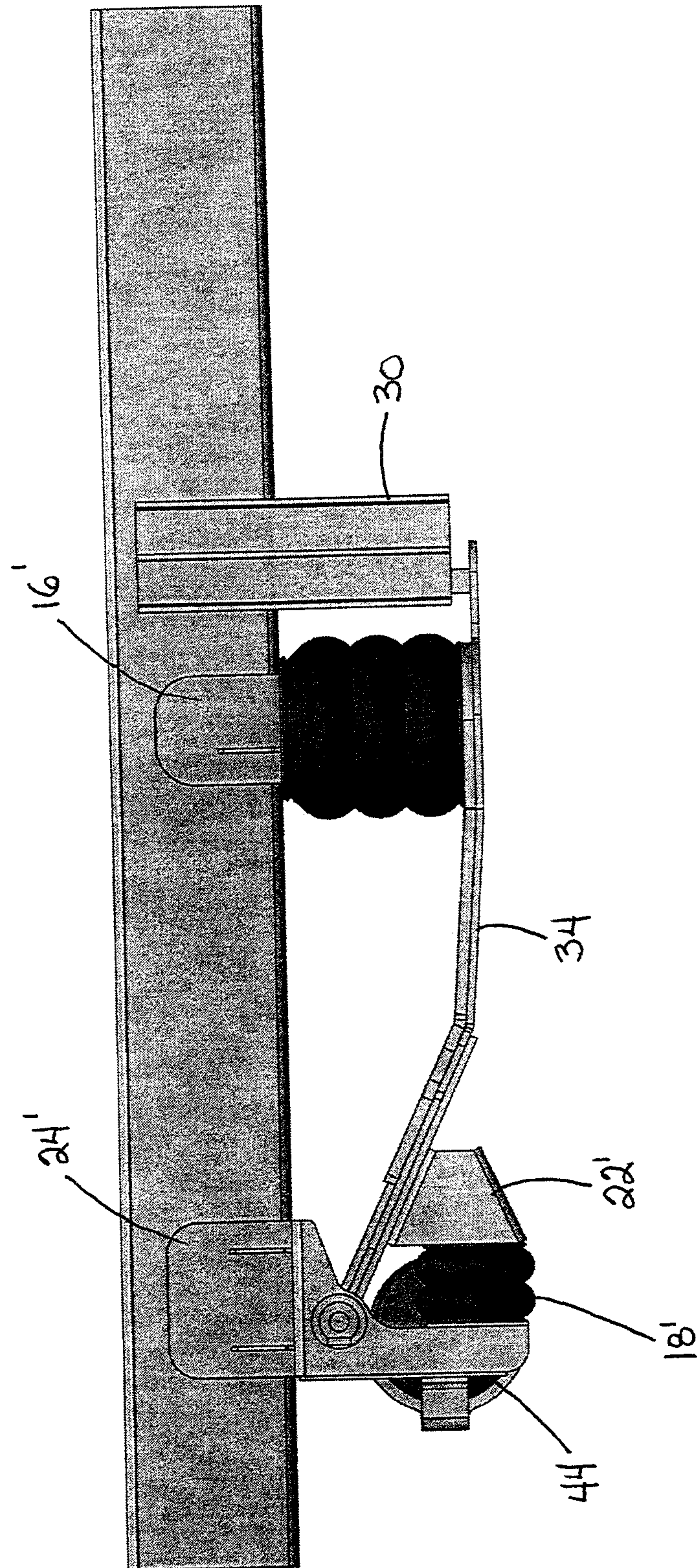


Fig 2

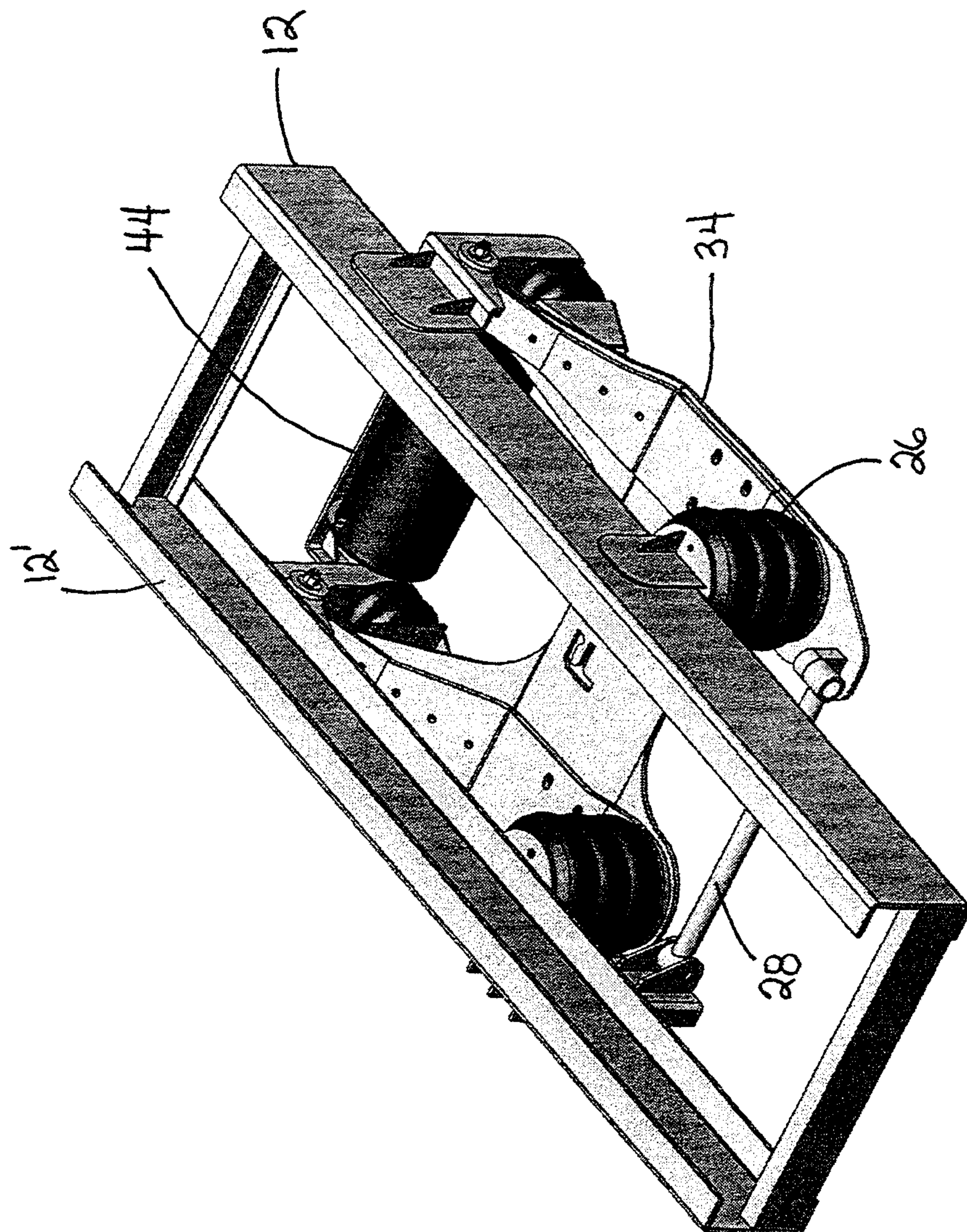


Fig. 3

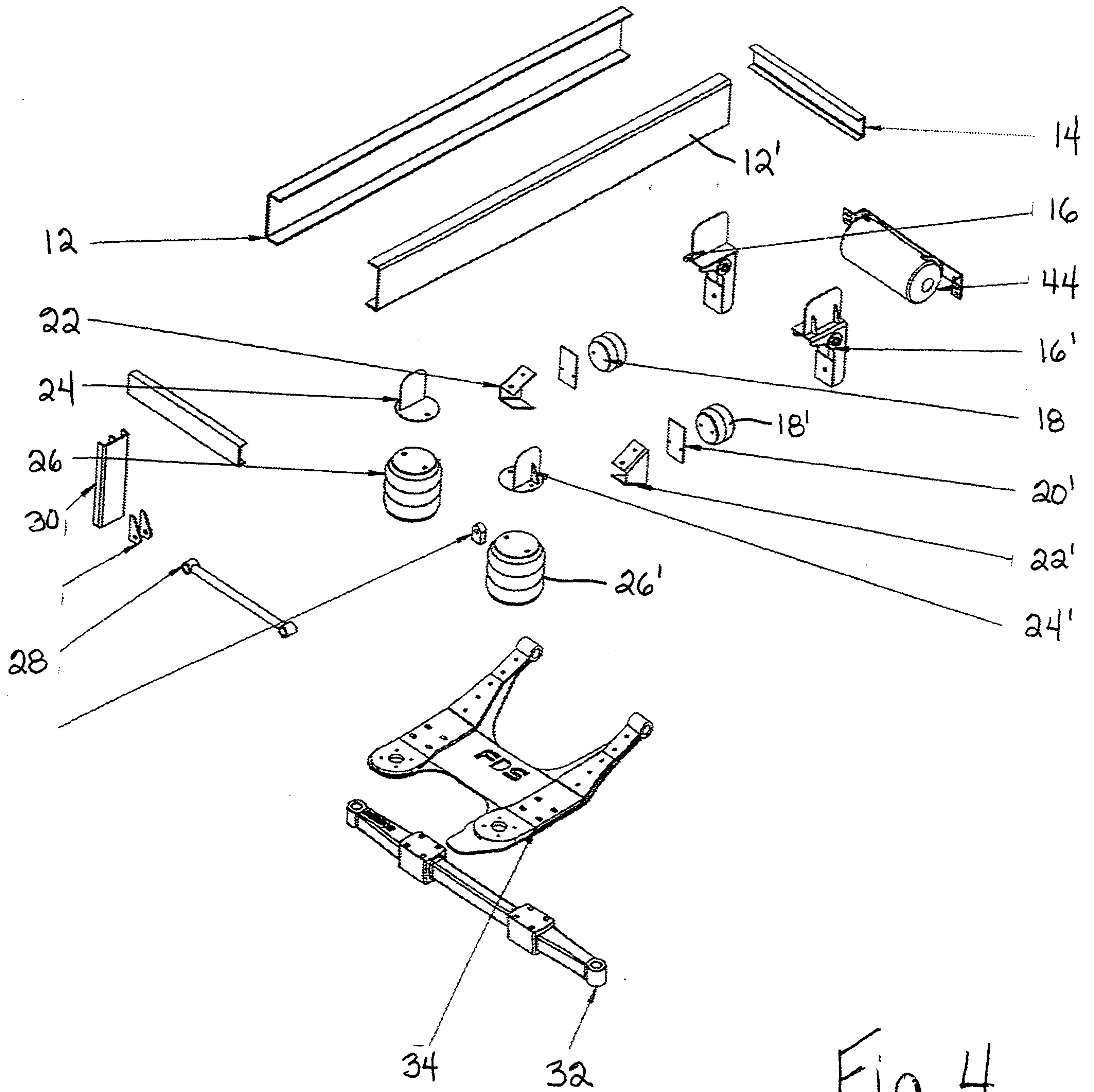
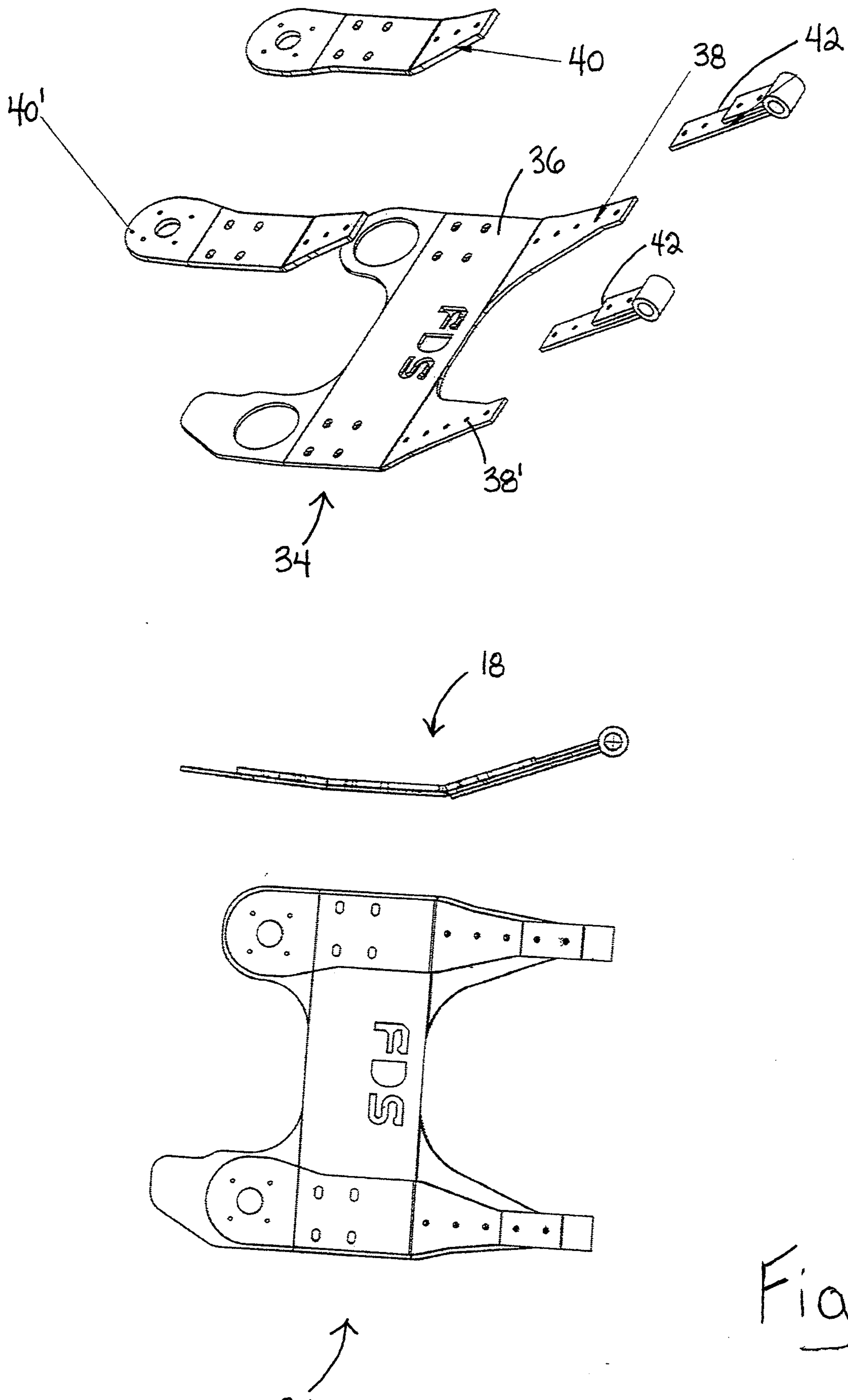


Fig. 4



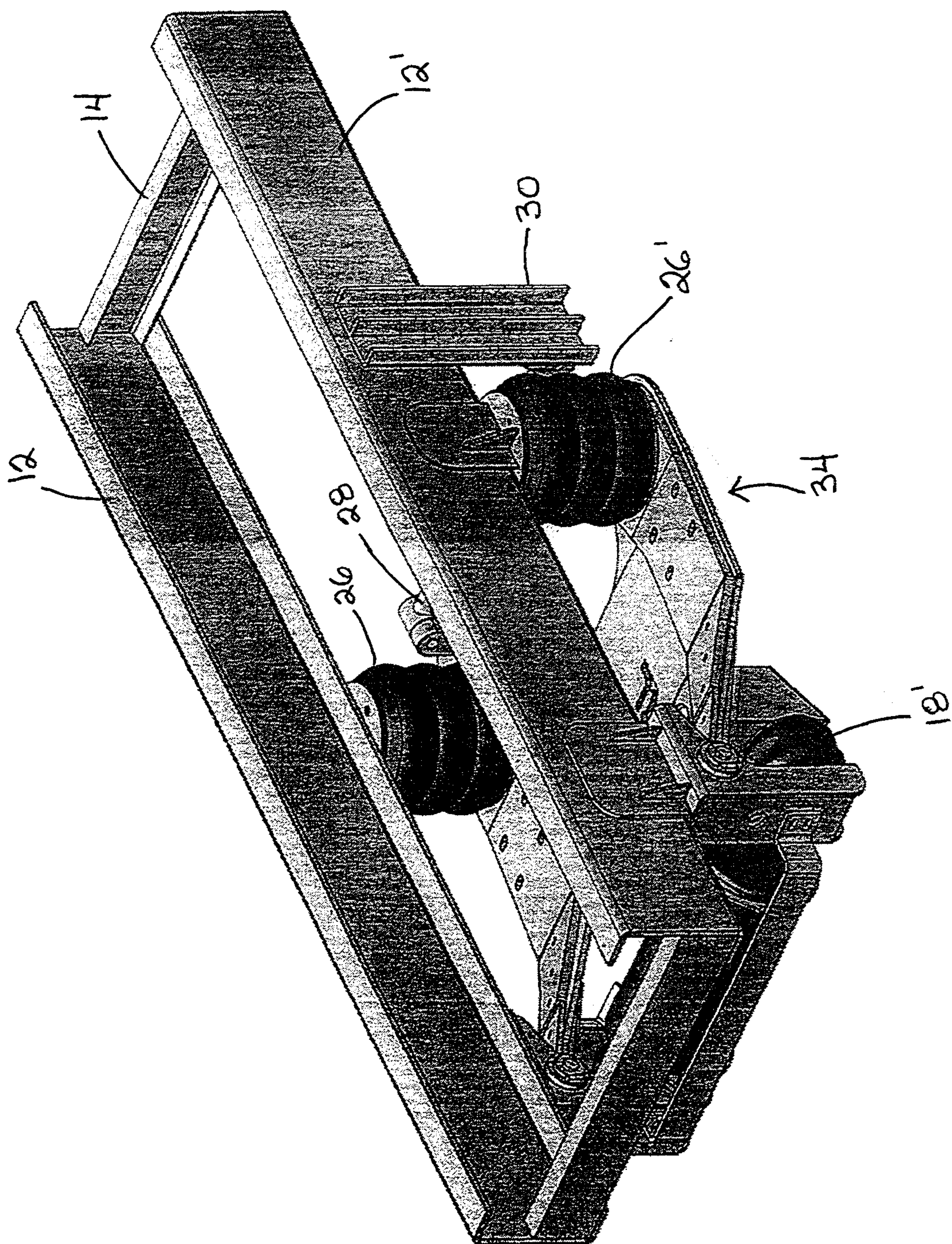


Fig. 6

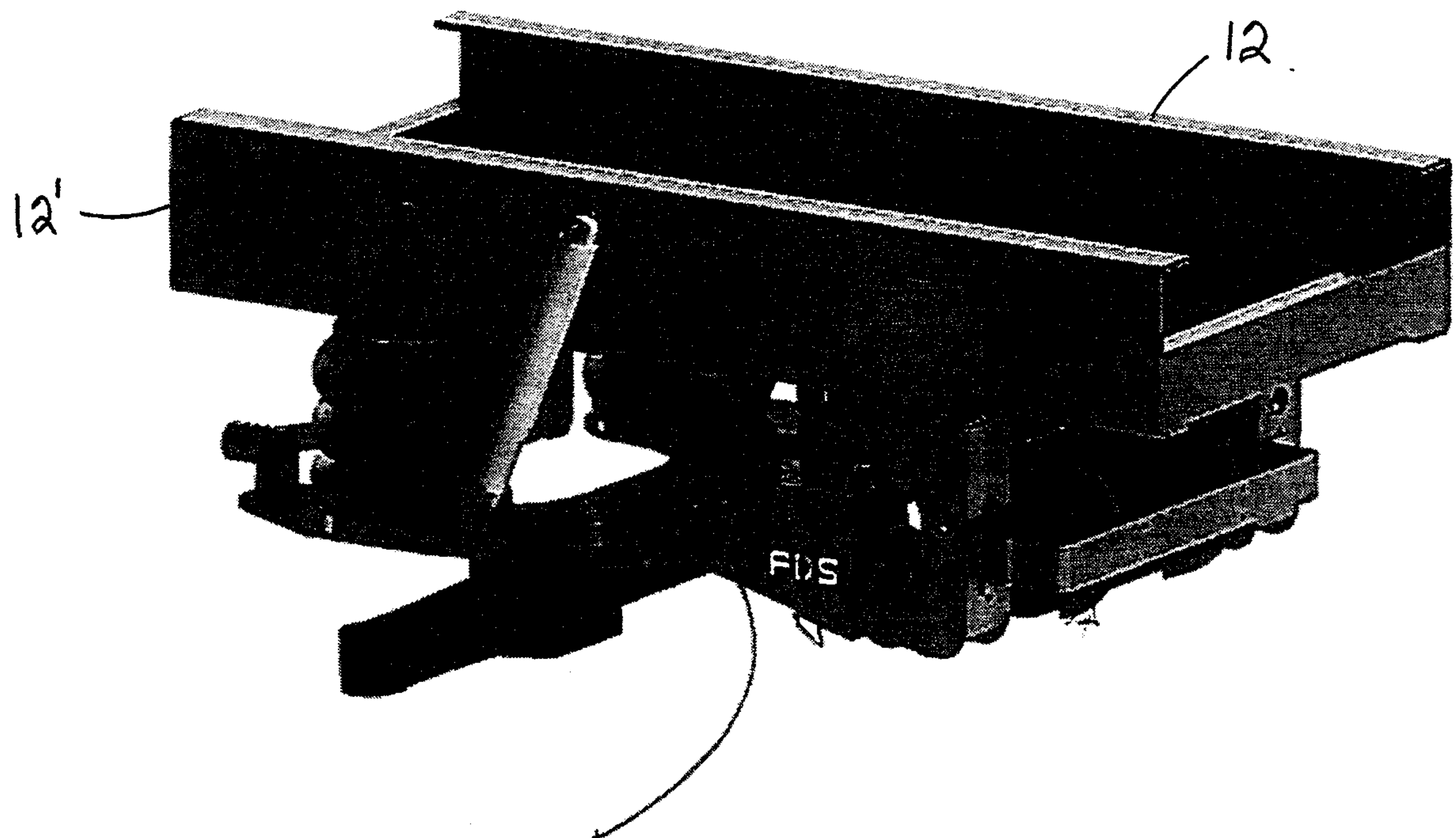
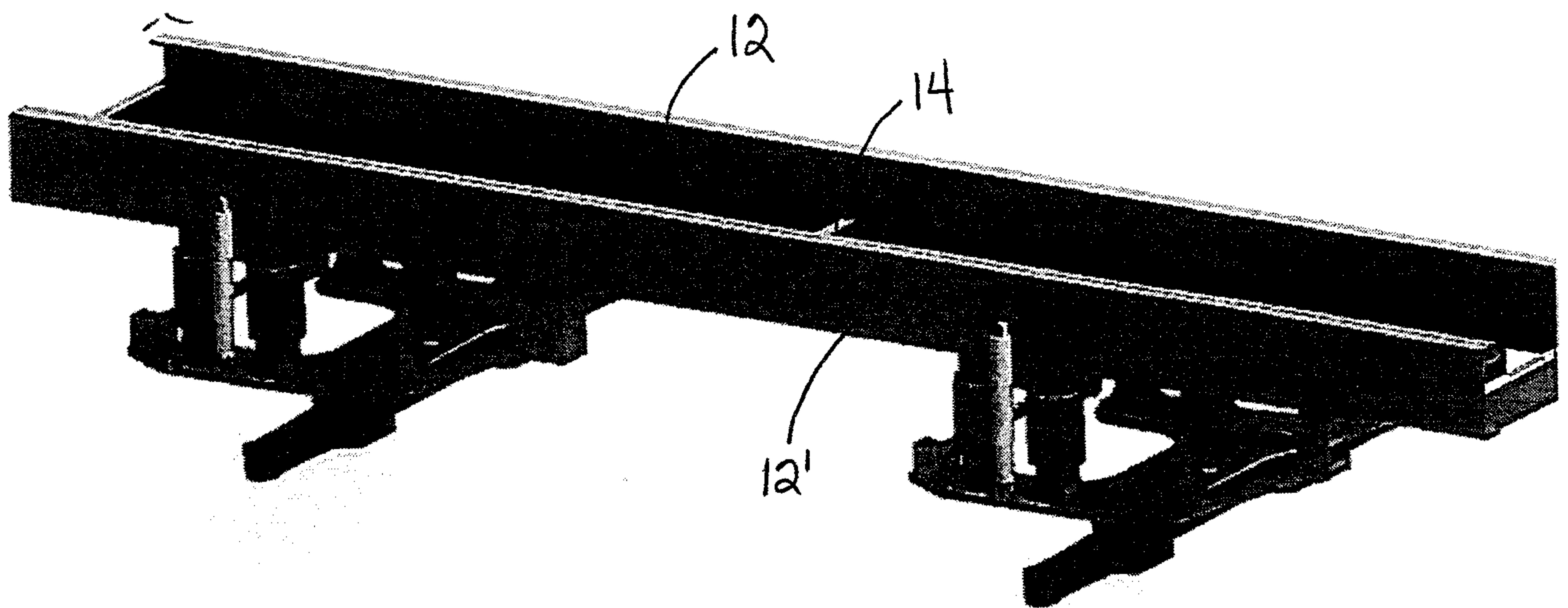


Fig. 7

