Feb. 6, 1951 A. T. KANDT ET AL 2,540,677

DRAFT GEAR

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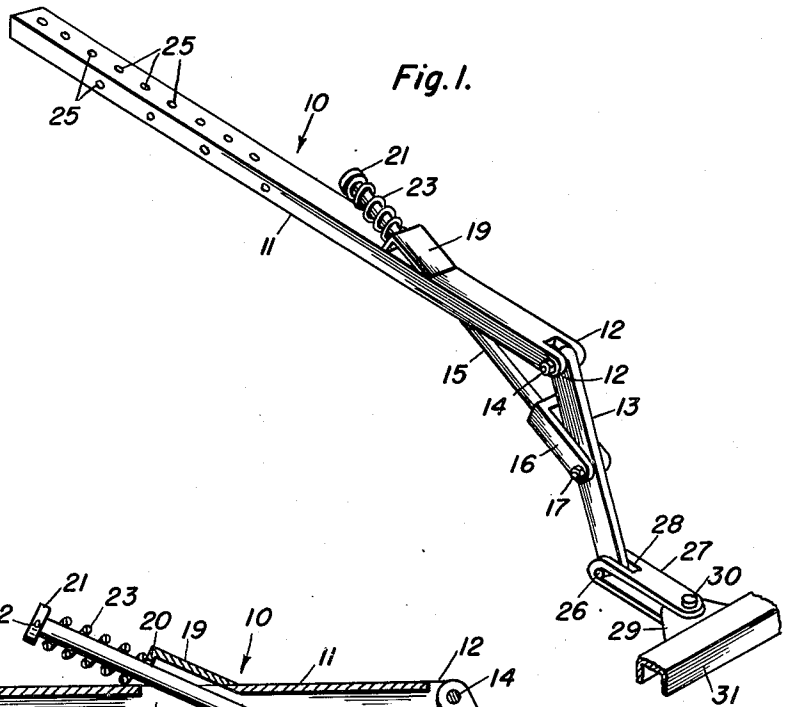

Fig. 1.

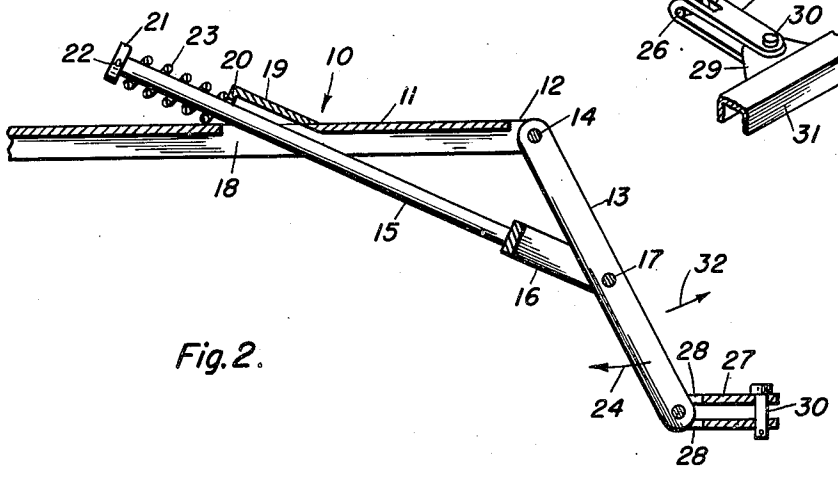

Fig. 2.

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DRAFT GEAR

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1 Claim. (Cl. 280—33.9)

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This invention relates to new and useful improvements and structural refinements in draft gear, and the principal object of the invention is to provide a device of the character herein described, which may be conveniently and effectively employed for connecting various farm implements to a suitable source of motive power, the connection thus provided possessing resilient characteristics, whereby such implement will be better adapted to overcome various obstacles frequently encountered in the performance of its work.

A further object of the invention is to provide draft gear which, by virtue of its operation as above outlined, will eliminate the previously experienced difficulties and damage, which frequently result from the contact of the drawing implement with the obstacles, such as stones, tree roots, or the like, when conventional types of draft gear are being employed on the drawn implement.

Another object of the invention is to provide draft gear which is simple in construction and operation, and which may be readily attached to and detached from the various types of implements with which it may be used.

An additional object of the invention is to provide draft gear which will not easily become damaged, which will readily lend itself to economical manufacture, and which is otherwise well adapted for the purposes for which it is intended.

With the above more important objects in view, and such other objects as may become apparent as this specification proceeds, the invention consists essentially of the arrangement and construction of parts as illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of the invention, and

Figure 2 is a longitudinal cross sectional view of the same.

Like characters of reference are used to designate like parts in the specification and throughout the several views.

Referring now to the accompanying drawings in detail, the invention consists of draft gear designated generally by the reference character 10, the same embodying in its construction a draw bar 11, preferably having a substantially U-shaped cross sectional configuration and being relieved at one end thereof to provide a pair of spaced furcations 12.

A lever 13 is pivotally connected at one end thereof to the bar 11, this being accomplished

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by positioning the end of the lever between the furcations 12 and connecting the lever thereto by means of a suitable bolt or rivet 14.

A control rod 15 is provided at one end thereof with a fork 16, the latter straddling the midportion of the lever 13 and being pivotally connected thereto by means of a further bolt or rivet 17.

The draw bar 11 is provided medially of its length with an opening 18, this being "covered" by means of an inclined, substantially L-shaped cover plate 19 which is secured to the bar 11, as will be clearly apparent. The relatively short arm of this plate is provided with an aperture 20 and the plate, as a whole, constitutes what may be referred to as a guide, adapted to slidably accommodate the aforementioned rod 15. It will be noted that the latter extends through this guide and the remaining end of the rod is equipped with a collar 21 which is rigidly secured thereto by means of a transversely extending pin 22. A suitable compression spring 23 is interposed between the collar 21 and the guide 19, whereby the lever 13 is urged in the direction of the arrow 24, as will be clearly understood.

To facilitate attachment, the free end portion of the draw bar 11 is equipped with a series of suitable apertures 25, while the free end of the lever 13 is provided with a transversely extending pin 26. This pin is loosely positioned in the closed end of a substantially U-shaped yoke 27, the latter being provided with a slot or slots 28 in order to accommodate the end portion of the lever 13, as will be clearly apparent.

The free end portions of the yoke 27 straddle an attaching plate 29 and are pivotally connected thereto by means of a coupling bolt 30. The plate 29 is associated with the farm implement 31 and constitutes no component part of the present invention.

When the invention is placed in use, the yoke 27 is connected as already described to the drawing implement such as a tractor or another source of motive power, while the free end portion of the draw bar 11 is attached to the drawn implement, such as a plow or a seed drill. The resiliency of the spring 23 is such as to normally maintain the drawing and drawn implement in uniform movement, but when the drawn implement encounters an obstacle (a stone or the like), the drawn implement will be momentarily stopped while the drawing implement continues in its movement. The progressively increasing distance between the two implements will be

absorbed by the movement of the lever 13 in the direction of the arrow 32, against the resiliency of the spring 23.

Accordingly, the drawing implement may continue in its movement to a gradual stop, while the drawn implement remains relatively stationary, as above explained. In this manner, the invention will provide what may be referred to as a cushioning effect in the connection of the two implements, whereby the draft gear will not be exposed to undue strain and premature breakage, and the drawn implement will have a better opportunity to surmount the obstacle encountered. The driver of the drawing implement will, of course, note the strain on the spring 23 when the distance between the two implements increases, and will make an effort to remove the obstacle before proceeding further with his work.

Furthermore, if the drawing implement should encounter some obstruction such as would cause sudden stoppage thereof, the drawn implement, by virtue of its momentum may coast to a gradual stop, in which event the lever 13 will move in the direction of the arrow 24 and the rod 15 will slide in the direction 32. This action is "reversed" with respect to that which occurs when the drawn implement encounters an obstacle, and the dual functional utility of the invention is readily apparent. It may be added that conventional draw bars are frequently bent or otherwise damaged by the momentum of the drawn implement when the drawing implement is suddenly stopped, as above described.

It will be also observed that if the plow blade becomes obstructed with an accumulation of straw, roots, or the like, the operator may back up the plow and tractor without moving the drill, and thereby avoid the obstruction of discs and seeders. The time saving factor of the invention will thus be clearly appreciated.

Also, in the event that the drawing implement sags in loose ground or mud, the plow and tractor may be backed up and quickly restarted in the forward direction, without jarring the drill and packer.

Of course, the invention may be employed with equal effectiveness with farm implements of various types. However, it will be noted that the instant device is particularly adapted for use as a packer and pony drill hitch or draft gear.

While in the foregoing there has been shown and described the preferred embodiment of this invention it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

What we claim as our invention is:

In yieldable draft gear, a drawbar provided at a point spaced rearwardly from its front end with an upwardly and rearwardly extending passage, a downwardly extending lever pivoted at its upper end to the front end of said drawbar and swingable forwardly and rearwardly in a vertical plane, a yoke pivoted to the lower end of said lever and adapted for connection to a draft implement, a control rod pivoted at one end thereof to an intermediate portion of said lever and extending slidably through said passage, a collar at the remaining end of said rod, and a compression spring positioned on said rod between said drawbar and said collar, whereby said spring may be compressed when said lever swings forwardly relative to the drawbar but whereby the lever may swing rearwardly without compressing said spring.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,430,922	Mueller	Oct. 3, 1922
1,812,733	Ainsley	June 30, 1931
2,238,095	Almerantz	Apr. 15, 1941