B. F. BODENNER.

ADJUSTABLE REAR AXLE FOR SEPARATORS.

APPLICATION FILED MAY 4, 1918.

1,363,711.

Patented Dec. 28, 1920.

2 SHEETS—SHEET 1.

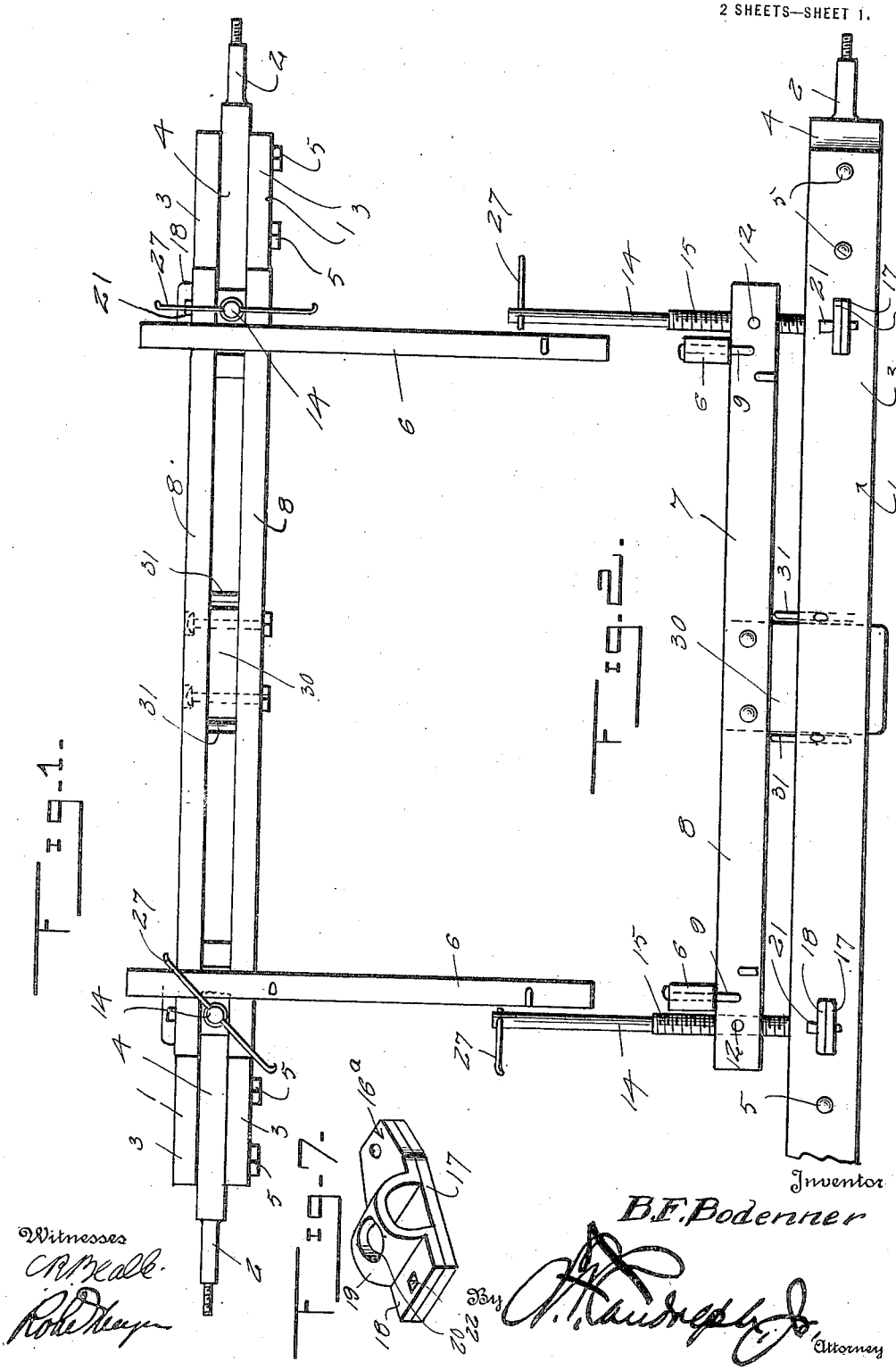


Fig. 1.

Fig. 2.

Fig. 7.

Witnesses

C. R. Beadle.

Robt. Dreyer

Inventor

B. F. Bodenner

By A. Kaufmann Jr.

Attorney

B. F. BODENNER.

ADJUSTABLE REAR AXLE FOR SEPARATORS.

APPLICATION FILED MAY 4, 1918.

1,363,711.

Patented Dec. 28, 1920.

2 SHEETS—SHEET 2.

Fig. 3.

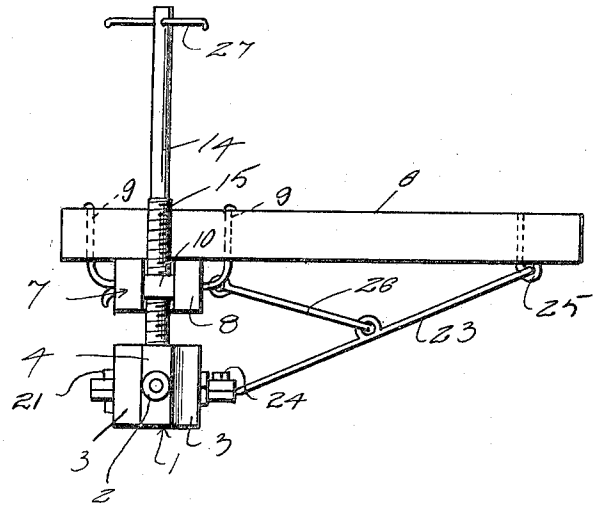


Fig. 4.

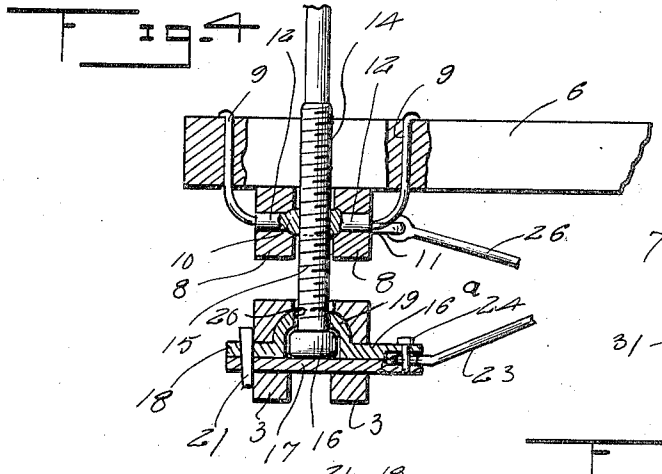


Fig. 6.

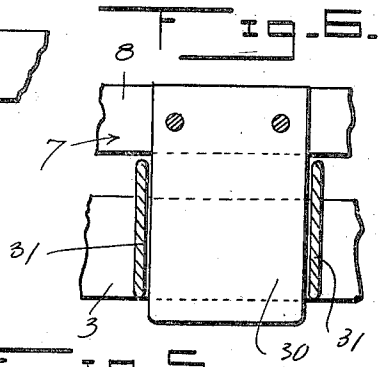
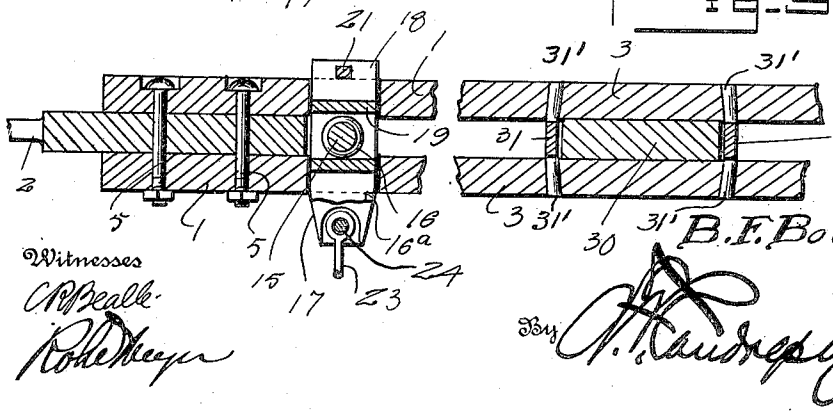


Fig. 5.



Witnesses

C. B. Beall.

Rollo Meyer

Inventor

B. F. Bodenner.

By A. Landgraf Jr.

Attorney

UNITED STATES PATENT OFFICE.

BERT F. BODENNER, OF HUGHENDEN, ALBERTA, CANADA.

ADJUSTABLE REAR AXLE FOR SEPARATORS.

1,363,711. Specification of Letters Patent. Patented Dec. 28, 1920.

Application filed May 4, 1918. Serial No. 232,570.

To all whom it may concern:

Be it known that I, BERT F. BODENNER, a subject of the King of Great Britain, residing at Hughenden, in the Province of Alberta and Dominion of Canada, have invented certain new and useful Improvements in Adjustable Rear Axles for Separators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to grain separators and more particularly to a vertically adjustable rear axle structure, by means of which a grain separator may be leveled, without the necessity of digging holes in the ground and running either the front or rear wheels into these holes, or the employment of any of the many ways now employed to properly level a separator.

It is well known, that to obtain the maximum efficiency from a grain separator, it is necessary to have the separator perfectly level, for if the rear end of the thresher is low, as is ordinarily the case, the grain has a tendency to pass over the sieves into the blower structure and if the separator is not leveled laterally or from side to side, the grain will overload the lowest side of the sieves and cause some grain to pass over the loaded part of the sieves into the blower structure and also cause chaff and small straws to remain in the threshed grain owing to the fact that one part of the sieve will be overloaded and will choke up the use of the air blast at this part of the sieve.

It is the object of this invention to provide a rear axle structure for grain separators by means of which the rear end of the separator may be adjusted vertically with respect to the supporting axle proper which carries the wheels, to properly level the separator and which axle structure is also constructed to permit the limited adjustment of one side of the separator independently of the adjustment of the other side to level the separator laterally.

With the foregoing and other objects in view, this invention consists in such novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings, and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings, wherein like characters designate like and corresponding parts throughout the several views, and in which:

Figure 1 is a top plan of the improved axle structure.

Fig. 2 is a rear elevation of the improved axle structure.

Fig. 3 is an end elevation of the axle structure.

Fig. 4 is a detail vertical section through the axle structure.

Fig. 5 is a detail horizontal section through the axle structure.

Fig. 6 is a fragmentary vertical section through the axle structure, and

Fig. 7 is a detail perspective view of a socket structure employed in the construction of the axle.

Referring more particularly to the drawings, 1 designates the rear axle proper which is adapted to carry stub axles 2 upon its ends upon which the rear supporting wheels of the grain separator or thresher are mounted. The stub axles 2 are of the ordinary construction employed in threshers or separator structures. The main axle 1 is composed of a pair of bars 3 which have their inner surfaces spaced as clearly shown in Figs. 1 and 5 of the drawings. Blocks 4 are inserted between the facing sides of the bars 3 at their ends, and these blocks are connected to the bars 3 by bolts 5, the heads of which are countersunk in one of the bars 3.

The sills 6 of the body of the separator (not shown), are attached to the adjustable section 7 of the rear axle. The adjustable section 7 is composed of a pair of parallel bars 8 extending parallel with each other and being positioned directly above the bars 3. The bars 8 are connected to the sills 6 in any suitable manner, such as by straps 9, and they have nuts or bearings 10 carried thereby near the ends of the bars. The bearings 10 have their threaded openings 11 positioned between the facing sides of the bars 8 and they also have pins 12 formed thereupon and radiating therefrom, which pins are seated in suitable openings formed in the bars 8 to hold the bearings 10 against rotation.

A feed screw 14 extends through each of the nuts 8, or one at each end of the adjustable structure 7 of the axle, and these feed screws have threaded portions 15 which en-

gage the threads of the bores of the bearings 10 for moving the adjustable structure 7 vertically with respect to the main supporting structure 1 of the axle. Heads 16 are formed upon the lower ends of the feed screws 14 and these heads are rotatably mounted in sockets 16ª carried by the bars 3.

The sockets 16ª include flat base plates 17 which extend transversely through the bars 3 and top plates 18 which have substantially semi-cylindrical portions 19 formed thereupon and constituting housings provided with openings 20 through which the feed screws extend. The openings 20 are of such size as to prevent the heads 16 from passing therethrough and the substantially semi-cylindrical portions 19 confine the heads in the sockets and hold the feed screws against vertical movement so that rotary movement of the feed or jack screws will raise the adjustable structure 7 with respect to the structure 1. Keys 21 are inserted through openings 22 formed in the plates 17 and 18 for binding the plates securely together and in their proper position with respect to the bars 3. The forward ends of the plates 17 and 18 are provided with recesses in which the ends of bracing arms 23 are seated, as clearly shown in Fig. 4 of the drawings. The bracing arms 23 are connected to the plates 17 and 18 by suitable pins or bolts 24 and these bracing arms may be attached to the main body of the separator at any desired point or to the under surface of the sills 6 as shown at 25 in Fig. 3 of the drawings. Auxiliary braces 26 are connected to the braces 23 and to the forward bar 8 of the movable structure 7 of the axle.

Operating rods 27 extend diametrically through the upper ends of the feed or jack screws 14 for facilitating the rotation thereof, and each feed or jack screw is rotated independently of the other one, so that one end of the movable structure 7 of the axle may be raised or lowered independently of movement of the other end, to properly level a separator laterally when necessary.

A wedge 30 is attached to the bars 8 intermediate their ends and it seats in a socket formed by a pair of plates 31 and portions of the sides of the bars 3. The plates 31 which are secured by side pins 31′ project above the upper edges of the bars 3. The wedge or tongue 30 engaging the plates 31 prevents side movement of the adjustable structure 7 of the axle with respect to the main portion 1 and it also keeps the upper adjustable portion 7 in its proper position with respect to the lower portion 1 at all times.

By rotating the feed screws 14 through the medium of the actuating rods 27, either end or the entire adjustable structure 7 of the axle may be moved vertically, to properly level a grain separator and if necessary, or if one side of the separator is lower than the other side, by the rotation of one of the feed or jack screws, this side can be raised to the level of the higher side and thus the separator is properly leveled and the many inconveniences contingent with the usual manner of leveling a separator and the disadvantages caused by a separator which is not properly leveled will be removed.

From the foregoing description taken in connection with the accompanying drawings the advantages of construction and the method of operation of the improved adjustable rear axle for separators will be readily apparent to those skilled in the art to which this invention appertains and, while in the foregoing description, the principle of the operation of this invention has been described together with various features of construction, it is to be understood that certain minor features of construction, combination and arrangement of parts may be altered to suit practical conditions provided such alterations are comprehended within the scope of what is claimed.

What is claimed is:

In an axle structure, a lower wheel carrying section including parallel side bars, an upper body carrying section including parallel side bars spaced from one another, plates positioned between the side bars at a point intermediate the length of the lower section, a tongue depending from between the upper side bars at a point intermediate the length of the upper section and projecting between the plates of the lower section to prevent independent longitudinal movement of said upper and said lower sections, bearing members carried by said upper section adjacent the ends thereof, socket members carried by said lower section and having upwardly extended portions provided with an aperture, adjusting screws threaded through the bearings of the upper section and having heads mounted in the sockets of the lower section, said screws extended through the apertures of said sockets, bracing means for said bearings and the upper section, and brace rods connected with said upper and lower sections and with a frame above the same.

In testimony whereof I affix my signature in presence of two witnesses.

BERT F. BODENNER.

Witnesses:

JESSIE GUNN,

J. J. McKENNA.