W. A. WATTS.

ADJUSTABLE TONGUE.

APPLICATION FILED FEB. 28, 1913.

1,091,990.

Patented Mar. 31, 1914.

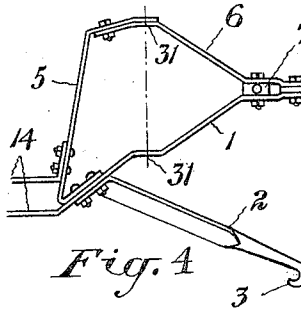


Fig. 4

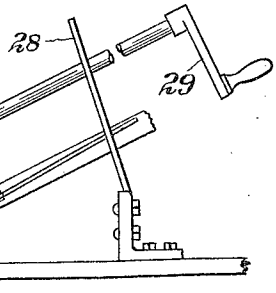
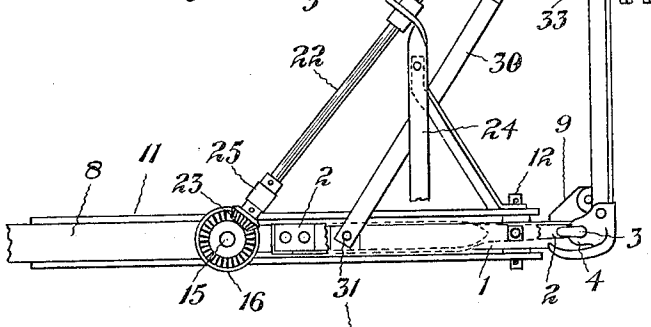


Fig. 1



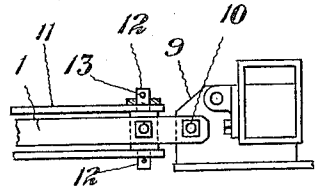


Fig. 5

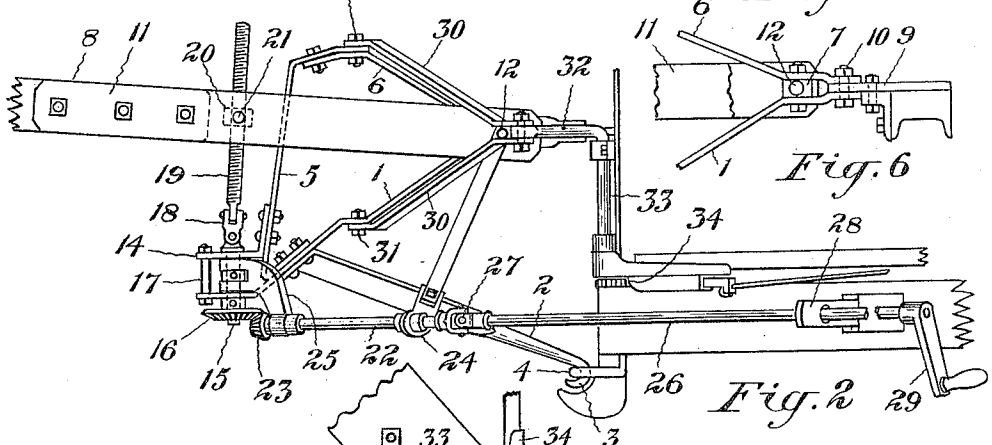


Fig. 6

Fig. 2

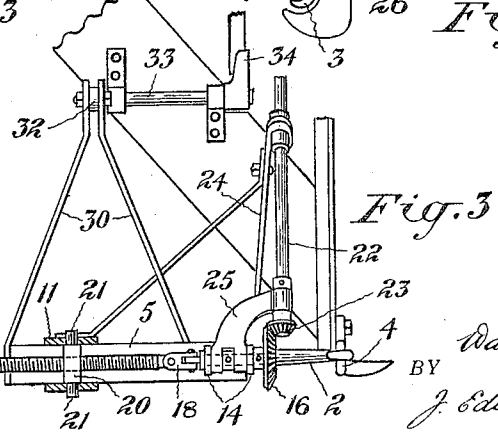


Fig. 3

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ADJUSTABLE TONGUE.

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To all whom it may concern:

Be it known that I, WALTER ALBERT WATTS, of the city of Toronto, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Adjustable Tongues, of which the following is a specification.

This invention relates to tongues which are adapted to be adjusted to any desired angle and which are therefore particularly adapted for use with agricultural implements which are to be connected in gangs to be drawn by a traction engine, and my object is to devise a simple and strong construction of the supporting base on which the tongue is pivoted and with which the adjusting mechanism is connected. I attain this object my means of the constructions hereinafter described and illustrated in the accompanying drawings.

Figure 1 is a side elevation of the adjustable tongue connected with the frame of a harvester binder. Fig. 2 is a plan view of the same. Fig. 3 is a front elevation of the same with part of the tongue in section. Fig. 4 is a plan view of the suupporting base alone detached from the base of the binder. Fig. 5 is a side elevation of the connection between the supporting base and the binder frame. Fig. 6 is a plan view of the same.

In the drawings like numerals of reference indicate corresponding parts in the different figures.

In this invention three main parts are concerned: a supporting base adapted to be secured to a binder frame, a tongue pivotally supported thereon and adjusting means between the tongue and the supporting base. The supporting base itself is best seen in Fig. 4. It comprises the braces 1 and 2, connected together at their forward ends to form a triangle. The rearward ends of these members are adapted for connection with a binder frame, the former in a manner to be hereinafter described and the latter by being provided with a hook 3 adapted to engage in the eye 4 suitably formed on or connected with the binder frame. This specific arrangement whereby the member 2 may rock in a vertical plan may, however, be constructionally departed from without departing from the spirit of my invention.

A member 5 forming a transverse tongue support is secured at one end to the member 1 at the apex of the triangle formed by the members 1 and 2. The other end of the member 5 forming the tongue support has a rearwardly extending brace member 6 secured thereto, the rear end of this brace member 6 extending rearwardly to a point adjacent the rear end of the member 1.

Between the rear ends of the braces 1 and 6 is secured a block 7 which serves as a pivot for the tongue 8. Rearwardly of the block 7 the ends of the braces 1 and 6 are brought close together to embrace the bracket 9 formed on or secured to the frame of the binder and the bolt extending through the ends of the members 1 and 6 and the bracket 9 forms a horizontal pivot on which the members 1 and 6 may rock in a vertical direction.

The forward part of the tongue 8 is preferably formed of wood while the rearward end is formed of two metal straps 11 which embrace the tongue support 5 and the block 7. The latter is provided with the trunnions 12 on which the straps 11 are pivoted, as shown particularly in Fig. 5. Suitable cotter pins 13 are passed through the trunnions to retain the straps 11 in position thereon. The tongue may thus swing freely from side to side being supported by the member 5.

At the apex of the triangle formed by the members 1 and 2 I form a connection for the adjusting mechanism for swinging the tongue 8 on its pivot. This comprises two brackets 14 one bolted to the member 5 and the other preferably formed as a forward extension of the member 1. In these brackets I journal the spindle 15 carrying the bevel gear 16. The outer ends of the brackets are preferably connected by a suitable stay bolt 17. The spindle 15 is connected by means of a suitable universal joint 18 with the screw 19. This screw 19 is threaded through the nut 20 which is provided with the vertical trunnions 21 by means of which it is pivotally connected with the straps 11 of the tongue. It is evident that by rotating

the spindle 15 that the angle of the tongue may be varied at will, the universal joint 18 and the pivoted nut 20 allowing the parts to accommodate themselves to the changing angle of the tongue relative to the spindle 15.

For the purpose of actuating the adjusting mechanism I provide the inclined spindle 22 having secured thereto the bevel pinion 23 meshing with the bevel gear 16. This spindle has one bearing formed in the standard 24 secured at its lower end to the member 1 and braced by means of the diagonal brace secured thereto at one end and at the other end preferably fitted over the upper trunnion 12 of the block 7 below the cotter pin 13. The lower end of the spindle 22 is journaled in the bracket 25 which embraces the spindle 15 between the brackets 14. The spindle 22 is connected with the spindle 26 by means of the universal joint 27. This spindle 26 has a bearing in the bracket 28 secured in the frame of the binder, through which bracket it may freely slide when the supporting base for the tongue is vertically swung, as hereinafter described. The end of the spindle 28 is provided with the crank handle 29 by means of which it may be operated.

The parts just described form a ready means for operating the adjusting screw 19 from the binder, no matter at what angle in a vertical plane the supporting base of the tongue may lie.

For the purpose of vertically adjusting the supporting base I provide the following mechanism: A pair of links 30 are pivotally connected at their lower ends with the members 1 and 6 of the supporting base at the points 31. Where the links are connected the members 1 and 6 are preferably bent to bring these parts into substantial parallelism, as shown particularly in Figs. 2 and 4. The upper ends of these links 30 are brought closely together and pivotally connected with the crank arm 32 of the crank shaft 33 journaled on the frame of the binder. This crank shaft is provided with the usual adjusting lever notched quadrant 34. It is evident that by adjusting the lever 34 that the supporting piece of the adjustable tongue may be vertically swung as desired.

From the description of the supporting base taken in connection with the drawings it will be seen that the supporting base is substantially in the form of a rhomboid, the member 1 connecting the obtuse angles of the rhomboid. The rearward side of the rhomboid is missing, being not necessary for the purpose of this invention, though it will readily be seen that if desired the rearward ends of the members 1 and 2 might be connected without altering the mode of operation of the structure. This rhomboid supporting base it will be seen is adapted at its rear side to be connected with the frame of the binder so as to swing vertically while it carries at its rear side a pivot for the horizontally movable tongue and at its forward obtuse angle a means of connection for the adjusting mechanism by which the tongue is horizontally swung.

The construction described is very simple and is of the form best adapted for strength. By adopting this form I am also able to dispense with the use of the wood in the supporting base, the only wood employed being in the pole of the tongue itself.

What I claim as my invention is:—

1. In mechanism of the class described the combination with a supporting base comprising two members, each adapted at its rear end for connection with the apparatus to be drawn and secured together at their forward ends to form a triangle, and a transverse member forming a tongue support connected at one end with the two former members at the apex of the triangle, of a tongue pivoted on one of said first-mentioned members adjacent to its rear end; and adjusting mechanism connected with the said tongue and with the said base adjacent the apex of the triangle.

2. In mechanism of the class described the combination with a supporting base comprising two members, each adapted at its rear end for connection with the apparatus to be drawn and secured together at their forward ends to form a triangle, and a transverse member forming a tongue support connected at one end with the two former members at the apex of the triangle, and a rearwardly extending brace member connecting the other end of the tongue support with the member on which the tongue is pivoted adjacent said pivot, of a tongue pivoted on one of said first mentioned members adjacent to its rear end, and adjusting mechanism connected with the said tongue and with the said base adjacent the apex of the triangle.

3. In mechanism of the class described a supporting base formed of three external members arranged in rhomboidal form in plan and a diagonal member connecting opposite angles of the rhomboid, a pivotal connection for a tongue being formed adjacent one obtuse angle, and a connection for tongue-adjusting mechanism adjacent the other obtuse angle.

4. In mechanism of the class described a supporting base formed of three external members arranged in rhomboidal form in plan and a diagonal member connecting opposite angles of the rhomboid, a vertical pivotal connection for a tongue being formed near the rear of the base and also two hori-

zontal pivotal connections whereby the base may be connected with the apparatus to be drawn.

5. In mechanism of the class described a supporting base formed of three external members arranged in rhomboidal form in plan and a diagonal member connecting opposite angles of the rhomboid, a vertical pivotal connection for a tongue being formed near the rear of the base and also two horizontal pivotal connections whereby the base may be connected with the apparatus to be drawn, in combination with links pivotally connected with an external member and the diagonal member in front of and at opposite sides of the vertical pivotal connection; and suitably supported lifting means connected with the upper ends of the links.

Toronto, this 11 day of Jan., 1913.

WALTER ALBERT WATTS.

Signed in the presence of—
LOUIS ANDREW MCTAGGART,
LELAND PHELPS MCCLELLAND.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."