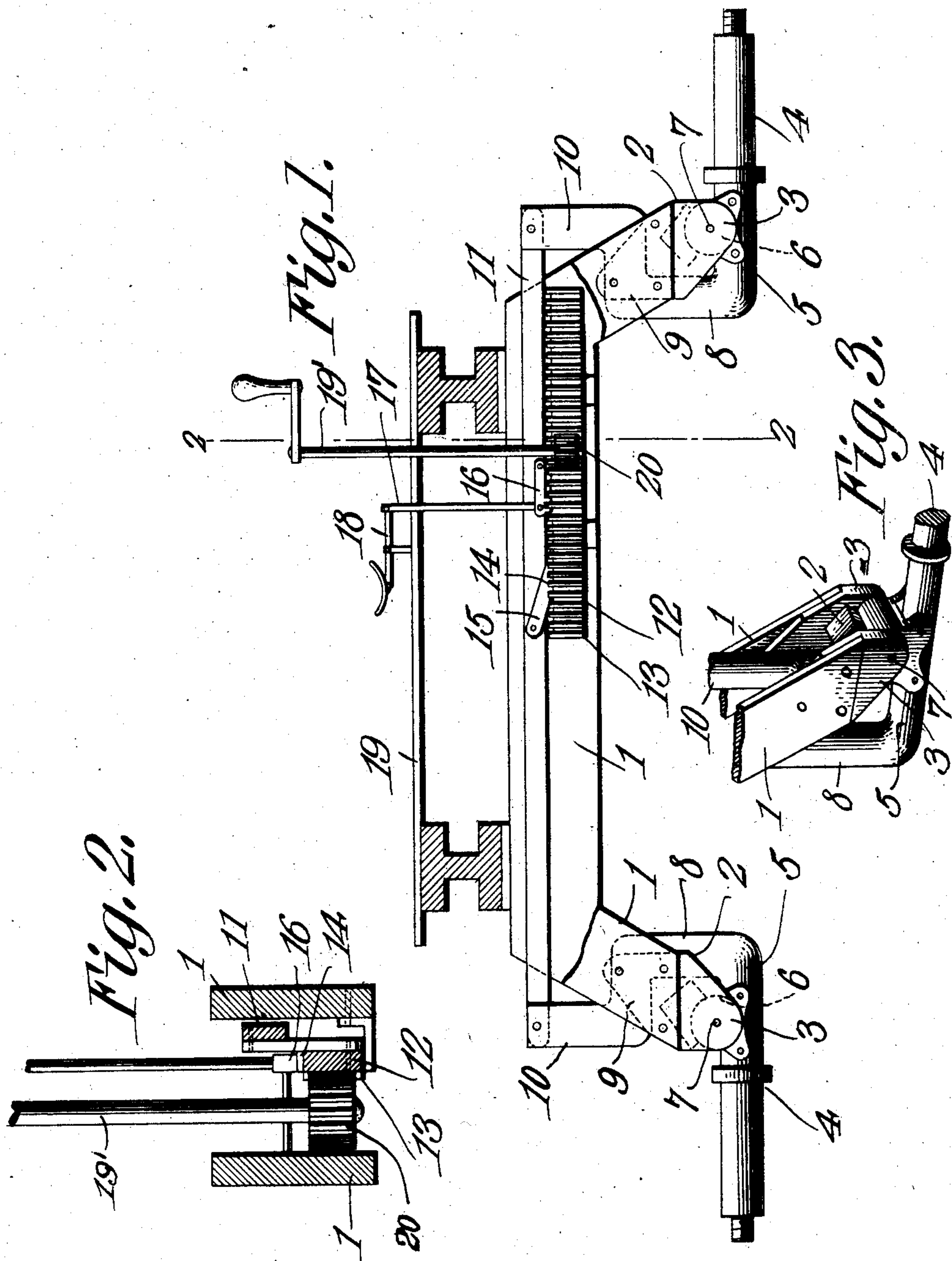


No. 854,212.

PATENTED MAY 21, 1907.

E. G. HARTLE.  
AXLE.

APPLICATION FILED SEPT. 14, 1906.



WITNESSES:

*E. H. Hunt*  
*C. Broadway*

*Edda G. Hartle*, INVENTOR.

By *C. A. Snow & Co.*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

EDDA G. HARTLE, OF COLUMBUS, OHIO.

## AXLE.

No. 854,212.

Specification of Letters Patent.

Patented May 21, 1907.

Application filed September 14, 1906. Serial No. 334,638.

*To all whom it may concern:*

Be it known that I, EDDA G. HARTLE, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a new and useful Axle, of which the following is a specification.

This invention has relation to axles and it consists in the novel construction and arrangement of its parts as hereinafter shown and described.

The object of the invention is to provide an axle with pivoted spindles which are adapted to swing in vertical planes so as to vary the angle of inclination of the wheels with relation to the ground and thereby brace the vehicle or implement to which the axle is applied against lateral draft. Means is carried by the axle whereby said spindles are moved on their pivots simultaneously. The said means in turn is operated by suitable cranks attached to the vehicle and is held in stationary position by a dog or other retaining means which may be disengaged by operating a suitable lever provided upon the vehicle or implement. The said axle is especially adapted to be used upon excavators, road levelers, graders, plows, etc.

In the accompanying drawing:—Figure 1 is a front elevation of the axle with parts broken away. Fig. 2 is a transverse sectional view of the axle cut on the line 2, 2 of Fig. 1. Fig. 3 is a perspective view of one end of the axle.

The axle comprises the parallel bars 1, 1. The said bars are spaced apart and are substantially U-shaped in side elevation the ends of the bars being disposed in a downward direction. The blocks 2, 2 fit between the ends of the bars and are provided with the pivoted members 3, 3. The shanks 5 of the spindles 4 are provided with the circular lugs 6 which in turn are pivoted to the members 3 at the point 7. The said lugs 6 are located upon the lower horizontal portions of the said shanks 5. The said portions merge into the vertical portions 8 which in turn merge into the upper horizontal portions 9 which normally lie between the bars 1, 1 and which merge into the upper vertical portions 10, 10 the longitudinal axes of which are in

alinement with the radii of the lugs 6 and the pivoted members 3. The horizontal rod 11 connects the upper ends of the portions 10, 10 together said rod being pivoted at its ends to the said portions. The rack bar 12 is mounted for longitudinal movement upon one of the bars 1. The said bar 12 is provided with the vertically disposed gear teeth 13 and the horizontal gear teeth 14. The link 15 is pivoted at its upper end to the bar 11 and at its lower end to the bar 12 so that the said bars must move longitudinally in unison. The pawl 16 is pivotally supported at one end by one of the bars 1 and normally engages the gear teeth 14. The rod 17 is attached at its lower end to the free end of the pawl 16. The foot lever 18 is fulcrumed upon the platform 19 and is operatively connected with the rod 17. The crank shaft 19' is suitably journaled upon the implement and is provided at its lower end with a pinion 20 which meshes with the gear teeth 13 of the bar 12. Supporting wheels (not shown) are mounted for rotation in the usual manner upon spindles 4.

From the foregoing description it is obvious that when the working end of the lever 18 is elevated by means of foot or other pressure that the bar 17 will be moved longitudinally and the free end of the pawl 16 will be elevated out of engagement with the gear-teeth 14, then by rotating the crank shaft 19' that the bars 12 and 11 will be moved longitudinally in unison and that the lower horizontal portions 5, 5 of the spindles will be swung in vertical planes upon the pivots 7, thus the supporting wheels (not shown) will be pitched at a desired angle with relation to the surface of the ground. The angle of inclination of the said wheels may be changed while the implement or vehicle to which the axle is attached is in movement or at rest.

Having described my invention what I claim as new and desire to secure by Letters Patent is:—

1. An axle, spindles pivoted to the ends thereof, a rod pivoted at its ends to said spindles, a rack bar mounted for longitudinal movement upon the axle and a link connecting said rod and said rack bar together.

2. An axle, spindles pivoted to the ends

thereof, a bar pivoted at its ends to the inner  
ends of said spindles, a rack bar mounted for  
longitudinal movement upon the axle, a link  
connecting the first said bar and said rack  
5 bar together, a lever actuated pawl mounted  
upon the axle for engagement with said rack  
bar and a crank shaft having a pinion mesh-  
ing with said rack bar.

In testimony that I claim the foregoing as  
my own, I have hereto affixed my signature  
in the presence of two witnesses:

EDDA G. HARTLE.

Witnesses:

ALBERT ROSS,  
J. W. JAMES.