M. KNAPP.

Wagon-Brake.

No. 4,743. Patented Sept. 5, 1846.

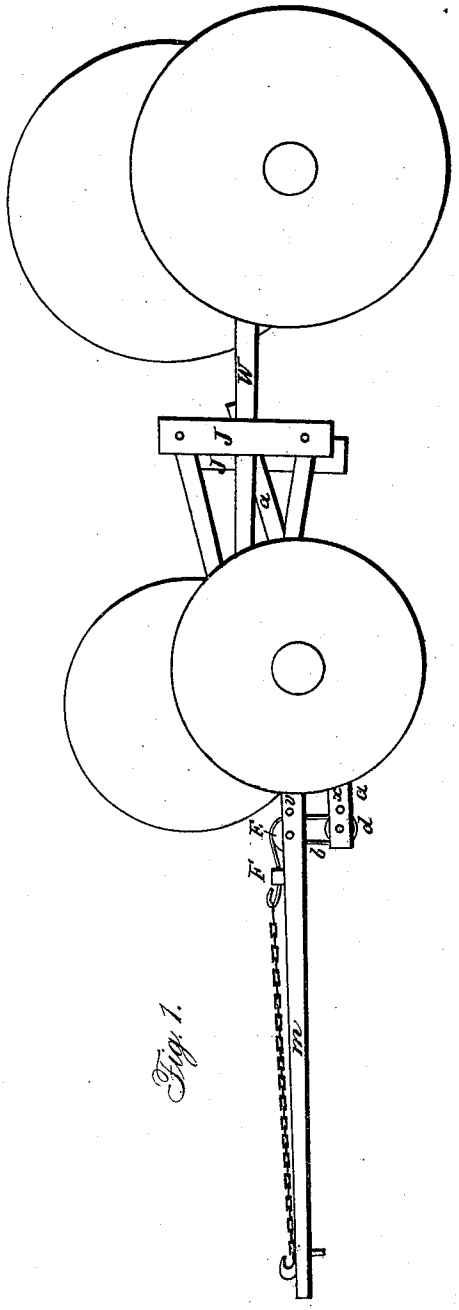

Fig. 1.

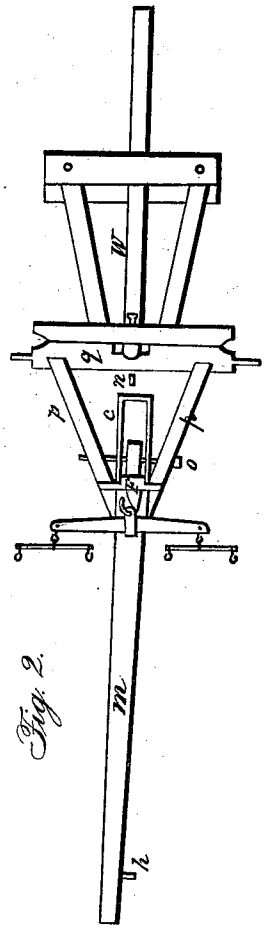

Fig. 2.

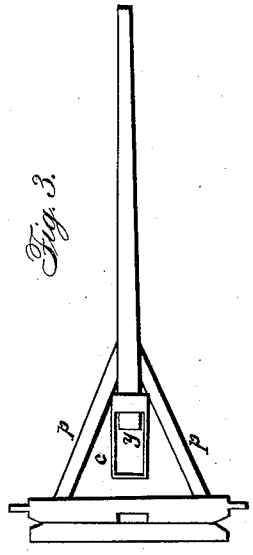

Fig. 3.

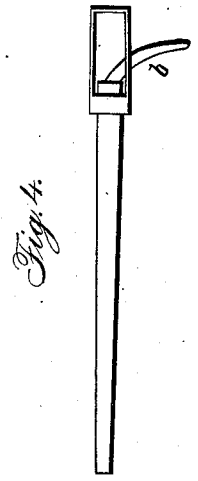

Fig. 4.

UNITED STATES PATENT OFFICE.

MYLO KNAPP, OF SPRINGWATER, NEW YORK.

MODE OF ATTACHING HORSES TO WAGONS.

Specification of Letters Patent No. 4,743, dated September 5, 1846.

To all whom it may concern:

Be it known that I, MYLO KNAPP, of Springwater, in the county of Livingston and State of New York, have invented a new and Improved Mode of Drawing Wagons, Sleighs, and Sleds by the Use of that which is Denominated "Lever-Tongue"; and I do hereby declare that the following is a full and exact description.

The nature of my invention consists in transferring a portion of the load to the collars of horses or the yokes of oxen only in the act of drawing.

The amount of weight to be borne by the team depends upon the degree of rise to be ascended or the weight to be drawn. It will readily be perceived that this bearing is in proportion to the weight to be drawn, and entirely ceases (reverting back to the load) when the team ceases to draw, thereby leaving them unencumbered when drawing is unnecessary.

The nature of my invention consists in increasing the power of teams whether horses or cattle by extra weight which gives them more firmness and ability to perform their tasks. When two horses are harnessed to a wagon or carriage this weight is to be applied to their hames or collars consequently to them. If cattle are used the weight will of course be applied to their yokes all of which is to be done by the use of the lever tongue which operates to transfer a portion of the weight of the load to increase the heft of the team only in the act of drawing. The steeper the hill the more heft the team requires, and the more the tongue presses down; as the draft decreases the tongue lightens up.

It sometimes happens that on rising hills horses and cattle are choked down by the rising of their collars and yokes; by this improvement that difficulty is done away as in all cases where drawing is necessary both collars and yokes are borne down so that the throats of the team are left free to receive the air. It may be proper here to state that no extra weight will be borne by the team except the collars are pressed back to the strong part of the neck which can only take place in the act of drawing.

This principle may also be applied to the back although the neck is preferred. It may be used to great advantage upon the backs of single horses as the shafts or thills of carriages thus drawn are supported directly from the back, no alteration in the harness being necessary.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation, reference being had to the annexed drawings, in which—

Figure 1, is a side view. Fig. 2 and Fig. 3 are top views.

I construct my tongue (*m*) Fig. 2, about the common length, that is to say about ten and one-half feet in length from the axletree (*q*) forward to the bolt (*h*) in the under side of the tongue as shown by Fig. 2. The depth of tongue under the double whiffletree I generally make from four to five inches and across the tongue in same place about 4 inches letting it taper gradually toward (*h*) as shown by Fig. 2. It will be seen that the straight part of the tongue has a back projection (marked *y*, Fig. 3,) between the branches *p p*. This back projection is from 3 to 5 inches in length or sufficiently long to receive the clasp C as shown by Fig. 3, also by Fig. 4.

Fig. 4 shows the tongue turned over or under side up. It is designed more particularly to show the manner of securing the strap *b* to the under side of tongue which is done by driving the clasp C on to the back projection of the tongue gripping and securing the strap at the same time to the tongue as shown by Fig. 4. Other ways of securing will answer the purpose.

Fig. 1 shows a side view of strap (*b*) fastened to the under side of the tongue nearly on a perpendicular line with the front part of roller E. It then passes down and around roller *d* in the end of the lever *a a*, thence upward through the clasp C, Fig. 2 and over roller E and under guard F Fig. 1 or under guard F Fig. 2. At the end of this strap is a hook to which is attached a double whiffletree with single whiffletrees as shown by Fig. 2. All that now remains to complete the connection of strap (*b*) to collar or hames is only the want of a span of horses harnessed in the ordinary manner with a common neck yoke containing a ring to sustain the tongue; the team then being hitched to the whiffletrees the connection is complete. When cattle are used the connection is formed from strap *b* to the yoke by means of the chain which lies upon the top of the tongue Fig. 1, one end of chain to be hitched to the hook of strap (*b*), the other end to be

hitched to the staple or an extra ring in yoke, the other or second ring supporting the tongue.

a a Fig. 1 represents the lever which passes directly under the center of the forward axletree back to the under side of the swaybar *g g* which must be double; size of lever from three to 5 inches square at the axletree, according to strength of timber; this lever has two holes one at *x* the other near the end of the lever for the adjustment of roller D. Directly over these are two holes in the tongue one at (*v*) the other further forward contains the bolt which passes through roller (E). Should it be required to give less bearing this is done by adjusting the rollers E and D. This is easily done firstly by drawing out the bolt which passes through roller E and removing roller E, to *v*, replacing the bolt through the roller, and in like manner is roller D, removed to *x*. The purchase being shortened the bearing will be less. It may be well to state that the bolt which passes through the roller E Fig. 1 is the same as bolt O, which passes through the tongue clasp and roller E Fig. 2. In a former description I stated that the tongue was stiff through its whole length. All that is meant is that the tongue has no flexible joint except at the hinges which connect and fasten the branches (*p p*) to the axletree (*q*) which is not the case with all tongues, some having what is called a block tongue, consequently a joint in it, but the lever tongue plays up and down upon the axletree according to the surface of the country. It may be well to state that the long reach (marked W Fig. 1) which connects the hind wheels to the forward wheels passes between the two back pieces of the swaybar as shown by *g g* the upper piece of swaybar swinging upon the reach W. Fig. 2 shows the reach W fastened to the forward axletree by the king bolt N. The back part of reach is connected with hind axletree in usual manner.

What I claim as my invention, and desire to secure by Letters Patent, is—

The lever (*a a*) roller strap (*b*,) rollers (E and D,) clasp (C) and guards (F) to be applied to the tongues and shafts of carriages to produce a proportionate bearing as herein described.

MYLO KNAPP.

Witnesses:
GARRY KNAPP,
JOHN F. BROWN,