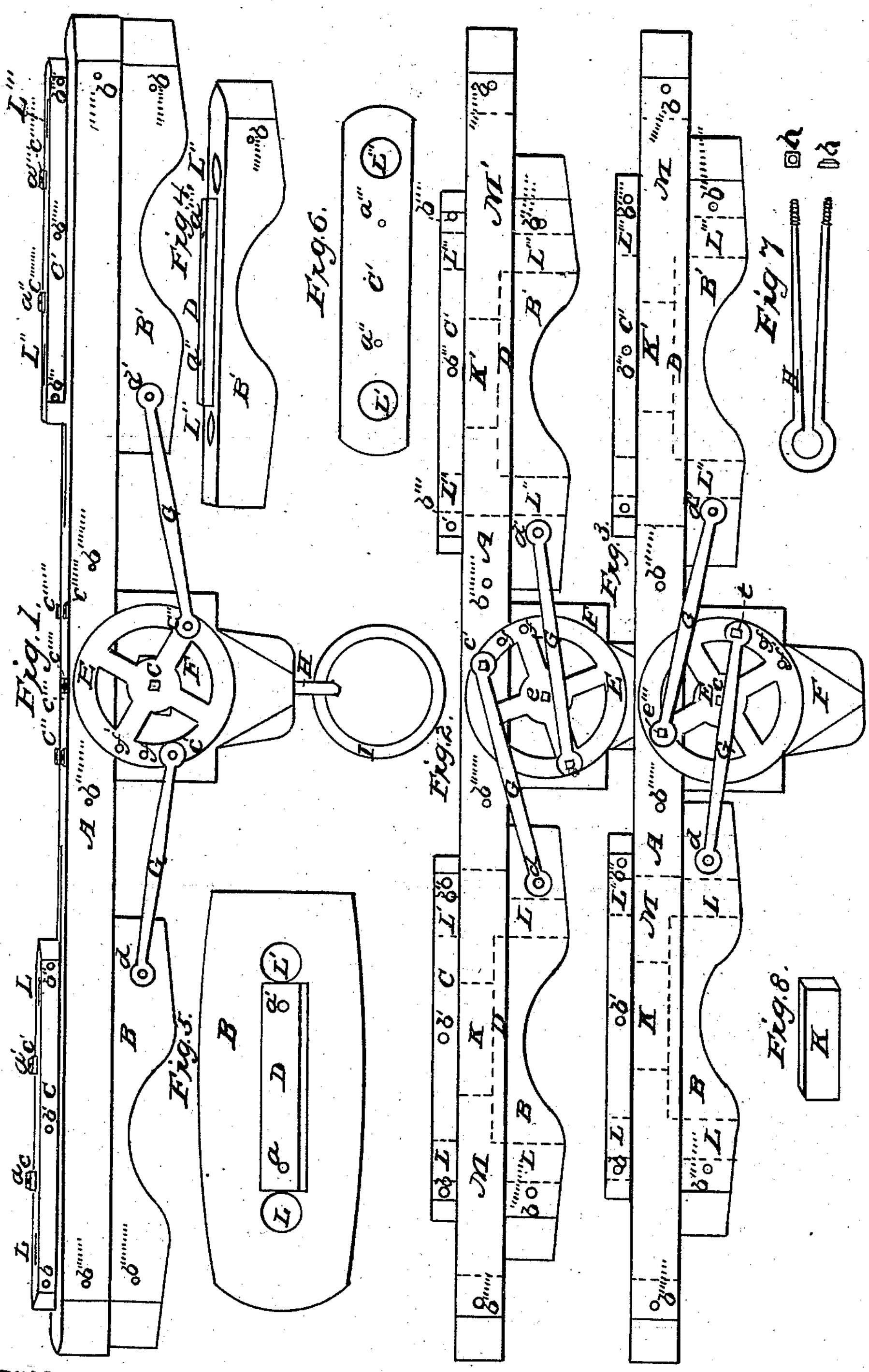
S. G. WALKER.

Ox Yoke.

No. 80,788.

Patented Aug. 4, 1868.



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SYLVESTER G. WALKER, OF CROYDON, NEW HAMPSHIRE, ASSIGNOR TO HIMSELF, WILLIAM C. ALLEN, AND ABIJAH POWERS.

Letters Patent No. 80,788, *dated August* 4, 1868.

IMPROVEMENT IN ADJUSTABLE OX-YOKES.

The Schedule referred to in these Letters Patent and making part of the same.

Be it known that I, SYLVESTER G. WALKER, of Croydon, in the county of Sullivan, and State of New Hampshire, have invented a new and useful Improvement in Adjustable Ox-Yokes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

Figure 1 is a perspective view of the yoke complete, with my improvement therein.

Figure 2 is a longitudinal sectional view of the yoke in a position in which the advantage in leverage is given to the left-hand or nigh ox.

Figure 3 is a longitudinal sectional view of the yoke, so adjusted as to give the advantage in leverage to the right-hand or off ox.

Figure 4 is a perspective view of one of the neck-pieces and guide-blocks.

Figure 5 is a top view of the same parts.

Figure 6 is a top view of one of the cap-pieces.

Figure 7 is a view of the draught-staple.

Figure 8 is a loose movable block between the cap-pieces and guide-blocks in the mortise of the beam.

The same letters indicate identical parts in all the figures.

A is the beam of the yoke. B B′ are neck-pieces bearing upon the necks of the oxen when in use. C C′ are cap-pieces covering the mortises or slots M M′, in which the guide-blocks D D′ and the movable blocks K K′ slide in advancing to and receding from the centre draught-block F. The guide-blocks D D′ should be firmly secured by bolts or screws to the neck-pieces B B′, as seen in figs. 4 and 5. A longitudinal sectional view of the slots M M′ is represented in figs. 2 and 3. *a a′ a″ a‴* are bolts passing through the neck-pieces B B′, the slots M M′, and the cap-pieces C C′, on the upper side of which they are fastened by their respective nuts, as seen in fig. 1. By means of these bolts and the cap-pieces C C′, the neck-pieces B B′ are hung to the beam A, thus superseding the use of iron bands heretofore used for the purpose, thereby securing greater lightness to the yoke, and rendering the movements of the neck-pieces B B′, toward and from the draught-block F, easier and more sure, and relieving the movable parts of the yoke of much of the friction occasioned by the devices for the same purpose heretofore used.

E is the advantage-ring, attached to the centre dranght-block F by the pinion or axis *e*, on which it revolves. The centre-block F is firmly fastened to the beam A by bolts and their nuts, *c c c c*, as seen in fig. 1, on the upper surface of the beam A. G G′ are levers or arms, each of which is attached, at one end, to one of the neck-pieces B B′ by the bolts *d d′*, and at the other end to the advantage-ring E by the screws *e e′*, on which they partially turn, as the ring E revolves in one direction or the other, as seen in figs. 1, 2, and 3. The bolts *d d′* and the axle *e* are designed to be on a line with each other in the construction of the yoke. *f f′* are female screws, in the periphery of the ring E, designed for the reception of the male screw *e′*, by which device a change in the leverage of the ring may be effected within the limits of nearly half its diameter, according to the number and position of the female screws upon its periphery. H is the draught-staple, passing through the centre-block F and the beam A, and is firmly confined, by means of nuts, on the upper side of the beam. I is the draught-ring. K K′ (one of which is shown in fig. 8) are loose, movable blocks, placed between the bolts *a a′ a″ a‴* and the cap-pieces C C′ and guide-blocks D D′, and slide in the slots M M′, and are designed to give strength, stability, and ease of motion to the yoke, when it is used as an adjustable yoke, that is to say, when the neck-pieces B B′ and their appendages are allowed to slide to and from the centre-block F. To secure this sliding motion of the adjustable parts of the yoke, that is to say, the neck-pieces B B′ and their appendages, the blocks K K′ should a little more than fill the spaces in the slots M M′, between the guide-blocks D D′ and the cap-pieces C C′.

L L′ L″ L‴ are apertures, for the reception of the bows by which the oxen are confined to the yoke. *b b b*, &c., are bolts, which pass through the beam A and other parts of the yoke, and are designed to give strength and firmness to the yoke and the particular parts through which they pass.

My improvement consists, first, in hanging the neck-pieces B B′ to the beam A by means of the guide-blocks D D′, the bolts *a a′ a″ a‴*, and the cap-pieces C C′, as shown in figs. 1, 2, and 3 of the drawings; second, in the device of the advantage-ring E, connected by the arms G G′ with the neck-pieces B B′, as above described and shown in figs. 1, 2, and 3 of the drawings, by which one ox is enabled to gain an advantage of leverage or beam over the other ox, as the nature of the work in which they are employed may require; third, in a method by which the oxen may be firmly confined at points equidistant from the centre draught-point or block F, or either ox may be confined at any given points not equidistant from the centre-block F, which the revolution of the advantage-ring E will permit, that is to say, the leverage of the oxen may be made equal or unequal, as may be desired. This I accomplish by the removal of the blocks K K′ from the slots M M′, adjusting the neck-pieces B B′ at the points desired, and firmly confining them by screwing down tightly the cap-pieces C C′ upon the beam A.

I construct my improved yoke of the usual length, and adjust the size or diameter of the advantage-ring E and the length of the arms G G′ according to the amount of the reciprocating motion which I desire to give to the neck-pieces B B′.

In ordinary yokes, the advantage-ring E should have a diameter of seven inches, and the arms G G′ a length of ten inches each, and attached at two inches from the ends of the neck-pieces. This will give a reciprocating motion to the neck-pieces B B′ of about six inches on each side of the centre-block F, or twelve inches in the whole; and this space may be varied in proportion to the variation given to the leverage of the advantage-ring E, by attaching the ends of the arms G G′ at points on the periphery of the ring E nearer or more distant from each other. As seen in fig. 1, these points of attachment are nearest each other, and of course the spaces on either side of the centre-block F are reduced. If the end of the arm G were confined at *f′*, it would give a space on either side of the centre-block nearly equal to the diameter of the ring E. The arms G G′ should be made of sufficient length to prevent the neck-pieces B B′ from approaching the centre-block F nearer than three-fourths of an inch, in order to prevent the ears of the oxen from being pinched.

Having described the construction of my improved yoke, I now proceed to set forth the manner in which it may be used and operated. In many kinds of work, for instance, in plowing upon side-hills, it is desirable to give the advantage in draught to one ox or the other, and that this advantage should be varied as the work may require. When the nigh ox works upon the upper side of the furrow, he needs the advantage, and, of course, the off ox needs it when he is in that relation with the furrow. The nature of the ground and the movements of the oxen will cause the yoke constantly to adjust itself, so as to give the advantage to the ox that needs it. Thus, in fig. 1, the yoke is represented in a position which will give an equal leverage to the oxen; in fig. 2, it is represented in a position which gives the advantage to the nigh ox; and, in fig. 3, it is represented in a position which gives the advantage to the off ox. The positions of each ox in reference to the centre-block F, in actual labor, will of course be constantly changing, according to the nature of the work and ground, within the limits of the reciprocating motions of the neck-pieces B B′, thus constantly varying the leverage which each ox possesses.

In plowing or doing other work on level ground, the strength of the oxen being equal, it is then desirable to give them an equal leverage on the yoke. This I accomplish by removing the movable blocks K K′ from the slots M M′, adjusting the neck-pieces B B′ at any desirable points equidistant from the centre-block F, and then confining the neck-pieces firmly in place upon the beam A by tightly screwing down the cap-pieces C C′. If, in consequence of inequality in strength, it is desirable to give one ox a permanent advantage over the other, it can be accomplished by confining, in the manner before stated, each neck-piece at a point upon the beam which will give the desired advantage.

Having above described the construction and operation of my improved ox-yoke, what I claim, and desire to secure by Letters Patent, is—

1. The method of hanging the neck-pieces B B′ to the beam A, by means of the bolts *a a′ a″ a‴*, the guide-blocks D D′, the slots M M′, and the cap-pieces C C′, as above described.

2. The advantage-ring E, in combination with the levers G G′, constructed and operating as above described.

3. The method of making the neck-pieces B B′ stationary at any given points, equidistant or not equidistant from the centre-block F, within the limits of the reciprocating motions of the said neck-pieces, by removing the blocks K K′ from the slots M M′, and screwing down tightly the cap-pieces C C′ upon the beam A, as above described.

Croydon, New Hampshire, February 6, 1868.

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Witnesses:

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