

UNITED STATES PATENT OFFICE.

ABEL B. FOWLER AND ISAIAH H. FLAGG, OF KALAMAZOO, MICHIGAN.

IMPROVEMENT IN DRAFT-EQUALIZERS.

Specification forming part of Letters Patent No. 188,618, dated March 20, 1877; application filed December 2, 1876.

To all whom it may concern:

Be it known that we, ABEL B. FOWLER and ISAIAH H. FLAGG, of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented a new and valuable Improvement in Double-Trees; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a plan view of our double-tree, and Figs. 2 and 3 are detail views thereof.

This invention relates to double-trees; and it consists in novel means for regulating the distance between the horses and the distribution of the draft between them.

In the annexed drawings, A designates the pole or tongue of a wagon secured to curved hounds B B, and C designates a double-tree, which is made nearly straight behind, and convex in outline in front. D is a hammer-strap, which is perforated, so as to allow the passage of pivot-pin E, which serves as a pivot both for double-tree C and for equalizing bar or lever F, which is arranged directly above said double-tree. Both of said parts C and F are centrally pivoted.

On the upper side of said equalizing-bar or centrally-pivoted lever F, at or near the ends thereof, are studs or small pins *ff*. On said studs are pivoted, by eyes, or in any other convenient manner, the inner ends of metallic connecting-rods G G, the outer ends of which are screw-threaded for a considerable distance at *g g*. These screw-threaded ends are received in the screw-tapped heads *h h* of clevis-pins H H, whereby clevises I I are loosely attached to the rear of double-tree C. These clevises extend forward in front of said double-tree, where they have loosely attached to them in the usual manner the whiffletrees J J. By screwing said clevis-pins H H a greater or less distance upon said connecting-rods G G the space between the horses may be increased or diminished at will without affecting the evenness or the directness of the draft. By this construction I am able to take advantage of the best parts of the road for the travel of the horses without changing any part of the apparatus except the ones mentioned.

To prevent wear upon the double-tree, I make use of the device shown in detail in Fig. 3, which consists of a chafing plate or shield, K, and a guide-bar, *k*, both constructed in a single piece. One of these devices is attached to the rear of each end of said double-tree C, as shown in Fig. 1. They confine the clevises I I to the double-tree, and limit the longitudinal play of the clevises in either direction.

To adjust the above-described apparatus so as to give the greater leverage to the weaker horse, one of the clevis bolts or pins H is screwed inward on its connecting-rod G, the other clevis-pin and clevis being left in their former position. The horse on the side of the first-named clevis then has less leverage in his favor than the other one.

In order to effect the adjustment of one of said clevises and its pin, as above described, the clevis-pin is first detached and adjusted on the rod, and the clevis is then again attached to the pin. The form of the double-tree makes it interfere less with the movement of the clevises and their pins than if the rear line of said double-tree were curved backward, as in ordinary double-trees, while the curvature of the front line of said double-tree gives to it all the usual strength.

What we claim as new, and desire to secure by Letters Patent, is—

1. The pivoted connecting-rods G G, screw-threaded at their outer ends, in combination with the double-tree C, clevises I I, clevis-bolts H H, having screw-tapped eyes *h h*, and lever F, substantially as described.

2. Shield K and guide-bar *k*, made in one piece, in combination with a double-tree, clevis, and clevis-pin, substantially as set forth.

3. As a new article of manufacture, the shield K and guide-bar *k*, made in one piece, substantially as described, and for the purpose set forth.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

ABEL B. FOWLER.
ISAIAH H. FLAGG.

Witnesses:
KUFUS H. GROSVENOR,
HENRY G. BROWNELL.