M. DURNELL & W. MILNER.

Improvement in Double-Trees.

No. 114,116. Patented April 25, 1871.

Fig. 1.

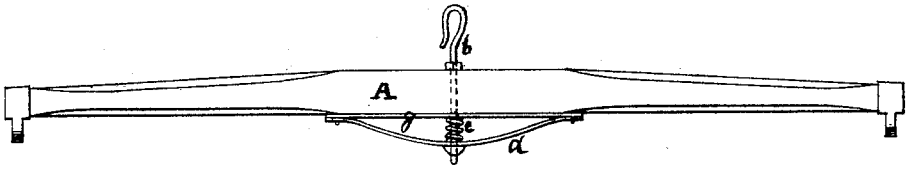
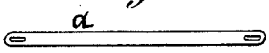


Fig. 2.



Witnesses
John A. Ellis
J. F. White

Inventor
Durnell and Milner
Per
T. H. Alexander
Atty

United States Patent Office.

MILTON DURNELL AND WESLEY MILNER, OF LEESBURG, OHIO.

Letters Patent No. 114,116, dated April 25, 1871.

IMPROVEMENT IN DOUBLE-TREES.

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

To all whom it may concern:

Be it known that we, MILTON DURNELL and WESLEY MILNER, of Leesburg, in the county of Highland and State of Ohio, have invented certain new and useful Improvements in Double-Trees; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon which form a part of this specification, in which—

Figure 1 is a plan of our double-tree, and

Figure 2 a view of the elliptic spring, showing its mode of construction in order to adapt it to our purpose.

The object of this invention is to relieve the shoulder of the horse from sudden jerks in starting a heavily-loaded vehicle or plow; and

The nature of it consists in the peculiar arrangement of an elliptic spring, a spiral spring, and a bolt or draft-bar, in connection with the double-tree, substantially as will be hereinafter fully set forth.

In the annexed drawing—

A represents the double-tree made in the ordinary way, except that through its center it is provided with a hole for the hooked bolt or draft-bar *b* to work in.

d represents an elliptic spring, which may be made singly or compound. This spring is provided near each end with slots, as fully seen in fig. 2.

e is a spiral spring, and

g a metal plate secured to the double-tree.

We pass the bar *b* through the hole in the center of the double-tree, and also through the metal plate *g*. Then slip the spiral spring over the bar and adjust the elliptic spring, as seen in fig. 1, and secure it to the double-tree by means of bolts or screws passing through the slots in each end so as to allow the spring to yield to the pressure communicated to it by bar *b*.

e represents a nut on the end of bar *b*, which serves to prevent it from drawing out of the hole in the spring *d*, and also as the means by which the pressure on the bar will be communicated to it.

We are aware that double-trees have been constructed with a spring for the same purpose for which our invention is designed; but we do not believe that the combination of the flat or elliptic with the spiral spring, arranged as herein set forth, was ever before known or used.

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

The slotted elliptic spring *d* and metal plate *g*, in combination with spiral spring *e*, draft-hook *b*, and double-tree A, all arranged as described, for the purpose set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

MILTON DURNELL.
WESLEY MILNER.

Witnesses:
J. M. SPEAR,
S. SIMPSON.