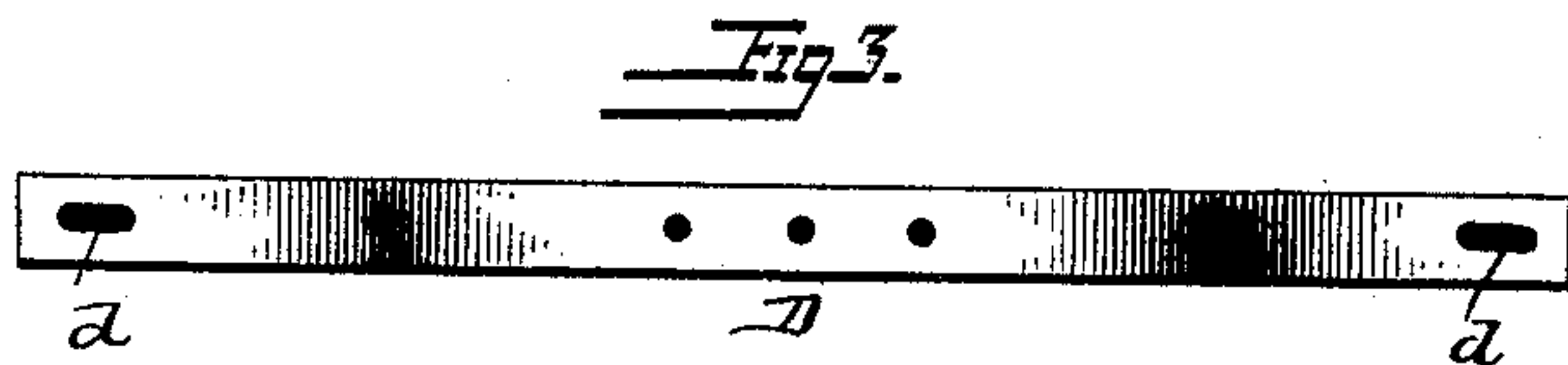
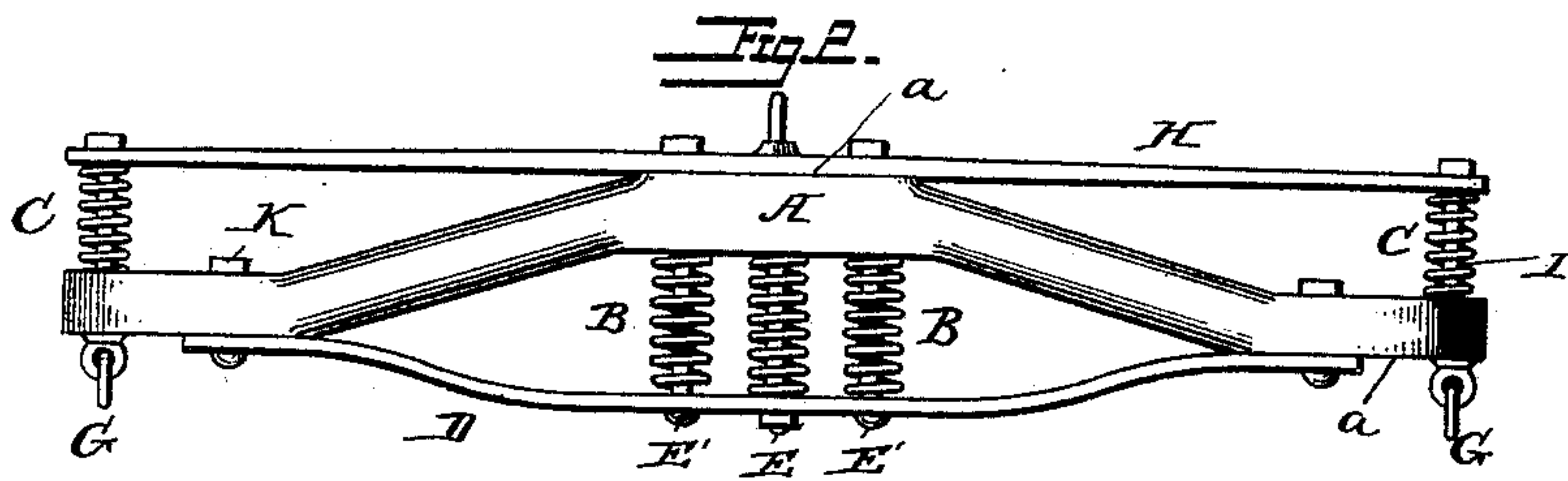
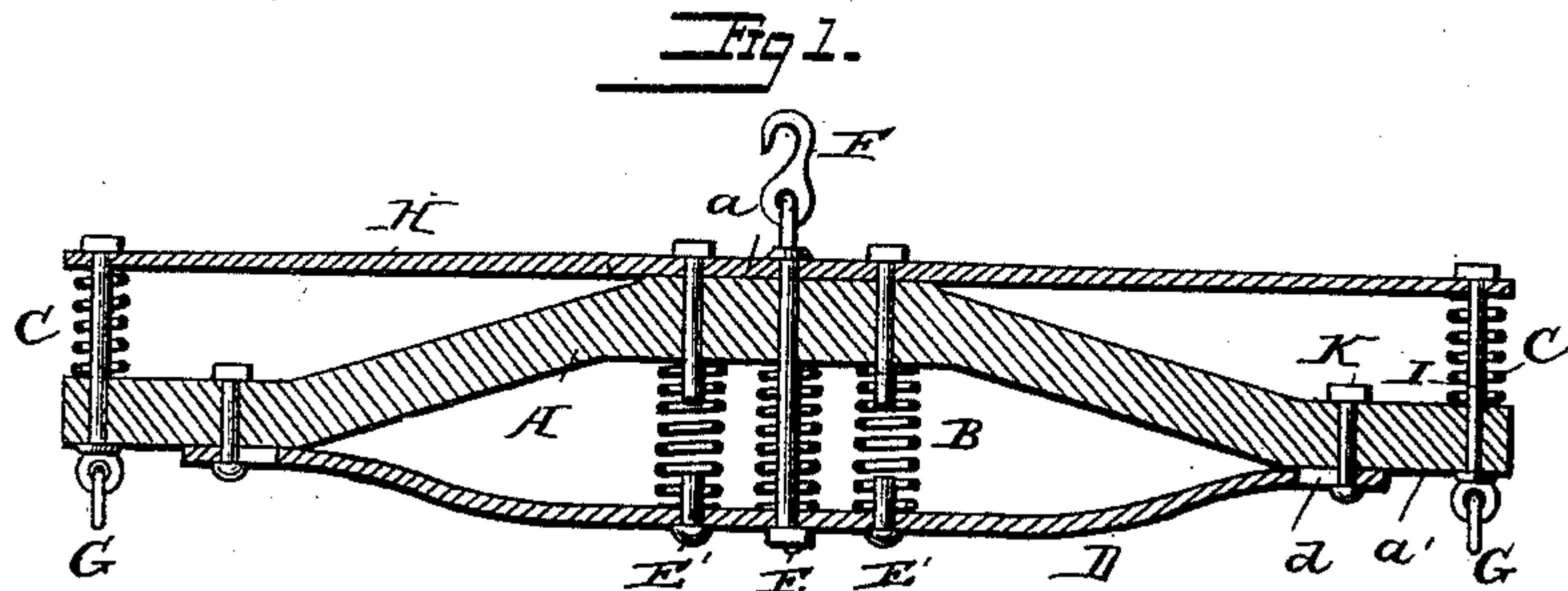


(No Model.)

C. K. FICKES.
WHIFFLETREE.

No. 415,193.

Patented Nov. 19, 1889.



Witnesses

Geo. G. Hinkel, Jr.
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UNITED STATES PATENT OFFICE.

CURTYS KELLER FICKES, OF MECHANICSBURG, PENNSYLVANIA.

WHIFFLETREE.

SPECIFICATION forming part of Letters Patent No. 415,193, dated November 19, 1889.

Application filed October 25, 1887. Renewed June 5, 1889. Serial No. 313,231. (No model.)

To all whom it may concern:

Be it known that I, CURTYS KELLER FICKES, a citizen of the United States, residing at Mechanicsburg, Cumberland county, Pennsylvania, have invented certain Improvements in Double and Single Trees, of which the following is a specification.

This invention relates to that class of whiffletrees or doubletrees in which springs are employed to relieve the draft-animal from the shocks incident to suddenly starting the load or to the latter meeting an obstruction; and it consists in certain novel features, to be hereinafter described and pointed out.

In the accompanying drawings, Figure 1 is a horizontal section of a whiffletree embodying my invention. Fig. 2 is a top view of the same. Fig. 3 is a front view of the front spring D.

The whiffletree proper, designated by the letter A, consists of wood bent or sawed and of substantially bow shape, as shown in the drawings, its central portion and two ends being by preference flattened in order to form convenient bearing-faces for the flat springs.

H is a flat spring secured centrally to the rear flattened face *a* of the whiffletree by a bolt E passing through apertures formed in the whiffletree and said spring. This spring is of a length substantially the same as that of the whiffletree, and carries near its ends two rods I I, passing through apertures in the whiffletree, and provided at their forward ends with hooks G, or other means for attachment to the traces.

C C are springs interposed between the ends of spring H and the whiffletree, respectively, surrounding the rods I, they serving to supplement the action of spring H. This permits a bar of comparatively light weight to be used for the spring H, thus lessening the weight and cost of the whiffletree.

D is another flat spring having its ends bearing against the front flattened faces *a'*, near the ends of the whiffletree and connected centrally thereto by rod E. This spring is bowed slightly toward the front and has interposed between it and the whiffletree one or more springs B, which supplement its own elasticity, they being preferably of spiral form

surrounding bolt E, and guide-pins E', when more than one such spring is employed.

The spring D is provided near its ends with slots *d*, through which pass bolts K, uniting it with the whiffletree.

F represents a hook or other means of connection between the whiffletree and the vehicle, it being attached by means of an eye or otherwise to the central bolt E.

From the above description of the parts of my invention and an examination of the drawings the method of operation will be readily understood. It will be seen that two sets of springs are interposed between the vehicle and the draft-animal, one being that lettered D, the other that lettered H. This construction avoids the necessity of using exceedingly stiff springs, as has heretofore been required, and makes a construction which is both simple and not liable to get out of repair. When the draft is applied, the tendency is to bend or bow the spring H forward, the rods I sliding freely through the end of the whiffletree. At the same time the spring D is more or less straightened, which latter movement is permitted by reason of the free sliding movement relatively to the whiffletree which the ends of the spring have, and, further, because of the bolt E, to which the hook F is attached, sliding freely in the whiffletree.

I do not wish to be confined to the specific form of device which I have shown, as it will be understood that the spirit of my invention will not be departed from, even though some of the parts be changed or even omitted altogether. Thus spring H might be dispensed with, the hooks G being then connected directly to the end of the whiffletree A, in which case the spring D and its supplemental springs B, if employed, will be depended upon entirely to relieve shocks. It will also be understood that any form of sliding connection between the ends of spring D and the whiffletree may be employed—as, for instance, clips—under which the ends of the spring may lie.

I am aware that spring-whiffletrees, broadly considered, are old, and therefore disclaim the same.

I claim—

1. The combination, with a bowed whiffletree A, of a spring D, having its ends con-

5 nected with and bearing upon the whiffletree near its ends, and a bolt sliding freely through the whiffletree and connecting the central portion of the spring with the vehicle, substantially as set forth.

10 2. The combination, with a bowed whiffletree A, of a spring D, having its ends bearing upon the whiffletree near its ends and sliding thereon, a bolt sliding freely through the whiffletree connecting the spring with the vehicle, and a supplemental spring or springs interposed between the whiffletree and the central portion of spring D, substantially as set forth.

15 3. The combination, with a bowed whiffletree A, of a spring D, having its ends bearing upon the whiffletree, a bolt sliding freely through the whiffletree and connecting the spring with the vehicle, and a spring H, connected to the rear face of the whiffletree to the ends of which the traces are connected, substantially as described.

4. The combination of the bowed whiffletree A, the spring D, having its ends slotted, as at *d*, where it is connected with the whiffletree, 25 a bolt E, connecting said spring with the vehicle, a spring or springs B, interposed between the central portion of the spring and the whiffletree, another spring H, secured centrally to the rear face of the whiffletree, rods 30 I, secured to the ends of spring H and projecting forward therefrom through the whiffletree and to which the traces are attached, and springs C, interposed between the ends of spring H and the whiffletree, substantially 35 as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CURTYS KELLER FICKES.

Witnesses:

ISRAEL FLOHR,
J. E. SEARS.