T. H. BROWN.

Trotting-Sulky.

No. 223,215. Patented Jan. 6, 1880.

Fig: 1.

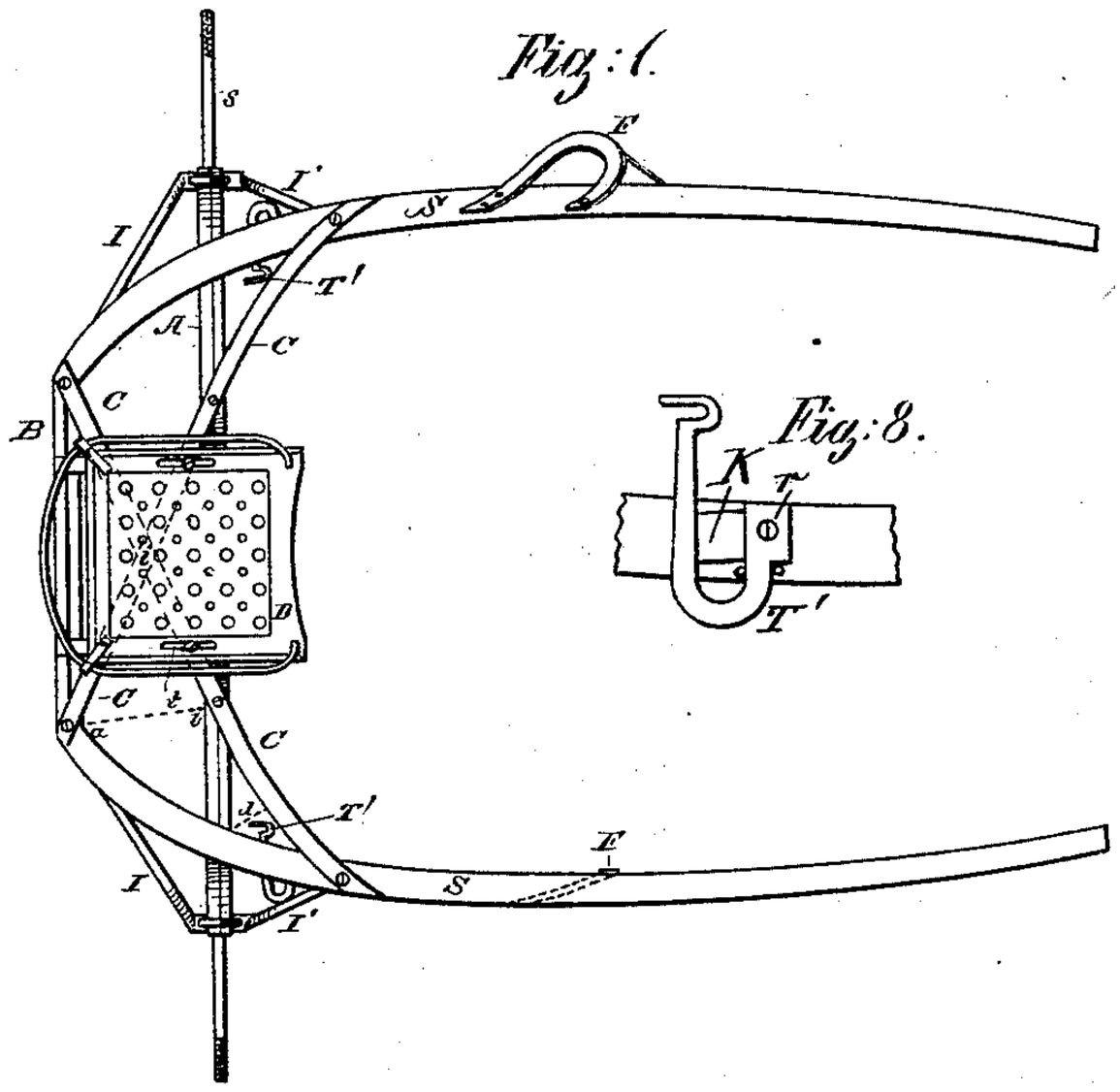

Fig: 8.

Fig: 2.

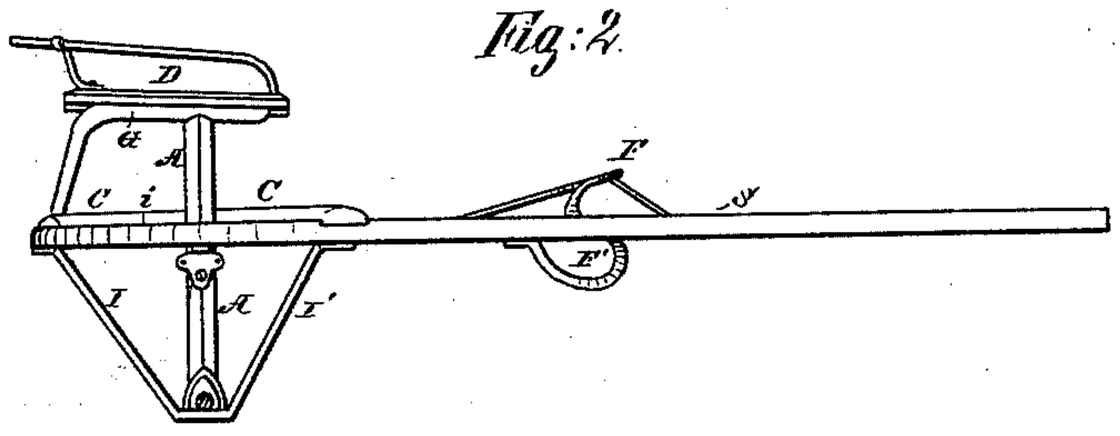

Fig: 4.

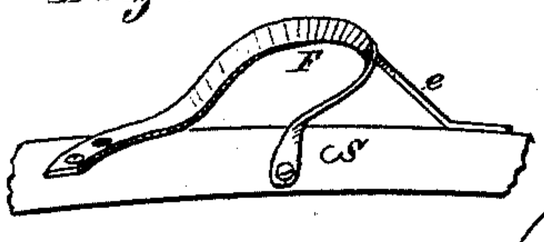

Fig: 3.

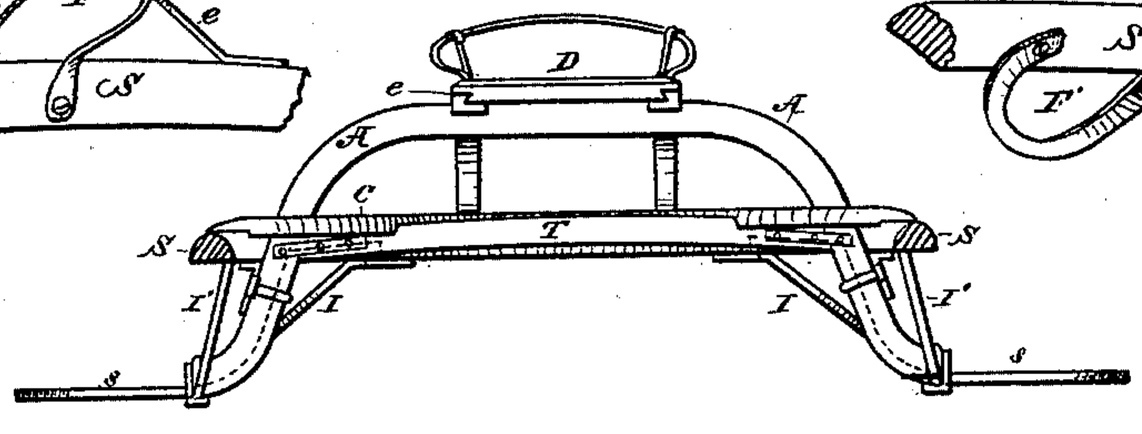

Fig: 6.

Fig: 5.

Fig: 7.

WITNESSES

P. Elwood

Jesse Lee Jr.

INVENTOR

Thomas H. Brown

Per M. E. Dayton

Attorney.

UNITED STATES PATENT OFFICE.

THOMAS H. BROWN, OF CHICAGO, ILLINOIS.

TROTTING-SULKY.

SPECIFICATION forming part of Letters Patent No. 223,215, dated January 6, 1880.

Application filed February 8, 1879.

To all whom it may concern:

Be it known that I, THOMAS H. BROWN, of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Trotting-Sulkies; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention consists, first, in combining, with an arched axle, a tie or cross-bar uniting the opposite and more nearly vertical portions of the axle substantially in the plane of the shafts; second, in combining, with the shafts and said tie, two cross-braces, each extending from a point on one shaft in advance of the axle to or near the rear extremity of the other shaft, and intersecting each other at a point in the rear of the axle; third, in providing a backward-and-forward sliding movement of the seat upon its immediate supports, in combination with devices whereby it may be set or fixed in any desired position; fourth, in locating the foot-rest or stirrups without the space between the shafts.

Figure 1 is a top view or plan of my improved sulky-body. Fig. 2 is a side elevation of the same. Fig. 3 is a front elevation, in transverse section, of the shafts in rear of the foot-rests and in front of the diagonal braces. Fig. 4 is an enlarged side view of the stirrup when placed on top of the shaft, looking outward. Fig. 5 is a front view of the same. Figs. 6 and 7 are side and front views of the stirrup placed beneath the shaft.

A is the axle of the sulky, which is shown as rising centrally to the seat D. S S are the shafts, curved inward at their rear extremities in the usual form, and joined by the rear cross-bar, B. T is a cross-bar or tie joining the rising portions of the axle A about on the plane of the shafts. C C are diagonal braces connecting the rear extremities of the several shafts with points of opposite shafts in advance of the axle, intersecting each other at the rear of the axle, and fastened to the tie T. I and I′ are iron braces, arranged in the usual manner to support the shafts from the axle near the wheels.

Heretofore the central elevation in sulky-axles has never been carried higher than to bring its upper surface in the plane of the lower surface of the shafts. Rising gradually from the wheels to the center, axles so formed have not left a sufficiently broad free space beneath them for the requirements of modern trotting horses. The lateral bracing of the shafts has been such as to conform with the space heretofore provided beneath the axle. The usual position of the axle and the mode of bracing have both interfered with the close hitching of the horse, found to be desirable, or have proven unsuited in many cases to the free movements of the animal when hitched up closely.

It is a principal object of my invention to provide materially increased space beneath and in front of the axle between the shafts, so that under no circumstances will the most extreme movements of the animal be restricted. To this end I prefer to bend the axle abruptly upward near the wheels, and to extend the central arch thereof high enough to form the direct support of the seat, as shown in the drawings, and to introduce the tie T, joining the rising portions of the axle, substantially in the plane of the shafts. Great strength is obviously given to the axle by this construction, and a wide clear space of uniform elevation is provided beneath the same.

Increased space is secured in front of the axle by the arrangement of the diagonal braces C C as shown. These braces are secured to the tie T, where they cross the same, and to each other at their intersection in rear of the tie. The strong elements of a diagonally-braced parallelogram are thus practically secured in the plane of the shafts and at the rear of the axle, giving abundant rigidity to the sulky-body in this plane, while the forward extensions of the braces C C abundantly stiffen the shafts.

If desired, studs may be introduced at *d* to strengthen the curved portions of the braces.

Substantially the same result will be obtained, so far as space is concerned, by the omission of the tie T; and the axle may be secured to the shafts, as it is herein shown to be, or it may rise centrally only to the position herein given to the tie and be connected

with the braces C C, as shown, of the tie. In either case there will be no backward springing of the central part of the axle in securing the shafts to the horse, that will cause the wheels to proximate or gather in front, and to produce a dragging movement on the ground. Any slight springing of the axle in the absence of the tie will merely vary slightly the width of the tread of the wheels.

In pursuance of the same object—namely, to secure as much free space as possible between the shafts—I show the foot-rests or stirrups located either upon or beneath the shafts. They may also be placed wholly without the shafts; but in that position they are found to uncomfortably spread the legs of the driver.

For an upper stirrup (shown in Fig. 4) I support the loop F, bent and attached as indicated, by the light stud *e*, fastened to the outer margin of the shaft. When the loop is placed obliquely on the under side of the shaft, as shown in Fig. 6, the stud is not necessary.

T′ T′ represent trace-hooks formed on the free ends of bent steel arms T′, whose other ends are rigidly secured to the under side of the shafts, as seen in Fig. 8, which shows the shaft with trace-hook attached, inverted. Fig. 8 also shows an elastic rubber block, K, inserted between the parallel portions of the bent arm T′, and held by a lip on the block that passes under the broad attachment of the arm T′, secured by the screw *r*. A spring trace-connection so formed will provide all needful play to the traces required by the movements of the horses' shoulders, and obviates the use of a whiffletree.

A whiffletree hung in position to give draft in a line between or below the shafts would of necessity occupy some portion of the space before or beneath the axle or the tie T, which space, as already set forth, it is one purpose of my invention to make as large and clear as possible.

Obviously other forms of fixed spring-trace attachments may be applied to the sulky, and I do not therefore limit myself in my claims to the specific form shown and described.

The seat D has for its main support the arch of the axle A. Between the arch and the seat, however, are arranged parallel guide-pieces G, transverse to the axle.

The guides may be bent and extended downward to rest upon the shafts or the back bar, B, forming braces, as shown, to more firmly hold the seat in position.

The seat D is arranged to slide backward and forward upon the guides G, and is provided with any convenient form of fastening by which it may be firmly set at any desired point. Fig. 1, for the latter purpose, shows the side bars of the seat slotted at *t*, and clamp-screws passing through the slots into the guides beneath. Fig. 3 shows the seat and guides dovetailed in such manner as to hold the seat securely to the guides while permitting the sliding movement mentioned.

The object of this adjustability in the seat is to secure proper poise of the driver over the spindles or bearing-points of the axle whatever his size or that of the horse.

The seat having the adjustable function described may obviously be applied to any form of sulky, and when not directly supported by the axle any suitable arrangement of braces may be employed to sustain the guides G.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination, in a sulky having an axle arched above the plane of the shafts, of two intersecting trusses, one vertical and consisting of the arched axle and the chord T, united by suitable braces, the other horizontal in the plane of the shafts, and composed wholly or in part of the rear extension of the shafts, substantially as described.

2. The axle A, centrally arched above the plane of the shafts, in combination with the tie T and braces C C in or near the said plane of the shafts, substantially as described.

3. In combination with the shafts S S, the back bar, B, and the tie T, the diagonal braces C C, joined to the shafts in front of said tie and to the rear extremities of the shafts, and intersecting each other in the rear of the tie, substantially as described.

4. In a sulky, the seat D, provided with longitudinal slots and guides, whereby it is adapted to be adjusted backward and forward on its supports, substantially as described, and for the purpose specified.

5. The shaft S of a sulky, provided with foot-rests F, placed on the top or outside of said shaft, whereby said shafts may be brought nearer together and the driver's feet may be less exposed to the action of the horse.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

THOMAS H. BROWN.

Witnesses:
JESSE COX, Jr.,
A. B. SMITH.