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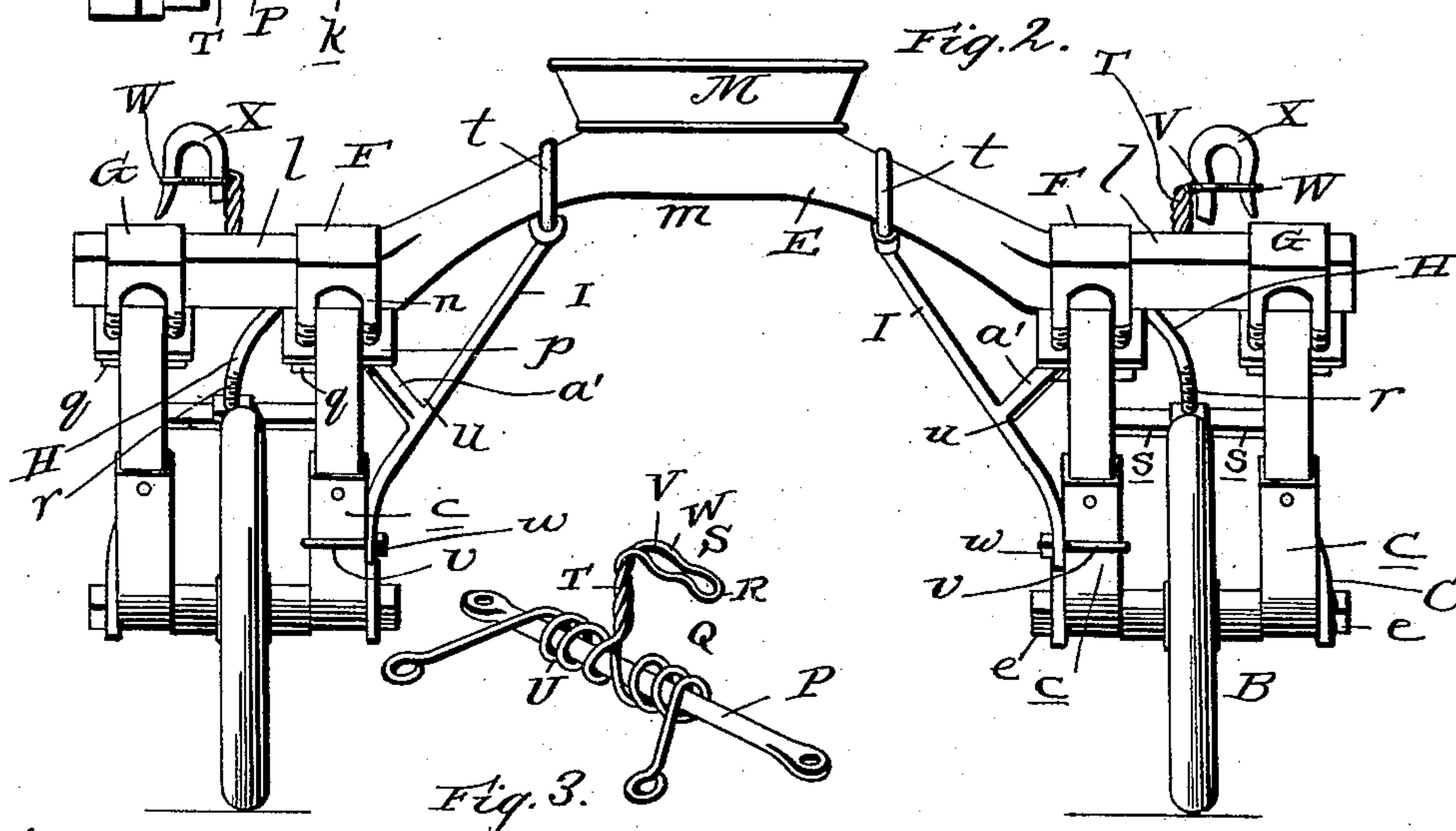
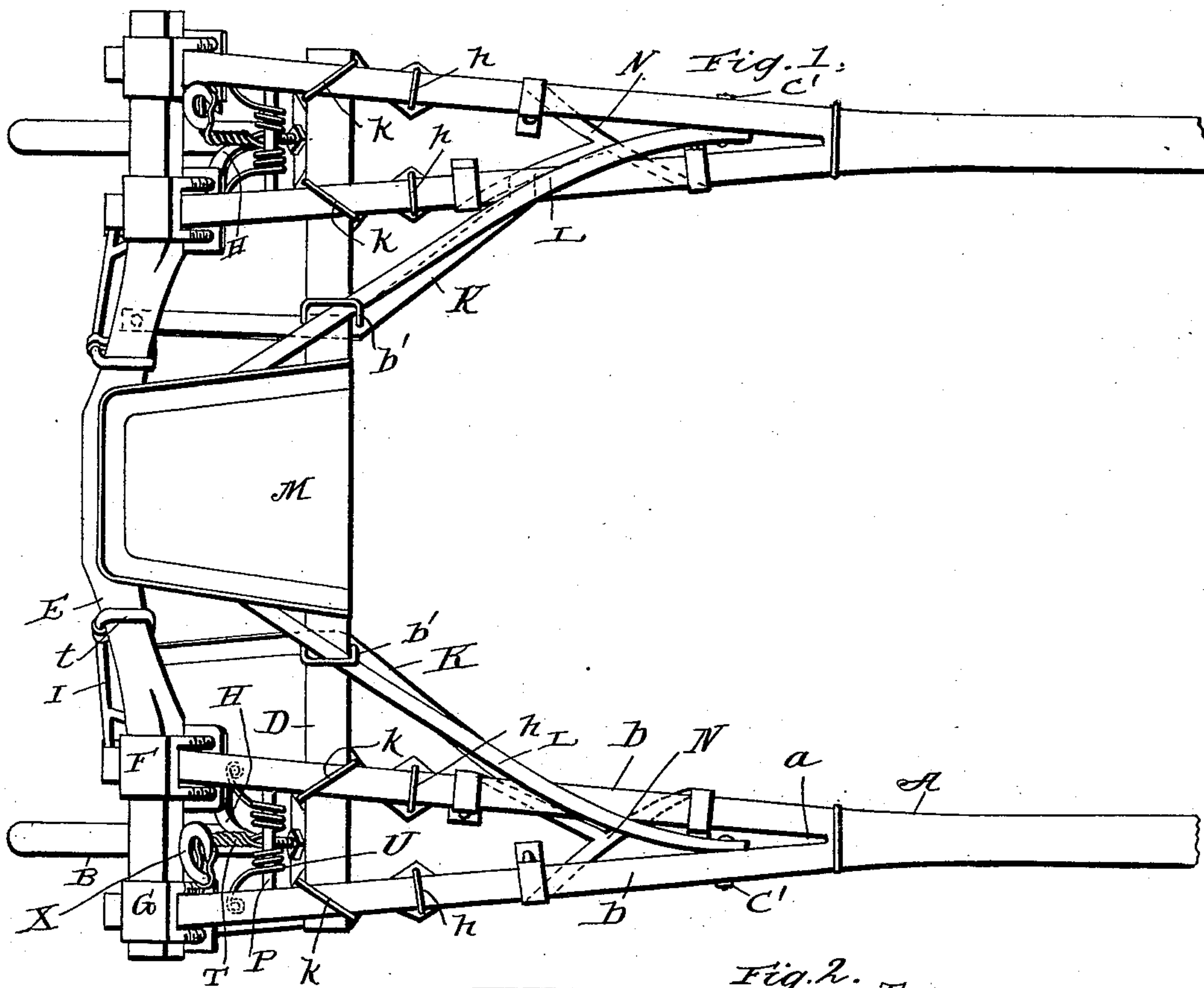
2 Sheets—Sheet 1.

W. H. C. DIESSEL & W. O. & E. D. FOOTE.

SULKY.

No. 528,927.

Patented Nov. 13, 1894.



Witnesses:

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R. H. Matthews.

Inventors

Wm. C. Diesel
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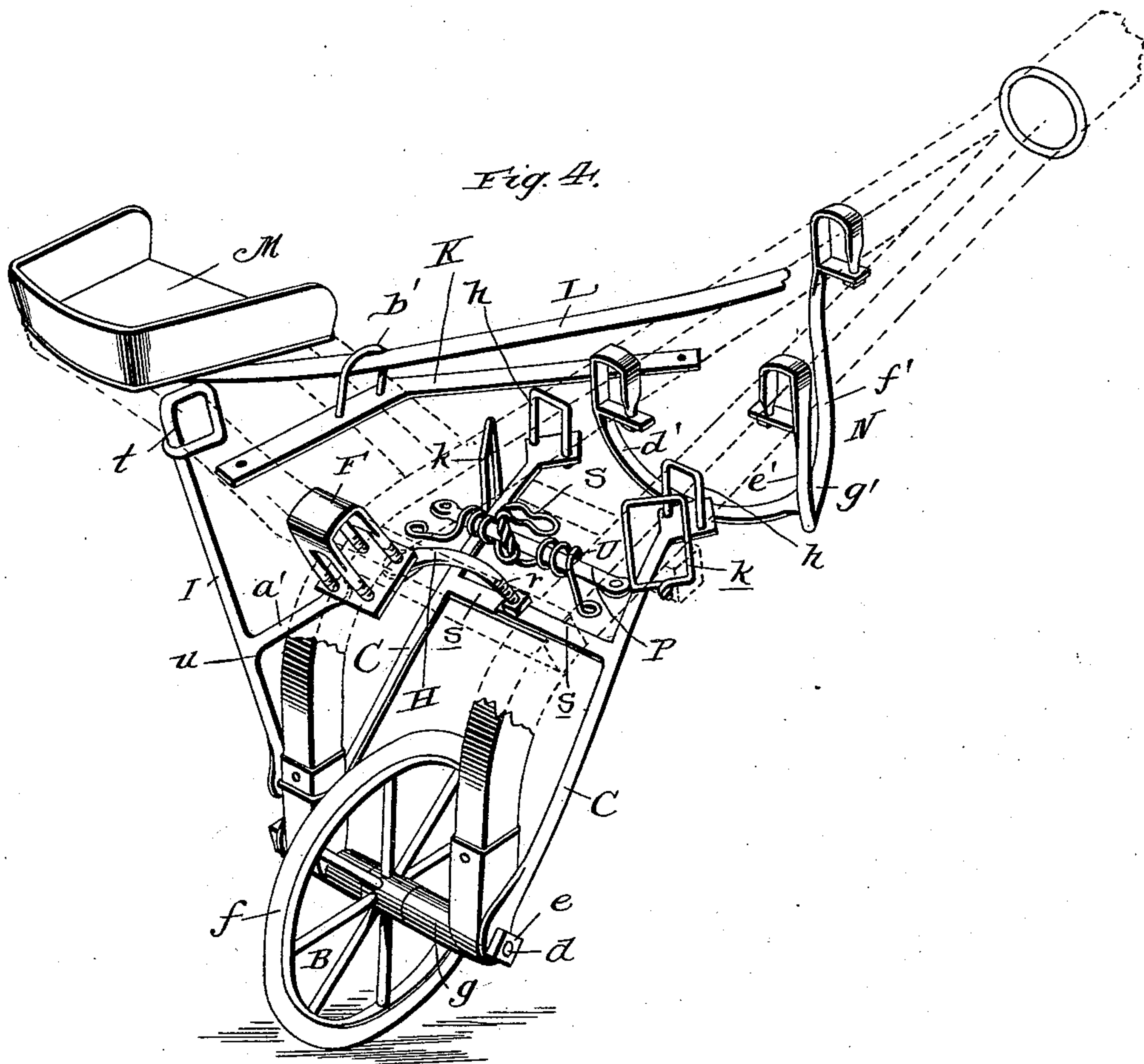
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UNITED STATES PATENT OFFICE,

WILLIAM H. C. DIESSEL, WILLIS O. FOOTE, AND EDWARD D. FOOTE, OF
MEXICO, MISSOURI.

SULKY.

SPECIFICATION forming part of Letters Patent No. 528,927, dated November 13, 1894.

Application filed April 7, 1894. Serial No. 506,723. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. C. DIESSEL, WILLIS O. FOOTE, and EDWARD D. FOOTE, citizens of the United States, residing
5 at Mexico, in the county of Audrain and State of Missouri, have invented certain new and useful Improvements in Sulkies; and we do declare the following to be a full, clear, and exact description of the invention, such as
10 will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to improvements in that class of sulkies in which pneumatic wheels, or wheels having pneumatic
15 tires are employed, and supported in the extremities of the shafts or thills, and the novelty and advantages will be fully understood from the following description and claims when taken in connection with the annexed
20 drawings, in which—

Figure 1, is a plan view of our improved sulky with a part of the thills or shafts broken away. Fig. 2, is a rear elevation. Fig. 3, is a perspective view of one of our improved
25 single-trees removed, and Fig. 4, is an enlarged perspective detail view with parts broken away and other parts illustrated in dotted lines.

Referring by letter to said drawings:—A, indicates the shafts or thills. These shafts
30 are of a peculiar construction, and are each formed from a single piece of material. In forming these shafts, we take a bar of wood, of a sufficient length and thickness, and after
35 treating the same in a manner common to the treatment of wood for bending; one end of the bar being much thicker than the other, we kerf the thickened end lengthwise of the bar for a sufficient distance and to a point
40 which extends well up into the shafts as shown at *a*. We then separate or spread the branches *b*, apart as shown and curve them downwardly and rearwardly at their inner ends where they are provided with thill irons
45 or thimbles *c*. These irons *c*, are provided with apertures to receive a shaft or spindle *d*, which shafts or spindles are held in position by means of nuts *e*, or the like.

B, indicates the supporting wheels. These
50 wheels are comparatively small, and are so constructed as to receive a pneumatic tire *f*,

although it is obvious that in some cases, any other suitable tire might be employed. The wheels are arranged upon the spindles between the fork or bifurcation of each thill at
55 the extremities of the branches, and collars *g*, are preferably employed on each side of the wheel to retain the latter in proper position.

The inner or rear end of the thills are connected with the horizontal portions thereof
60 by means of braces *C*. These braces are preferably provided with eyes at each end and the eyes at one end receive the spindles before the nuts *e*, are applied, and the eyes
65 at the opposite end where the braces are expanded, receive yokes or clips *h*, which straddle the forked branches of the thills and are secured thereto by means of nuts or other
70 suitable fastening devices.

D, indicates a cross bar. This cross bar is placed at opposite ends on the under sides of the horizontal portions or just before the
75 bends of the thills, and are secured thereto and to each branch, by means of yokes or clips *k*, or the like. The connections which straddle the branches of the thills and embrace the cross bar, may be composed of wire, twisted together at the free ends, although it
80 is obvious that other devices might be employed. This cross bar D has its central portion bowed or curved upwardly as shown for a purpose which will presently appear.

E, indicates a rear cross bar or truss. This truss has its ends straight for a sufficient
85 distance in its length as shown at *l*, and thence curved upwardly as shown at *m*. This truss has its straight portions placed upon the branches of the bifurcations of the thill, and on the curved or bent portions thereof so that
90 the central curved portion will bow or loop rearwardly when in position, and be thereby carried to a point in rear of the axles or spindles, and above the same. The cross bar or strut E is secured to the curved branches of
95 the thills by means of clips *F*, and *G*. These clips have four parallel threaded branches *n*, and are placed over the cross bar or strut so as to straddle the curved branches of the
100 thill on opposite sides and receive a plate *p*, beneath, which is secured in position by means of nuts *q*, or other suitable devices.

H, indicates a tie rod. This rod may be composed of stout wire threaded at its lower end as shown at *r*, and may have an eye at its upper end to receive one of the threaded branches of the clip F, before the nuts are applied, and the threaded end takes through apertures in two cross branches *s*, extending from the braces C, so that the braces are connected at an intermediate point with the curved portions of the thills, through the medium of this tie rod, and the clips and securing nuts.

The inner sides and lower portions of the thills, are connected with the truss bar E adjacent to the seat by means of metallic straps or braces I. These braces are secured at their upper ends to the truss as shown at *l*, and their opposite or lower ends are forked or branched as shown at *u*, and one branch is clipped to the lower end of the inner branch of the thills by means of a clip *v*, and nuts *w*, or the like, and the other branch which extends forwardly, as indicated at *a'*, is provided with an eye and receives one of the threaded branches of the clip F, before the nuts are applied. It will thus be seen that the inner branches of the thills are firmly braced to the strut or truss E, and are furthermore braced to the curved portion of said thills, and consequently, through the medium of the clips F, are braced to the straight portions of the truss.

K, indicates a metallic strap. This strap is of a curved or angular form as shown and is placed beneath the truss E, the cross bar D, and the inner branches of the forked thills, and secured at the said respective points by suitable fastening devices.

L, indicates a bar, preferably composed of wood. This bar is bowed or bent as shown, and is secured at or about midway of its length to the forward central portion of the truss and beneath the seat M. This bar is also secured by means of the clips *b'*, to the upper side of the cross bar D, again to the upper side of the inner branches of the forks of the thills, and its free ends are carried into the forks and secured to the inner sides of the outer branches by bolts and nuts or other suitable devices as indicated at *c'*.

The seat M, which may be of the character usually employed is secured to the raised or curved central portions of the truss and cross bar, respectively.

N, indicates the stirrups or foot rests. These stirrups are of a form, substantially as shown, and may be cast or made from strap iron, and comprise the three branches *d'*, *e'*, and *f'*. The stirrups are applied to the horizontal portions of the thill and to the forked branches by clipping the branch *e'*, over the outer branch of the fork, the branch *f'*, over the inner branch of the fork and in advance of the first clip, and the branch *d'*, over the inner branch of the fork at a point in rear of the clip of the branch *e'*. This manner of attachment will cause the looped

branches *g'* to assume a position obliquely across the fork of the thill, so as to bring them in a convenient position for the driver to place his feet within them; the branch *d'* serving as a brace to the loop *g'*.

From the construction described, it will be seen that we have a sulky frame of a very light but strong construction and it will be observed that there are no parts of the wood employed punctured by nails or screws, as commonly used, but that all the parts are united by clips and braces in such a manner that there is no liability of the structure becoming weak or injured.

In order to overcome the sulky motion so common to this class of devices we have provided a new single tree as better illustrated in Fig. 3 of the drawings. This single-tree comprises a short rod P; there being one secured to the under sides of the forked branches of the thills about the curved portions thereof, and in rear of the cross bar D, and a stout wire trace holder Q. This trace holder may be formed by taking a piece of stout spring wire or other suitable material and bending it about midway of its length, as shown at R, leaving a vertically-disposed, elongated eye S, for a purpose which will presently appear. The wire having its branches brought together as described, is then bent so as to form a lateral branch and the wire wrapped or twisted as shown at T, for a sufficient distance, when the branches of the wire are separated and carried in opposite directions into a sufficient number of coils U, to receive the rod P, and the free ends of said wires are then terminated in eyes or other suitable means for the attachment to the under sides of the forked branches of the thills in rear of the rods. In forming the lateral trace-receiving branch W, of these single trees, the two branches of the wire may be contracted or brought together about midway of their length so as to form in addition to the eye or loop S, another loop or eye V, to receive one end of a piece of leather X, or other flexible material, the object of this piece of material being to hold the trace in position when placed over the branch W. By this construction it will be seen that we have a spring or yielding single tree of a very cheap and durable construction and by the employment of which the common single tree may be dispensed with and all sulky motion prevented. It will also be seen that by the construction of the parts and the location of the seat the driver during travel, will have a tendency to throw himself forward, and by the form of the truss and cross bar, we are enabled to bring the seat to a sufficient altitude and yet employ very small wheels which is very desirable.

Having described our invention, what we claim is—

1. A sulky comprising shafts or thills having their rear portions curved downwardly and their straight and curved portions bifurcated

or forked so as to form branches *b*, and also having the free ends of the branches *b*, spread apart, wheels carried by the said shafts, a truss bar connected to the curved portions of the branches *b*, of the shafts or thills, a cross bar connected to the straight portions of the branches *b*, of the thills and arranged in advance of the truss bar, and a seat mounted on the truss and cross bars, substantially as specified.

2. The sulky comprising the thills having their rear portions curved downwardly and their straight and curved portions bifurcated so as to form branches *b*, and also having the ends of the branches *b*, spread apart, the cross bar secured to the branches *b*, of the thills in advance of the curve thereof, the truss bar secured to the curved portions of the branches *b*, the clips securing said parts at their intersecting points, the braces connecting the curved ends of the thills with the horizontal portions, the tie rods connecting the curved parts of the thills with said braces, the braces connecting the truss bar with the inner branches *b*, of the thills and also with the straight portion of the truss bar, the straps or braces, connecting the horizontal portions of the inner branches of the thills

with the cross and truss bars, the spindles arranged in the curved ends of the branches *b*, of the thills and the small wheels carried by the spindles all substantially as specified. 30

3. The combination with the forked thills; of the single tree comprising the cross rods secured to said thills and the spring wires coiled around said rod and having one end secured to each cross branch and provided with a lateral branch to receive a trace, substantially as specified. 35

4. The single-tree comprising a wire bent about midway of its length and thence turned at an angle, and the branches wrapped or twisted and thence carried in opposite directions in a coiled manner to receive a rod or the like, and the free ends of said branches being adapted for attachment, substantially as specified. 40 45

In testimony whereof we affix our signatures in presence of two witnesses.

WM. H. C. DIESSEL.
WILLIS O. FOOTE.
EDWARD D. FOOTE.

Witnesses:

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J. B. FLEMING.