3 Sheets—Sheet 1.

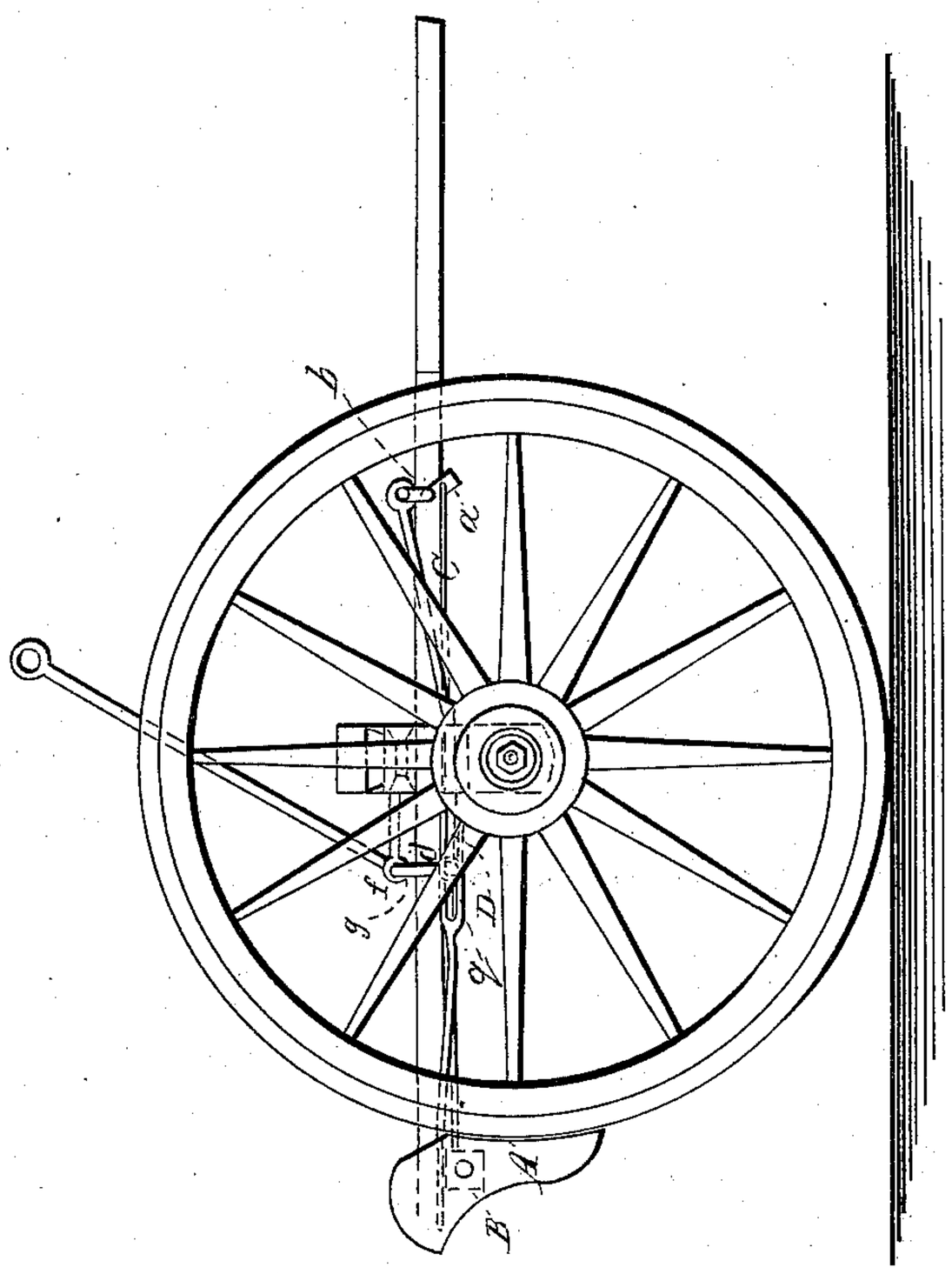
W. HULL.

Wagon-Brake.

No 70,217.

Patented Oct. 29, 1867.

Fig. 1.



Witnesses:

Geo Esmond

H. F. Wilson

Inventor:

Wesley Hull

3 Sheets—Sheet 2.

W. HULL.

Wagon-Brake.

No. 70,217.

Patented Oct. 29, 1867.

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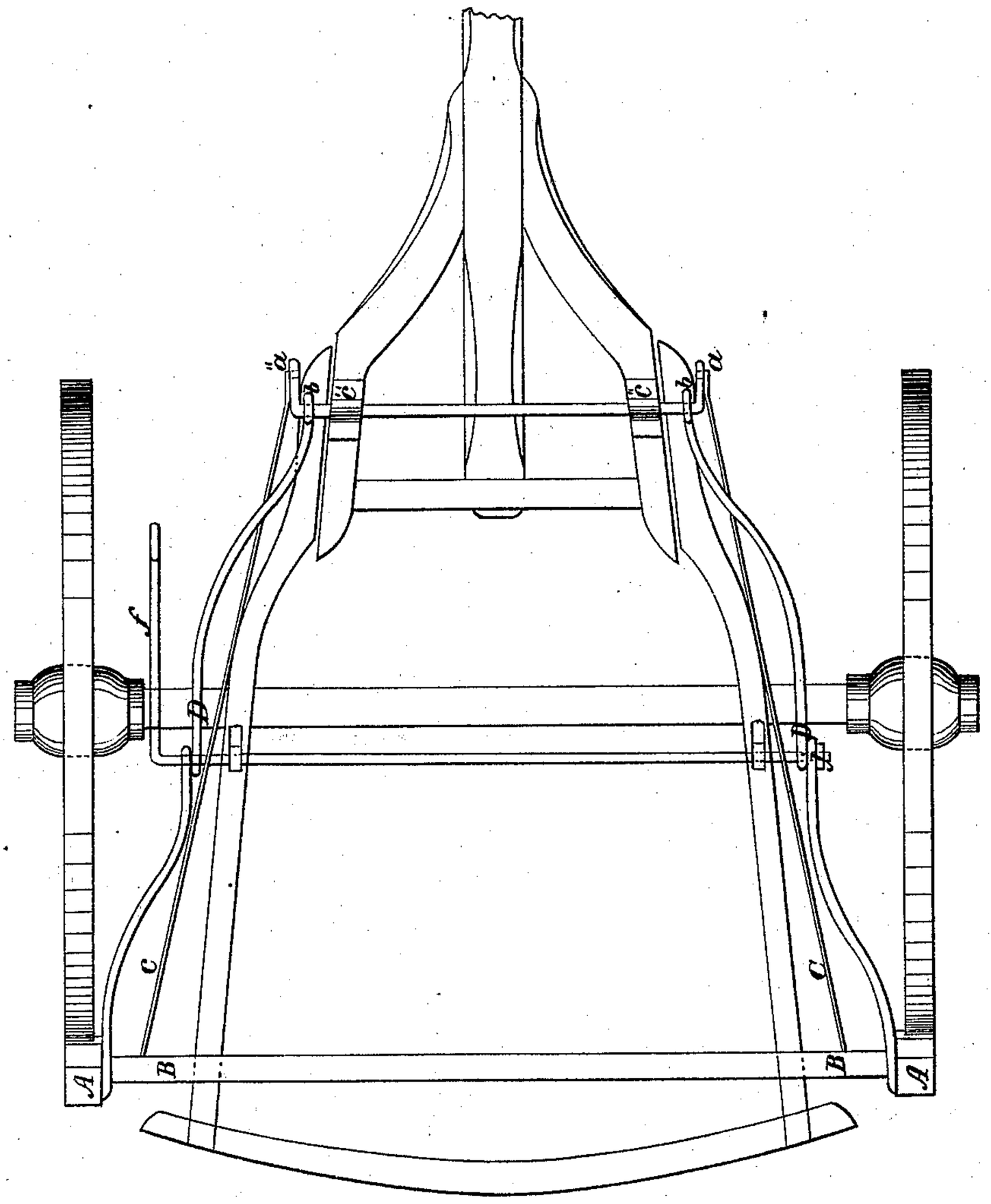

Witnesses:

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H. F. Millsaps.

Inventor:

Wesley Hull

3 Sheets—Sheet 3.

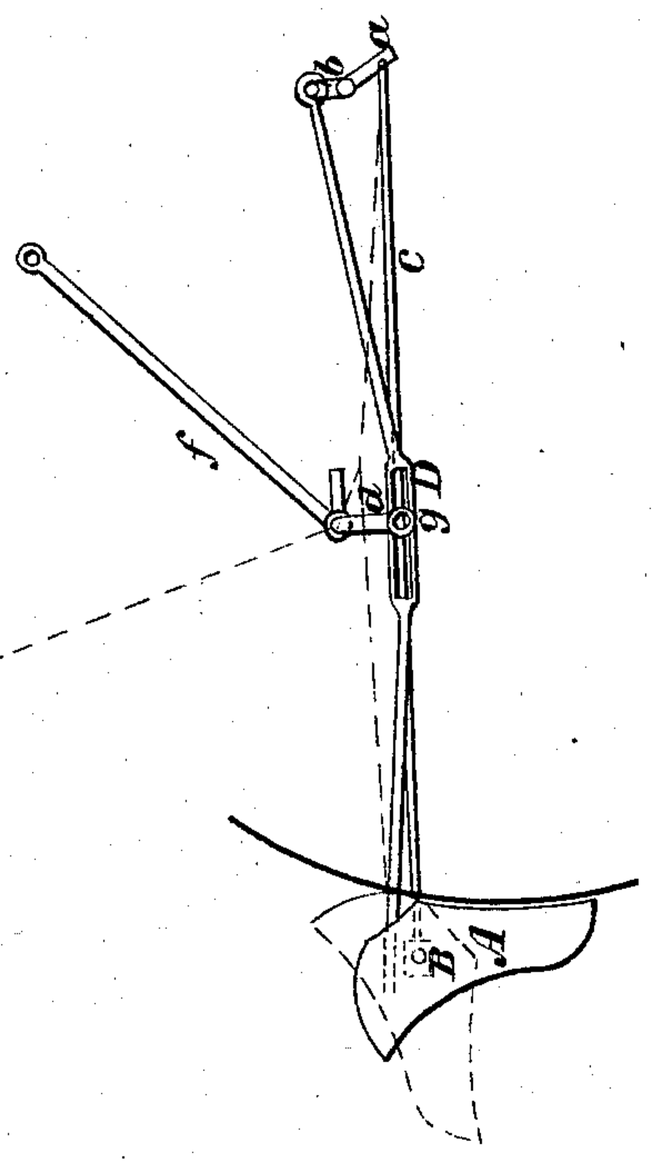
W. HULL.

Wagon-Brake.

No. 70,217.

Patented Oct. 29, 1867.

Fig. 1.



Witnesses:

Geo Esmond

H. F. Wilson

Inventor:

Wesley Hull

United States Patent Office.

WESLEY HULL, OF FORT WAYNE, INDIANA.

Letters Patent No. 70,217, *dated October* 29, 1867.

IMPROVEMENT IN WAGON-BRAKE.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WESLEY HULL, of Fort Wayne, in the county of Allen, and State of Indiana, have invented certain new and useful improvements in Wagon-Brakes; 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. In the drawings—

Figure 1, sheet 1, is a side elevation.

Figure 2, sheet 2, is a plan view.

Figures 1, 2, and 3, sheet 3, are detached views of the same.

The nature of my invention consists in the construction of a brake, which will act to lock the wheel thereof while ascending a hill, as well as descending the same.

To enable others skilled in the arts to make and use my invention, I will proceed to describe its construction and operation.

A represents a lock, which is constructed as seen in fig. 1, sheet 1, and in the diagrams on sheet 3. This lock is pivoted to the outer end of a cross-bar, B, and works freely on it; said block formed with curved sides or faces, as seen in the drawings, which are presented to the surface of the wheel when the brake is in operation. These surfaces are forced in contact respectively, as desired, by means of connecting-rods, in the manner hereinafter described. C represents a connecting-rod, which is attached by its rear end to the cross-bar B, and extends forward to the front end of the hounds, or nearly so, and is there secured to the lower end of an angular lever, as seen at *a*. This lever is pivoted at its fulcrum *b* to the hounds of the wagon, as seen in the drawings. Said lever extends from the fulcrum upwards to the upper surface of the hounds, where it forms an angle, and extends thence horizontally across said hounds and the rear end of the pole, as seen in fig. 2, sheet 2, where it is turned downwards, and bent and pivoted to form a fulcrum, as on the opposite side. *c* represents bearings, which secure the said pole to the hounds. When tension is applied to the pole the bent lever is operated by being relieved, as seen in diagram 1, sheet 3, and the brake is relieved. When the pole is forced backwards, as in holding back going down hill, the bent lever acts to force the brake on to the wheel, as seen in red lines, diagram 1, sheet 3. The bend in the lever *a* serves to shorten the lower arm thereof. When pressure is applied and the long arm forced backwards the short arm is virtually shortened, so as to increase the leverage just in proportion to the amount of pressure applied and the distance that the long arm is forced back. The result of this combination is considered at once effective, cheap, and durable. D represents a set of connecting-rods, which are secured at their rear ends to the block or brake A, at or near its upper extremity, as seen in the drawings. The front end is secured to the rod on which the angular lever is secured, as seen at *d*. These rods, at or near their centres, and just in the rear of the axle, are secured to the end of a lever, *f*, as seen at *g*, by means of slots formed in their ends of suitable length. This lever is secured by means of suitable bearings to the axle or bolster thereof, as seen in figs. 1 and 2.

Now, when tension is applied to the pole, as in drawing the wagon upon an inclined plane, and where, from any cause, it becomes necessary or desirable to stop, the handle of lever *f* is forced backwards, and thus tension is applied to the brake-rod, and through it to the brake A, which is thereby tilted up, as seen in diagram 2, sheet 3, wherein the surface *h* is brought to bear on the surface of the wheel, and by its eccentricity causes the wheel to be effectually locked, and the horses may stand at ease. The operation of the brake is at once effective, simple, and easily controlled. After locking while ascending a hill, when the horses again resume the load, the tension applied to the pole simultaneously unlocks the wheel and relieves the friction. *i* represents a spring which acts upon lever *f* for the purpose of holding the lever in a position so as not to be interfered with when the brakes are being acted upon in going down hill, and thus preventing it from swaying back and forth. Said spring acts also to force the lever upward and forward when the lock is relieved in ascending a hill, and thus takes off all of the weight and consequent friction except that created by the block itself.

Another great advantage is derived from the use of this brake in the convenience with which it may be used for the purpose of hitching the horse by throwing the lines over it, and by the tension therefrom derived. The said lever is always kept in a position to secure the brakes to the surface of the wheels, and thus prevent them from starting, for when they attempt to start, they relieve the locks, and consequently the lever is

thrown back, and the horses are thereby checked in their forward movements as effectually as they would have been were they held by a man. The horses are also completely prevented from backing by this device, for the reason that when the attempt is made the rest-pin in the slot of the rear connecting-rod is forced back to the rear extremity of said slot, and thus the top end of the rubber-block is prevented from coming forward, and the wheel is as effectually locked as while ascending or descending a hill.

This lock may be used as a self-acting lock, or as a single descending lock, or as an ascending lock, or as a self-acting ascending and descending lock, with or without the lever.

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

The brake A, bent lever *a*, connecting-rod C, in combination with slotted connecting-rods and lever, for the purpose of locking wheels of wagons while ascending or descending hills, the whole being arranged and combined in the manner and for the purposes herein set forth and described.

WESLEY HULL. [L. S.]

Witnesses:
GEO. ESMOND,
GEO. W. DURGIN, Jr.