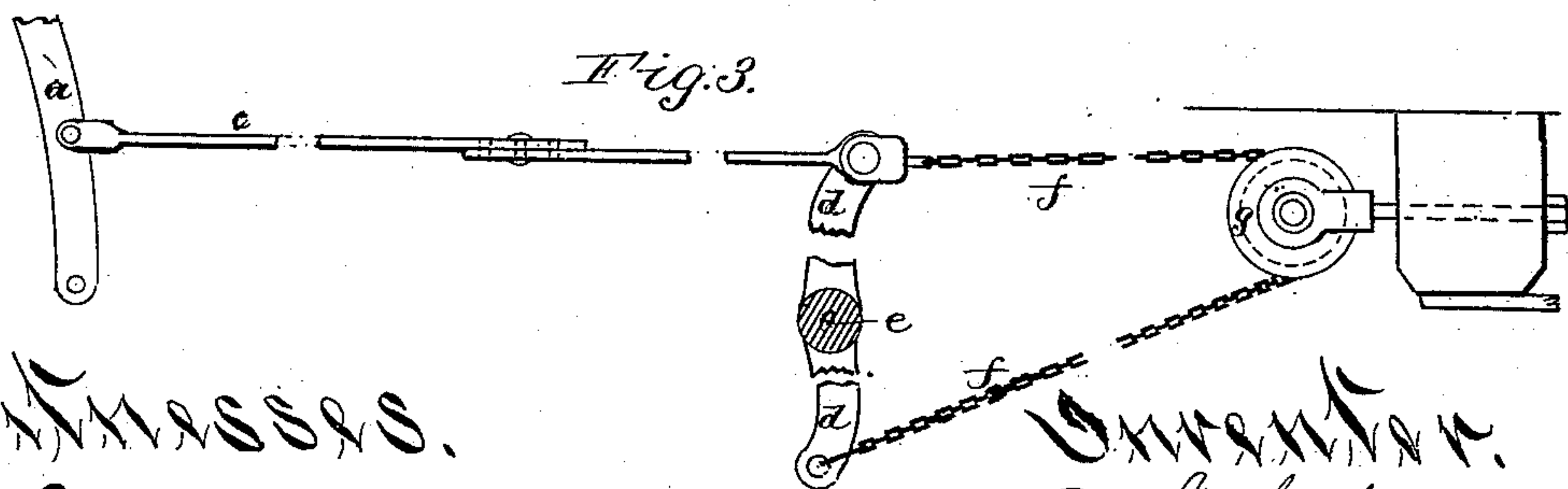
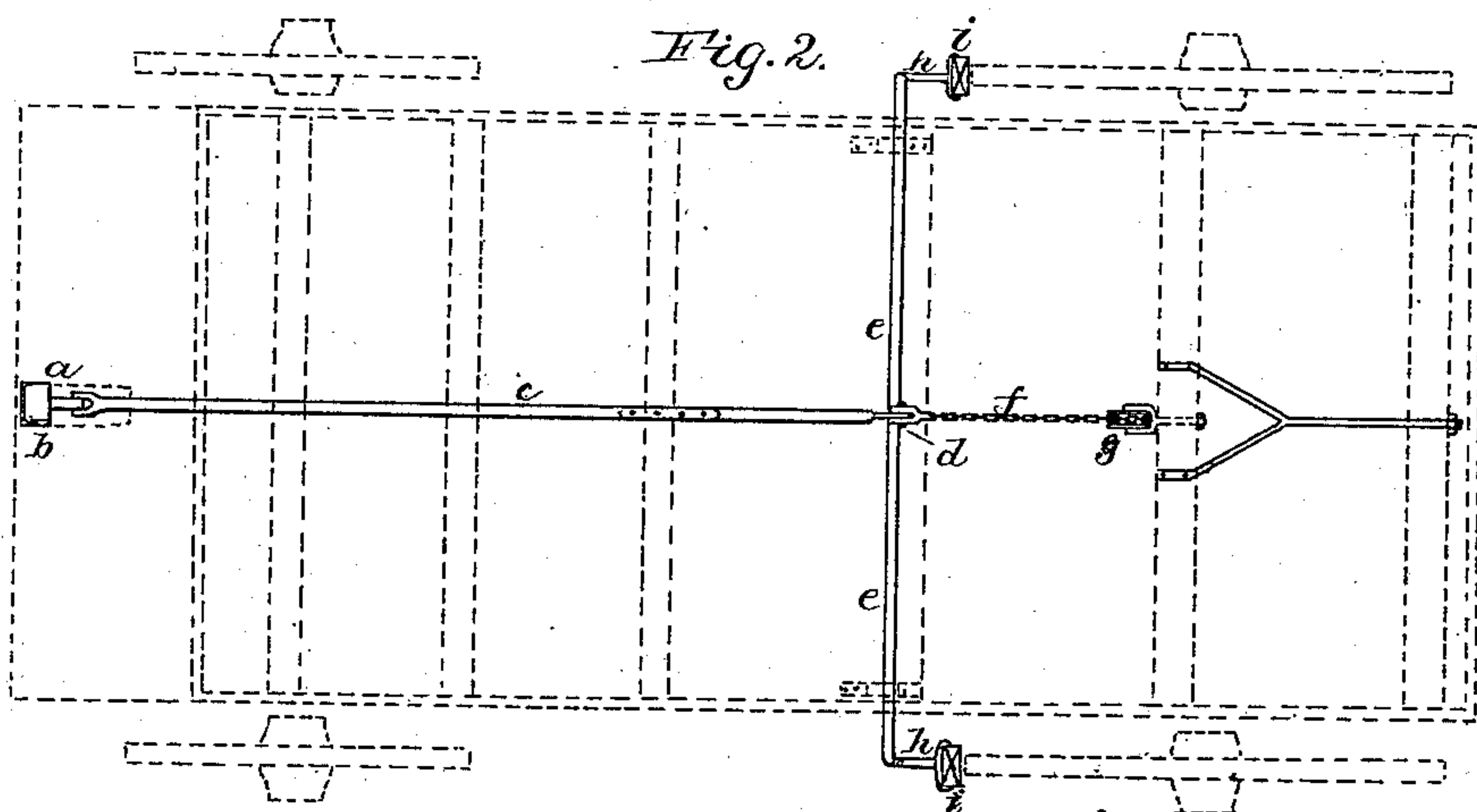
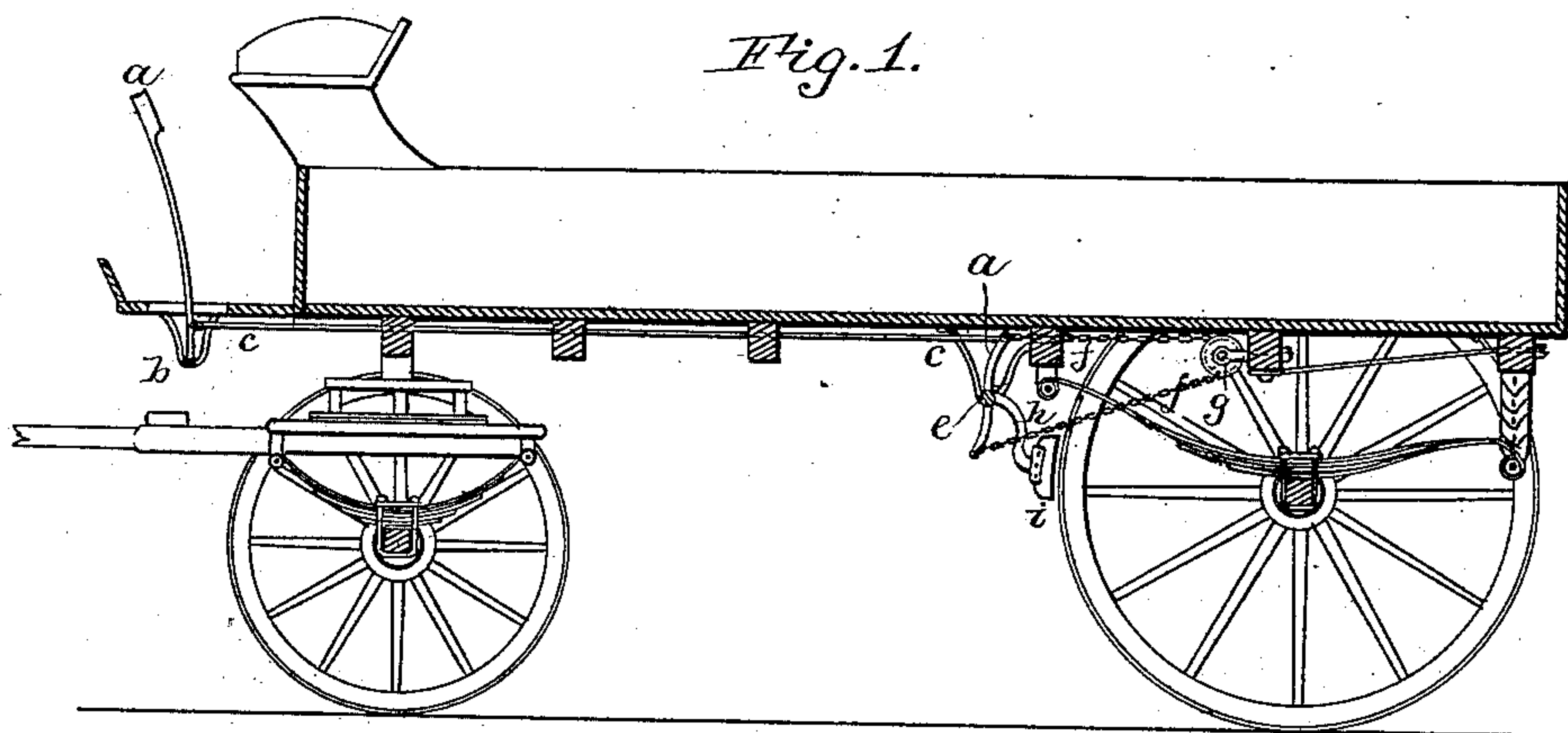


(No Model.)

A. J. STEELE.  
WAGON BRAKE.

No. 299,693.

Patented June 3, 1884.



Witnesses.  
J. Garner  
J. Patterson

Witnesses.  
A. J. Steele  
per  
J. A. Lehmann, atty.



# UNITED STATES PATENT OFFICE.

ABNER J. STEELE, OF ALLEGHENY, PENNSYLVANIA.

## WAGON-BRAKE.

SPECIFICATION forming part of Letters Patent No. 299,693, dated June 3, 1884.

Application filed December 14, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, ABNER J. STEELE, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Wagon-Brakes, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improvement in wagon-brakes; and it consists in the application of a double lever, chain, and pulley for greater power in the use of the brake on wagon-wheels.

The wagon-brakes now in general use consist of a vertical lever at the side of a wagon, controlled by either hand or foot of the driver. This lever is pivoted to a rod that has its rear end attached to a revolving bar by means of a short lever, the bar projecting at both sides from under the wagon in front of the hind wheels. To the projecting ends of this revolving bar are attached by short rods the blocks of the brake, so that when the bar is partly turned the blocks are pressed against the hind wheels of the wagon, which occurs when the vertical lever is acted upon by hand or foot. To release the wheels from the brake a spring is applied to return the lever to its former position when the pressure of hand or foot is removed. This kind of wagon-brake answers the purpose very well on light wagons; but on heavily-loaded wagons it is insufficient, because the brake, to become effective, has to be applied with greater force than men ordinarily possess.

To facilitate the application of the brake and make it more powerful, I attach under the middle of the wagon-bed, on the transverse rolling bar carrying the blocks of the brake, a vertical double lever, of which one half is above and the other below the bar. To the upper end of the lever I attach a rod that extends forward to the lever operated by the driver, and also a chain that runs back over a pulley on a cross-piece under the wagon-bed to the lower end of the lever. If now the foot-lever in front of the wagon, pivoted at its lower end in a bracket below the wagon-bed, be pushed forward, it draws the rod and upper half of the double lever forward, and the

chain, following the movement, pulls the lower end of the lever backward. The bar to which the lever is rigidly fastened is made thereby to partially turn or roll, and the brake-blocks at the ends of the bar are pushed against the wheels until the pressure against the foot-lever ceases, when the brake-blocks are removed from the wheels by a contrary motion. By the introduction of the double lever, chain, and pulley the force exerted is greatly increased, while the operation is facilitated.

The accompanying drawings represent my invention, Figure 1 being a longitudinal section, Fig. 2 a bottom plan, and Fig. 3 a detail view of brake chain and lever.

The foot-lever *a* is pivoted to a bracket, *b*, and pivoted to the foot-lever *a* is the straight rod *c* under the wagon-bed. The rod *c* extends back to the upper end of the vertical double lever *d*, and is pivoted to it. The double lever *d* is at its middle rigidly attached to the transverse bar *e*, one half of it being over and the other below the bar. At the end of the upper half of the lever *d* is likewise attached a chain, *f*, that runs back on a line with the rod *c* to a pulley, *g*, and, passing over it, returns to the lower end of the double lever *d*. The bar *e*, projecting from under both sides of the wagon-bed in front of the hind wheels, has rigidly attached to its ends two levers, *h*, which levers hold the brake-blocks *i*. By pressing against the foot-lever *a* the rod *c* is drawn forward, and with it the chain *f* and the upper half of the lever *d*, causing the lower half underneath to be drawn backward by the chain. The movement of the lever is participated in by the bar *e*, and the levers *h*, being turned, apply the brake-blocks to the wheels, from which they are removed again by a reversed motion of the foot-lever without the use of a spring. Where the brake shaft or bar *e* has but a single arm, and the rod *c* is connected to this arm alone, the first movement of the operating-lever *a* turns the shaft or rod *e* freely in its bearing until the brakes strike against the wheel. As soon as the brakes strike the wheels, a pull upon the arm *d* causes about one half of the power that is applied to be exerted upon the wheels, and the other half upon the bearings to this rod or shaft *e*. Where the vehicle is light and comparatively little

power is required, this construction answers well enough; but when the brake is to be applied to a heavy vehicle, all of the power that is applied should be transmitted directly to the brake-blocks, and not only one half. Where the rod or shaft *e* is provided with two arms which project in opposite directions, as shown in Fig. 3, the pull upon the two arms is just equal to the pull being exerted in opposite directions, the rod or shaft *e* being simply turned in its bearings, and then the whole power is used in applying the brake-blocks directly to the wheels.

The difference between the old method of applying the brakes and my method consists

in removing the pressure from the bearings of the brake rod or shaft and transmitting the pressure directly to the brake-blocks upon the wheels.

Having thus described my invention, I claim—

In a wagon-brake, the double lever *d*, in combination with the bar *e*, chain *f*, and pulley *g*, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ABNER J. STEELE.

Witnesses:

LOUIS MOESER,  
J. E. HIRSCH.