

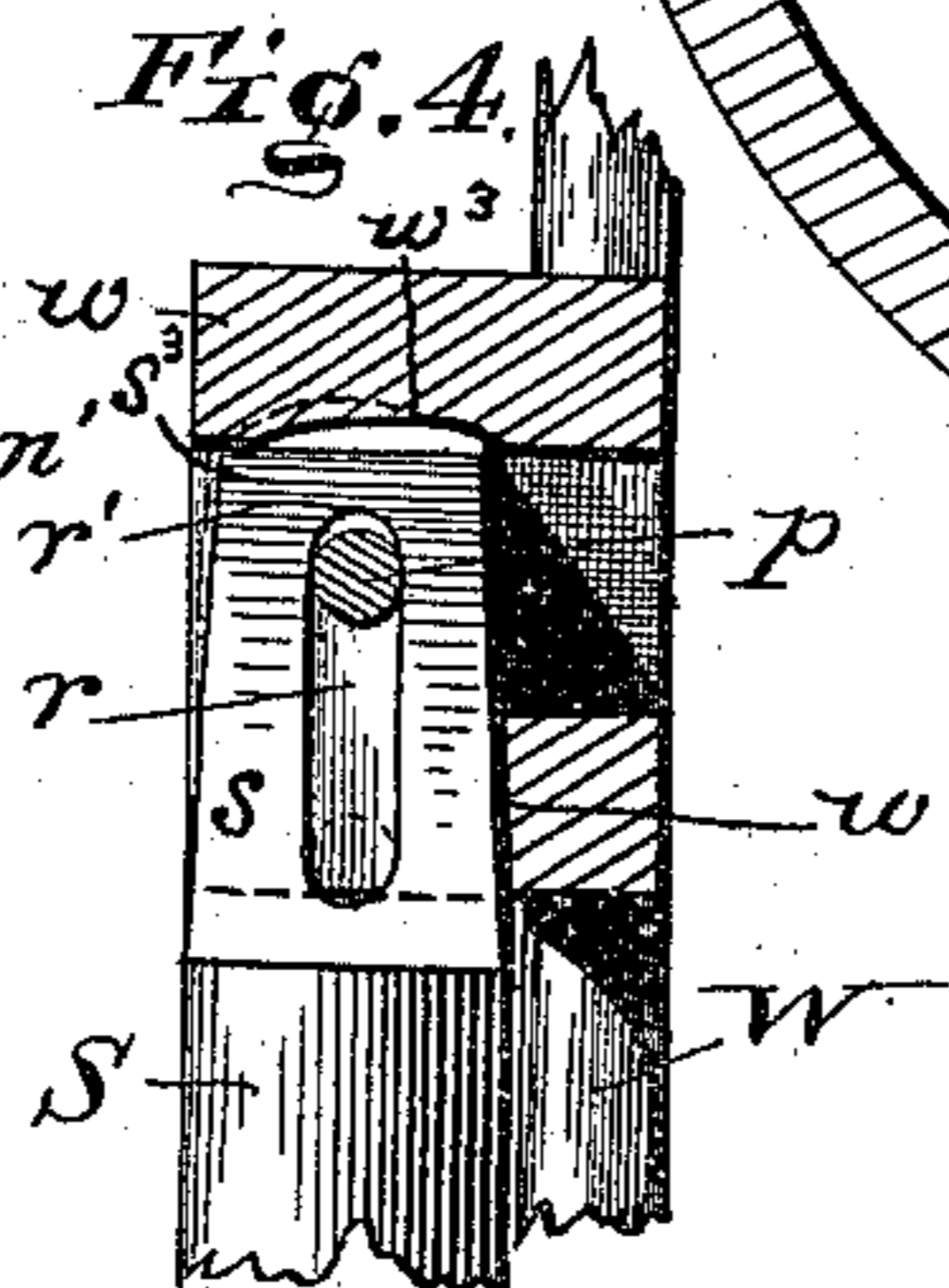
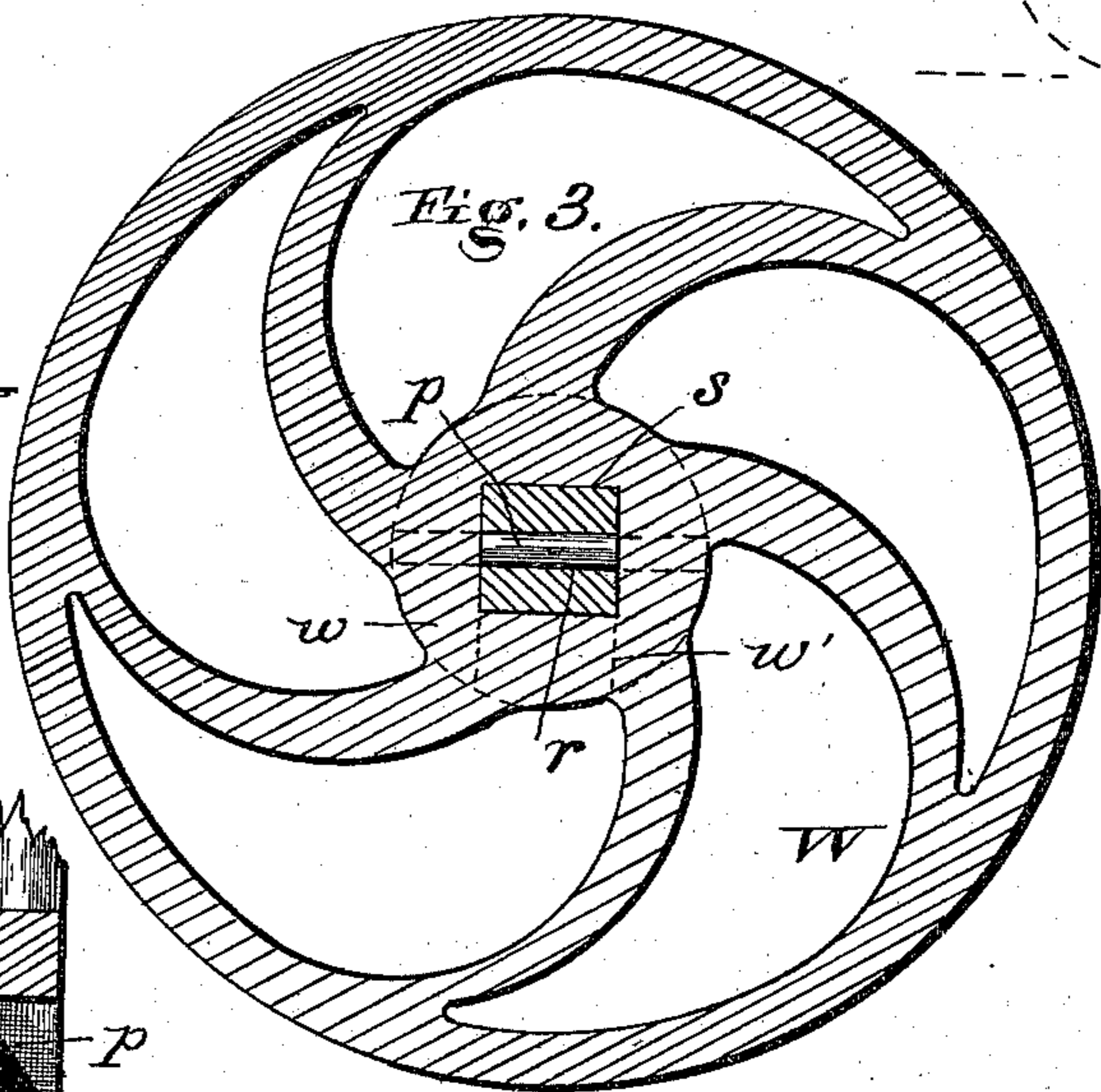
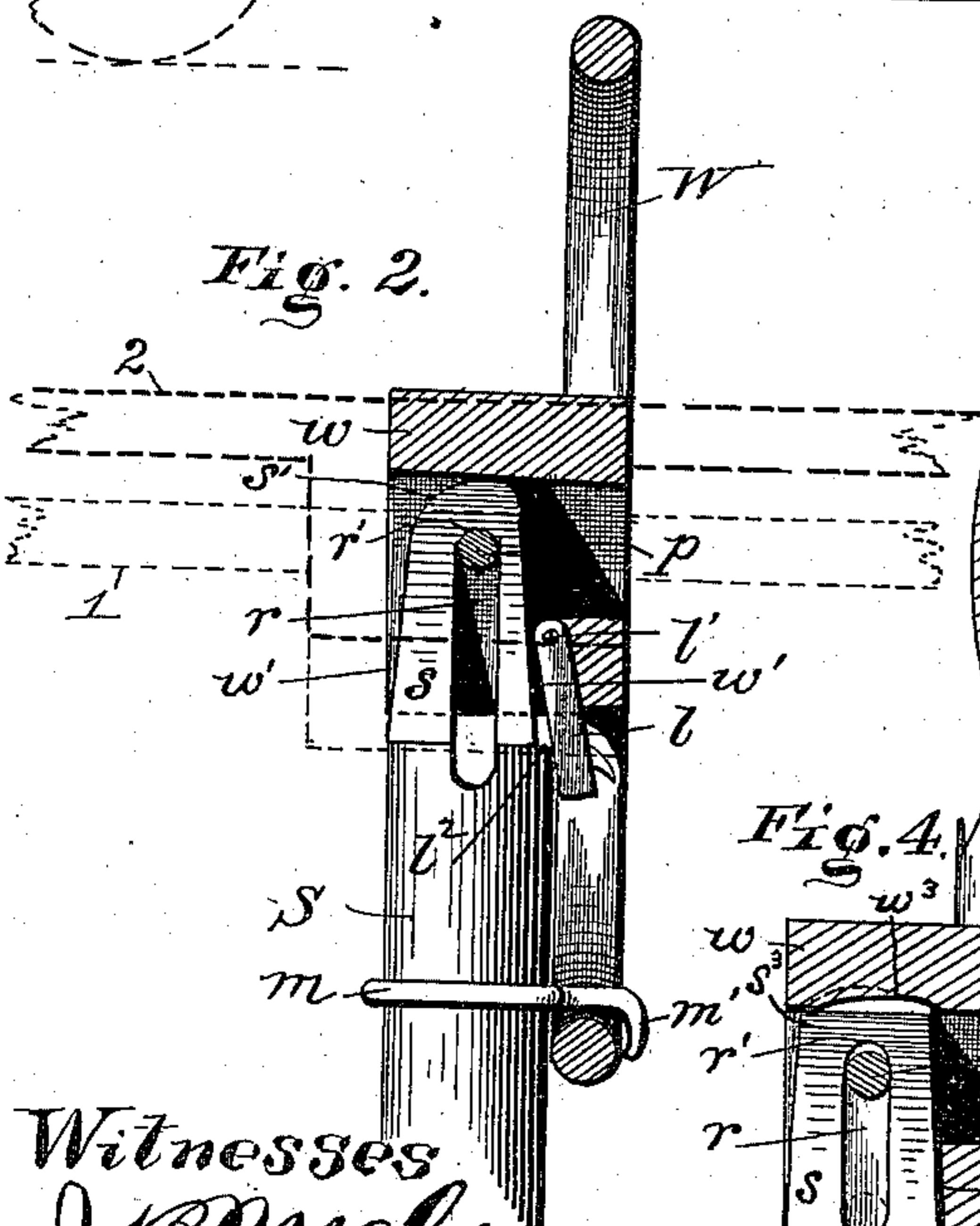
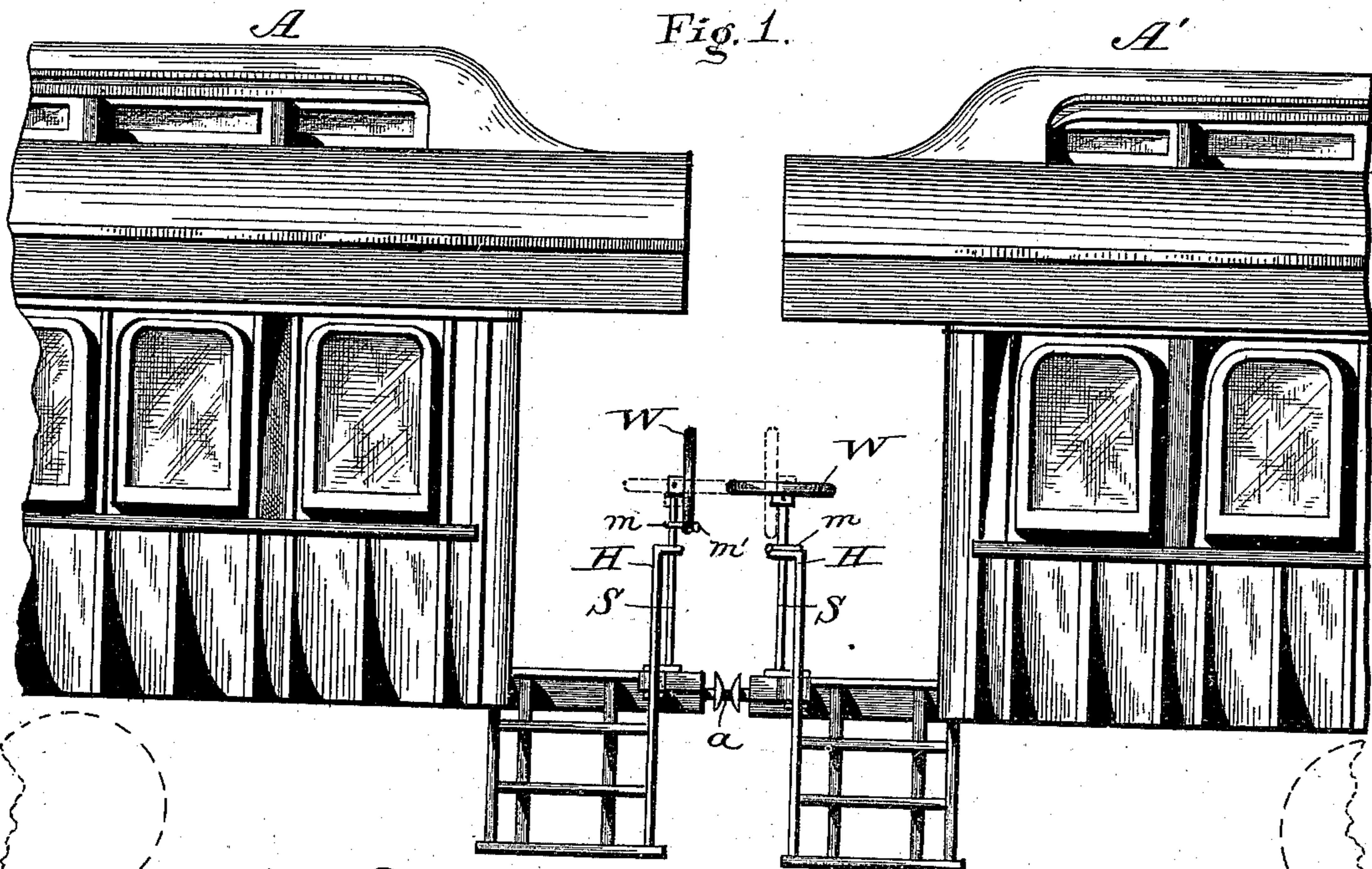
(No Model.)

A. KILPATRICK.

CAR BRAKE.

No. 382,310.

Patented May 8, 1888.



Witnesses  
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# UNITED STATES PATENT OFFICE.

ANDREW KILPATRICK, OF MORTON, PENNSYLVANIA.

## CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 382,310, dated May 8, 1888.

Application filed February 25, 1888. Serial No. 265,226. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW KILPATRICK, residing at Morton, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Car Brakes; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form a part of this specification.

The objects of my invention are to obviate the difficulties and inconveniences now experienced by reason of the room taken up upon railway-car platforms by the brake-wheels in ordinary use, and the obstacles presented by such wheels to the coupling on of cars of special construction, such as vestibule-cars.

Car-platforms are made as narrow as possible, and the inwardly-projecting brake-wheel, ordinarily seventeen inches in diameter, offers a serious obstacle to free ingress and egress to and from the car, causing children to strike their heads and adults to bruise their arms and bodies. These difficulties are especially experienced on crowded trains, and at such times the clearing of the cars and reception of new passengers is much impeded.

When it is desired to couple to an ordinary car having the usual brake-wheel another car of special construction, the outward projection of the brake-wheel often causes still greater inconvenience. The vestibule-cars are provided with inclosed platforms, the end wall of which is about flush with the edge of the platform, and to couple on such a car to the ordinary passenger-coach necessitates the removal of the brake-wheel from the latter. When such wheel is riveted in place, as often happens, a cold-chisel and other tools must be employed and considerable delay often experienced, and corresponding trouble and expense are incurred in replacing the wheel in condition for use. A device which would successfully and practically remedy these difficulties must be such as to permit in general the instantaneous application of the brakes by hand should necessity arise, and should be simple and strong in construction.

With these considerations and objects in

view my invention consists in a brake-wheel so connected with its shaft as to be partially removable therefrom and turned into a vertical position.

My invention further consists in certain combinations of parts, hereinafter particularly set forth.

I would here remark that it is not essential in all cases that the whole of the brake-wheel should turn into a vertical position. I have constructed a wheel only one-half of which was adapted to so turn, said half being hinged to the stationary half on a practically-diametrical line; but I prefer the particular construction hereinafter described.

In speaking hereinafter of the turning of the wheel into a vertical position, I intend to include the turning of a portion of said wheel.

In order to make my invention more clearly understood, I have shown in the accompanying drawings that means for carrying it into effect which I prefer.

In said drawings, Figure 1 represents the contiguous ends of two railway passenger-cars coupled together and provided with attachments embodying my invention. Fig. 2 is a vertical sectional view of a brake shaft and wheel containing my invention. Fig. 3 is a horizontal section of the same. Fig. 4 is a vertical section illustrating a shaping of the parts which is adapted to keep the hand-wheel in vertical position by its own gravity.

Referring to the drawings, A A' indicate two railway passenger-cars coupled together at *a*. With the exception of the brake-shafts S and brake-wheels W, the devices for applying the brake-shoes to the wheels to check or stop their motion may be of any suitable character adapted for hand-brakes, and need not be herein described. The usual appliances for working the brakes by steam will also be present.

The upper end, *s*, of the brake shaft is polygonal in cross-section, and also slightly tapering, so that it is, by preference, a frustum of a pyramid.

*w* is a wrench in function adapted to fit and serve as a means for rotating the shaft *s* S, at the same time being instantly removable therefrom. Most conveniently the part *w* is an in-

tegral portion and constitutes the hub of the brake-wheel W, though it may be a separate piece adapted to receive an ordinary brake-wheel. When in its horizontal position, as shown, on car A', the brake-wheel has all of its usual capabilities when turned by hand to rotate the shaft S in its bearings on the hand-rail H, take up the brake-chain, and compress the brake-shoes upon the car-wheels.

I will now describe that construction which I deem preferable for retaining the brake-wheel upon its shaft, though in a partially-removed and vertical position, as shown on car A.

$r$  is a recess in or on the upper portion of shaft S. It is here shown as being in substantially the middle of the shaft; but it might be a depression in one side of the shaft, the main object being to obtain a retaining-shoulder,  $r'$ . The function of such shoulder may in a measure be obtained by a pin or projection extending horizontally from the face of the shaft.

$p$  is a stop secured to the brake-wheel hub, and situated so as to engage the shoulder  $r'$  and limit the vertical movement of the wheel relative to the shaft, thus preventing the former from being entirely removed. In this case the stop is a pin passing diametrically through the hub  $w$  and the middle of shaft S. It will thus be seen that the wheel W, having been raised from the position shown in Fig. 2 by dotted lines 1 to that shown in dotted lines 2, in which latter position stop  $p$  will be in engagement with shoulder  $r'$ , may then be turned into a vertical position, as shown in full lines, said figure. To enable this to be done, one corner of part  $s$  is beveled off, as shown at  $s'$ , and the opposite lower portion of hub  $w$  is recessed at  $w'$  to make room for shaft S. When thus turned, passage across the platform will be entirely unobstructed, and a vestibule-car may be coupled on without removing the brake-wheel or experiencing inconvenience from it. The wheels W will normally remain in this position, so that ingress and egress at stations may not be interfered with.

On all ordinary occasions the steam-brakes will be used; but in case of necessity a mere turning of wheels W into horizontal position will instantly put the hand-brakes in condition for use.

By slightly tapering shaft S at  $s$  it is insured that the wheel will in all cases instantly obtain a secure and rigid hold of the shaft.

A gravity-latch,  $l$ , pivoted at  $l'$  and adapted to engage a shoulder,  $l''$ , on shaft S, serves as an additional security against the accidental turning of the wheel W from horizontal to vertical position.

A ring,  $m$ , having a hook,  $m'$ , and ordinarily

resting on hand-rail H, insures, when its hook has been dropped over the rim of wheel W, that the latter shall be maintained in vertical position.

As a substitute for ring  $m$ , the hub  $w$  may be hollowed, as shown at  $w^3$  in Fig. 4, and the upper inner corner,  $s^3$ , of the shaft left square. It will be clear that in such case the wheel will be supported by said corner  $s^3$ , and its own gravity will keep it in vertical position.

The brake-chain I prefer to attach to that side of shaft S which is opposite to recess  $w'$ , so that the gravity of the chain will keep the wheels W when vertical turned away from the platform and on the outer side of the hand-rail.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a railway-car brake, the combination, with the brake-shaft, of a continuous circular brake-wheel removably connected therewith and adapted to be turned into a vertical position thereon, with one portion of the wheel above and one portion below the point of connection with said shaft, substantially as set forth.

2. In a railway-car brake, the combination, with the brake-shaft, of a brake-wheel mounted and having a vertical sliding movement on said shaft, and also hinged thereon and adapted, when elevated, to be turned into a vertical position, substantially as set forth.

3. In a railway-car brake, the combination, with the brake-shaft having a recess, of a brake-wheel mounted and having a vertical sliding movement on said shaft, provided with a stop engaging said recess to limit such movement, the wheel being adapted to be turned into a vertical position, substantially as set forth.

4. In a railway-car brake, the combination, with the brake-shaft tapered at its upper end and provided with a recess, of a brake-wheel fitting said tapered end and provided with a stop engaging said recess to limit the vertical movement of the wheel, the wheel being adapted to be turned into a vertical position, substantially as set forth.

5. In a railway-car brake, the combination, with the brake-shaft having the shoulder  $r'$ , of the wheel having a stop in line therewith, vertically movable on the shaft, adapted to be turned into vertical position, and having its center of gravity when in such position beyond its point of support.

ANDREW KILPATRICK.

In presence of—

H. N. LOW,  
EDWARD STURTEVANT.