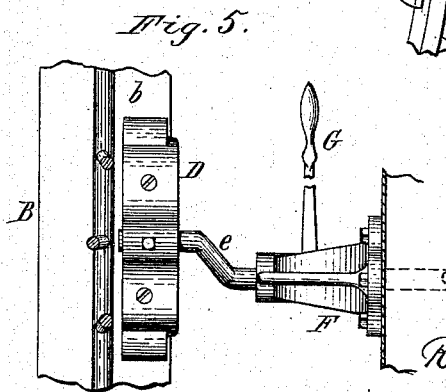
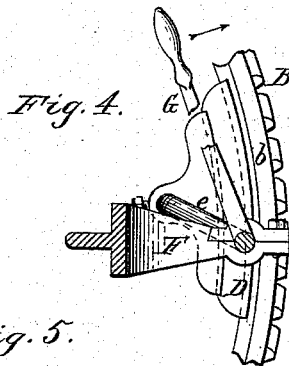
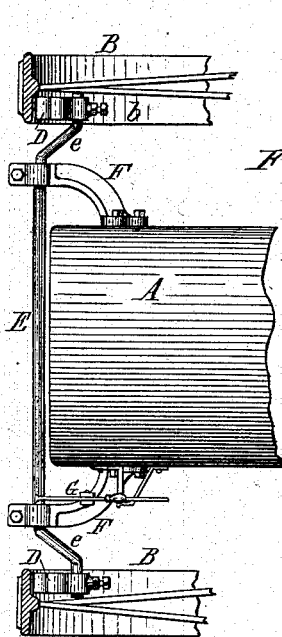
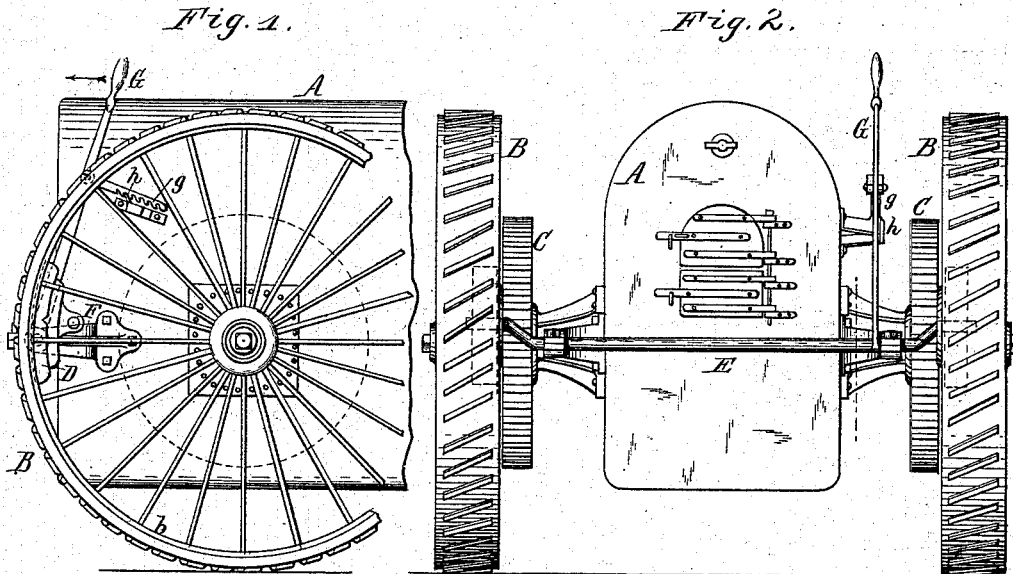


(No Model.)

R. W. AITKEN.
BRAKE FOR TRACTION ENGINES.

No. 288,753.

Patented Nov. 20, 1883.



Thos. L. Popp
Chas. F. Seyer.

Witnesses.

Inventor:
R. W. Aitken
By Wilhelm Bonner
Attorneys.

UNITED STATES PATENT OFFICE.

ROBERT W. AITKEN, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF TO
PITTS AGRICULTURAL WORKS, OF SAME PLACE.

BRAKE FOR TRACTION-ENGINES.

SPECIFICATION forming part of Letters Patent No. 288,753, dated November 20, 1883.

Application filed July 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, ROBERT W. AITKEN, of the city of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Brakes for Traction-Engines, of which the following is a specification.

This invention relates to an improvement in the construction of brakes for traction-engines, and has for its object to produce a reliable brake which will be effective under all circumstances irrespective of the driving-gear.

The traction-wheels are ordinarily provided on their inner sides with gear-wheels, which are driven by pinions mounted on a countershaft. Heretofore brakes have been applied to this countershaft; but this is objectionable, because the brake is rendered inoperative when a few teeth of the driving-pinions break, which is liable to happen in ascending or descending steep grades, when an effective brake is most necessary to avoid accidents to the machinery and the persons operating the same. Brakes have also been applied to the outer sides of the traction-wheels; but these brakes are not very effective, because they bear only against the spurs or transverse traction-ribs formed on the faces of the traction-wheels.

My invention is designed to remedy these difficulties; and it consists of a brake which is applied to the inner sides of the rims of the traction-wheels, as hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a fragmentary side elevation of the rear portion of a traction-engine provided with my improved brake. Fig. 2 represents a rear elevation thereof. Fig. 3 is a sectional top plan view of the same. Fig. 4 is a vertical section of the brake, on an enlarged scale, in line *x x*, Fig. 2, looking to the right. Fig. 5 is a rear elevation of the same parts.

Like letters of reference refer to like parts in the several figures.

A represents the rear portion of the boiler of a traction-engine, B B the traction-wheels, and C C the gear-wheels, secured to the inner sides of the traction-wheels, all of any ordinary and well-known construction.

D represents the brake-shoes, arranged on the inner sides of the rear portions of the rims *b* of the traction-wheels. The brake-shoes D are attached to cranks *e*, formed on the ends of a shaft, E, which extends across the engine on the rear side of the boiler, between the traction-wheels. The shaft E is supported in bearings F, secured to the boiler.

G represents a hand-lever secured to the shaft E for turning it, and provided with a ratchet-bar, *g*, riding over a stud or projection, *h*, secured to the boiler, or with some other suitable catch device for locking the lever in position when the brake-shoes have been tightened.

Upon swinging the lever G in the direction of the arrows in Figs. 1 and 4 the brake-shoes are pressed against the inner sides of the rim *b* of the traction-wheels, and the ratchet-bar *g* prevents any retrograde movement of the lever until it is released from the stud *h*. The brake-shoes bearing against the inner sides of the rim *b* have large bearing-surfaces against the wheels, and are very effective in arresting the movement of the wheels. As the brake mechanism operates directly upon the traction-wheels, it is independent of the driving-gear and not affected by any breakage of the same.

I claim as my invention—

1. In a traction-engine, the combination, with a boiler, A, of traction-wheels B B, arranged on opposite sides of the boiler, brake-shoes D, arranged on the inner faces of the rims of the traction-wheels adjacent to the boiler, and mechanism attached to the boiler, whereby the brake-shoes are connected and simultaneously pressed against the inner sides of the rims and removed therefrom as desired, substantially as set forth.

2. The combination, with the traction-wheels B B, of the brake-shoes D D, arranged on the inner sides of the rims *b* of the wheels, crank-shaft E, bearings F, and hand-lever G, substantially as set forth.

ROBERT W. AITKEN.

Witnesses:

JNO. J. BONNER,
CHAS. F. GEYER.

Correction in Letters Patent No. 288,753.

It is hereby certified that in Letters Patent No. 288,753, granted November 20, 1883, upon the application of Robert W. Aitken, of Buffalo, New York, for an improvement in "Brakes for Traction Engines," an error was committed requiring correction as follows: The grant should read that the said patent was issued to *Robert W. Aitken and the Pitts Agricultural Works*, to make it conform to the files and records of the case in the Patent Office.

Signed, countersigned, and sealed this 27th day of November, A. D. 1883.

[SEAL.]

M. L. JOSLYN,
Acting Secretary of the Interior.

Countersigned:

BENJ. BUTTERWORTH,
Commissioner of Patents.