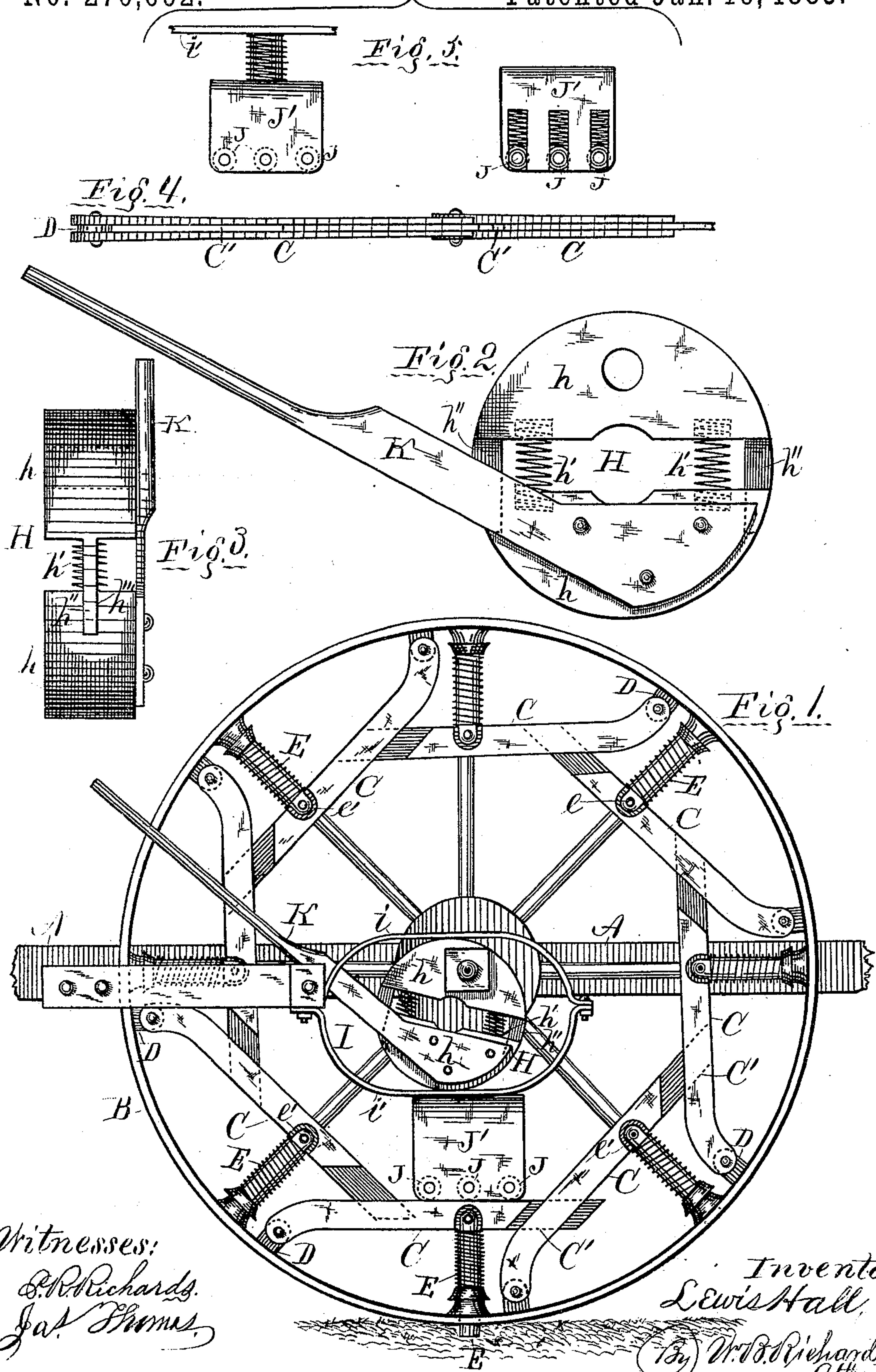


(No Model.)

L. HALL.
TRACTION WHEEL.

No. 270,662.

Patented Jan. 16, 1883.



Witnesses:
C. R. Richards,
Jas. Thomas,

Inventor:
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Atty.

UNITED STATES PATENT OFFICE.

LEWIS HALL, OF METAMORA, ILLINOIS, ASSIGNOR OF ONE-FOURTH TO
ANDREW G. SCHERER, OF PEORIA, ILLINOIS.

TRACTION-WHEEL.

SPECIFICATION forming part of Letters Patent No. 270,662, dated January 16, 1883.

Application filed August 31, 1882. (No model.)

To all whom it may concern:

Be it known that I, LEWIS HALL, a citizen of the United States, residing at Metamora, in the county of Woodford and State of Illinois, have invented certain new and useful Improvements in Traction-Wheels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements on the traction-wheel for which Letters Patent, No. 259,135, were granted to me June 6, 1882; and the present invention consists in yielding cams for actuating the spurs; in spurs hinged to the cam-tracks; in cam-tracks the free end of each of which extends into a slot in the adjacent cam-track, all as and for the purposes hereinafter described and claimed.

In the accompanying drawings, which illustrate my invention, Figure 1 is a side elevation. Fig. 2 is an enlarged end elevation of the eccentric. Fig. 3 is an enlarged side elevation of the eccentric. Fig. 4 is an enlarged top plan of one cam-track and part of another. Fig. 5 is a modification.

Referring to the drawings by letters, the same letter indicating the same part in the different figures—

Letter A represents the frame; B, the wheel; C, the cam-tracks; D, the standards, to which the cam-tracks are hinged; E, the traction-spurs, actuated by cam-tracks C; H, the eccentric journaled to the hub of the wheel B, or to any suitable part thereof, or to the frame A; I, the bent arm, which is provided with limbs i i' , located respectively in contact with the upper and lower sides of the eccentric H; J, a series of cam-rollers, which are journaled in a stirrup or frame, J' , which projects downwardly from the limb i' ; K, the lever, secured to and adapted to actuate the eccentric H.

The foregoing parts described by letter, except as hereinafter described, are similar in construction and operation to the parts respectively designated by the same letters in

my aforesaid patent, and hence need not be described here further than to point out the improvements hereinafter claimed.

The eccentric H in my present device is made in two parts, h h , placed a short distance apart, with spiral or other springs h' , located between them, and one of said parts provided with tongues h'' , which project into grooves h''' in the other part, and thereby align or hold said parts in proper relative positions to each other. When the lever K is thrown rearward, as shown by full lines at Fig. 1, to force the spurs E outward by contact with the cam-tracks C, the springs h' will be slightly compressed between the parts h h of the eccentric, but not so much so but that they may be still further compressed to allow the spurs E to yield when projected through the rim of the wheel, and when they come in contact with a stone or other hard substance which they cannot penetrate.

I do not limit my claim to the foregoing special method of permitting the spurs to yield when they come in contact with hard substances, as the same result can be effected by making the stirrup J' to yield where connected with the arm I, or the rollers J to yield in the frame or stirrup J' , as shown at Fig. 5; or yielding springs may be placed on the cam-tracks or between the eccentric H and limb i' of the arm I.

The spurs E in my present device are hinged at e' (their inner ends) to the cam-tracks C, so that the lower ends of said spurs may be thrust outwardly through the rim of the wheel in a direct line, and not in a curved path, as when not hinged. In my present device also the free end of each cam-track extends through a slot, O' , in the adjacent cam-track, whereby each cam-track is sustained against lateral movement by its fellow cam-track; and said slots are of such lengths as to properly limit the movement of the cam-tracks in thrusting and retracting the spurs E.

Having thus described my present invention and parts of a general machine on which my improvements may be incorporated, what I claim as new is—

1. In a traction-wheel, in combination with cam-tracks having reciprocating spurs, a yielding cam-roller adapted to act on the cam-tracks

successively and to yield to allow the spurs to be retracted when they come in contact with hard substances, substantially as and for the purpose specified.

5 2. In a traction-wheel, the combination of the flexible tracks having reciprocating spurs with the spring-eccentric and means for forcing said spurs outwardly through the rim of the wheel, which means act upon the cam-
10 tracks and are adapted to yield to permit the retraction of the spurs when they come in contact with hard substances, substantially as described.

15 3. In a traction-wheel, in combination with cam-tracks having reciprocating spurs and retracting-springs, cam-rollers J, and oscillating bar I, having limbs *i i'*, the eccentric H, formed in two parts with spring-connection to each other, whereby they are adapted to yield to
20 permit retraction of the spurs, substantially as and for the purpose specified.

4. In a traction-wheel, in combination with cam-tracks having reciprocating spurs, a swinging bar having a cam-roller adapted to

actuate said cam-tracks and spurs, and a yield- 25
ing spring-eccentric adapted to actuate said swinging bar and roller, substantially as and for the purpose specified.

5. In a traction-wheel, a yielding spring-eccentric adapted to actuate the reciprocating 30
spurs, substantially as and for the purpose specified.

6. In a traction-wheel, in combination with the cam-tracks C, the spurs E, hinged to said cam-tracks, substantially as and for the pur- 35
pose specified.

7. In a traction-wheel, cam-tracks C, hinged to said wheel, and each provided with a slot through which the free end of an adjacent cam-track passes, substantially as and for the 40
purpose specified.

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

LEWIS HALL.

Witnesses:

C. I. BENFORD,
M. R. BRADY.