(No Model.)

C. BOCHKOLTZ.

CINDER CAR.

No. 439,465. Patented Oct. 28, 1890.

Fig. 1.

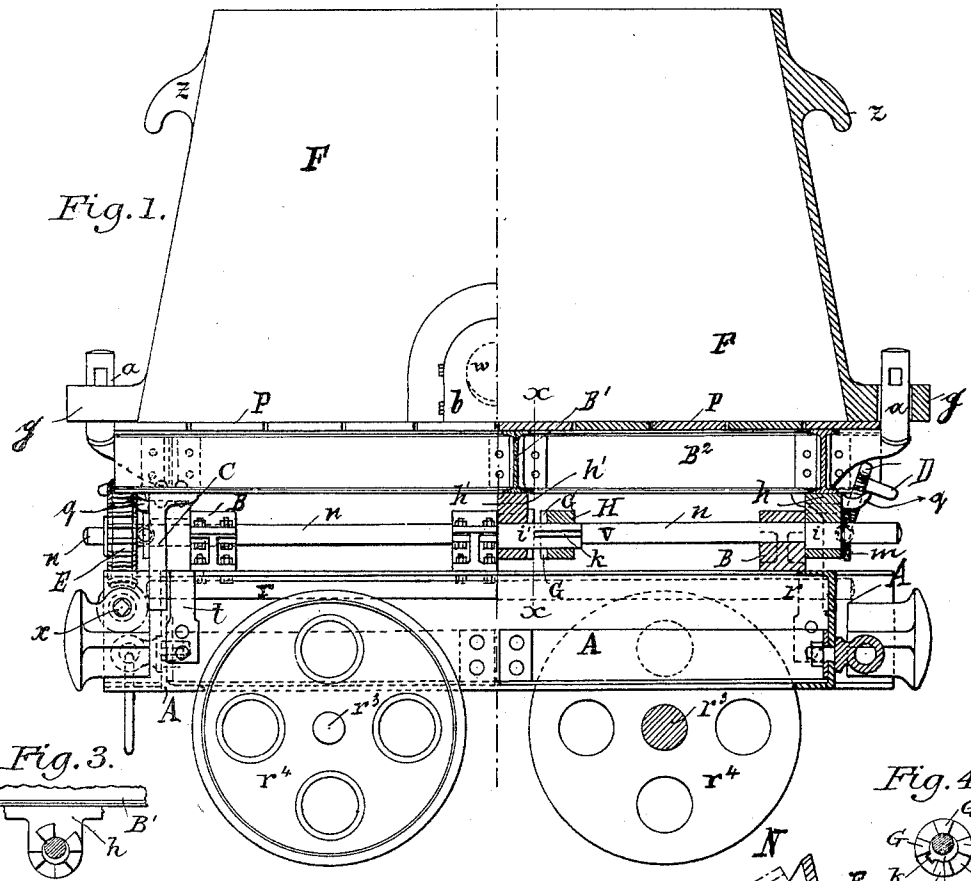


Fig. 3.

Fig. 4.

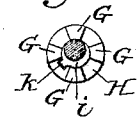
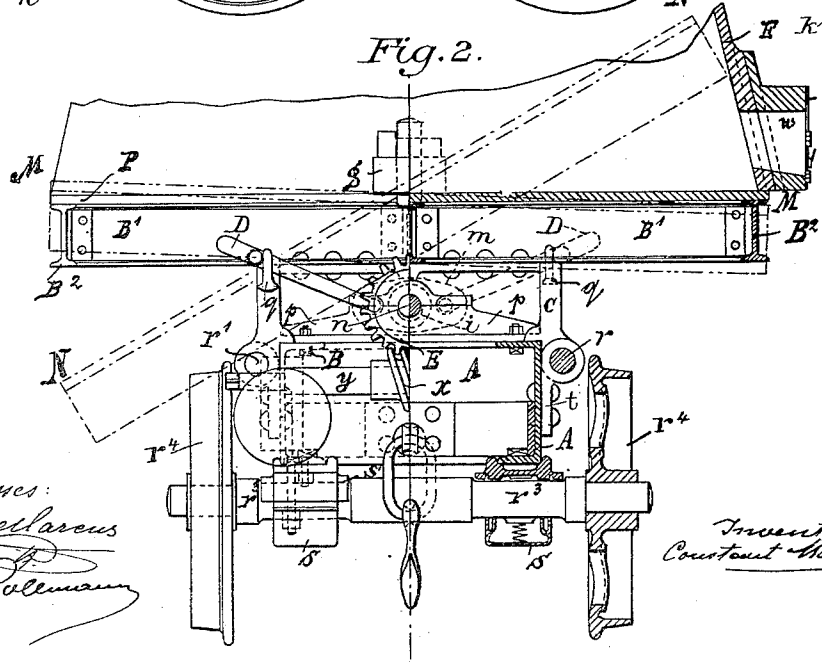


Fig. 2.



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CINDER-CAR.

SPECIFICATION forming part of Letters Patent No. 439,465, dated October 28, 1890.

Application filed September 1, 1890. Serial No. 363,624. (No model.) Patented in Luxemburg April 8, 1890, No. 1,271, and in Belgium April 15, 1890, No. 90,052.

To all whom it may concern:

Be it known that I, CONSTANT BOCHKOLTZ, of Weilerbach, Germany, have invented certain new and useful Improvements in Cinder-Cars, (for which I have obtained Letters Patent in Luxemburg, No. 1,271, granted April 8, 1890; in Belgium, No. 90,052, granted April 15, 1890; in France, application filed April 1, 1890, No. 191,576, and for which I filed an application for Letters Patent in Germany April 21, 1890;) and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to cars specially constructed for receiving and dumping the liquid and solid cinder and slag from blast-furnaces.

It has for its object to provide ready means for producing a slight inclination of the platform or body of the car to either side, so as to facilitate the discharge of the liquid slag or cinder, and also for furthermore tilting the platform to such an angle on either side as will cause a ready discharge therefrom of all of the solid slag or cinder.

It consists in the combination and arrangement, with the truck and body of the car, of certain novel devices, as hereinafter described and claimed, whereby the desired end is fully attained.

In the accompanying drawings, Figure 1 is a side elevation of the improved cinder-car, showing one-half in central vertical section; Fig. 2, a front elevation thereof, showing one-half in central vertical section; Fig. 3, a detail sectional elevation in line $x\,x$ of Fig. 1, looking to the left, illustrating one division of the clutch; Fig. 4, a similar section in said line $x\,x$, looking to the right, showing the opposite division of the clutch.

The car consists, principally, of three parts—viz., first, the rectangular iron railway-truck A, mounted upon the axles $r^3\,r^3$, and wheels r^4, and provided with the customary buffers and coupling devices; second, the iron body-frame $B'\,B^2$, supporting a platform P, forming the bottom of the detachable body F of the car, and, third, the intermediate pivotal shaft n and supporting devices C C, upon which the body-frame is mounted and by means whereof its manipulation and adjustments are effected.

The truck A, upon which the car is carried, may be of any approved construction. Upon this truck A are secured—one at each end and one in the middle—three elevated journal-boxes, in which are journaled a longitudinal shaft n, extending the length of the truck at a right angle to its axles and midway between its sides. This shaft n is provided with three eccentrics i, which severally support in the middle and at each end thereof bearings $h\,h'\,h$, attached to the frame $B'\,B^2$, carrying the platform P. These bearings $h\,h'\,h$ encircle and turn loosely upon the eccentrics, so that by a partial rotation of the shaft the eccentrics are made to raise or lower slightly the frame and platform.

The rotation of the shaft n is effected by means of a cog-wheel E, secured thereto, and which gears with a worm x upon a transverse counter-shaft y, journaled in boxes mounted on the truck, and which extends out to either side thereof, each end of said counter-shaft being adapted to receive a detachable crank by which to turn it.

To facilitate righting the empty platform after it has been tilted and unloaded, a chuck-block H is mounted to slide freely longitudinally of the shaft on the central eccentric i' to and from the central bearing h', the opposed faces of both the bearing and block being notched, as at G G, to engage and lock when brought into contact, and thus form a clutch. The clutch-block H, while free to play longitudinally upon the eccentric i', is prevented from turning independently thereof by means of a spline k.

The platform P, pivotally mounted upon the longitudinal shaft n, is upheld in a level or horizontal position by means of four vertical standards C—one at each corner thereof—which are hinged to the truck to swing outwardly from under the platform when free.

These standards are preferably fixed to two parallel lateral shafts r r', journaled in boxes t t, mounted upon the truck A, so that each pair of standards may be made to swing out together from under the platform P by a rotation of the shaft to which they are connected.

Latch-rods D, hinged to a cross-piece m at one end of the truck, engage and hold the standards C when in their upright position, so as to prevent their accidental displacement.

The top or body F of the car is made detachable from the platform P, so as to admit of being lifted off therefrom, and is secured in place by means of pins a, projecting upward from the frame of the platform through ears or lugs g g on the edge of the body.

Hooks z z are secured to the sides of the body F near the top thereof, whereby the hoisting-chains from a crane or derrick may be attached thereto.

A discharge-port or tap-hole w, closed by a suitable door b, is provided in one side of the car-body F.

In the use of the car an inconsiderable inclination thereof will suffice to empty it when it is filled merely with liquid slag, and in such case, after the tap-hole w has been opened and the slag in the body F has flowed out, the residue which may remain upon the platform P is discharged by simply inclining it toward the tap-hole, this being accomplished by turning the counter-shaft y by means of a crank applied to its outer end, so as to rotate the pivotal shaft n, and thereby cause its eccentrics to raise the frame B′ and B² and with it the platform and body of the car until the platform is free to tilt slightly, as indicated by the line M M, Fig. 2. If the car contains solid slag, or if it has become lined with cooled slag, the body F is lifted off of the platform P by means of hoisting-chains attached to the hooks z z, and the pivotal standards C C on one side are then released from the latch-rod D, which confined them, whereupon by turning the shaft r, which serves as the pivotal shaft for these standards, they are swung outward from under the platform, so that it may be easily tilted over, as indicated by the dotted lines N N in Fig. 2. After being tilted the platform may be righted again by hand, or, preferably, by moving the clutch-block H into engagement with the bearing h', so as to lock the shaft n to said bearing and then turning the shaft by means of a crank attached to the outer end of the counter-shaft y, geared to said shaft n. After the platform is righted the standards C C are again thrown up to their vertical position to support it.

While the means described are specially adapted to the tilting of cinder-cars they may be employed with advantage to cars for dumping materials of all kinds.

I claim as my invention—

1. The combination, in a tilting car, of a truck and truck-frame, a superimposed separate platform-frame and platform, an interposed central shaft having eccentrics upon which the platform-frame is pivoted, means for rotating said shaft, pivoted standards hinged to the truck to prop the outer sides of the pivoted platform-frame, and latches to confine said standards, substantially in the manner and for the purpose herein set forth.

2. The combination, in a tilting car, of the truck, the superimposed separate platform, the intervening central shaft journaled in elevated boxes, carried by the truck and upon which the platform is pivoted, the detachable body fitted upon the platform, the swinging upright standards hinged to the truck to uphold the platform, and the latches engaging said supports, all substantially in the manner and for the purpose herein set forth.

3. The cinder-car comprising a truck, a separate superimposed platform, an intervening longitudinal central shaft mounted upon the truck, having eccentrics upon which the platform is pivoted, a counter-shaft mounted upon the truck and geared to the pivotal shaft, a body detachably connected to the platform to be lifted therefrom, standards hinged to the truck to afford vertical support to the platform, and latches to confine said standards in their upright position, substantially in the manner and for the purpose herein set forth.

4. The combination, in a cinder-car, of the truck, the central longitudinal shaft mounted in bearings on the truck, the eccentrics on said shaft, the tilting platform pivoted on said eccentrics, and the clutch mechanism on the shaft, engaging the pivotal bearings of the platform, whereby the platform may be locked to the shaft to turn therewith, substantially in the manner and for the purpose herein set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CONST. BOCHKOLTZ.

Witnesses:
OTTO MARCUS,
JOS. ROLLMANN.