

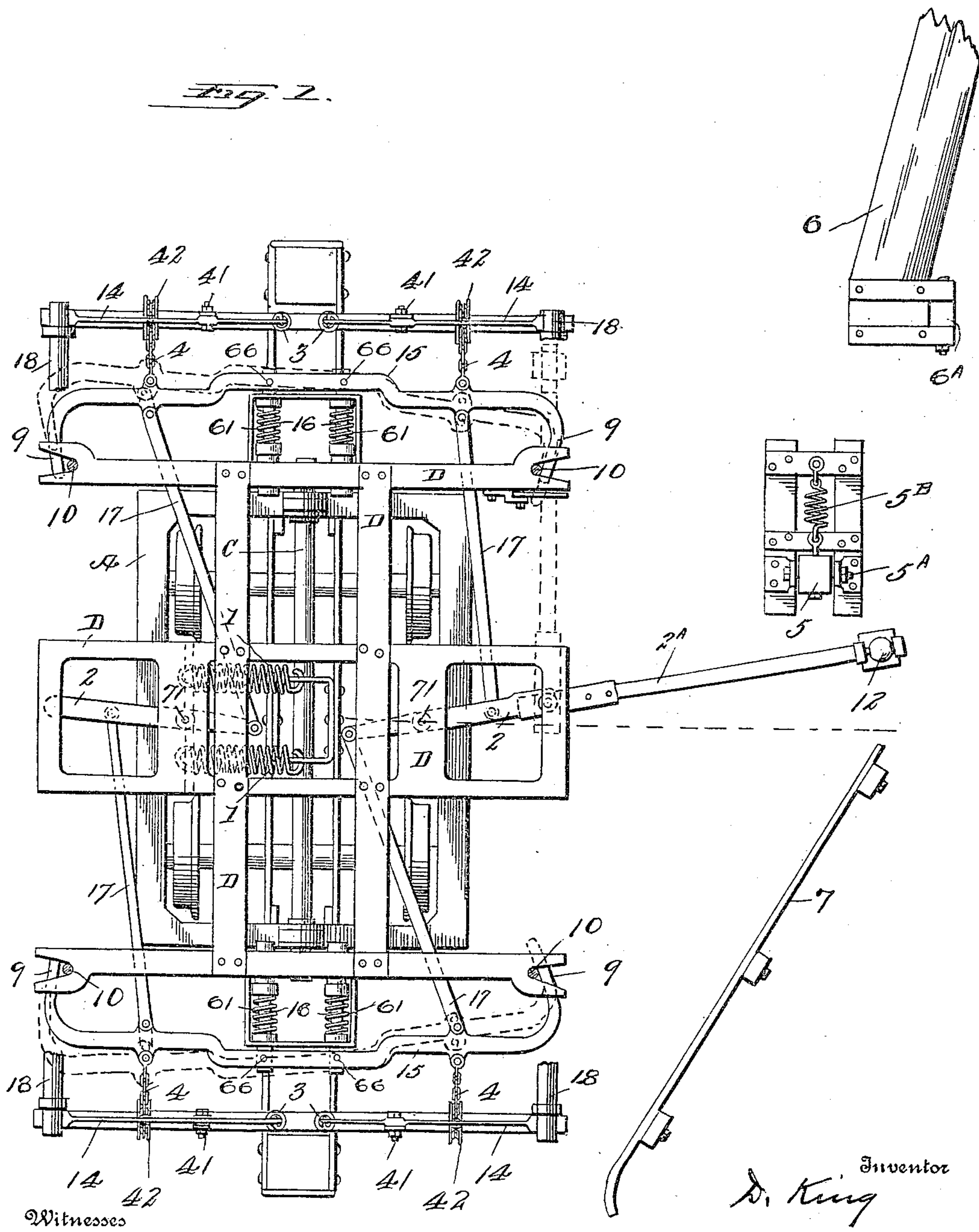
No. 824,365.

PATENTED JUNE 26, 1906.

D. KING.
DUMPING CAR.

APPLICATION FILED SEPT. 7, 1905.

2 SHEETS—SHEET 1.



Witnesses

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M E Brown

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His Attorney

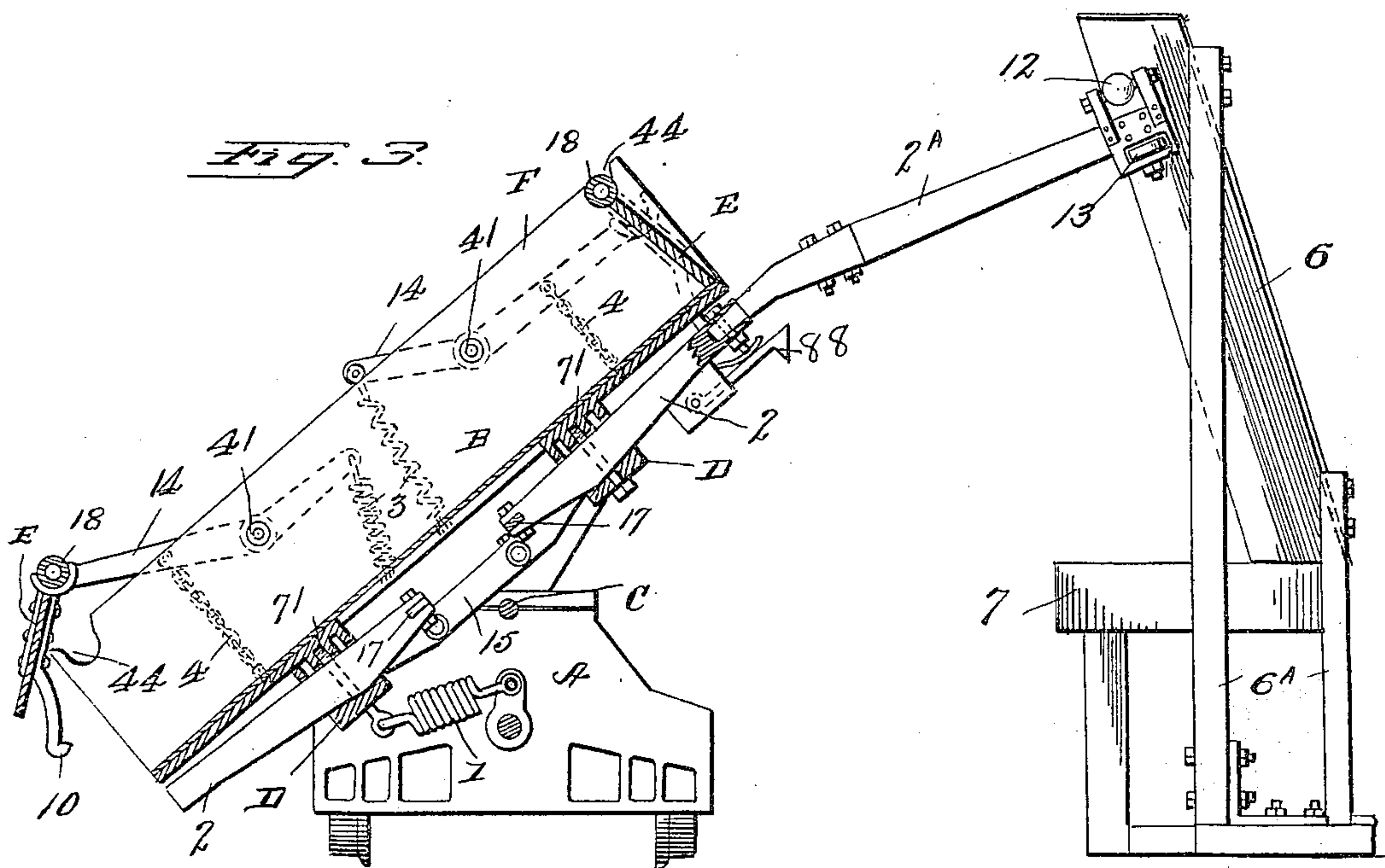
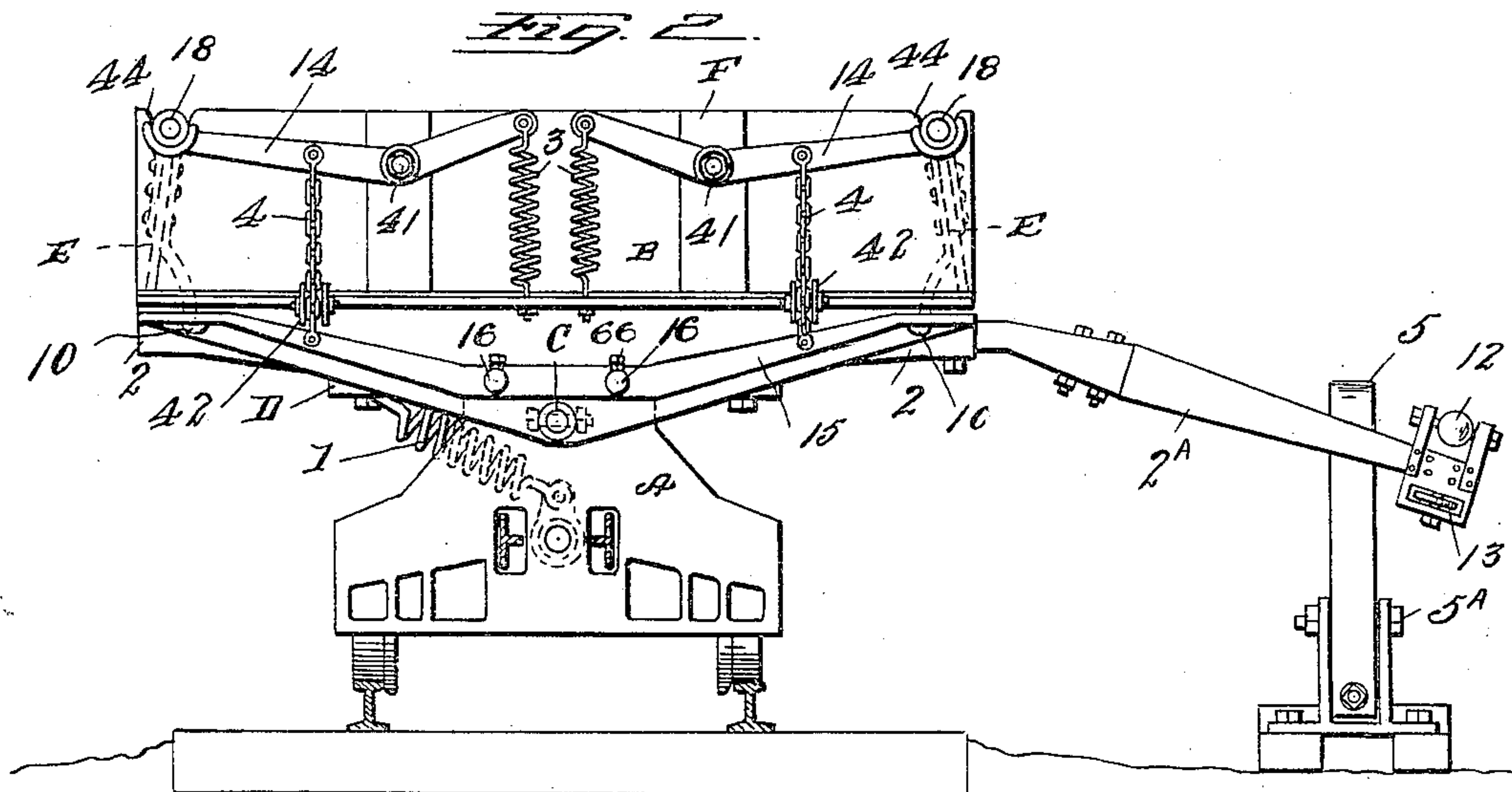
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UNITED STATES PATENT OFFICE.

DANIEL KING, OF PINKNEY, TENNESSEE.

DUMPING-CAR.

No. 824,365.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed September 7, 1905. Serial No. 277,393.

To all whom it may concern:

Be it known that I, DANIEL KING, a citizen of the United States, residing at Pinkney, in the county of Lawrence and State of Tennessee, have invented certain new and useful Improvements in Dumping-Cars, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to dumping-cars for carrying and unloading coal, slag, gravel, or other material which is desired to have dumped in bulk.

15 The object of the invention is to produce a side-dumping car having side doors or gates which open when the car swings and to operate the dumping by spring-power, the power being stored in the springs when the car-body is brought to horizontal position; also, 20 to construct attachments by which the movement of the train may release the body and door and also may right the dumped car and store up power in the springs for future dumping; also, in various improvements in the construction of dumping-cars, 25 substantially as hereinafter described and claimed.

30 Figure 1 is a plan view of the truck, the truck-frame, the body-frame, the body and door locking and operating system, and the door-pintles and their connections, the car-body, lining, and doors being omitted for clearness of illustration. The operating-cams, obstructions, or inclines at the side of 35 the track are indicated. Fig. 2 is an end view of the car with dumping-lever extended and post at the side of the track in position when the car is about to be unlocked for automatic dumping. Fig. 3 is a section 40 through the car-body, showing the same in dumped position and means for restoring the body to horizontal position as the train progresses.

45 The truck A is preferably of the general character of the truck described in my Patent No. 792,660, of June 20, 1905. The body B rocks sidewise on the longitudinal axis C, as in said patent.

50 For convenience of illustration I illustrate and describe only the lever system for dumping the car-body at one side of the track. It will be apparent to the skilled mechanic that the system can be readily duplicated in such parts as would be necessary to make the

device operable from either side and to cause 55 the car to dump at either side of the track.

The numeral 1 indicates the dumping-springs. These springs have their lower ends secured to the draft-beams of the truck and their upper ends fast to the body-beams or 60 body-frames D, any suitable connection being used.

The body is normally held in its central or horizontal position by locking pins or bolts 16, which bolts are normally pressed inward 65 toward the middle of the car by springs 61, as in my patent referred to. A lever 15 at either end of the car and extending across the car withdraws one or the other of the bolts 16, according to the movement of said 70 lever. Thus when either lever 15 has its end on one side of the car pressed toward the car center the pivot 66, connecting said lever to bolt 16 at that side, becomes a fulcrum for the lever and the corresponding bolt at the 75 other side is withdrawn, permitting the car-body to tilt in the direction of the bolt so withdrawn, as explained in said patent. This the car-body will do under the impulse 80 of spring 1. The levers 15 are operated simultaneously by means about to be described. Rods, links, or chains 17 are connected to projections from levers 15 and are coupled to levers 2, extending about trans- 85 versely of the car and pivoted to the under body-frame D at 71, substantially as shown in Fig. 1. It will thus be apparent that when either lever 2 is swung on its pivot 71 the train of links and levers described will be operated to liberate bolts 16 at one side of 90 the car, thus permitting springs 1 to dump the car. Lever 2, at one side of the car at least, has a knuckle-jointed or hinged extension 2^A, which can be folded inward, as in dotted lines, Fig. 1, or swung out, as in full 95 lines, Figs. 1, 2, and 3, and when so swung outward it is apparent that the contact of its outer end with a fixed obstacle alongside the track when the car moves would have the same effect as a movement of the lever with 100 the car standing still—that is, such an obstruction at the outer end of lever 2^A would unlock the body through levers 15, as described, and permit the springs 1 to dump the car. 105

When the car-body is tilted, it is needful that the gate at the side toward which it tilts should be released, so as to swing out. This is

effected as follows: The car-doors E are the side of the car-body and extend from end to end. At each end each door has a pintle 18, which pintle rests in a groove in a door-lever 14, which door-lever is pivoted, as at 41, outside the body and to the end F thereof, the pintle 18 normally passing through a notch 44 in the end F of the car-body. The inner ends of the door-lever 14 are connected by tension-springs 3 to the bottom or lower edge of the car-body. Between the pivots 41 and the pintles 18 a chain 4 connects each doors-lever with the locking-lever 15, the chains passing under suitable pulleys 42 near the lower corners of the car-body. As the locking-levers 15 are drawn back on the dumping side of the car they slack the chains 4 on that side, thus permitting springs 3 on that side of the car to pull down the door-levers when unlocked. The doors E have catches 10, which extend downward from the doors into notches in the bottom frame D of the car-body, and preferably these catches have hooked ends. The locking-levers 15 have inturned ends 9, which hold the catches firmly into place in said notches when said levers are locked. When these locking-levers 15 are unlocked, (dotted lines, Fig. 1,) they permit the ready escape of the catches 10 from said notches. Thus the movement of levers 15 simultaneously unfastens the catches 10 and permits the springs 3 to lift the outer ends of the door-levers on the dumping side, while the springs 1 tilt the car-body toward that side. The inward movement of levers 15 at the side of the car remote from the dumping side simply draws down the door-levers at that side against the tension of their springs, (by means of chains 4;) but as the pintles 18 remain in the notches 44 in the ends of the car-body this door is not unfastened. The lever 2^A is generally swung back to trip the locking-levers, as described, by engagement with a short post 5 at a tippie, a high embankment, &c. Preferably post or obstacle 5 will be pivoted near its base, as at 5^A, and will be held upright by a spring 5^B. As the car tilts the lever 2^A will swing above the top of post 5 or the post will yield, or both movements will take place, so that lever 2^A will be free. Of course the manipulation of lever 2^A may be effected by hand where force enough is employed.

After the car-body has been dumped it can be restored to horizontal position by the engagement of lever 2^A with a downwardly-inclined surface 6 at the side of the track, said incline being arranged to bear down on the outer end of the lever 2^A as the train moves along. The outer end of the lever 2^A has an antifriction device to engage with the mechanism alongside the track. Thus when the body is tilted a roll 12, supported on suitable bearings at the end of said lever, engages

the under side of the inclined surface 6 and rolls down under said incline as the car advances, which of course depresses the outer end of said lever 2^A and causes the car-body to be swung back to horizontal position. The incline 6 will be supported on suitable posts, as 6^A. When the car-body has been restored to its horizontal position, the hinge-lever 2^A may be turned in toward the car-body and automatically locked by engaging an inwardly-extending incline 7, suitably arranged alongside the track. The antifriction-roll 13 should project from the lever, so as to engage this incline 7 when the train reverses its movement. When the lever 2^A is swung inward, it may be held by catch 88.

In the illustrations no attempt has been made to indicate the parts as drawn to scale, and parts not considered essential for an understanding of the case have generally been omitted.

What I claim is—

1. A dumping-car provided with a spring interposed between the body and truck and held under tension when the car is in horizontal position, means for holding the car-body horizontal, and means for releasing the body so that the spring may dump the same.
2. The combination with a car-body and supporting-truck, of a spring interposed between the body and truck, means for holding the body horizontal and the spring under tension, means for holding a side door closed, and means for releasing the body and door, whereby the spring effects the tipping of the body and the opening of the door.
3. In a dumping-car, the combination with the car-body, of body-locking levers at the ends thereof, door-levers on which the door-pintles rest, springs connecting the ends of the door-levers to the body, and chains connecting the door-levers to the body-locking levers, whereby the release of the body-locking levers releases the tension on the springs connected to the door-levers.
4. In a dumping-car, the combination with the car-body, of door-levers pivoted to said body, doors supported by said levers, and a spring connecting one arm of each of the door-levers to the body, and serving to lift the doors when permitted to operate on the door-levers.
5. In a dumping-car, the combination of a car-body and locking-levers therefor, a pair of door-levers at each end of the car-body, springs connected to the inner ends of these levers and to the car-body, doors supported to the outer ends of said door-levers, and body-locking levers connected by flexible connections to the door-levers, to hold their springs under tension when the body is locked.
6. The combination with a dumping-car body, of a swinging door supported on door-levers, body-locking levers by which the body is held in horizontal position, and door-

catches also engaged by said body-locking levers.

5 7. The combination with a dumping-car truck and body-locking levers extending transversely of said body, door-levers at each end of the body and having pivots at each side which become alternately the fulcrum of said levers, doors having pintles extending into notches in the door-levers and also into
10 notches in the body, springs connected to the body and to the door-levers, and flexible connections from the door-levers to the body-locking levers, whereby the latter may be depressed and the doors left supported by the
15 body, as set forth.

8. The combination with a car-truck and dumping-body, and an interposed spring, of a lever connected to the body, and an incline adjacent to the car-track, whereby the car-
20 body may be brought to horizontal position and the spring placed under tension as the train moves past the incline.

9. The combination with a car-truck and dumping-body, and a spring acting to dump
25 the body, of means for holding the body in

horizontal position, and means alongside the track whereby the car-body may be released and permitted to be dumped by the spring.

10. The combination with a car-truck and car-body, and a spring acting to dump said
30 body, of detents acting to hold the body in horizontal position, a hinged lever which may be extended at the side of the car and act to release said detents by engaging an ob-
35 struction, and an incline at the side of the track by which said hinged lever is turned in as the car moves.

11. The combination with a car truck and body, of a spring acting to dump the body when free to do so, a swinging door on said
40 body, levers on which said door may swing, and springs connected to the door-levers and body to support the doors when swung open.

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

DANIEL KING.

Witnesses:

N. M. ANTHONY.

W. I. CASSIDY.