(No Model.) 2 Sheets—Sheet 1.

A. C. AMES.

DUMPING WAGON.

No. 351,017. Patented Oct. 19, 1886.

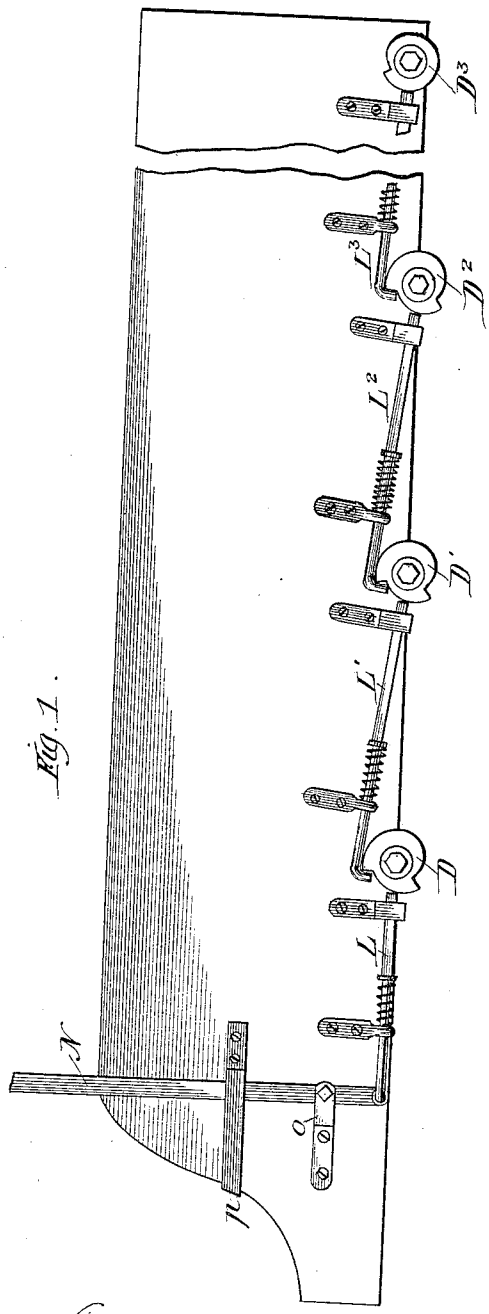


Fig. 1.

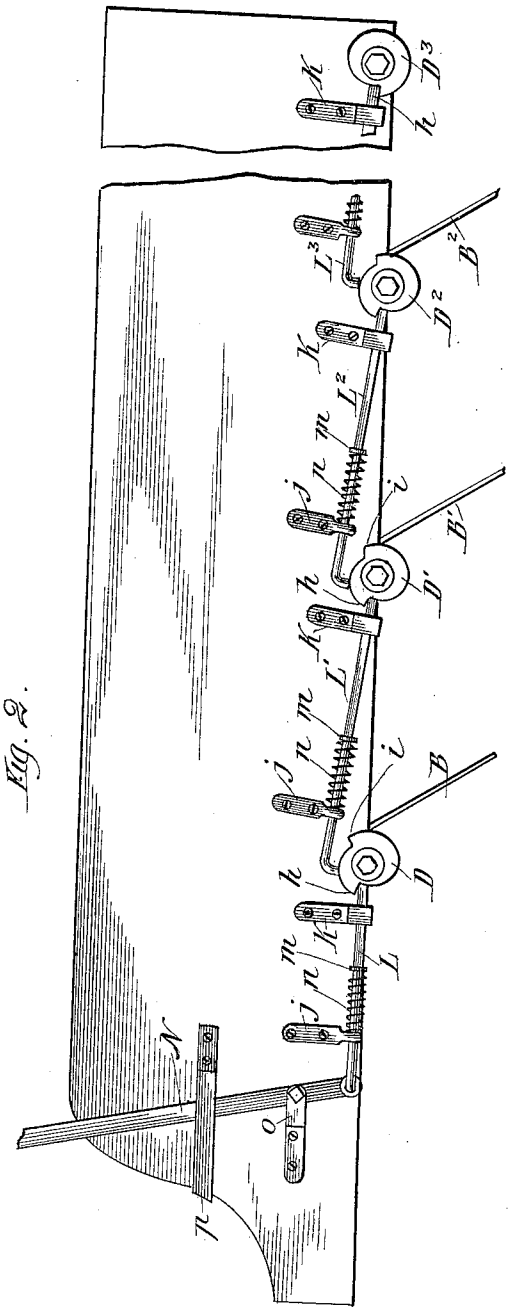


Fig. 2.

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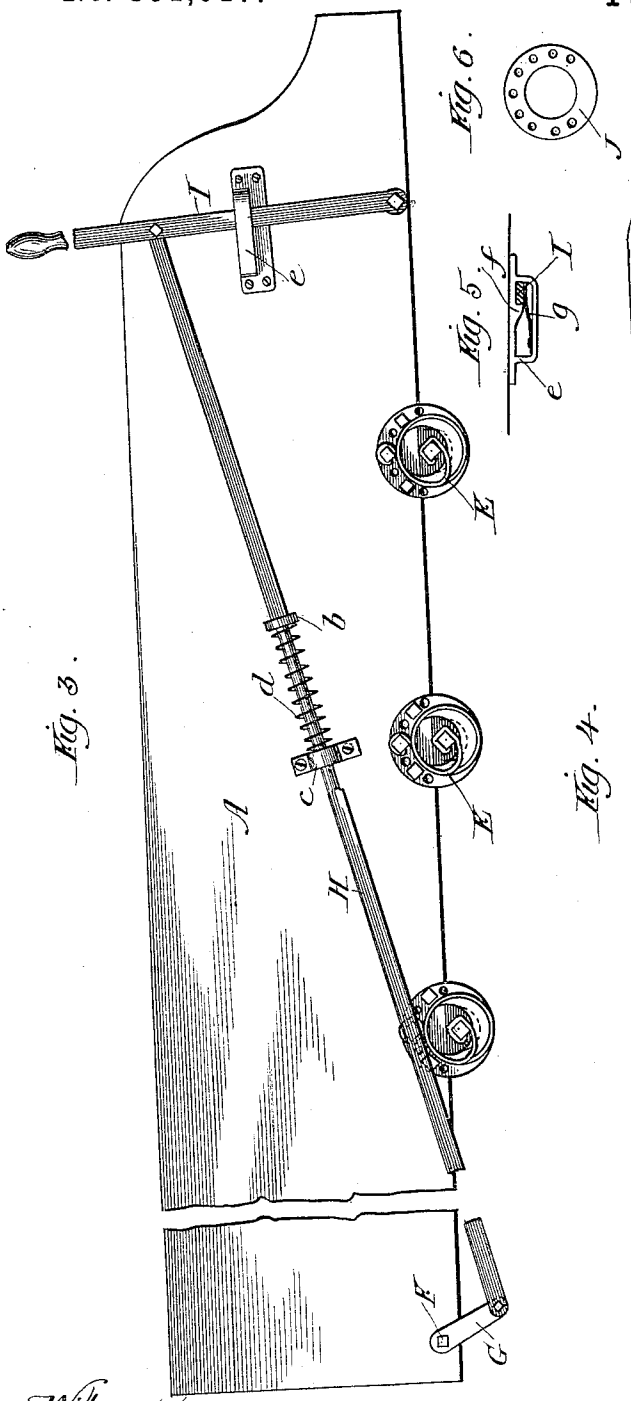
N. PETERS, Photo-Lithographer, Washington, D. C.

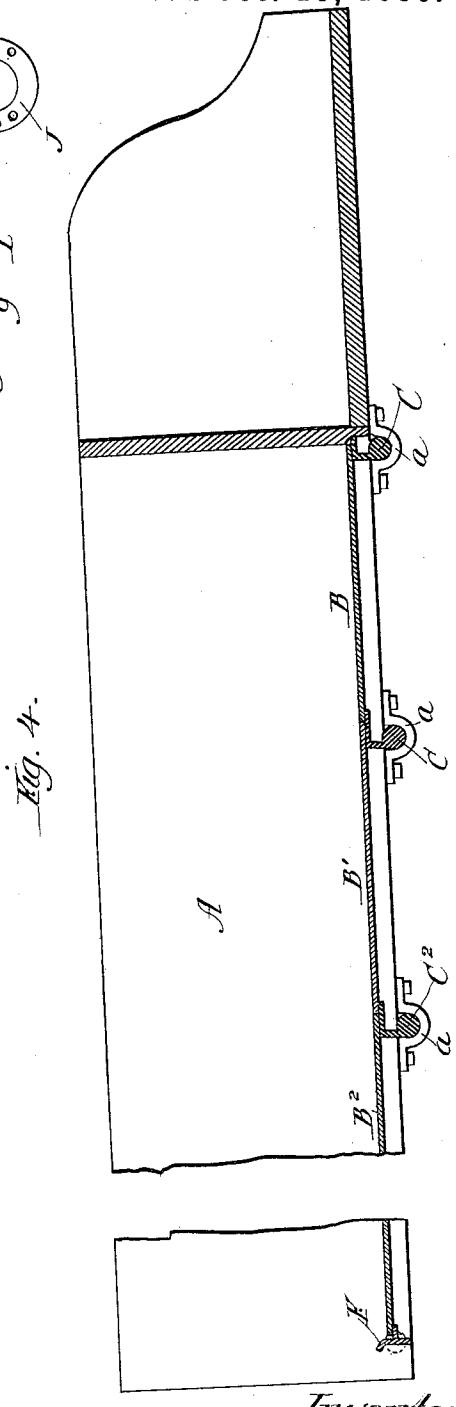
(No Model.) 2 Sheets—Sheet 2.

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Witnesses.
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Inventor:
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UNITED STATES PATENT OFFICE.

ALBERT C. AMES, OF CHICAGO, ILLINOIS, ASSIGNOR TO J. H. SHEPARD, OF SAME PLACE.

DUMPING-WAGON.

SPECIFICATION forming part of Letters Patent No. 351,017, dated October 19, 1886.

Application filed March 12, 1886. Serial No. 195,025. (No model.)

To all whom it may concern:

Be it known that I, ALBERT C. AMES, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dumping-Wagons, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in that class of dumping-wagons in which the wagon-bed bottom is composed of sections, each supported in journals in the sides of the bed at one end, and that when closed each section will be supported with its free end by the pivotal end of the next adjacent section, and operating in a manner that the dumping of the first section will liberate the next adjacent section, which, again, with dumping, will liberate the next, and so on until the last section has been dumped. With such dumping-wagons, however, after the load had been discharged, the sections had to be raised again by hand to their horizontal position in the reversed order, to replace them for the next load; and it has been the object of my invention to provide a means for automatically replacing the several sections for forming a continuous bottom, after the contents of the wagon have been dumped, by simply pulling a second lever.

My invention therefore consists of the novel devices and combinations of devices hereinafter described and specifically claimed.

In the accompanying drawings, Figure 1 represents an elevation of one side of the wagon-bed in the position when the dumping-sections are elevated to form a continuous bottom; Fig. 2, an elevation of the same in position when the dumping sections are down, as after dumping the load. Fig. 3 represents an elevation of the opposite side of the wagon, and Fig. 4 a longitudinal vertical section of the same with the dumping-sections in their closed position. Fig. 5 is a sectional plan of the lever-lock, and Fig. 6 an elevation of one of the spring tension-adjusting rings.

Corresponding letters in the several figures of the drawings designate like parts.

A denotes the wagon-bed, the bottom of which is composed of a series of sections, B B′ B^2, &c., each such section being rigidly secured upon the L-shaped flange of a shaft, C C′ C^2, &c. The journals of these shafts C C′, &c., are supported in boxes *a*, secured under the sides of the wagon-bed. Each section B B′, &c., in being secured upon the L-flange of its shaft does not lap over the entire width of such flange, but leaves a margin that forms the support for the free edge of the next adjacent section, and the free edge of the last or rear section is supported on the flange of a shaft, F, T-shaped in section and pivoted with its journals in holes through the sides of the wagon-bed A. This shaft F has mounted upon one of its protruding ends a crank, G, that, by a rod, H, is connected with a lever, I, by which to operate it from the driver's seat. The rod H has a collar, *b*, and is passed through a loop, *c*, secured to the wagon-bed, and around such rod is placed a spiral spring, *d*, that at its ends is compressed between such loop *c* and collar *b* for pushing such rod forward when released. The lever I is guided in a frame, *e*, having a shoulder, *f*, and spring *g* for locking such lever on its forward position, and with pushing lever I back the shaft F is sufficiently turned that its flange will release the first section, B, of the wagon-bottom, which, with dropping, turns the flange of its shaft C from under the rear end of section B′, which, again, with dropping, releases section B^2 to drop, and so on in succession until all the sections have been dropped and have dumped their load.

A spiral spring, E, is secured with one end upon the protruding squared end of each shaft C C′ C^2, &c., and is coupled with its other end to a ring, J, having a series of holes, one for securing such spring by a bolt. The required tension of each spring E is obtained by a more or less turn of ring J, at which it is fastened against the wagon-body by bolts passed through either holes. These springs have to be sufficiently powerful to more than counteract the gravitating force of section B B′, &c., for raising such sections to their horizontal positions again after dumping their load.

Upon the protruding opposite ends of shafts C C′ C^2 are mounted cams D D′ D^2, and upon the end of shaft F is mounted a cam, D^3. These cams are shaped eccentrical, and each cam D D′ D^2 has two shoulders, *h* and *i*, on

about a relative rectangular position, and cam D^3 has a single shoulder, *h*. Forward of each cam is guided in suitable loop-irons, *j* and *k*, of the wagon-body a bolt, L L′ L^2 L^3, on a somewhat inclined position. Each such bolt has a collar, *m*, and a spring, *n*, surrounding the bolt between such collar and guide-loop *j*, and tending to push its pointed end rearward against its cam D D′, &c., in the direction toward the fulcrum thereof, while the heads of bolts L′ L^2 L^3, extending to above the centers of the next forward cams, are hook-shaped to engage with the shoulders *i* thereof. The bolt L is coupled with its forward end to the lower end of a lever, N, pivoted in a bracket, *o*, and guided by a bar, *p*, both secured to the wagon-bed.

The sections B, after being released and having dumped their load would be elevated to their horizontal positions again immediately after relieved of their load; but in the order in which they are tilted in succession the free ends of the sections could not pass by and reach their supports upon the next forward shafts, C, again, and therefore the order in which in succession the several sections are to be lifted must be reversed—that is, the section which was the last released to dump its load must be the first to be lifted again—and for that purpose each section is first locked in its vertical position by its bolt L engaging with the shoulder *h* of its cam D. Now, after all the sections have dumped their load and have been locked in their pending positions, by swinging lever N the bolt L is withdrawn from shoulder *h* of cam D, when the spring E, on the opposite end of shaft C, will raise section B to its horizontal position, and this cam D, thereby being turned about a quarter of a revolution, its shoulder *i* will engage the hook-head of bolt L′ and will withdraw such bolt from cam D′, when section B′ will be raised by its spring and cam D′ will withdraw bolt L^2 to clear cam D^2, and so on, until, finally, the shaft F is released to turn its flange under the free end of the last section.

With this device, as will be seen, the driver need not leave his seat for dumping or for replacing the bottom of the wagon-body, since by operating lever I the sections forming the wagon-bed bottom are released automatically in succession from rear to front, and then after dumping the load, by operating lever N the sections will be lifted and securely replaced again automatically in succession from front to rear.

What I claim is—

1. In a dumping-wagon of the class described, each pivotal section provided with a spring, substantially as and for the purpose set forth.

2. In a dumping-wagon of the class described, each pivotal section provided with a spring for raising such section, with a cam and spring bolt for locking each section on its pending position, and with a lever for releasing the sections to be elevated in the successive order reverse to their successive order of dumping, substantially as and for the purpose set forth.

3. In a dumping-wagon of the class described, the combination, with the section pivot-shafts C, of springs E, substantially as and for the purpose set forth.

4. In a dumping-wagon of the class described, the combination, with the section pivot-shafts C, of springs E and adjusting-plates J, substantially as and for the purpose set forth.

5. In a dumping-wagon of the class described, the combination, with shafts C and springs E, of cams D, spring-bolts L, and lever N, all substantially as set forth, to operate as specified.

6. In a dumping-wagon of the class described, the combination, with shafts C and springs E, of cams D, having shoulders *h* and *i*, of spring-bolts L, having hook-shaped heads, and of lever N, all substantially as set forth, to operate as specified.

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

ALBERT C. AMES.

Witnesses:

ANTON SCHOENINGER,

ERNST HAMBURGER.