(No Model.) 2 Sheets—Sheet 1.

J. T. DOUGINE.

DUMPING WAGON.

No. 445,981. Patented Feb. 10, 1891.

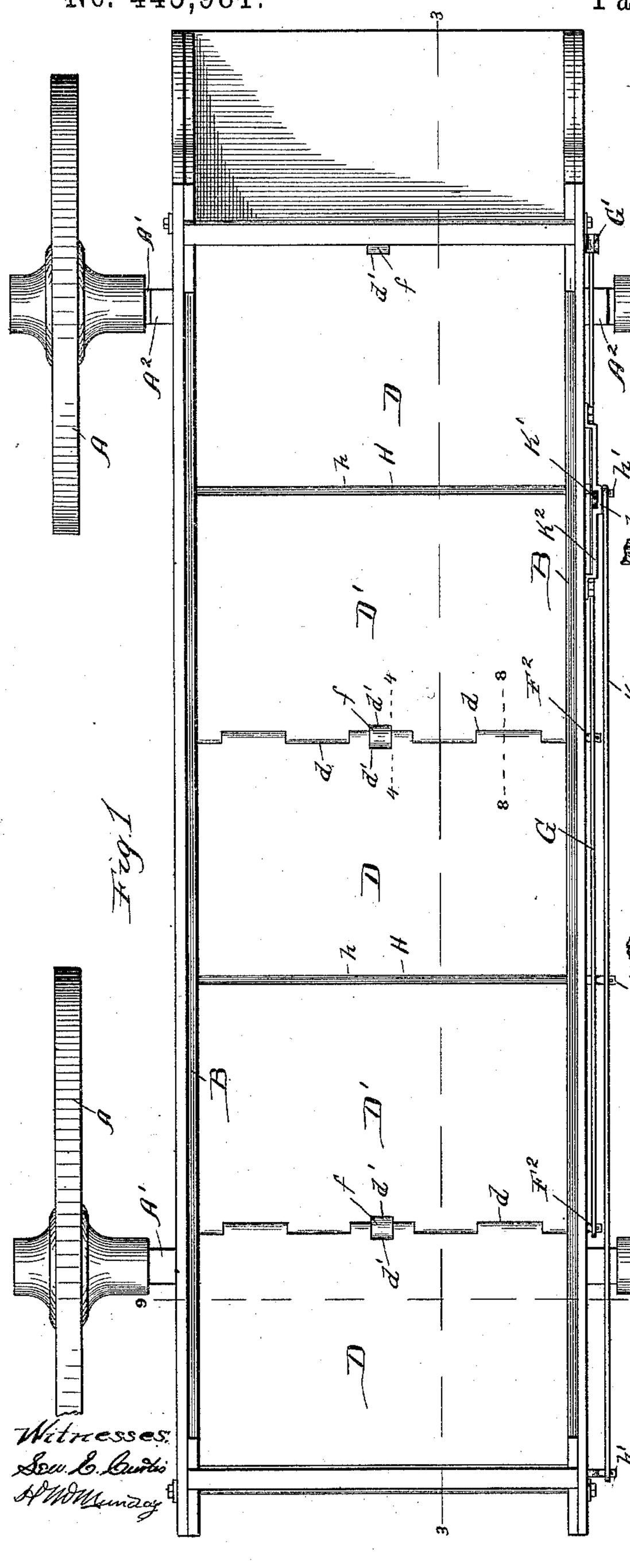

Fig. 1.

Fig. 9.

Fig. 6.

Fig. 7.

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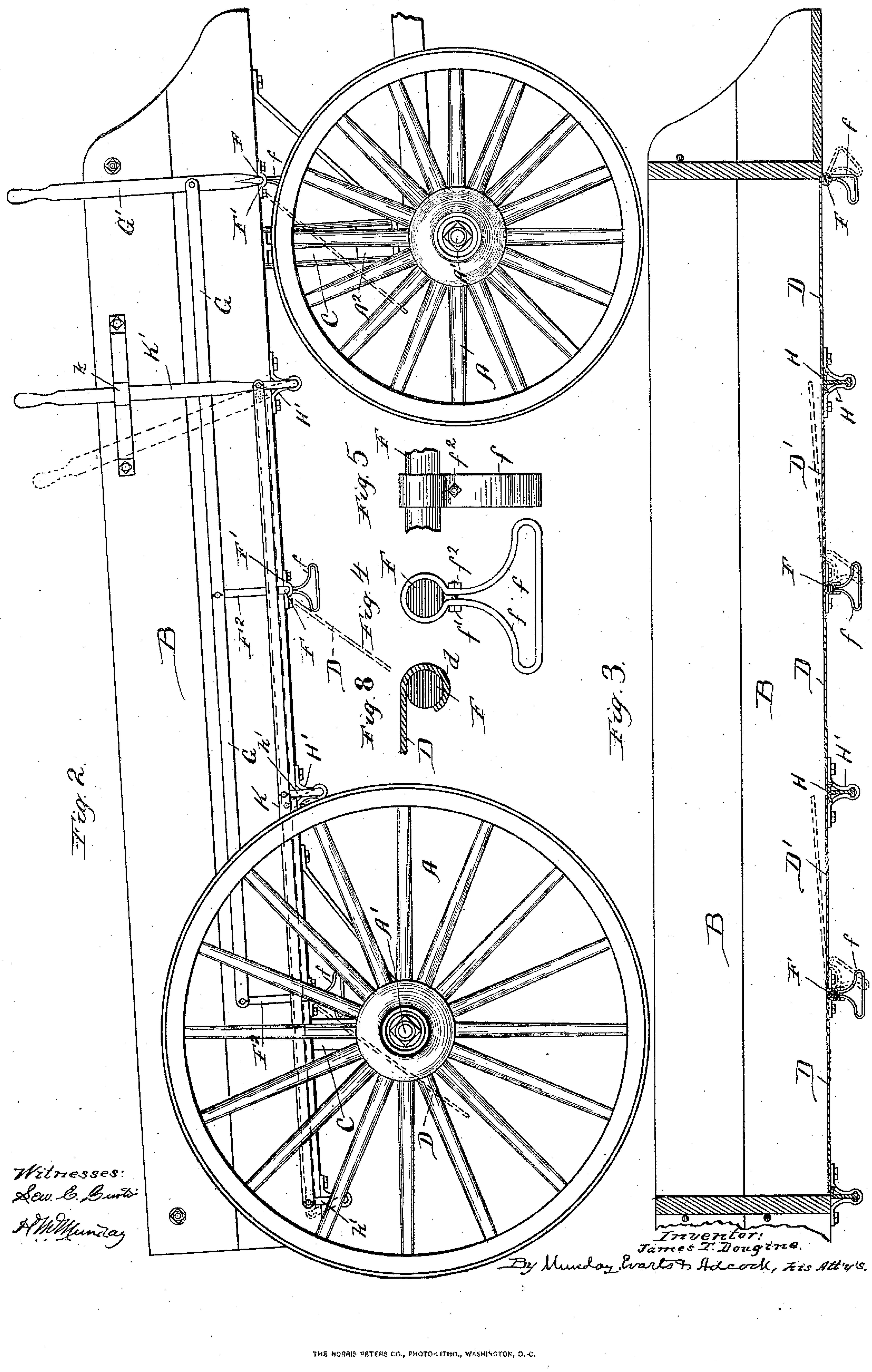

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES T. DOUGINE, OF CHICAGO, ILLINOIS.

DUMPING-WAGON.

SPECIFICATION forming part of Letters Patent No. 445,981, dated February 10, 1891.

Application filed April 7, 1890. Serial No. 346,976. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. DOUGINE, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful invention in Dump-Wagons, of which the following is a specification.

My invention relates to dump-wagons.

The object of my invention is to provide a dump-wagon having a hinge-sectional bottom, the contiguous sections of which open or swing in opposite directions, so that the break or opening in the bottom of the box formed by dropping the sections may be double the width of one section.

A further object is to provide a dump-wagon of a strong, simple, and efficient construction, the alternate sections of which are dumped or operated simultaneously, so that when such alternate sections are dropped or opened if the load does not begin to break or discharge at one part it may at another, and whereby all the sections may be opened or dumped without lifting or raising any of the sections or any portion of the load thereon. This very greatly facilitates the dumping or discharge of the load, and especially when it is composed of stone, sticky clay, or other materials, which by the jolting action of the wagon in hauling the load over any distance of rough road will tend to arch itself against the sides of the box or compact together into a solid mass. With many wagons heretofore in use the difficulty of dumping or discharging loads of many kinds of material is such that the utility of the dump-wagon is largely lost.

A further object of my invention is to provide a dump-wagon the hinge-sections of which may not only be dumped, but may be restored to position by the driver without leaving his seat.

A further object is to so construct the wagon that a portion of the load may be dumped and the dropped or dumped sections restored to their position or closed without dumping the remainder of the load.

My invention consists in the means I employ to accomplish these objects or results—that is to say, my invention consists in a dump-wagon having a bottom composed of a series of hinged sections or leaves, each pair of leaves being hinged about a common axis or shaft, so that the contiguous sections will open in opposite directions, the meeting ends of each two sections being supported upon a common rocking or oscillating bar.

It further consists in providing the rocking hinge bolts or shafts about which the sections are hinged with arms or projections adapted to engage the sections for the purpose of elevating or restoring them to position, such hinge bolts or shafts being also furnished with operating-arms pivoted to a common operating-bar.

It further consists in providing the oscillating bars which support the free meeting ends of the sections with operating-arms pivoted to a common connecting-bar, so that these oscillating supporting-bars may be simultaneously moved to dump each alternate section.

It further consists in the novel devices and novel combinations of parts and devices herein shown and described, and more particularly pointed out in the claims.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a plan view of a device embodying my invention. Fig. 2 is a side elevation. Fig. 3 is a section on line 3 3 of Fig. 1. Fig. 4 is an enlarged detail section taken on line 4 4 of Fig. 1, showing the construction of the arm, cam, or projection on the rocking shaft which serves to raise the section. Fig. 5 is a side view of the device shown in Fig. 4. Fig. 6 is an enlarged detail side elevation of the oscillating support or bar upon which the meeting ends of the sections rest, and by the oscillating movement of which they are dumped. Fig. 7 is a cross-section on line 7 7 of Fig. 6. Fig. 8 is an enlarged detail section on line 8 8 of Fig. 1, showing the form of the hinge. Fig. 9 is a detail cross-section taken on line 9 9 of Fig. 1, showing the supports for the box which elevate it above the axle or bolster.

In the drawings, A A represent the wheels; A′ A′, the front and rear axles; A^2, the front bolster; B B, the sides of the box; C C, the standards or supports upon which the sides

of the box rest and which serve to elevate it above the rear axle and the front bolster, and thus give room for the front wheels to turn under the box, and for the operation of the devices, hereinafter to be described, for raising the hinge-sections D D′ of the box-bottom, as well as to give room for the proper swinging of each pair of hinge-sections, the shaft or hinge-bolt of which is located above the rear axle or front bolster.

F is a rocking hinge bar or shaft through which each pair of sections D D′ is hinged together by the eyes or sleeves *d*, formed upon the edges of the sections. The construction of the hinges *d* at the edges of the sections is much the same as that of an ordinary strap-hinge, excepting that the sleeve *d* is, or should preferably be, made about two-thirds of a circle, as indicated at Fig. 8, to give room for the escape of sand or dirt from the hinge. Each hinge-shaft F is furnished with a projecting arm or cam *f f*, adapted to engage against the section D or D′ and elevate or restore the same to position. The cams or projections *f* I prefer to make of the loop construction shown in Figs. 4 and 5, as that is a simple construction and affords a very rigid means of securing the same to the shaft F by a bolt and nut *f′ f²*, which serve to clamp the loop about the shaft. The hinge-shafts F are journaled in suitable bearings F′, rigidly secured to the box-sides B. The hinge-shafts F are provided with operating-arms F², which are pivoted to a common connecting-rod G, which is connected to an operating-arm G′. The bottom of the box may be provided with any desired number of hinge-sections D D′. I however prefer to employ five for use in a box of ordinary length. The free or meeting ends of the hinge-sections D D′ rest upon oscillating supports H, which are journaled in suitable bearings H′, attached to the sides of the box B. These oscillating supports H have a curved web or face *h* for the edges of the leaves or sections D D′ to rest upon, so that the supports H may be rocked or oscillated without lifting or raising the sections resting thereon or any portion of the load. The oscillating leaf-supporting bars H are furnished with operating-arms *h′*, which are pivoted to a common operating or connecting bar K, connected with the dumping-lever K′. The dumping-lever K′ may preferably be made integral with or connected rigidly to the operating-arm of the front oscillating bar, as this brings the dump-lever in convenient position for operation, and saves the necessity of providing a separate pivot or bearing for the dump-lever, and also somewhat simplifies the construction.

When it is desired to dump only one or more sections at a time, the operating-arms of the other leaf-supporting or dumping bars H may be disconnected from the operating-bar K by simply removing the connecting or pivot pins, so that the movement of the dump-lever K′ will only dump the sections desired.

The dump-lever K′ is provided with a guard K², secured to the side of the box B. This guard is furnished at or near its middle with a holding-notch *k* to receive the dump-lever and retain it in position to lock the dump-bars H in their upright or middle position, so as to prevent the accidental dumping of any of the sections.

The hinge edge of each section D or D′ is provided with a notch or recess *d′*, to receive the circular portion of the lifting bar or cam *f*, which encircles the hinge-shaft F. It will be observed that the lifting arms or cams *f f* for each pair of sections are made integral with each other and consist of a single loop-shaped strap of metal. The lifting-arms for the front section D are, however, made single instead of double, as there is but one section to operate from the front hinge-shaft F.

The operation is as follows: To dump a load, the dumping-lever K′ is first moved in one direction, as shown in Fig. 2—say backward, as indicated in dotted lines—which operates to dump the alternate sections D D D by turning the dumping or leaf-supporting bars H H H backward until the free edges of the levers or sections D D D will clear the curved face *h* of the supporting-bars H. The dumping-lever K′ is then moved in the opposite direction and the sections or leaves D′ D′ dumped in a similar manner by the reverse movement of the supporting-bars H. To elevate the sections, the operating-lever G is then first moved backward, thus rocking the shafts F and causing the lifting arms or cams *f* secured thereto to impinge against and raise the sections D′ D′ into the position shown by dotted lines in Fig. 3, and then the dump-bar K′ is moved backward to its farthest position, thus swinging the oscillating bars H under the now raised sections D′ D′, so as to support the same. The operator then in like manner elevates the remaining or alternate sections D D D by throwing the operating-lever G′ forward, and then he moves the dump-lever K′ forward to its middle position, where it is held by the locking-notch *k*, so that the free or meeting edges of the contiguous sections will rest upon the curved face or web *h* of the dumping or supporting bars H.

I claim—

1. A dumping-wagon having a bottom composed of hinged sections hinged together in pairs, each pair of sections or leaves having a common hinge bolt or shaft, and an oscillating bar for supporting the meeting ends of the sections, said oscillating bar being adapted to rock beneath one section and dump the other, substantially as specified.

2. A dumping-wagon having a bottom composed of hinged sections hinged together in pairs and extending transversely across the wagon-body, each pair of sections or leaves having a common hinge bolt or shaft, the free

or meeting ends of the sections being supported upon oscillating bars extending transversely across the wagon-body, substantially as specified.

3. A dumping-wagon having a bottom composed of hinged sections hinged together in pairs, each pair of sections or leaves having a common hinge or bolt, the free or meeting ends of the sections being supported upon oscillating bars, and said oscillating bars having curved webs or faces for the edges of the sections or leaves to rest upon, substantially as specified.

4. A dumping-wagon having a bottom composed of hinged sections hinged together in pairs, each pair of sections or leaves having a common hinge or bolt, the free or meeting ends of the sections being supported upon oscillating bars, and a lever and connecting mechanism for operating said oscillating supporting-bars, substantially as specified.

5. A dumping-wagon having a bottom composed of hinged sections hinged together in pairs, each pair of sections or leaves having a common hinge bolt or shaft, the free or meeting ends of the sections being supported upon oscillating bars, said hinge-shafts having cams or projections adapted to impinge against said sections to raise the same, and a lever and connecting-bar for rocking said hinge-shafts, substantially as specified.

6. A dumping-wagon having a bottom composed of hinged sections hinged together in pairs, each pair of sections or leaves having a common hinge bolt or shaft, the free or meeting ends of the sections being supported upon oscillating bars, said hinge-shafts having cams or projections adapted to impinge against said sections to raise the same, a lever and connecting-bar for rocking said hinge-shafts, and a lever and connecting mechanism for rocking said oscillating supporting-bars, substantially as specified.

7. The combination, in a dump-wagon, of sections D D′, hinged together in pairs, with oscillating hinge-shafts F, having operating-arms *f* secured thereto for raising the sections, and oscillating bars for supporting the free ends of the sections, said oscillating bars being adapted to rock under the alternate sections and dump the remaining sections, substantially as specified.

8. The combination, in a dump-wagon, of a series of hinged sections or leaves with oscillating hinge-shafts having projecting arms or cams secured thereto for raising the hinged sections, and oscillating bars for supporting the free ends of the sections, said oscillating bars being adapted to rock under the alternate sections and dump the remaining sections, substantially as specified.

9. The combination, in a dump-wagon, of a series of hinged sections or leaves with oscillating hinge-shafts having projecting arms or cams secured thereto for raising the hinged sections, said projecting arms being made of a loop form encircling said shaft and secured thereto by clamp-bolts, substantially as specified.

10. The combination, in a dump-wagon, of the box-sides B, standards C, by which the box is supported above the axle and bolster, hinged sections D D′, and shafts F, having arms or cams *f* for raising the leaves, substantially as specified.

11. The combination, in a dump-wagon, of the box-sides B, standards C, by which the box is supported above the axle and bolster, hinged sections D D′, shafts F, having arms or cams *f* for raising the leaves, operating-arms f^2, connecting-bar G, and operating-lever G′, substantially as specified.

12. The combination of hinge-sections D D′, shafts F, having lifting-arms *f* and operating-arms F^2, connecting-bar G, lever G′, supporting-bars H, having faces *h* and operating-arms *h′*, connecting-bar K, and dumping-lever K′, substantially as specified.

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