No. 717,074. Patented Dec. 30, 1902.

T. CARROLL.

SIDE DUMP FOR VEHICLES.

(Application filed July 29, 1901.)

(No Model.) 3 Sheets—Sheet I.

Fig. I

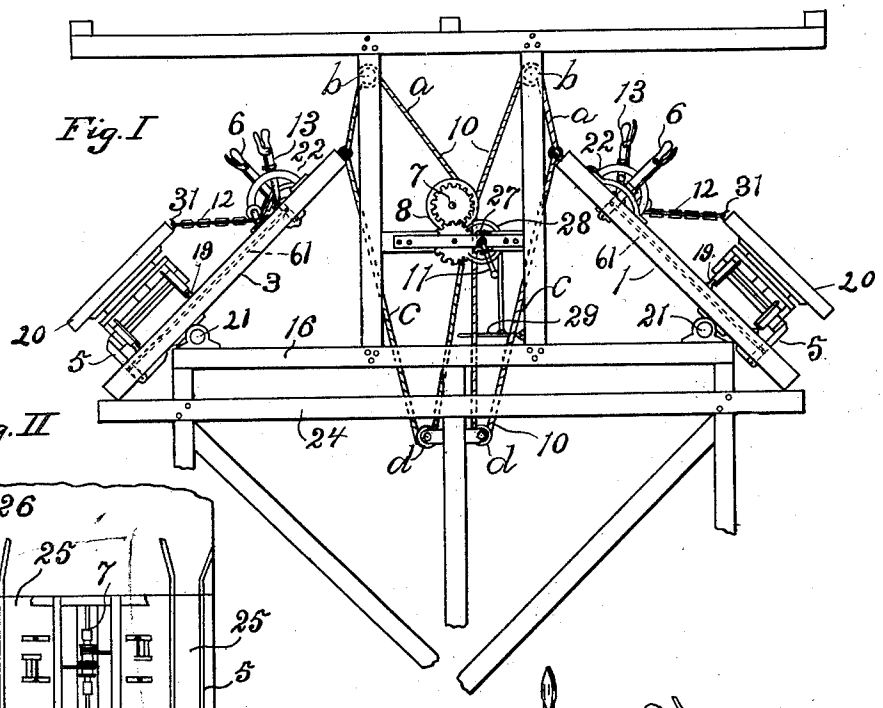


Fig. II

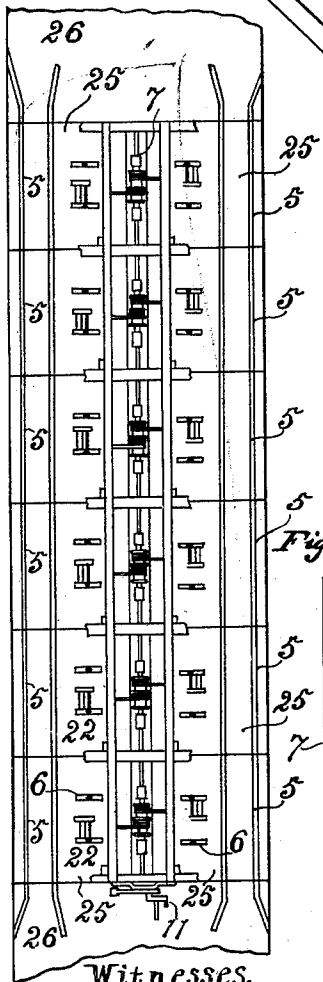


Fig. IV

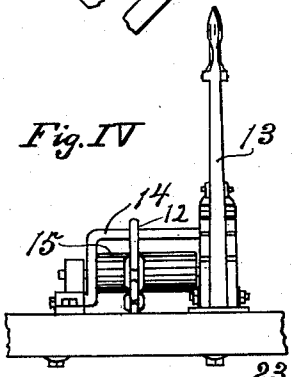


Fig. IV a

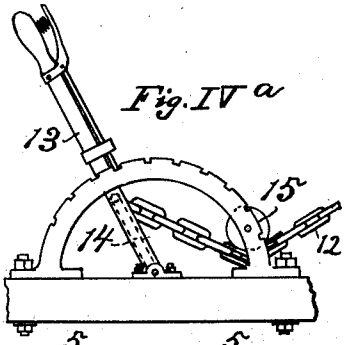
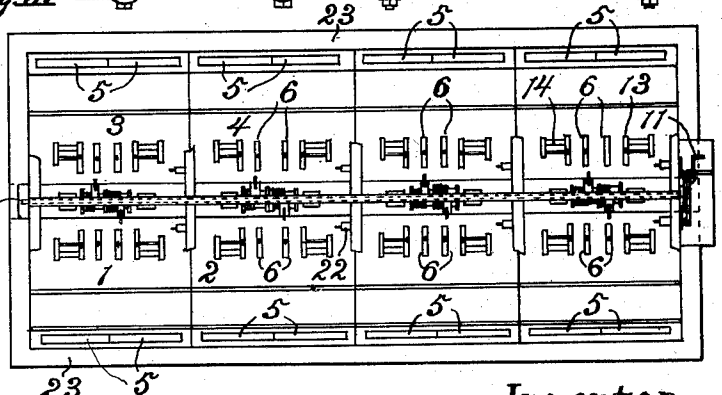


Fig. III



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(No Model.) 3 Sheets—Sheet 2.

Fig. V.

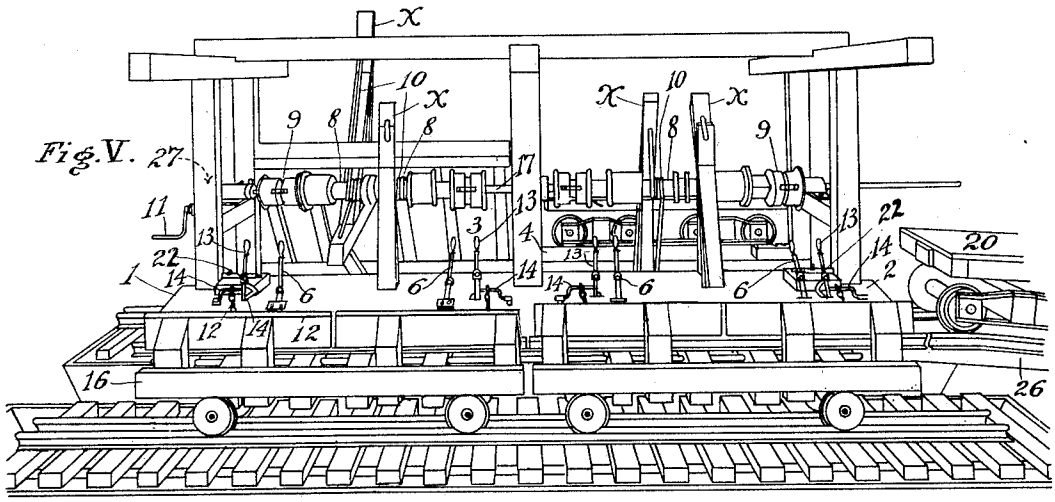
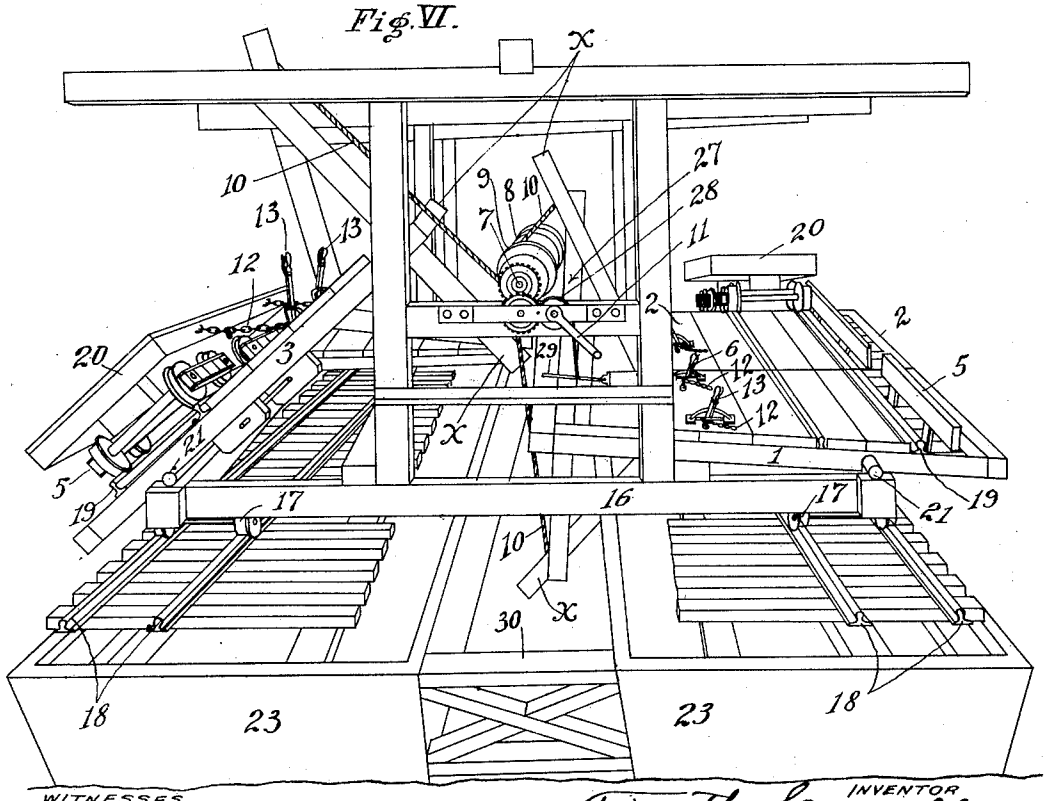


Fig. VI.



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(No Model.) 3 Sheets—Sheet 3.

Fig. VII.

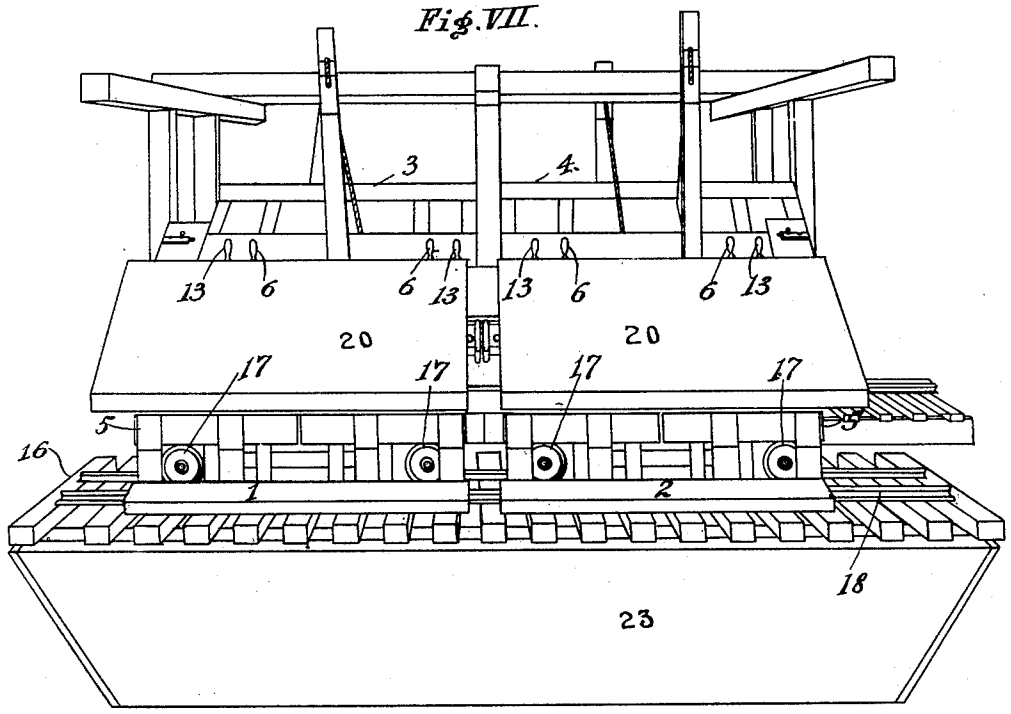
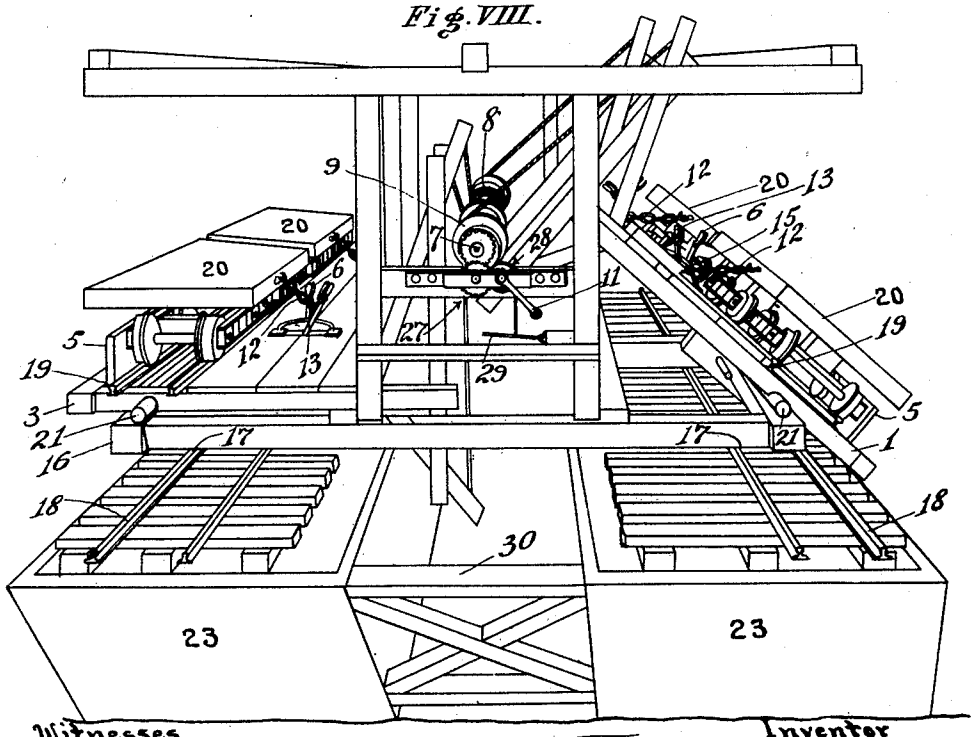


Fig. VIII.



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UNITED STATES PATENT OFFICE.

TIMOTHY CARROLL, OF ANAHEIM, CALIFORNIA.

SIDE DUMP FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 717,074, dated December 30, 1902.

Application filed July 29, 1901. Serial No. 70,173. (No model.)

To all whom it may concern:

Be it known that I, TIMOTHY CARROLL, a citizen of the United States, residing at Anaheim, in the county of Orange and State of California, have invented a new and useful Improvement in Side Dumps for Vehicles, of which the following is a specification.

This invention relates to improvements on the dumps patented to me by Letters Patent of the United States granted as follows: No. 561,485, dated June 2, 1896, and No. 595,236, dated December 7, 1897.

An object of this invention is to unload from vehicles great quantities of material with the greatest economy of time, attention, and labor.

This invention is adapted for dumping wagon-loads and car-loads of any material, and is epecially adapted for handling large quantities and loads of great weight. I propose with this invention to enable a single attendant to perform the operation of dumping at pleasure many wagon-loads or car-loads of rock, beets, or any other loads to be dumped and at pleasure to dump a single wagon-load or a single car-load.

In Southern California it is the custom with some beet-growers to send to the place of delivery heavy loads of beets in trains of wagons, while others haul their loads of beets in single wagons.

One object of this invention is to allow train-loads and single loads to be dumped indiscriminately and successively from the one dump with the least inconvenience and the smallest number of attendants.

A further object of this invention is to enable the attendant or attendants to dump one or more loads at any point desired and to readily change the dumping-place, thereby facilitating the work of loading cars, filling bins, building breakwaters or docks, and other constructions made of rock, sand, earth, or other material dumped into place.

This dump comprises a plurality of tilting frames, means for temporarily holding vehicles on said tilting frames, respectively, and means for tilting said tilting frames either simultaneously or independently.

In carrying out my invention for constructing breakwaters and for dumping car-loads of material into the water I propose in some instances to provide a float furnished with a track upon which trucks are arranged to run, carrying the main frame of the dump; but it is to be understood that the tilting platform may be applied directly to a scow or other suitable float and that the apparatus may be made in many ways without departing from my invention, also that the apparatus may be mounted on one or more trestles or other supports instead of on floats. Any available power may be used to operate the tilting frames.

A further object is to provide superior means for temporarily holding the vehicle on the tilting frame of the dump.

Another object is to simplify the means for manipulating the tilting platforms or frames.

The tilting platforms or frames may be furnished with tracks for railway-cars and with tracks for wagons or other vehicles, as may be required to meet the conditions in any instance.

My invention comprises the machine, combinations, and parts herein described and claimed.

It is to be understood that in actual practice the customary aprons or chutes for giving direction to the dumped material will be used substantially as shown in my former patents. For convenience such chutes are omitted from these drawings.

The accompanying drawings illustrate my invention in some of the forms in which it may be applied.

Figure I is a fragmental view, in end elevation, of a dump embodying my invention. Fig. II is a plan of said dump as applied for dumping wagon-loads of beets and other material. Fragments of the approaches of the dump are shown. Overhead timbers are broken to expose the ends of the tilting frames. Fig. III is a plan of the invention as applied for dumping loads of rock and other material into the water. Fig. IV is a detail view of the improved means for holding down the upper side of a car or other vehicle to prevent it from tipping off of the tilting frame of the dump. Fig. IV^a is a side elevation of the device shown in Fig. IV. Fig. V is a detail side view of my invention as applied with a portable main frame on a float and shows the tilting frames furnished

with levers. Fig. VI is an end view of the same, showing the float composed of two scows fastened together by ties and braces. In Figs. V and VI one of the tilting frames or platforms is connected by its clutch with the operative frame-tilting means, while the other tilting frames or platforms are, by means of their clutches, disconnected from such operative means. A flat-car is shown in dumping position on one of the tilting frames. Fig. VII is a view of the apparatus shown in Figs. V and VI, showing two cars in dumping position. Fig. VIII is an end view showing four cars in position, two of them dumping and two of them dumped. In Figs. I, II, and III the apparatus is in many respects the same as in Figs. V, VI, VII, and VIII, but is not so fully shown in detail. I will therefore refer first to the invention as illustrated in the four last-mentioned views.

In Figs. V, VI, VII, and VIII, 1 2 3 4 indicate four tilting frames. Each of these frames is furnished with means for temporarily holding vehicles on said tilting frames, respectively. Such means respectively consist in one or more keepers 5 and a lever 6 and rod 61 for operating the keeper, said lever being connected with the keeper by a connecting-rod. (Not shown.) The means for tilting the several frames simultaneously and independently consist in a shaft 7, means for rotating said shaft, spools 8, loosely mounted on said shaft, clutch members 9 for clutching the spools 8 to the shaft, flexible connections 10, connected with the tilting frames, respectively, to tilt the same and connected with the spools being wound around the spools in opposite directions in the way usual for the purpose, so that when any spool is clutched to the shaft and the shaft is rotated in one direction the tilting frame for said spool will be tilted and when the shaft is turned in the other direction said tilting frame will be returned to its level position. The means for tilting the frames are common to a plurality of said frames and by means of the clutches may be readily connected and disconnected at the will of the operator for tilting one or more of the frames, as desired. In the drawings for convenience of illustration the apparatus is shown adjusted for tilting only a portion of the tilting frames; but it is to be understood that when it is desirable to dump many loads at one time the spools 8 of the several tilting frames will all be connected with the shaft 7, so as to be turned simultaneously by means of the crank 11. The vehicles are to be respectively temporarily fastened to their respective tilting frames 1 2 3 4 by a flexible connection 12. 13 indicates levers respectively pivoted to the platforms and furnished with a horizontal arm 14, along which the flexible connection 12 slides. 15 indicates a roller fastened to the tilting frame and extending parallel with the horizontal arm 14 to hold the flexible connection down below the level of the arm, so that when the flexible connection is fastened to the car or other vehicle the movement of the lever 13 will draw the flexible connection taut, and the strain upon said connection when the vehicle is being dumped will be largely borne by the roller, and the strain which comes upon the lever will not wrench the lever from the frame. 16 indicates the main frame of the dump, and upon this main frame any desired number of the tilting frames 1 2 3 4 can be pivoted to tilt. 17 indicates trucks upon which the main frame 16 (shown in Figs. V, VI, VII, and VIII) is mounted to move. 18 indicates tracks upon which the trucks 17 move. 19 indicates tracks on the tilting frames for the cars 20 or other vehicles. (Not shown.) 21 21 indicate pivot-shafts on the opposite sides of the dump, respectively, for pivoting the tilting frames on the main frame. 22 indicates locks or bolts of any suitable character to hold the tilting frames respectively in their level positions. 23 indicates scows upon which the tracks 18 are mounted.

It is to be understood that the scows shown in Figs. III, V, VI, VII, and VIII are specially designed for building breakwaters and the like and that when desired to use the apparatus wholly on land the scows will be displaced by trestles 24 or other suitable supports, and the main frame 16 may be portable or stationary, as may be desired.

In Figs. V, VI, VII, and VIII the dump comprises only four tilting frames, and each of these frames is long enough for a railway-car; but it is to be understood that any number of tilting frames may be employed and that they may be of any suitable length. In Fig. II, I have indicated a dump furnished with twelve tilting frames 25, six on a side, and these tilting frames are mounted on trestles, (not shown,) and approaches 26 are shown at each end of the dump proper.

In practical operation with the form shown in Fig. II the teams will be driven onto the dump and stopped at any place desired, care being had that the wagon will stop on some tilting platform. In case there is a train of three wagons all three of the wagons must be on tilting frames. If this brings the team onto a tilting frame of the dump, that tilting frame will be locked by means of the lock 22 and its spool will be disconnected from the shaft and the other tilting frames will be unlocked and their spools connected with the shaft. Then the attendant will turn the shaft 7 and dump the loads. Then the shaft and tilting frames will be returned, and the teams and wagons will be ready to be driven off. Where a number of teams are to be attended to, teams and wagons may be driven simultaneously onto the tilting frames on the opposite sides of the dump and both train-loads dumped at the same instant, or in case only the load from one team is to be dumped on one side and the load from two teams is to be dumped on the other side the tilting frames will be appropriately connected and discon-

nected, so that the dumping can proceed as desired. A team can stand on one of the approaches while the wagon or wagons belonging to that team will stand on one or more tilting frames behind the team, and a following team and one or more wagons can be accommodated on tilting frames behind such just previously-mentioned team, care being always taken that before dumping the tilting frame on which the team stands is locked and is disconnected from the shaft, while the tilting frames on which the wagons stand are unlocked and are connected with the shaft.

The ropes or other flexible connections may be connected with the tilting frames in any suitable manner. In Figs. V to VIII, inclusive, the tilting frame is shown provided with upwardly and downwardly extending levers *x*, the spools being arranged between the upper and lower ends of said levers, respectively; but in the form shown in Fig. I the flexible connection is fastened directly to the tilting frame, one of said connections *a* being carried up over pulley *b* and thence down to the spool, while the other flexible connection *c* is carried downward and around a pulley *d* and then up and fastened to the spool to wind onto the spool when the connection *a* winds off of the spool, and vice versa. In this form (shown in Fig. I) there are two pulleys *b* above the shaft and two pulleys *d* below the shaft for each pair of tilting frames, and each tilting frame is furnished with a flexible connection *a*, led over a pulley *b*, and with a flexible connection *c*, led under a pulley *d*—that is to say, a flexible connection *a* is fastened to the edge of a tilting frame which is at one side of the main frame, is led thence over one of said pulleys *b*, thence to a spool on the shaft and wound thereon in one direction, and a flexible connection *a*, fastened to the edge of the tilting frame which is at the other side of the main frame, is thence led over one of said pulleys *b* and down to a spool on the shaft and wound thereon in the same direction as the first flexible connection *a*. A flexible connection *c* is fastened to said tilting frame which is at the one side of the main frame and led thence under one of said lower pulleys *d* and thence to a spool and wound thereon in a direction opposite to that of the upper connection, and another flexible connection *c* is fastened to the side of the tilting frame which is at said other side of the main frame, led thence under another of said pulleys *d*, and thence up and wound around a spool in said opposite direction. In practice the upper and lower flexible connections for any tilting frame are both connected to the same spool, so that when said spool rotates one of the connections will unwind and the other wind, and the tilting platform on the other side of the spool is connected in a corresponding manner, so that when both spools are connected the tilting of both tilting frames will be simultaneous.

Any suitable means may be employed to rotate the shaft. For convenience a winch 27, operated by the crank 11, is shown in the drawings. 28 indicates a band-brake operated by a treadle 29 for holding said winch in order to regulate the movement of the tilting frame after it has become overbalanced in the process of tilting.

By means of the scow-carried dumps car-loads of coal may be transported by the scow from the shore to anchorage for coaling vessels, and the car-loads may be dumped directly into chutes, (not shown,) and thus conveyed into the vessel to be coaled. Said scow-carried dumps can also be used for loading vessels with any material which can be dumped directly from the car into the vessel for loading the same.

30 indicates the ties and braces for holding the scows together to form a stable float.

The horizontal arm 14 and roller 15 of lever 13 are of sufficient length to allow the flexible connection 12 to be shifted along the car or vehicle to draw in a right line between the hook 31 of the fastening device on the vehicle and the lever on the tilting frame. When the attendant wishes to connect the connection 12 with the vehicle, he will slide said connection along the arm 14 to the true position and then hook it upon the hook.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A dump comprising a plurality of tilting frames arranged end to end with their pivotal points in alinement; means for temporarily holding vehicles on said tilting frames respectively; and means common to a plurality of said frames for tilting two or more of said tilting frames either simultaneously or independently.

2. A dump comprising a main frame; a shaft extending therealong; a plurality of tilting frames to tilt laterally; means for holding vehicles on said tilting frames, respectively; spools on the shaft for the tilting frames, respectively; means connecting the tilting frames with the spools, respectively; means for rotating the shaft in one and the other direction; and means for connecting and disconnecting the spools, respectively, with and from the shaft.

3. A dump comprising a main frame; a shaft extending therealong; tilting frames arranged in series on opposite sides of the main frame; means for temporarily holding vehicles on the tilting frames, respectively; spools on the shaft for the tilting frames, respectively; means operatively connecting the tilting frames with the spools, respectively; means for connecting and disconnecting the spools from the shaft, respectively; and means for rotating the shaft in one or the other direction.

4. A dump comprising a main frame; a plurality of tilting frames on the main frame said tilting frames being arranged end to end

with their pivotal points in alinement; a track composed of sections on said tilting frames, respectively; means for holding vehicles on said tracks, respectively; and means common to a plurality of said frames for tilting two or more of said tilting frames either simultaneously or independently.

5. A dump comprising a track; a main frame running on said track; a plurality of tilting frames on said main frame; means for temporarily holding vehicles on said tilting frames, respectively; and means for either simultaneously or independently tilting the tilting frames, respectively.

6. In a dump the combination of a tilting frame, a keeper for the hubs of a vehicle on said frame, means for tilting and returning the frame; a lever furnished with a horizontal arm; a flexible connection connected with said arm to fasten to a vehicle on said frame; and a roller fastened to the frame and under which the flexible connection extends.

7. The combination of a main frame; trucks carrying said main frame; a plurality of tilting frames mounted on said main frame; tracks for the trucks; tracks for vehicles on the tilting frames; means for operating the tilting frames, respectively; and means for temporarily holding vehicles on the tilting frames, respectively.

8. A dump comprising a float; tracks on said float; a main frame to run on said tracks; tilting frames pivoted on said main frame, said tilting frames being arranged end to end with their pivotal points in alinement; and means common to a plurality of said frames for tilting two or more of said frames either simultaneously or independently.

9. A dump comprising a float; tilting-frames on said float; tracks in sections on said tilting frames; and means for tilting said tilting frames simultaneously and independently.

10. A dump comprising a float; tilting frames arranged in two series, respectively, along the opposite sides of the float; the tilting frames of each series being arranged end to end with their pivotal points in alinement; sectional tracks on said tilting frames to form two continuous tracks, one at each side of said float; means for locking said tilting frames, respectively, in horizontal position; and means for tilting two or more of said frames either simultaneously or independently.

11. A dump comprising a main frame; tilting frames arranged in series along the sides of the main frame; sectional tracks on the tilting frames, respectively, to form two tracks, viz: a continuous track for each of said series of tilting frames; means for locking any of said tilting frames; and means common to a plurality of said frames for tilting any of said tilting frames simultaneously or independently.

12. The combination of a main frame; tilting frames at opposite sides of the main frame; a shaft extending along the main frame; means to rotate the shaft; spools on said shaft to rotate therewith; pulleys below the shaft; a flexible connection fastened to the edge of a tilting frame which is at one side of the main frame, led thence under one of said pulleys, thence to a spool on the shaft and wound thereon in one direction; a flexible connection fastened to the edge of a tilting frame which is at the other side of the main frame, led thence under one of said pulleys and up to a spool on the shaft and wound thereon in the same direction as the first flexible connection; pulleys above said shaft; a flexible connection fastened to said tilting frame which is at one side of the main frame, led thence over one of said upper pulleys and thence to a spool and wound therearound in a direction opposite to that of the lower connections; and a flexible connection fastened to one side of the tilting frame which is at said other side of the main frame, led thence over another of said pulleys and thence down and wound around a spool in said opposite direction.

13. In a dump, a tilting frame adapted to support a receptacle while it is being emptied, a lever pivotally mounted on the frame and provided with an arm, and a flexible connector slidably mounted at one end on the arm, and adapted to have its other end connected with the receptacle.

14. In a dump, a tilting frame adapted to support a vehicle while it is being emptied, a lever pivotally mounted on the frame and provided with an arm, a roller between the lever and vehicle and a flexible connector under the roller with one end slidably mounted on said arm and the other end adapted to be secured to the vehicle.

15. In a dump, a tilting frame adapted to support a vehicle while it is being emptied, a lever pivotally mounted on the frame, an L-shaped arm secured to the lever at one end and having its opposite end pivotally mounted in alinement with the fulcrum of the lever, a roller between the lever and the vehicle and a flexible connector under the roller, one end of which is slidably mounted on the arm and the other end is adapted to be secured to the vehicle.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, at Los Angeles, California, this 20th day of July, 1901.

TIMOTHY CARROLL.

Witnesses:
JAMES R. TOWNSEND,
JULIA TOWNSEND.