

S. W. HALL.

UNLOADING ATTACHMENT FOR RAILWAY FLAT CARS.

No. 580,974.

Patented Apr. 20, 1897.

Fig. 2

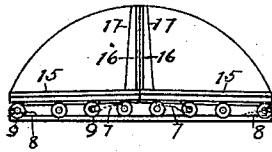


Fig. 1

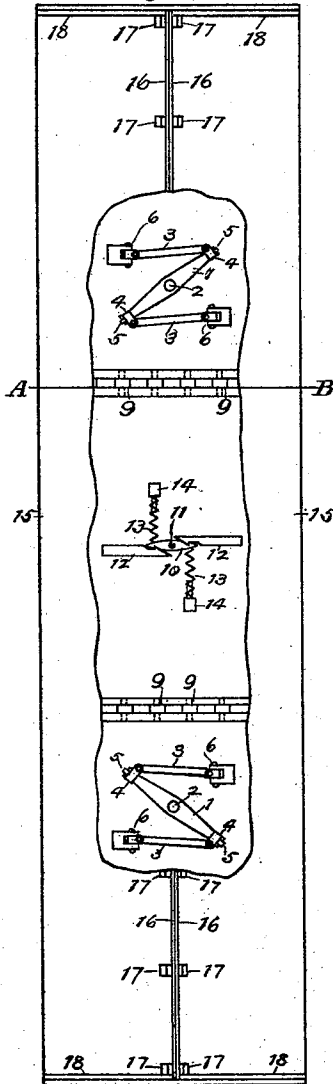


Fig. 4

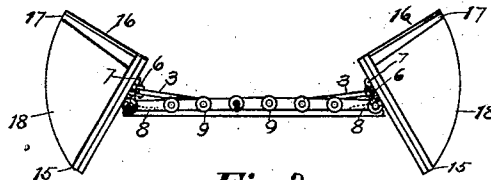
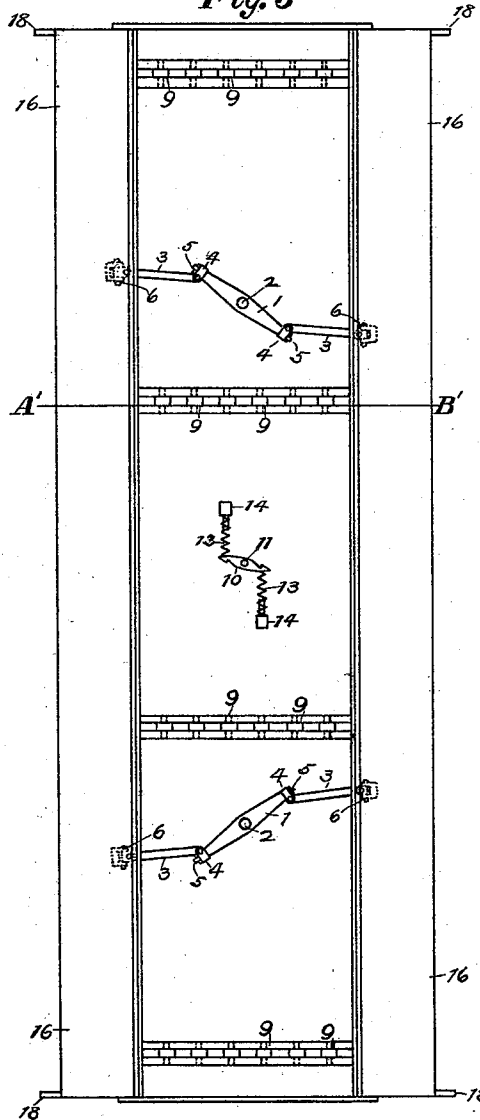


Fig. 3



WITNESSES

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(No Model.)

2 Sheets—Sheet 2.

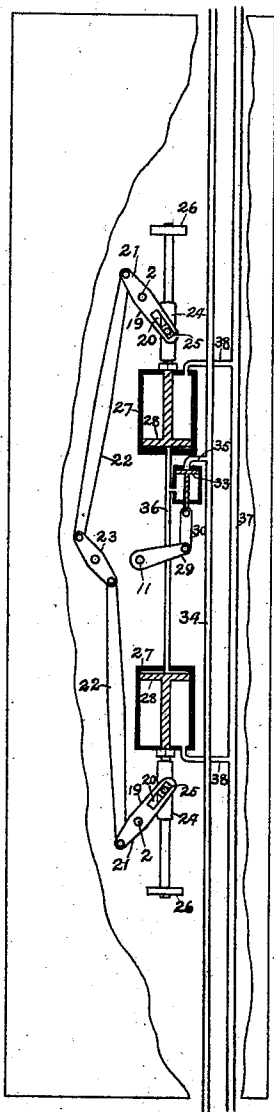
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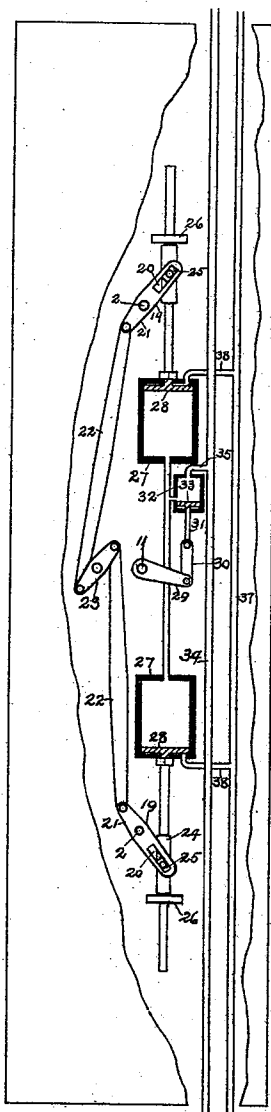
Fig. 5



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Fig. 6



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UNITED STATES PATENT OFFICE.

SILAS WRIGHT HALL, OF SIOUX CITY, IOWA.

UNLOADING ATTACHMENT FOR RAILWAY FLAT-CARS.

SPECIFICATION forming part of Letters Patent No. 580,974, dated April 20, 1897.

Application filed October 19, 1896. Serial No. 609,335. (No model.)

To all whom it may concern:

Be it known that I, SILAS WRIGHT HALL, a citizen of the United States, residing at Sioux City, in the county of Woodbury and State of Iowa, have invented a new and useful Unloading Platform or Attachment for Railway Flat-Cars, of which the following is a specification.

My invention is an automatic unloading device or attachment for railway flat-cars for unloading earth, loose rock, sand, gravel, cinders, coal, coke, and other materials of like nature, consisting of a sectional sliding platform, each section furnished with a back, so that when loaded or ready to receive a load the backs are in contact along the mid-line of the car. Said sections resting upon sets of friction-wheels, rollers, or balls are capable of being moved outward toward the edges or sides of the car until the center of gravity of section and load passes beyond the line of support, when said sections are upset and the load is discharged by the action of gravity. Said sections are moved by sets of connecting-rods hinged at one end to under side of said sections and at the other end to levers revolving in a horizontal plane. Said levers are fixed upon and moved by revolving shafts passing vertically through the floor of the car. To the lower ends of said shafts are fixed levers connected to piston-rods driven by pistons in compressed-air cylinders supplied with compressed air from main reservoir on locomotive. Each or any number of cars when so equipped may be automatically operated by simply turning air-cocks in the cab while the train is in motion or standing still. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a top view of sectional platform closed with part broken away to show levers, connecting-rods, shafts, latch, and friction-wheels. Fig. 2 is a view of cross-section on line A B of Fig. 1. Fig. 3 is a top view of car, showing sectional platform upset. Fig. 4 is a view of cross-section on line A' B' of Fig. 3. Fig. 5 is a view showing air-cylinders and connecting mechanism with sectional platform upset, as shown in Fig. 3. Fig. 6 is a view similar to Fig. 5 and showing the position of the operating mechanism

when the sections are in the position shown in Fig. 2.

Similar figures refer to similar parts 55 throughout the several views.

The sectional platform 15 15, Fig. 1, is substantially the size of an ordinary flat-car and may be constructed with a wooden or iron bottom, wooden or iron ends 18 18, and each section having a back 16 16, which may be made of boiler-iron, corrugated iron, or other strong material, supported and strengthened by iron braces 17 17. For the purpose of moving said sections there are attached to the bottom thereof connecting-rods 33, with joints 6 6, allowing same to revolve in vertical and horizontal planes and connected to levers 1 1 by a similar joint 5 5, being cylindrical ends of levers 1 1, adapting joint to revolve in vertical plane, and 4 4 being part of joint adapting it to revolve in horizontal plane. Said levers 1 1 are fixed upon and moved by revolving shafts 2 2, passing vertically through the floor of the car. Upon the bottom of said sections 15 15 are lugs 7 7, Figs. 2 and 4, engaging, when sections are being upset, with pins through lugs 8 8, attached to the floor of the car and which support and keep said sections from passing beyond the required point to upset and discharge contents.

9 represents friction rollers or wheels journaled on the car-floor on which the sections slide.

Upon the lower ends of shafts 2 2 are levers, to the short ends 21 21 of which is attached an equalizer of pistons 22 22 23, as shown in Figs. 5 and 6, and the long ends of said levers 19 19 having therein slots 20 20 for the working of sliding blocks 25 25, connected to the enlarged part of piston-rods 24 24, said piston-rods connecting with pistons 28 28, working in air-cylinders 27 27, and the other ends extending through guides 26 26. Said levers 19 19 may be connected to said piston-rods 24 24 by cross-heads instead of slots with sliding blocks.

A part of the mechanism is an automatic latching device securely latching or fastening said sections together when loaded or in position to receive a load and automatically unlatched when ready to slide or upset said sections. Said latching device is shown at Fig. 1, and consists of a notched bolt 10, en-

gaging with two catches 12 12, said catches when unlatched being returned to place by springs 13 13, held by stationary supports 14 14. Said bolt 10 is fixed upon a revolving shaft 11, passing vertically through the floor of the car, to the lower end of which is fixed a crank 29, Figs. 5 and 6, and joined to piston 33 by a connecting-rod 30, piston 33 working in air-cylinder 32. When said sectional platform is closed and in position shown in Fig. 1, the whole is easily and quickly upset by simply turning air-cock in cab of locomotive in charge of train, thus forcing compressed air through air-pipe 34, branch air-pipe 35 into air-cylinder 32, which forces piston 33 to a point back of opening in 32 leading into pipe 36, leading either way into air-cylinders 27 27. The movement of piston 33, as described, turns the latch-bolt and unlatches the sections, holding said latch open while the air passes on into air-cylinders 27 27, forcing pistons 28 28 back, thereby forcing sections 15 15 outward, when they are upset, as shown in Fig. 4. In a similar manner said sectional platform is easily and quickly closed by the turning of another air-cock in cab, thus forcing compressed air through air-pipe 37, branch pipes 38 38 into air-cylinders 27 27 back of pistons 28 28, thereby forcing pistons 28 28 in the opposite direction from the former operation, which closes said sections, and they are firmly latched in proper position.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination in a car of the sectional platform, the parts of which are adapted to be slid to the edges of the car so that they may be tilted, and the mechanism for sliding said sections, consisting of a pair of levers fixed upon a suitable shaft and connected with the sections, pistons working in suitable cylinders and having connections with said shafts

and suitable pressure connections for moving said pistons in opposite directions in said cylinders whereby the sections are slid outward to the edges of the car for dumping and returned; substantially as shown and described.

2. The combination in a car, of the sectional platform adapted to be slid to the edges of the car and tilted, suitable mechanism in connection therewith for moving the sections of said platform, and automatic means for latching said sections when in closed position and unlatching them when they are to be moved, consisting of a notched bolt mounted upon a shaft, spring-actuated latches carried by the sections and adapted to engage with said bolt, a shaft on which said bolt is fixed, and suitable means for moving said shaft; substantially as shown and described.

3. The combination in a car, of the tilting platform adapted to be moved to and from the edge of the car and tilted, levers in connection with said platform for sliding it, an automatic latching device for said sections, platform-cylinders having pistons connected respectively with the sliding levers and detent, and a pipe system for communicating fluid-pressure to said cylinders; substantially as shown and described.

4. In combination with a railway-car, a platform comprising sections mounted to slide to the edges of the car for dumping, connecting-rods 3 jointed to said sections, the centrally-pivoted lever 1 having its respective ends jointed to said connecting-rods, the shafts 2, upon which said levers are journaled and fluid-pressure pistons having fluid-pressure-supply connections and having equalizing connections with shafts 2, substantially as and for the purpose set forth.

SILAS WRIGHT HALL.

Witnesses:

JOSEPHINE HALL,
MARION E. HALL.