Apr. 24, 1923. 1,452,486

L. ALMQUIST

CANE CAR

Filed July 8, 1921 2 Sheets-Sheet 1

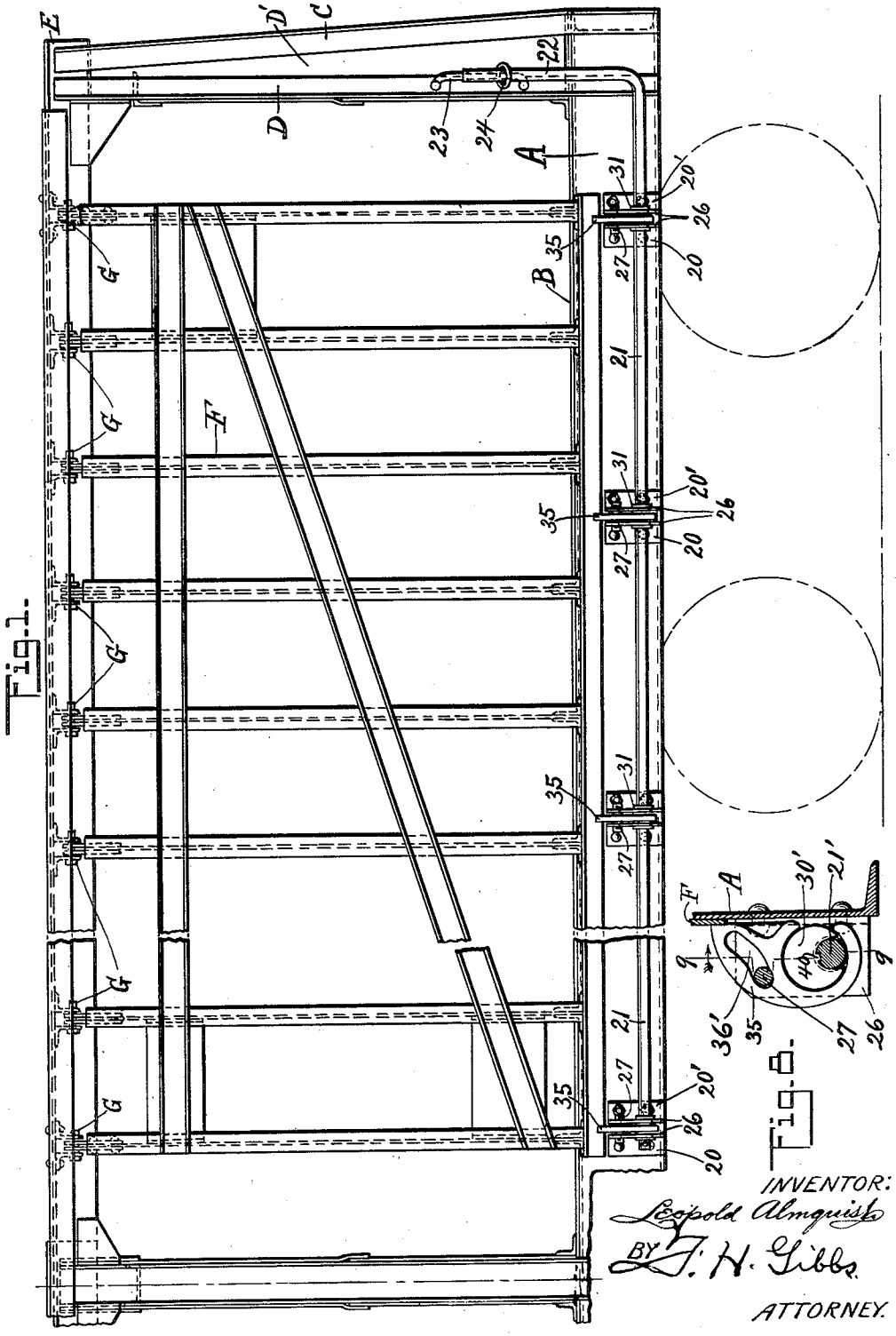


Fig. 1.

Fig. 2.

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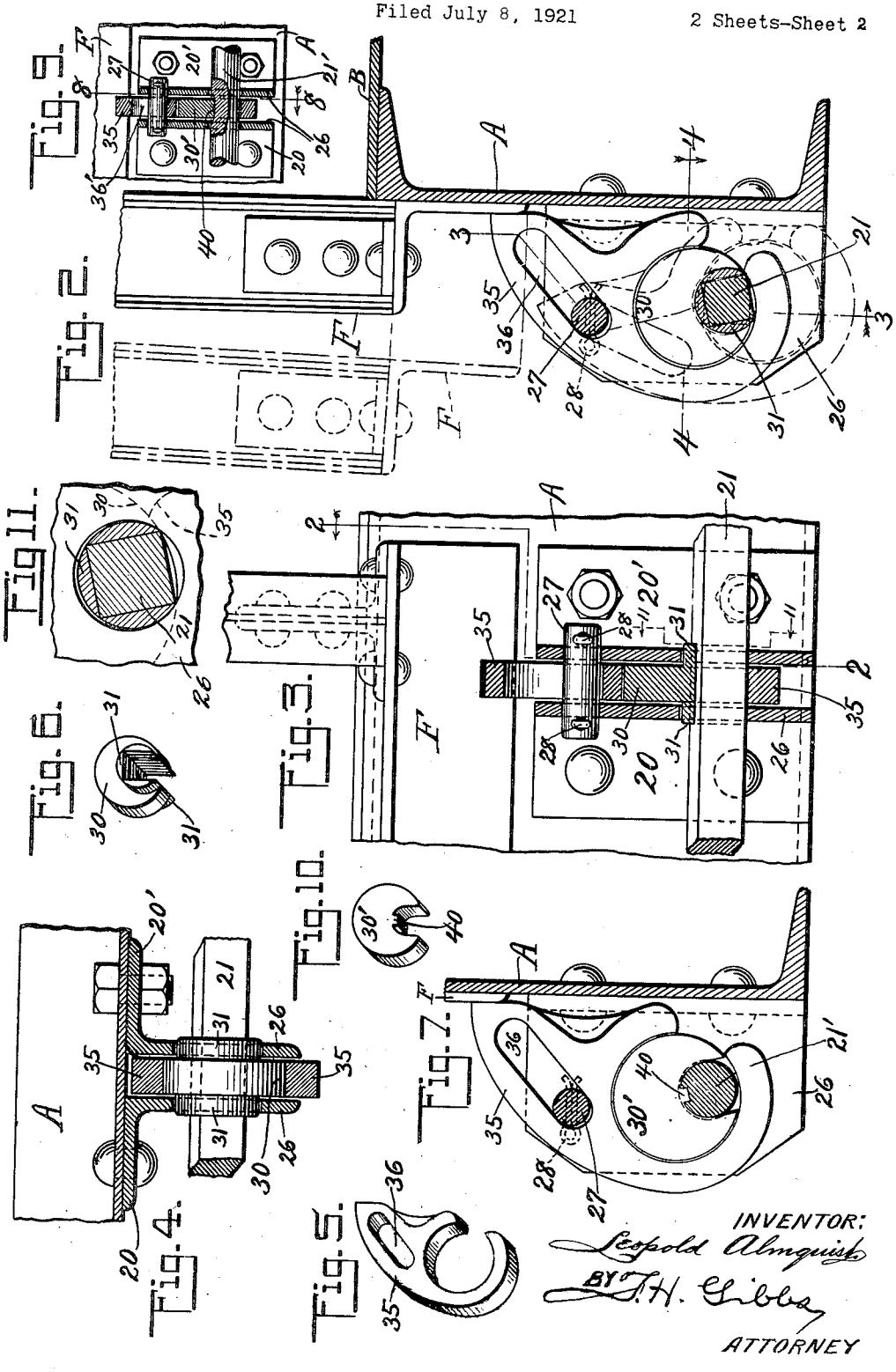
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

LEOPOLD ALMQUIST, OF NEW YORK, N. Y., ASSIGNOR TO AMERICAN CAR AND FOUNDRY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CANE CAR.

Application filed July 8, 1921. Serial No. 483,228.

To all whom it may concern:

Be it known that I, LEOPOLD ALMQUIST, residing at New York, county of New York, State of New York, and being a citizen of the United States, have invented certain new and useful Improvements in a Cane Car, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and to use the same, reference being had to the accompanying drawings, which illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof within the scope of the claims will occur to persons skilled in the art.

In said drawings:

Fig. 1 is a side elevational view of one corner of a cane car equipped with my invention;

Fig. 2 is a transverse sectional view, the section being taken on line 2—2 of Fig. 3;

Fig. 3 is an enlarged fragmentary side elevational view, parts being shown in section, the section being taken on line 3—3 of Fig. 2;

Fig. 4 is a sectional view, the section being taken on line 4—4 of Fig. 2 looking downwardly in the direction indicated by the arrow;

Fig. 5 is an isometric perspective view of the locking latch herein referred to, the latch being the one particularly illustrated in Figures 2 and 7;

Fig. 6 is a similar view of a cam hereinafter referred to which is adapted to be used with a square shaft and is of the type illustrated in Figures 2 and 3;

Fig. 7 is a view substantially on the line on which Fig. 2 is taken showing a slight modification in that the actuating cam of this figure is adapted to interlock with and be actuated by a round shaft, in contradistinction to the square shaft of Figures 2 and 3, and interlock with such round shaft as hereinafter described;

Fig. 8 illustrates in substantially the same section a modified form of locking means in which the slot of the locking latch is of a different contour for the purpose hereinafter more fully developed, this Fig. 8 being taken on the section line 8—8 of Fig. 9;

Fig. 9 is another view of the device shown in Fig. 8 shown partly in section, the section being taken on line 9—9 of Fig. 8;

Fig. 10 is an isometric perspective view of the actuating cam employed in the detail arrangement of Figures 8 and 9; and Fig. 11 is a section taken on the line 11—11 of Fig. 3.

The object of the invention is to provide simple, convenient, readily accessible and renewable locking latches adapted to cooperate with the outwardly swinging side gates of cane cars and similar railway rolling stock in which cars there is provided an underframe with a side wall made up of gates suitably supported at each side above said underframe and adapted to swing outwardly away from said underframe to permit dumping the load carried in the car at the side of the track when desired.

The structure is designed particularly for use in connection with cane cars in which the cane is loaded upon a suitable floor carried by the underframe and is held in position by means of outwardly swinging gates which should be readily releasable from the ends of the car so as to permit the load to fall outwardly and away from the tracks upon which the cars travel.

Various devices have been employed for this purpose, some of which have points of advantage, but there are inherent disadvantages in such devices which have been overcome by means of the present invention in which the parts are so coordinated that they are easily and quickly assembled and disassembled, and in the event of breakages, one or more of the parts may be renewed without taking down the whole assembly as has heretofore been found necessary with other devices employed for the purpose.

Referring specifically to the parts illustrated in the accompanying drawings, A indicates one of the side sills or underframing members of a car, B a floor carried by the car underframe, C, D and connecting web D′ one of the corner posts, E a side plate supported above the underframe. F indicates generally the side gate, which as will be observed is of the swinging type and is carried upon pintles, G, which extend longitudinally of and above the side sill. The gate structure extends longitudinally of the car, and when in closed position is in substantial parallelism with and closes against the side sill A.

Any convenient latch supporting means may be provided, within the scope of the invention, but referring to the specific means employed 20—20′ indicate brackets which are preferably rigidly secured to the side sills and it is to be observed that one of said brackets 20′, instead of being riveted thereto, is preferably bolted in position so as to be removable when desired for the purpose hereinafter indicated. Extending through and preferably supported by said brackets which are disposed at convenient intervals along the length of said side sill, is an operating shaft 21 an end of which is bent upwardly at 22 as shown in Fig. 1 and in the disclosure of the drawings a short angularly disposed slide 23 is secured to the member D and upon the member 23 a ring 24 is carried, which ring is adapted to slip over the angular upward extension of the shaft 21 to secure the parts hereinafter referred to in their locked position.

The brackets 20—20′ are provided with outwardly extending flanges 26 which are perforated for the passage of the shaft 21 and are also perforated to receive locking and guiding pins 27, the function of which will be hereinafter described. Said pins 27 are preferably held in position by means of cotters 28 projected through openings in said pins so as to prevent accidental displacement of such pins in service.

Preferably removably mounted upon the locking shaft 21 are cams 30 which cams in Figures 2 and 3 are shown provided with hubs 31 adapted to fit the non-circular shaft 21 and ride in the openings provided therefor in the flanges 26 of the brackets 20—20′.

Mounted upon the cams 30 are latch members 35, which latch members are slotted at 36 and in the slots 36 the pins 27 are positioned, as best shown in Figures 2, 3 and 7 of the drawings.

Where a circular shaft is employed I prefer to use the form of cam illustrated in Figures 7 and 10, which cam 30′, is provided with a locking teat 40 which is adapted to engage with a correspondingly shaped recess in the circular shaft 21′ so as to ensure actuation of said cam 30′ upon rotation of the shaft 21′.

An advantage in the present invention consists in the ease of assembling the latch members upon the actuating shaft and this is accomplished while the brackets or supports 20′ are removed and as follows:

Assuming that the actuating shaft is in position, the cams 30 or 30′ are slipped over the shaft, after which the latch members 35 are slipped over the cams by movement longitudinally of the actuating shaft, after which the bracket or support portion 20′ is moved to its operative position where it is removably secured to the underframe by bolts or otherwise with the pins 27 extending through suitable openings in the outstanding flanges 26 of the brackets 20—20′ and through the slots 36 of the latch members, after which the pins 27 are secured in position by the cotters hereinbefore referred to. A reversal of this operation will result in disassembling the latch members, which may be removed for renewal in the event of breakage or distortion due to service, or if for any reason the actuating shaft may become jammed and inoperative, as for example, in the event of the shaft becoming distorted.

In operation the devices shown in detail in Figures 2, 3 and 7 pursue the same relative path as illustrated by full and dotted lines in Fig. 2, in which figure it will be noted that the latch 35 is in its uppermost or locking position and the cam 30 is in a position in which the major portion thereof is positioned above the shaft 21. When said shaft 21 is rotated contraclockwise the cam 30 will be rotated and carried downwardly to the position shown in dotted lines Fig. 2 in which position the latch member 35 is retracted downwardly and outwardly to the position shown in dotted lines in said figure, thereby unlocking the gate and permitting it to move outwardly to dump the load in the car.

It may be desirable to give a different movement to the latch 35 in which said latch will in closing be caused to travel, first in an upwardly and then in an inward direction, in which case the modification shown in Figures 8 and 9 may be used, in which modification the slot 36′ instead of being relatively straight as shown in Figures 2 and 7 will be somewhat angular as shown in Fig. 8.

It is unimportant whether the square or round shaft is employed or whether the cams 30 or 30′ are secured upon said shaft as shown and described, or whether the shaft is of any other section and the cams are secured thereto or thereon by any other suitable means so as to cause rotation of the cams with rotation of the shaft as all are obviously within the present invention, which contemplates the employment of preferably a straight shaft portion extending parallel with and longitudinally of the underframe and carrying removable latches adapted preferably to contact with the outer face of a gate or side wall member, which is or may be impinged by the latches and thereby actuated or locked in closed position to retain the load in position within the car, and it is also unimportant whether the gates are of the skeleton type illustrated in the drawings or otherwise as may be desired.

What I claim is:

1. In a railway car, a side sill, a gate movable outwardly at its lower portion away from said sill, separable brackets carried by

said sill, a cam mounted in said brackets, a shaft adapted to operate said cam, a locking member for said gate operated by said cam and a guide for said locking member mounted in said brackets.

2. In a railway car, a side sill, a gate movable outwardly at its lower portion away from said sill, separable brackets carried by said sill, a cam mounted in said brackets, a shaft to operate said cam and a locking member for said gate held in operative position on said cam by said brackets.

3. In a railway car, a side sill, a gate movable outwardly at its lower portion away from said side sill, separable brackets carried by said sill, a cam mounted in said brackets, a shaft to operate said cam, a locking member for said gate held in operative position on said cam by said brackets and cooperating guiding means on said brackets and said locking member to guide said locking member upwardly and then inwardly into engagement with said gate.

4. In a railway car, a side sill, a gate movable outwardly at its lower portion away from said sill, a gate locking device carried by said sill comprising a shaft, a cam rotatable only with said shaft, a latch mounted on said cam so as to be actuated thereby, a bracket holding said cam and latch in cooperative relation and a guide on the bracket adapted to guide the latch into contact with an outer portion of said gate.

5. In a railway car, a gate, separable brackets carried by said car, an operating shaft, a cam operated by said shaft and a gate locking member operated by said cam, said brackets holding said cam in engagement with said shaft and said gate locking member.

6. In a railway car, a gate, separable brackets carried by said car, a cam rotatably mounted in said brackets, means to operate said cam and a locking member for said gate held in position on said cam by said brackets.

7. In a railway car, a side sill, a gate, separable brackets carried by said sill, an operating shaft, a slotted cam engaging said shaft and rotatably mounted in said brackets and a locking member for said gate operated by said cam, said brackets holding said cam in operative engagement with said shaft and said locking member.

8. In a railway car, a frame, a gate, separable brackets carried by said frame, an operating shaft, a cam slotted to receive said shaft, a locking member for said gate slotted to receive said shaft and having an opening to receive said cam, said cam and door operating member being held in operative relation by said brackets.

9. In a railway car, a gate, separable brackets carried by said car, a cam rotatably mounted in said brackets, a shaft to operate said cam, a locking member for said gate, said shaft, cam and locking member being held in operative relation by said brackets, and guide means for said locking member carried by said brackets.

In witness whereof I have have hereunto set my hand in the presence of two witnesses.

LEOPOLD ALMQUIST.

Witnesses:
JOHN B. D. THOMPSON,
A. KASSLER.