(No Model.)

2 Sheets—Sheet 1.

J. F. CLASS.

CAR BRAKE.

No. 496,600. Patented May 2, 1893.

Fig. 1.

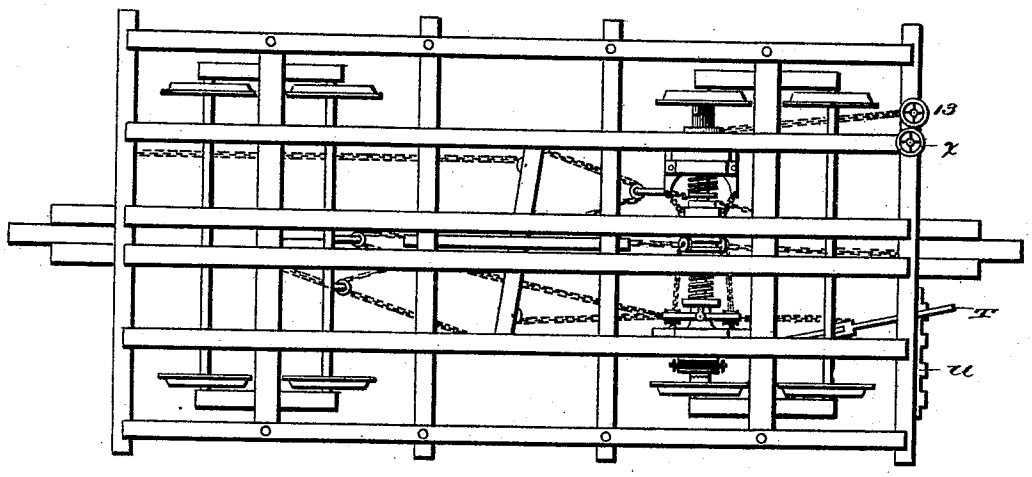


Fig. 2.

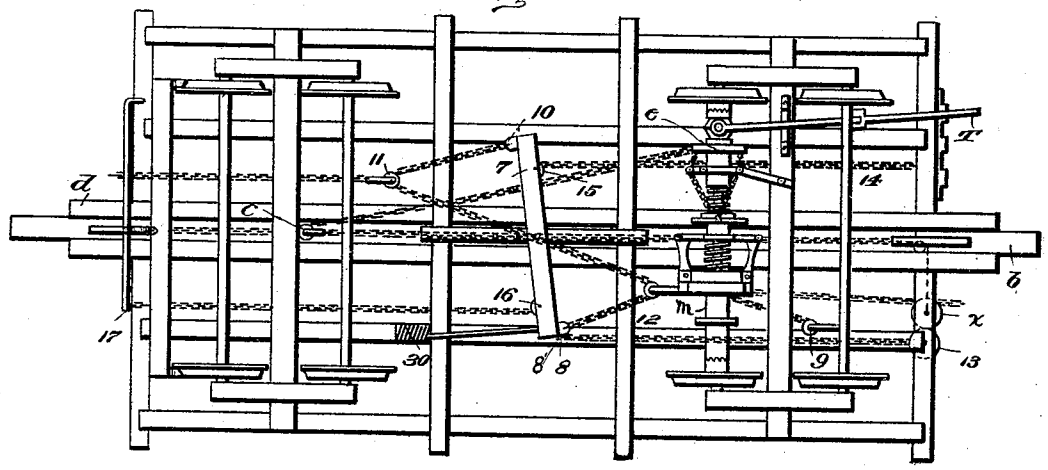
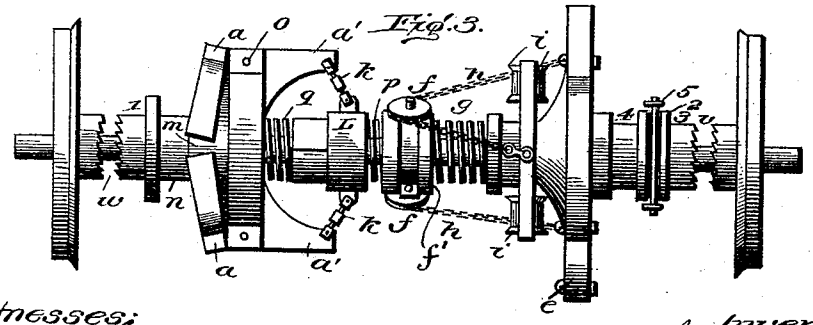


Fig. 3.



Witnesses:
Hugh F. Latimer
John F. Joseph

Inventor:
John F. Class
By John E. Latimer
Atty.

(No Model.) 2 Sheets—Sheet 2.

J. F. CLASS.

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Fig. 6.

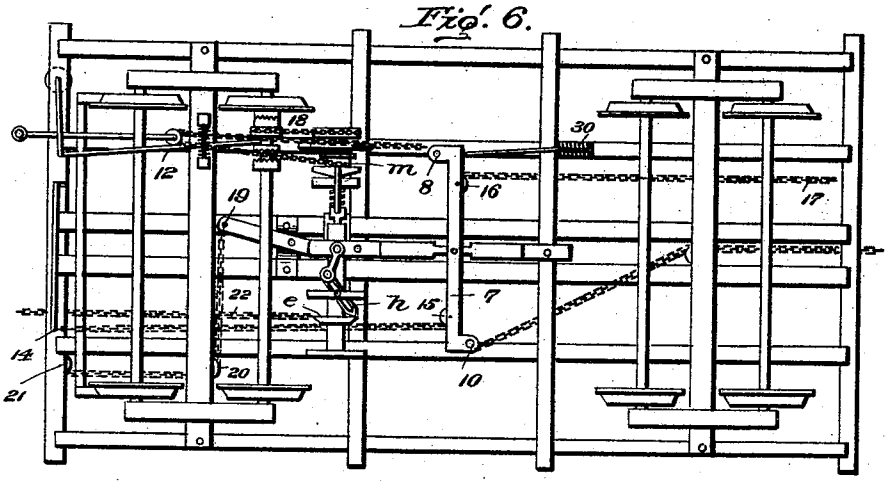


Fig. 7.

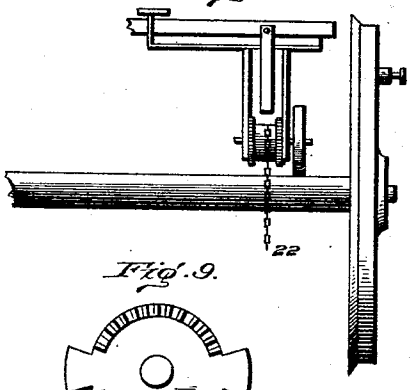


Fig. 8.

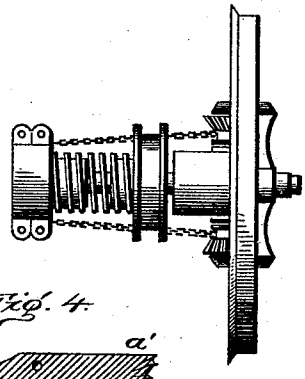


Fig. 9.

Fig. 4.

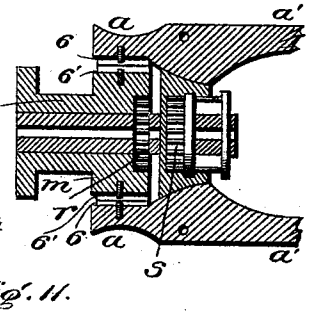
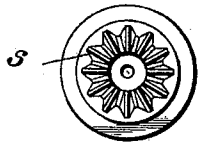


Fig. 5.



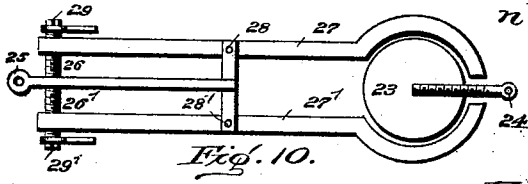
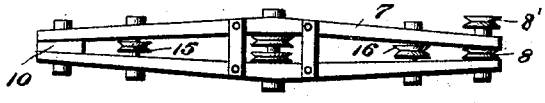


Fig. 10.

Fig. 11.



Witnesses:
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Atty.

UNITED STATES PATENT OFFICE.

JOHN F. CLASS, OF PLEASANT HILL, OHIO.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 496,600, dated May 2, 1893.

Application filed August 22, 1892. Serial No. 443,831. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. CLASS, a citizen of the United States, residing at Pleasant Hill, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Automatic and Hand Brakes; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in automatic or hand brakes as set forth in the following specification and claims and illustrated in the accompanying drawings, in which

Figure 1, is a view of a tender of a railroad engine from the top after the box has been removed. Fig. 2, is a view looking from beneath showing working of chains or cable. Fig. 3, is a view of the second axle of tender. Fig. 4, is a sectional view showing working of the clutch in Fig. 3. Fig. 5, is a sectional view showing a ratchet on shaft inside of clutch. Fig. 6, is a view showing the working by hand of brake on a car that has already been in use. Fig. 7, is a view showing the way by which the engineer may put on the brake with his foot. Fig. 8, is a view showing the way in which the combination can be attached to a driving wheel of any description. Fig. 9, is a view of dummy plate on driving wheel in Fig. 8. Fig. 10, is a view showing the manner in which chains or cables between engine and tender are connected to prevent breaking in case of accident. Fig. 11, is a view of lever 7 showing pulley wheels.

b is a bar to which the engine is hooked for the purpose of pulling train. There is a chain running from a brake wheel *x* over a pulley on bar *b* to the pulley wheel *c*, which is connected with bar *d* which is a corresponding bar to *b*, the chain running to a lever *e* for the purpose of throwing on or off the brake. The whole mechanism of Fig. 3 works on a hollow shaft which has a small shaft running from end to end to prevent one wheel from turning without the other.

i i are two spool-shaped wheels with rims which run together, thereby preventing a chain placed between them from slipping out. Lever *e*, bar on which spools *i i* work, the pieces on which pulleys *f f* are fixed, and spool *m n* revolve on the large hollow shaft. From clutch *a*, *a* to *l* both inclusive and pieces 1, 2, 3, and 4 are all made fast to hollow shaft. Piece 5 is a hollow band revolving on hollow shaft between two pieces screwed to said shaft for the purpose of forcing hollow shaft either against ratchet *v* or *w* as the desire is for the machine to go forward or back with the brake ready for action.

The starting of the engine, by means of the chain *x b c e* just described, causes lever *e* to be turned on the axle which pulls on chain *h* running between two spool wheels *i i* to draw pulleys *f f*, closing spring *g*; then as soon as engine stops pulling, spring *g* assumes its natural position. The clutch *a* is intended to clamp a wheel *m* which has a small part *n* in the middle to allow a chain to wind around when said wheel is clutched.

When lever *e* is released by engine stop pulling, spring *g* takes its natural position, pushing wheels *f* and *l* farther from the bar, thereby causing levers *k k* to stand nearer straight out from hinge on L which pushes *a' a'* farther from each other causing the clutch *a a* to close on wheel *m* because there is a pivot made by a bolt running through *o* and *a'*, *a*. Whenever the engine starts it removes the clutch from wheel *m* by closing spring *g*.

Spring *g* is strong enough to overcome spring *p* and *q* when entirely released. If spring *p* is not strong enough to put on the friction required to stop the train then it will overcome spring *q* and cause the cogs *r* and *s* as shown in Fig. 4 to fit each other making it impossible for wheel *m* to move except with shaft. When you want to throw this combination out of gear the engineer pushes lever *t* to the middle notch causing both ratchets *v* and *w* to pass freely.

If the engine is going forward and the engineer wants the brake in gear he pushes lever *t* to the left notch of ratchet *u* causing cogs *v* to strike, setting the whole machine in operation. If the engineer desires to brake

while backing, he pulls lever t to the right notch in ratchet u which closes the ratchet w, he then pulls lever e by means of hand wheel x which is fastened to the end of the chain which runs from x to b to c to e and thereby releases the clutch a allowing wheels to move freely.

Fitting on the rim of wheel m and inside clutch a are two shoes 6, 6′, made of brass or some other hard metal; these shoes are bolted one to clutch and the other to rim of wheel, m, and whenever worn can be removed and new ones put in their places, the clutch is also provided with two long nuts, k k; when the shoes have worn a little they can be closed by giving said nuts a turn.

7 is a lever fastened in the middle, having pulley wheels 8 and 10 at either end. A chain starting at spool wheel m runs to pulley 9 which is attached to the brake on the engine, then to pulley 8 then along said lever 7 to pulley 10, then to pulley 11 which runs to next car in rear for purposes hereinafter described, then to pulley 12, which is connected with any cars in front of engine then to pulley 8′, then to an ordinary hand brake which can be used when the engine is not attached. The object of this chain and pulleys is to draw lever 7 so that a chain attached to a brake at 14 running through lever 7 over pulleys 15, 16 and going to another brake at 17 will cause the brake bar to come in contact with the car wheels; spring 30 is used to relieve the brake when the chains are loosened.

Under every car there is a lever 7 with pulleys just described except instead of running from spool wheel m the chain now runs from pulley 10 to pulley 8.

This brake can be put on an old set of cars as shown in Fig. 6, by using an extra shaft running parallel with shaft on which car wheels are worked, by running an endless chain or cable 18 to obtain force to wind the chain on spool m. Lever 19 has a chain running over pulley 20 then to an ordinary brake wheel 21 (spring g being removed) the required friction being obtained by winding the brake 21. Chain h in this case must be replaced by an iron bar as represented by h Fig. 6, so that when chain 22 is drawn it will force clutch a to close as spring g did in Fig. 3. Between engine and tender in chain is a gage to allow chain to part before breaking.

23 Fig. 10 is a ball fitted between two clutches 27, 27, hinged on bolts 28, 28, with two springs 26, 26, strong enough to hold the ball in position until an extra strain comes.

29, 29, are two nuts, fitted on threads with handles on the same bar that springs 26, 26, are, so arranged that when the ball 23 gets out, spring 26, 26, can be closed, opening other end of 27, 27, and allowing ball to be put into its proper place. 24 is screwed in the ball 23 to hook chain which comes from engine; 25 is the hook for the chain going to tender.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of chain running from pulley x over pulley on hooking bar b, over pulley c to lever e, provided with chains h, h, spools i, i, collar f' provided with pulley wheels and clutch a, a, provided with levers a' a' provided with intermediate mechanism substantially as described.

2. The car brake combination of shifting bar T, collars 3 and 4, the lever e, provided with chains h, h, spools i, i, collar f' spring g.

3. The combination of lever 7 pulleys 13, 8, 10, 11, 12, 8′, 9, spool wheel m and chain running over pulleys 13, 8, 10, 11, 12, 8′, 9, to spool wheel m, pulleys 15 and 16 and chain running from brake at 14 over pulley wheels 15 and 16 to brake 17.

4. The combination of ball and socket consisting of the ball 23 stem to ball 24, hooking bar 25 springs 26 26′ nuts 29 29′ clutches 27 27′ bolts 28 28′.

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

JOHN F. CLASS.

Witnesses:
J. H. RIGGLES,
EDWARD L. LATIMER.