

H. G. COX.
Wagon-Brake.

No. 219,692

Patented Sept. 16, 1879.

FIG. 1

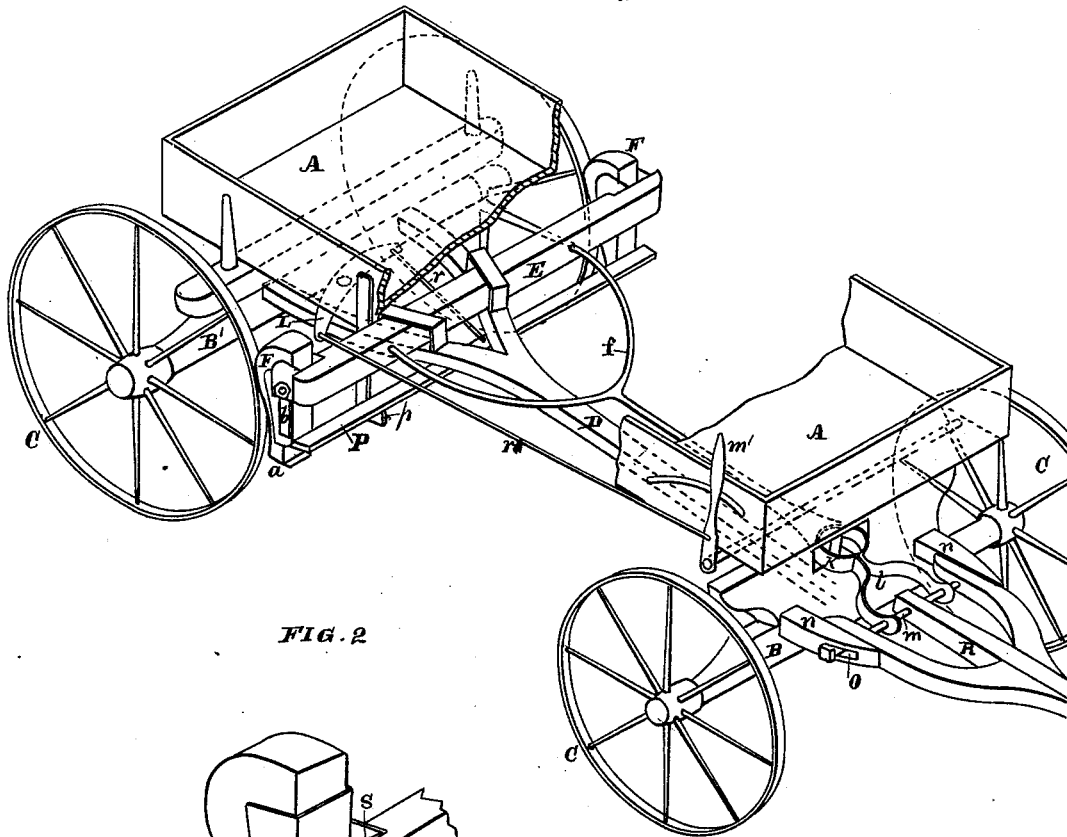


FIG. 2

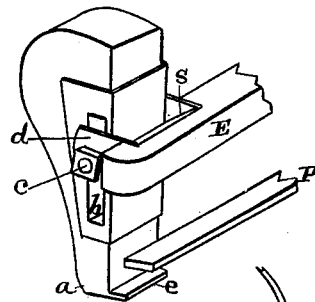
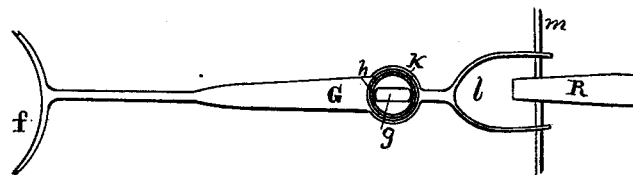


FIG. 3



Witnesses

Frank A. Brooks
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By *[Signature]*
attys

UNITED STATES PATENT OFFICE.

HARRIS G. COX, OF ALVARADO, CALIFORNIA.

IMPROVEMENT IN WAGON-BRAKES.

Specification forming part of Letters Patent No. **219,692**, dated September 16, 1879; application filed July 22, 1879.

To all whom it may concern:

Be it known that I, HARRIS G. COX, of Alvarado, county of Alameda, and State of California, have invented a Combined Horse and Hand Brake; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an improvement in wagon-brakes; and my improvements consist in so constructing the brake that it may be operated by the back-pulling action of the horses, or may be operated by an ordinary hand-lever, as desired, as is more fully described in the accompanying drawings, in which—

Figure 1 is a perspective view of my invention. Fig. 2 is an enlarged view of the brake-block. Fig. 3 is a view of the brake-bar attachment.

Let A represent the body, B the front axle, B' the hind axle, and C the wheels of an ordinary wagon, provided with the usual reach D for connecting the front and hind wheels. In guides on the reach moves the brake-bar E, on which the brake-blocks F are secured. These brake-blocks are made in a peculiar shape, being wider at the top than the lower end, rounded off from the head, and beveled downward, as shown, the lower end, *a*, being much thinner than the upper. Longitudinally in this block is cut a slot, *b*, through which passes a pin, *c*, fitting in lugs *d* on the brake-bar, this pin holding the block to the bar, as shown. On the lower front edge of the brake-block is formed a metal flange or lug, *e*, which prevents the brake-block rising higher than the supplemental or hand brake-bar P.

The side of the brake-bar is beveled off somewhat just above the block, as shown at *s*; in order that the upper end of the block may tip forward when the hand-brake is applied, and push the lower end of said block against the wheel, as hereinafter described.

Attached to opposite ends of the brake-bar E are the rods forming a yoke, *f*, which meet at the forward end on a widened or extended plate, G, having a slot, *g*, at its forward end. On top of this plate is formed a collar or ring, *h*, made of a diameter equal to the length of the slot, the king-pin passing through said slot and collar, as shown. This collar is encircled by a band, K, attached to a yoke, *l*, through

which the pin or rod, in connecting the tongue R and hounds, passes. In the sides of the hounds *n* are cut elongated slots *o*, and the pin or rod *m* passes through these slots, through the tongue-hounds and through the ends of the yoke *l*, as shown.

As the horses hold back on the tongue in stopping the wagon on going down a hill, they apply the brake at the same time. The tongue, on being pulled back, pushes the rod *m* back, which is rendered possible by the said rod sliding in the slots *o* in the hounds. This action forces the yoke *l* back, and, as the band on said yoke encircles the collar or ring *h*, formed in the plate G, and said plate G is provided with a slot, *g*, the yoke-rods *f*, attached to said plate and to the brake-bar, push the brake-bar back and force the blocks against the wheels. The moment the horses stop pulling back on the pole and put any strain on the traces the pole is drawn ahead and the brake-blocks removed from the wheels.

If at any time it is desired to slow the motion of the wagon or apply the brakes when the horses are pulling ahead, the same blocks may be pushed against the wheels by hand. In order to do this I swing on hangers *p*, under the hind hounds or reach, a supplemental or independent brake-bar, P. A lever, L, pivoted on the reach, is connected by rods *r* *r'* both with the said bar P and the hand-lever *m'*, the latter being placed on the side of the body. When this hand-lever is thrown forward it draws the supplemental bar P back, and this forces the lower end, *a*, of the brake-block against the wheels, the flanges or lugs *e* on said blocks catching on the bar P and preventing the brake-blocks from slipping up. This is necessary in case the horses back, since the peculiar construction of the blocks is such that if the horses back the wagon the blocks do not brake the wheels.

If, however, it is desired to prevent a wagon backing down a grade, the hand-brake may be applied, when the lugs on the lower end of the blocks admit of the hand-brake applying the blocks to the wheels without the said blocks sliding too far upward.

This brake is adapted to any ordinary wagon or vehicle or street-cars, and can be applied either by the power of the horses or by hand,

as desired. It differs from ordinary horse-brakes in that the wagon may be backed at any time without locking the wheels, while at the same time the wheels may be locked, if it is desired to do so. Either the hand or horse brake may be applied independently.

The peculiar method of joining the brake-rods to the yoke on the tongue-hounds is such that there is no binding action where the king-bolt passes through, no matter what angle the pole has in relation to the reach. Ordinarily at this point there is a binding or cramping, unless the pole is pushed back in a direct line with the reach; but the construction which I have shown obviates all this.

The shape of the brake-block is such that when the wheel is rolling ahead it crowds the block down in its place and holds it. When the wheel is moving back the tendency is to lift the block up off the wheel, which is possible, since the slot allows the block an upward motion, and, as the block is smaller at its lower than its upper end when it rises up, it is freed from the wheel, and the wagon may, therefore, be backed.

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

1. The brake-bar E, with its rods *f*, in combination with the slotted plate G, provided with the collar *h* and its encircling band K connected to the yoke *l* attached to the tongue-hounds, whereby the back-pressure on the tongue is imparted to the brake rod and bar without any binding and without reference to the angle of the tongue from the line of the reach or brake-rod, substantially as herein described.

2. The slotted plate G, with its collar *h* and encircling band or ring K, fitted to move about the king-pin of a wagon, in combination with the tongue-connecting yoke *l* and brake rod and bars *f* E, by which a rectilinear motion is imparted to the plate and brake-rod, notwithstanding the angle of the pole with reference to them, substantially as and for the purpose herein described.

3. The tongue R, with its rod *m* fitted to slide in the slots *o* of the hounds *n*, said rod having the yoke *l*, with its ring or band K, in combination with the slotted plate G, with its collar *h*, connected by the rods *f* with the brake-bar E, on which are mounted the loosely-swinging beveled brake-blocks F, whereby the backward action of the horses forces said blocks against the wheel for the purpose of locking them, substantially as herein described.

4. In combination with the loosely-swinging brake-blocks F, beveled as shown, and having the lugs or flanges *e* on the lower ends, *a*, the supplemental brake-bar P, provided with the lever L and rods *r r'*, for connecting said bar and the hand-lever *m'*, whereby the brakes may be worked by hand, substantially as herein described.

5. The loosely-swinging tapering brake-block F, with its flange *e*, adapted to have its lower end, *a*, pushed against the wheel by means of the bar P, rods *r r'*, and levers L *m'*, in combination with the brake-bar E, with its beveled edge *s*, whereby freedom of motion is given to said block sufficient to allow the lower end to be drawn back, substantially as and for the purpose herein described.

6. In combination with the tapering slotted brake-blocks F, with their flanges *e*, swinging loosely on the pins *c* in the bar E, the supplemental brake-bar P, with its rods and levers *r r'* L *m'*, and the slotted plate G, connecting with the bar E by the rods *f*, said plate having upon it a collar, *h*, on which moves a ring, K, fitted to a yoke, *l*, connecting with a pin, *m*, to the hounds of the tongue R, said pin *m* passing through elongated slots *o* in the wagon-hounds *n*, whereby the brakes may be applied by the action of the horses or by hand, or the brake put on or not, as desired, when backing, substantially as herein described.

In witness whereof I have hereunto set my hand.

HARRIS G. COX.

Witnesses:

CHAS. G. YALE,
FRANK A. BROOKS.