

(No Model.)

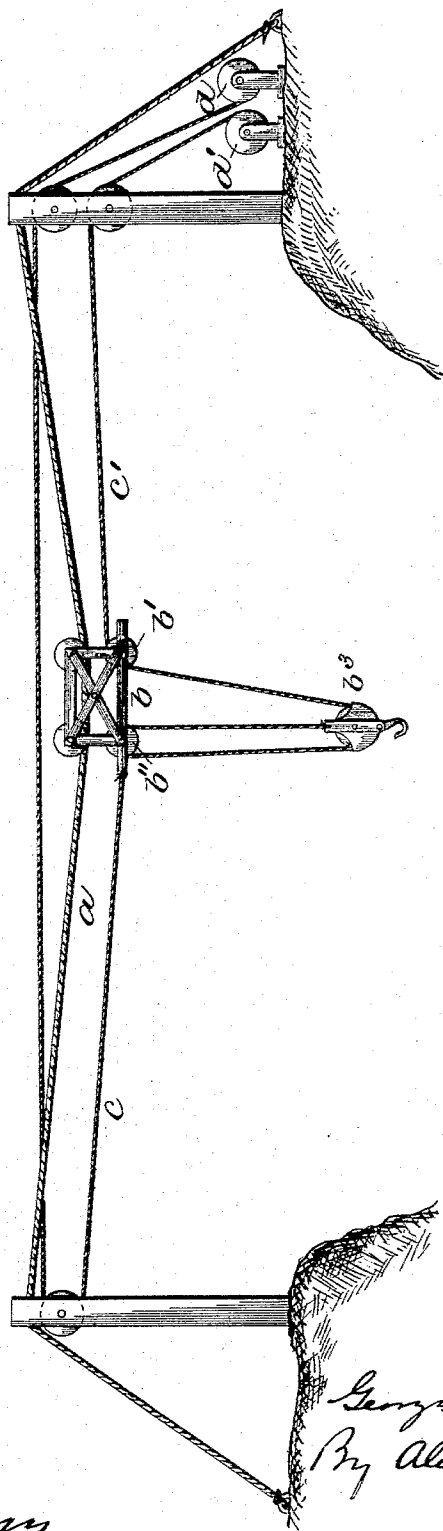
2 Sheets—Sheet 1.

G. W. WOOD.
ELEVATED CARRIER.

No. 533,770.

Patented Feb. 5, 1895.

Fig. 1.



Witnesses

H. J. North

John M. Munn

Inventor

George W. Wood

By Alexander Davis

Attorneys

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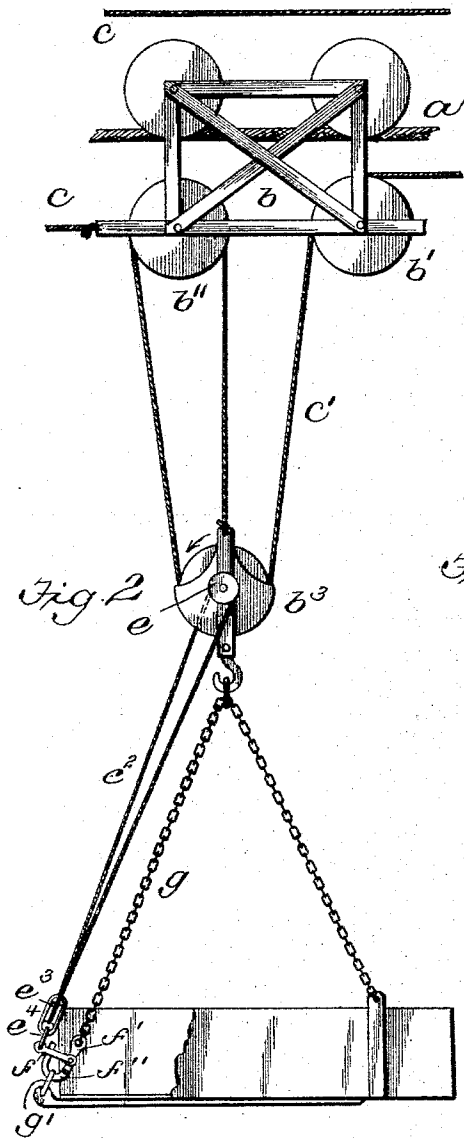


Fig. 3

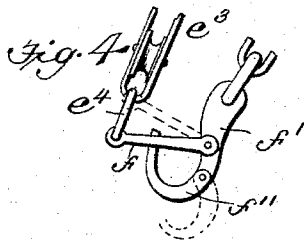
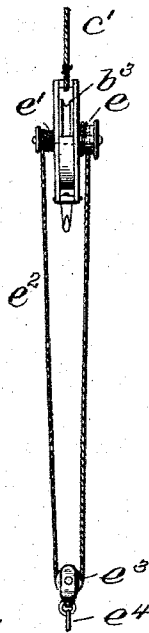
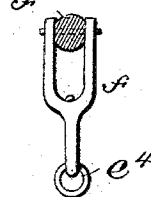


Fig. 5



Witnesses

H. J. North
Chas. M. Muzzey

Inventor

George W. Wood
By Alexander Davis
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE W. WOOD, OF LOCKPORT, ILLINOIS.

ELEVATED CARRIER.

SPECIFICATION forming part of Letters Patent No. 533,770, dated February 5, 1895.

Application filed September 17, 1894. Serial No. 523,259. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. WOOD, a citizen of the United States, residing at Lockport, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Elevated Carriers, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a diagram view of the arrangement I prefer for carrying out my invention; Fig. 2, a side elevation showing one form of dumping mechanism; Fig. 3, an end view showing the releasing or tripping cord used in said form of dumping mechanism, and Figs. 4 and 5 detail views of the releasing devices connected to the trip cord and suspending chain.

This improvement relates to that class of elevated carriers in which the carriage carrying the fall block devices is moved back and forth upon a main cable by a traveling rope; and the main object of the improvement is to provide an arrangement whereby a portion of the traveling rope is made to serve also the purpose of a hoisting-rope, whereby the use of an independent hoisting rope and the necessary devices for supporting said hoisting-rope is obviated as is more fully hereinafter set forth.

In the drawings, *a* designates the usual main cable; *b*, the usual carriage mounted on the cable and carrying two sheaves *b'* and *b''* journaled below the cable. The combined hoisting and traveling-rope is made in two sections, one section *c* being connected to the forward end of the carriage and passed around a suitable pulley or sheave at the far end of the main cable and is thence extended back to a drum *d*, supported near the engine, and is secured to said drum. The other part *c'* has one end connected to a drum *d'*, supported near the engine, and is thence carried forward over sheave *b'*, thence around under the sheave of the fall block and is then carried up over the sheave *b''* and then down to the fall block *b^s*, where it is secured. The drums *d* *d'* are of the same size and they may be mounted on the same or upon independent shafts, and any usual or approved mechanism for driving the drums in unison and independently of each other must be employed.

Any suitable mechanism may be employed for operating the drums.

It will be observed that to hoist the load it is simply necessary to hold drum *d* still and rotate drum *d'* so as to wind up the portion *c'* of the rope; and when the load has been raised to the desired height, to move the carriage along the cable to the dump, it is simply necessary to rotate one drum so as to unwind its rope and simultaneously rotate the other drum sufficiently fast to take up the rope as fast as it is paid off the other drum. If the drums are rotated at exactly the same speed the skip or bucket will be held in its raised position and the traveling rope will be held taut, as is evident. When it is desired to lower the fall block, it is simply necessary to clamp drum *d* and unwind drum *d'*. This simple arrangement does away with the use of an independent hoisting rope and the usual pendent fall-rope carriers. As the hoisting and traveling rope used in the present construction will always be kept taut, all devices for supporting this rope from the main cable are rendered unnecessary.

Any suitable dumping mechanism may be employed to empty the skip or bucket, but I prefer to use the dumping devices covered by my application, Serial No. 513,196, filed June 1, 1894, or the devices shown herein in Figs. 2 to 5 inclusive, as by said arrangements the skip may be emptied by simply raising the fall block slightly after it has been drawn to the dumping place.

In the form of dumping mechanism shown in Figs. 2 to 5 inclusive, I use two small drums *e* *e'*, one being larger than the other, and secure one drum on each end of the shaft of the sheave in the fall block, the shaft being extended on both sides for the reception of the drums. To each drum is attached one end of a single trip cord *e²*, the ends of the cord running over the drums in opposite directions so that when one end of the tripline is wound upon its drum the other end will be unwound from the other drum. In the loop thus formed is placed a small block or sheave *e³* which is connected by a link *e⁴* to one end of a loop *f*. The other end of the loop *f* is pivotally connected to the shank of a hook *f'* carried by one of the suspending chains *g*, the lower or

hooked end f'' of the hook f' being pivoted to the shank and adapted to have its free end engaged within the loop or clasp f . A ring or link g' connects the pivoted part f'' of the hook to the forward or tilting-end of the skip, and the clasp or loop f holds the hooked part f'' from swinging down and releasing the tilting end of the skip, so that all that is necessary to dump the skip is to swing the loop or clasp f up far enough to release said hooked part f'' , as shown most clearly in Fig. 4. As will be seen, the trip line and drum arrangement shown serves to automatically swing up the clasp f when the fall-block and skip are raised to a certain height. When the rope c' is drawn upon to raise the fall block, the sheave in the latter rotates in the direction of the arrow shown in Fig. 2 and carries with it the small drums $e e'$. The larger of these drums winds up its end of the trip line faster than the other drum unwinds the other end of the trip line, whereby the loop in the trip line is gradually shortened and the clasp f thereby swung off the end of the hooked part f'' . Of course, the trip line will be of sufficient length and the drums of proper size to permit the skip to be raised high enough for transportation without tripping the retaining devices.

30 Having thus fully described my invention, what I claim is—

1. The combination of a main track or cable, a carriage thereon, a fall block suspended from the carriage and means for raising and lowering said fall block, a skip suspended from the fall block, retaining devices carried by the skip, a looped trip line for operating the retaining devices, and means for shortening the loop in said trip line when the fall block is raised, substantially as described.

2. The combination of a carriage, a fall block suspended therefrom and carrying a sheave, a rope passing around said sheave and suspending the fall block from the carriage, a skip suspended from the fall block, retaining devices carried by the skip, a pair of drums on the shaft of the sheave and the fall block, one of said drums being larger than the other, the trip line having its ends secured to said drum and its loop connected to the retaining

devices, substantially as and for the purpose described.

3. The combination of a main track or cable, a carriage thereon, a fall block suspended from the carriage, means for raising and lowering the fall block, a skip suspended from the fall block, retaining devices adapted to support the skip in a substantially horizontal position, a trip-line connected to the retaining devices, and a drum on the shaft of the fall-block sheave, said drum being connected to the trip line and adapted to wind and unwind the same as the fall block is raised and lowered, substantially as described.

4. The combination of a fall block, a tilting skip suspended therefrom by means of chains, retaining devices adapted to hold the skip in a substantially horizontal position, said retaining devices consisting of a main hook f' carrying a pivoted hooked end f'' , this hooked end being adapted to engage a part carried by the tilting-end of the skip, and a loop or clasp carried by said hook f' and adapted to engage and lock the hooked-end f'' , and means for dis-engaging said loop from said hooked-end, substantially as and for the purpose described.

5. The combination of a main cable, a carriage thereon carrying sheaves $b' b''$, a pair of drums, a fall block, a rope c' connected to the fall block and extended up over sheave b'' , thence down through the fall block and then up over sheave b' to one of the drums, a rope c attached to one end of the carriage and extended to the far end of the cable and thence back to the other drum, a skip suspended from the fall block, retaining devices adapted to support the skip in a substantially horizontal position, a trip-line connected to the retaining devices, and a drum on the shaft of the fall block sheave, said drum being connected to the trip-line and adapted to wind and unwind the same as the fall-block is raised and lowered, substantially as described.

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

GEORGE W. WOOD.

Witnesses:

H. B. ALEXANDER,
E. H. LEE.