S. P. LERCH.

HAY CARRIER.

APPLICATION FILED DEC. 21, 1908.

938,775. Patented Nov. 2, 1909.

Fig. 1

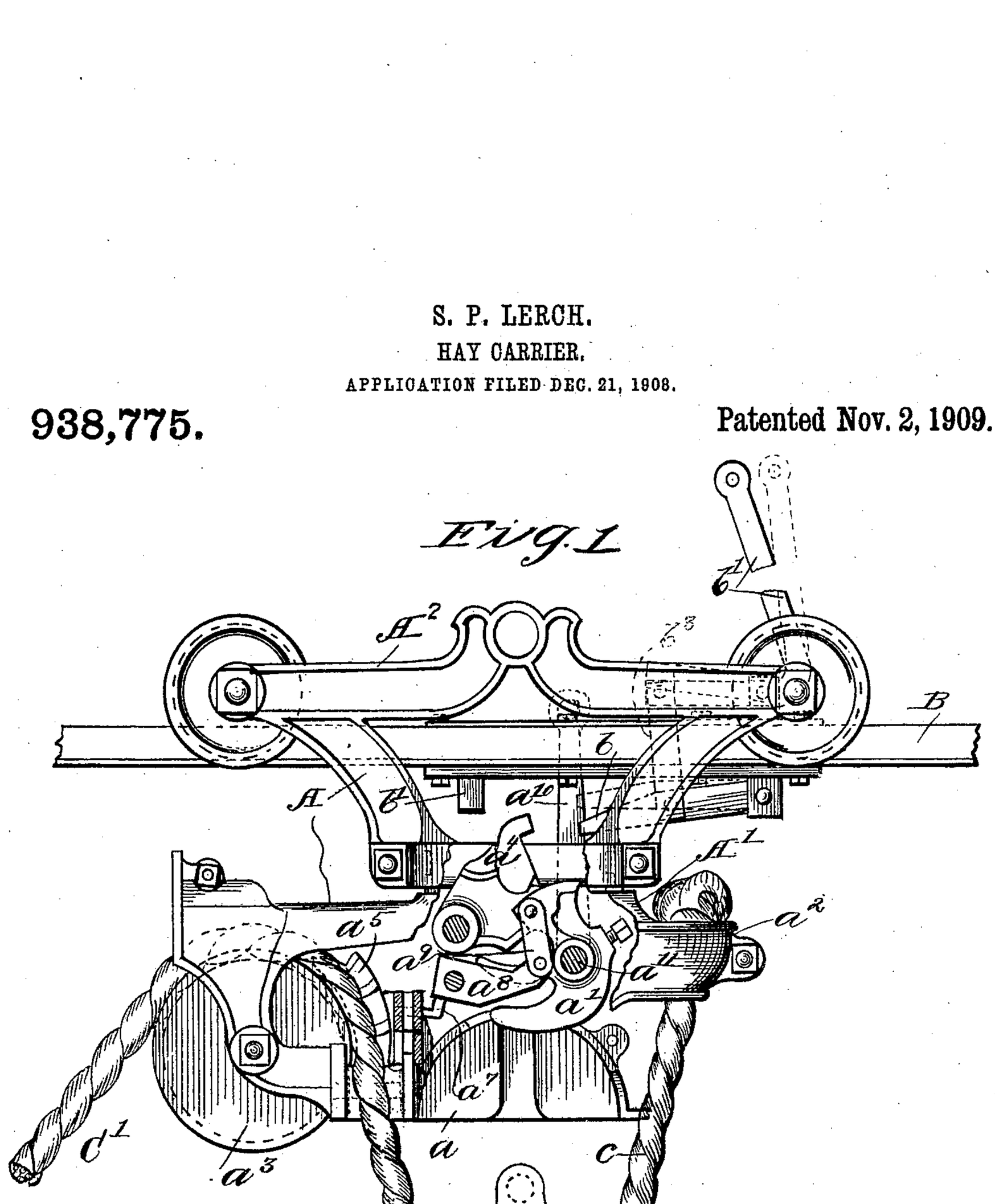


Fig. 2

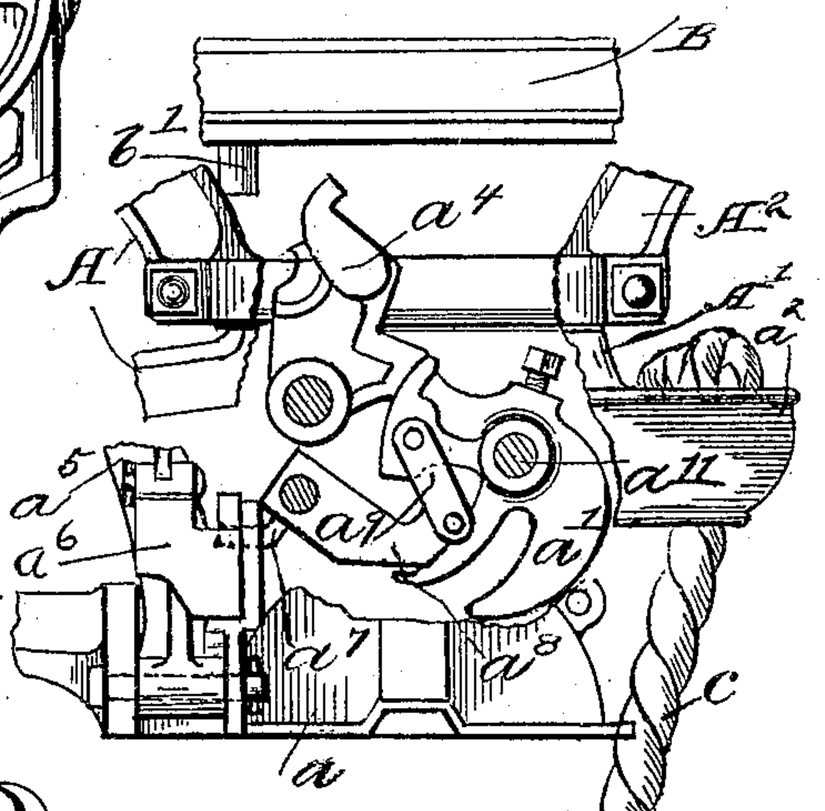


Fig. 4

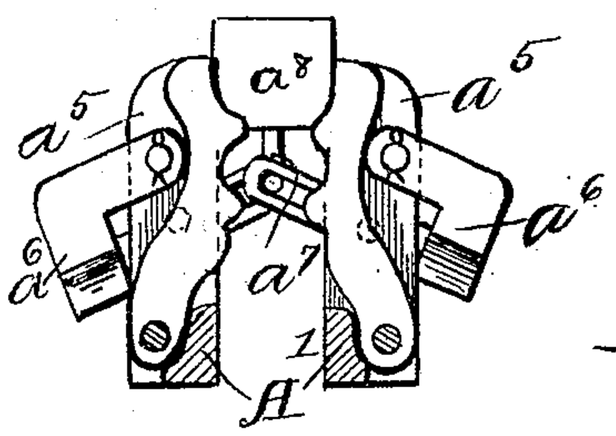
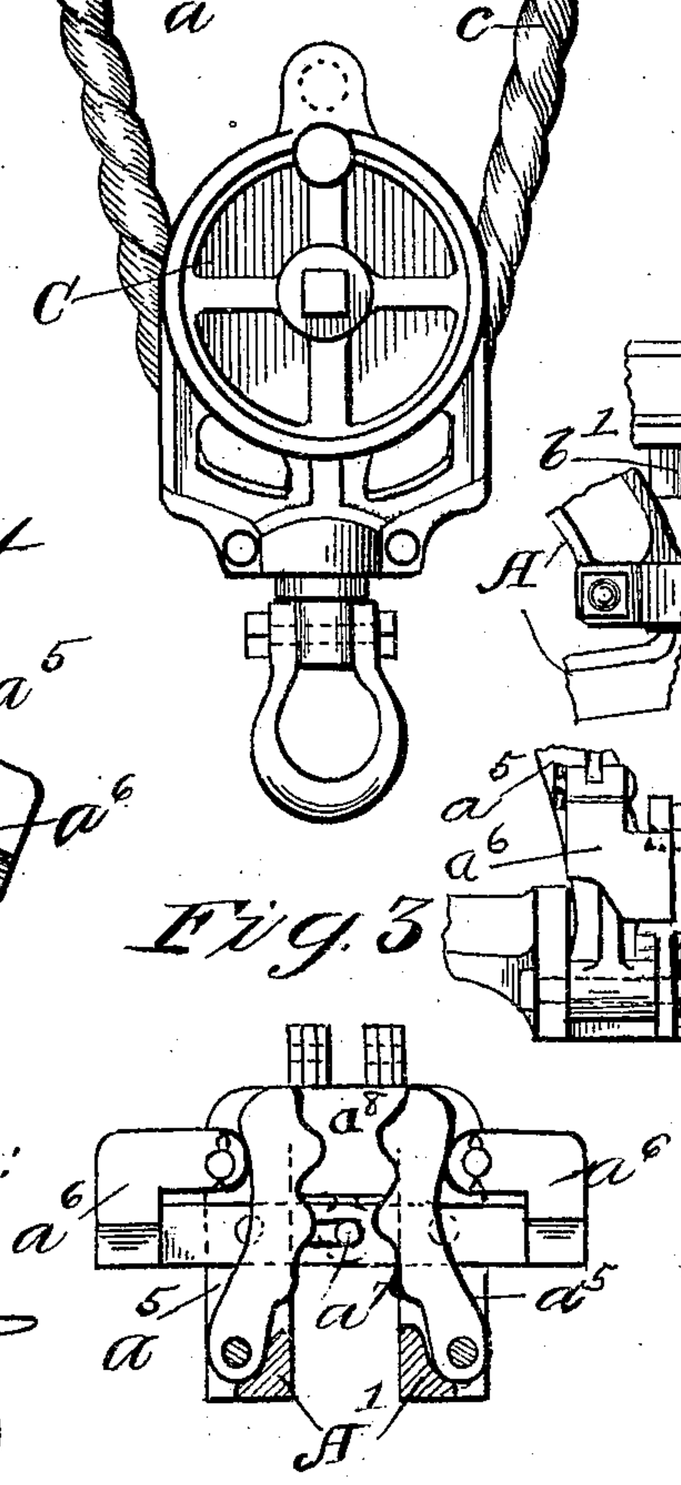


Fig. 3



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UNITED STATES PATENT OFFICE.

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HAY-CARRIER.

938,775. Specification of Letters Patent. Patented Nov. 2, 1909.

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To all whom it may concern:

Be it known that I, SAMUEL P. LERCH, a citizen of the United States, and a resident of Canton, county of Stark, and State of Ohio, have invented a new and useful Improvement in Hay-Carriers, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

In the construction of hay-carriers or hay-elevators, as the devices are variously known, it has been found desirable to provide means for sustaining the load at any desired elevation below the carriage by which it is transported, for example, from the wagon to the mow, in the case of the particular commodity in question. Ordinarily it will be understood, such carriers require to have the block or lifting-pulley to which the load is attached, raised into engagement with a hook in the carriage, thus necessitating in many instances considerable useless labor, as where the mow is only partially filled, the load being elevated the entire distance merely to be dropped an equal distance when the desired point for its deposition is reached. One form of construction for thus sustaining the looped portion of the hoisting cable, and the block attached thereto at any desired elevation is shown in my Patent No. 797,131, dated August 15, 1905.

The object of the present invention is to provide means for securing a similar result, but which, by operating on a different principle, will obviate a number of the difficulties inherent in the earlier construction.

To this and related ends, said invention then consists of the means hereinafter fully described, and particularly pointed out in the claims.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing:—Figure 1 is a side elevation, with parts broken away and shown in section, of a hay-carrier embodying my several improvements; Fig. 2 is a similar view of a portion of such carrier with parts shown in a different operative position; and Figs. 3 and 4 are end elevational views of the gripping mechanism proper that I utilize to sustain the cable in the manner above described, such mechanism being shown closed in the first instance and open in the second.

Only brief attention need be paid to the general features of construction of the carrier or elevator, comprising as it does, the familiar carriage A that is adapted to travel upon a suitable track B, in the present instance of T-cross section, made of two angle-bars placed side by side with their flanges disposed outwardly. The body A′ of the carriage is swiveled with respect to the portion A^2 that runs on the track, and is characterized by having a bell-like portion *a*, by means of which the hoisting block or lifting-pulley C, when raised, is guided into engagement with a hook *a′* pivotally mounted in such carriage portion. This block C is carried by the looped portion *c* of the hoisting cable C′, one end of which is secured to the carriage at a^2, the other end of which passes over a pulley a^3, and thence to the power, (usually a horse) hitched to such cable end. A dog a^4 pivotally mounted adjacent to the upper end of the hook, is adapted to lock the same in its operative position in which it engages the block, but is automatically raised from this position upon encountering a stop *b* provided for this purpose on the under side of the track B over the loading station. This stop in the present improved construction, however, is movable so as to permit of its being raised, as will be presently explained. A second fixed stop *b′* upon the under side of the track a short distance from the movable block, prevents movement of the carriage in the opposite direction, when dog a^4 is raised (Fig. 2), but permits such movement of the carriage when the dog is dropped into its locking position (Fig. 1).

The means provided for gripping the cable to sustain the looped portion thereof at any desired elevation, are designed to be entirely independent of the pulley a^3 in their operation, comprising two members a^5 pivotally mounted in the carriage frame (Figs. 3 and 4), the free ends of such members extending upwardly adjacent to said pulley, and on opposite side of the cable, so as to grip the latter upon being moved inwardly. Such inward movement of the gripping members a^5 is effected, upon the hook *a′* be-

ing raised to its operative position, by means of suitable connections, comprising in their preferred form, two transversely disposed levers a^6, the outer re-curved ends of which are connected with said members respectively, while the inner ends overlap and are slotted to receive the round end a^7 of another lever a^8 longitudinally disposed with respect to the carriage, and connected by means of links a^9 with the hook aforesaid. A lever a^{10} mounted upon one end of the short shaft a^{11} on which said hook is fixed, is utilized to thus operate the same, and, therethrough the gripping members when desired; and, as will be obvious, this operation will take place automatically whenever the hoisting block C is raised into engagement with the hook a' in the usual fashion. Another lever b^2 having one end connected with the movable stop b on the track by means of a link b^3, similarly serves to raise such stop when desired.

Having thus described the construction of my improved carrier, its mode of operation should be readily apparent. The load, attached to the hoisting block C in any approved fashion, may be raised to any desired height, short of a position in which such block actually engages the hook in the carriage, and then by pulling on a rope connected with actuating lever a^{10}, the gripping mechanism will be operated to close upon the cable, and securely sustain the looped portion thereof, so that the load can be transported at such intermediate position along the track. This is the condition of the carrier as illustrated in Fig. 1. This movement of the carriage is thus at the same time rendered possible, for by the same movement of the hook, the dog a^4 locking the same drops below the plane where it would engage the fixed step b' on the track. Should it be desired on the contrary, to move the carriage in the opposite direction, it is simply necessary to raise the movable dog b into the position indicated in dotted outline in Fig. 1, and thus leave the way clear for such movement also. On the return of the carriage, however, such movable stop being in its normal position, is adapted to raise the dog a^4, thus permitting the hook to drop into its inoperative position, and simultaneously release the cable from the gripping members a^5 so that the hoisting block may be lowered for another load. The condition of the carrier parts, when such carrier is held relatively stationary between the dogs b and b', is clearly shown in Fig. 2. In this condition it will be understood the members a^5 do not grip the cable, but allow the latter to run freely over pulley a^3 as is necessary in elevating the load. If it is desired to raise the load to the full height, it will be obvious that the carrier operates exactly as though no gripping device were provided in connection therewith. Such operation, aside from being self evident, is too familiar, to require description here.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. In a device of the character described, the combination of a carriage, a pulley borne thereby, a hoisting cable secured at one end to said carriage and passing over said pulley, and two members pivotally mounted in said carriage, their free ends extending upwardly adjacent to the curved edge of said pulley and on opposite sides of said cable so as to grip the latter upon being moved inwardly.

2. In a device of the character described, the combination of a carriage, a pulley borne thereby, a hoisting cable secured at one end to said carriage and passing over said pulley, means adapted to grip said cable to sustain the looped portion thereof at any desired elevation, manually operable means adapted directly thus to actuate said gripping means, and other means adapted automatically to release the latter.

3. In a device of the character described, the combination of a carriage, a pulley borne thereby, a hoisting cable secured at one end to said carriage and passing over said pulley, two members mounted in said carriage on opposite sides of said cable and adapted to grip the latter to sustain the looped portion thereof at any desired elevation, manually operable means adapted directly thus to actuate said gripping means, and other means adapted automatically to release the latter.

4. In a device of the character described, the combination of a carriage, a pulley borne thereby, a hoisting cable secured at one end to said carriage and passing over said pulley, two members mounted in said carriage on opposite sides of said cable and adapted to grip the latter to sustain the looped portion thereof at any desired elevation, manually operable means adapted directly thus to actuate said gripping means, and other means adapted automatically to release the latter, said last-named means being movable out of operative position when desired.

5. In a device of the character described, the combination of a carriage, a pulley borne thereby, a hoisting cable secured at one end to said carriage and passing over said pulley, a block carried by the looped portion of said cable, a hook pivoted in said carriage and adapted to engage said block, a dog adapted to lock said hook in its operative position, and means adapted to grip said cable to sus-

tain the looped portion thereof at any desired elevation, said means being connected with said hook so as to be thus actuated upon movement of the latter into its operative position.

6. In a device of the character described, the combination of a carriage, a pulley borne thereby, a hoisting cable secured at one end to said carriage and passing over said pulley, a block carried by the looped portion of said cable, a hook pivoted in said carriage and adapted to engage said block, a dog adapted to lock said hook in its operative position, two members mounted in said carriage on opposite sides of said cable and adapted to grip the latter to sustain the looped portion at any desired elevation, and means connecting said members with said hook whereby the former are actuated thus to grip said cable upon movement of the latter into its operative position.

7. In a device of the character described, the combination of a carriage, a pulley borne thereby, a hoisting cable secured at one end to said carriage and passing over said pulley, a block carried by the looped portion of said cable, a hook pivoted in said carriage and adapted to engage said block, a dog adapted to lock said hook in its operative position, two members pivotally mounted in said carriage, their free ends extending upwardly adjacent to said pulley and on opposite sides of said cable so as to grip the latter upon being moved inwardly, and means connecting said members with said hook whereby the former are thus actuated upon movement of the latter into its operative position, such means comprising a pair of transversely disposed levers respectively connected with said members at their outer ends, a longitudinally disposed lever engaging the other ends of said transverse levers, and links connecting said longitudinal lever with said hook.

8. In a device of the character described, the combination of a carriage, a pulley borne thereby, a hoisting cable secured at one end to said carriage and passing over said pulley, a block carried by the looped portion of said cable, a hook pivoted in said carriage and adapted to engage said block, a dog adapted to lock said hook in its operative position, means adapted to grip said cable to sustain the looped end thereof at any desired elevation, said means being connected with said hook so as to be thus actuated upon movement of the latter into its operative position, and manually operable means adapted to operatively position said hook and thus operate said gripping means.

9. In a device of the character described, the combination of a carriage, a pulley borne thereby, a hoisting cable secured at one end to said carriage and passing over said pulley, a block carried by the looped portion of said cable, a hook pivoted in said carriage and adapted to engage said block, a dog adapted to lock said hook in its operative position, means adapted to grip said cable to sustain the looped end thereof at any desired elevation, said means being connected with said hook so as to be thus actuated upon movement of the latter into its operative position, and a stop adjacent to the path of travel of said carriage adapted to engage said lock to release said hook therefrom and thereby release said gripping means.

10. In a device of the character described, the combination of a carriage, a pulley borne thereby, a hoisting cable secured at one end to said carriage and passing over said pulley, a block carried by the looped portion of said cable, a hook pivoted in said carriage and adapted to engage said block, a dog adapted to lock said hook in its operative position, means adapted to grip said cable to sustain the looped end thereof at any desired elevation, said means being connected with said hook so as to be thus actuated upon movement of the latter into its operative position, a movable stop, adjacent to the path of travel of said carriage, adapted in its normal position to engage said lock to release said hook therefrom, and thereby release said gripping means, and means for moving said stop from such normal position.

Signed by me this 19th day of December, 1908.

SAMUEL P. LERCH.

Attested by—
MARY GLADWELL,
JNO. F. OBERLIN.