

No. 788,543.

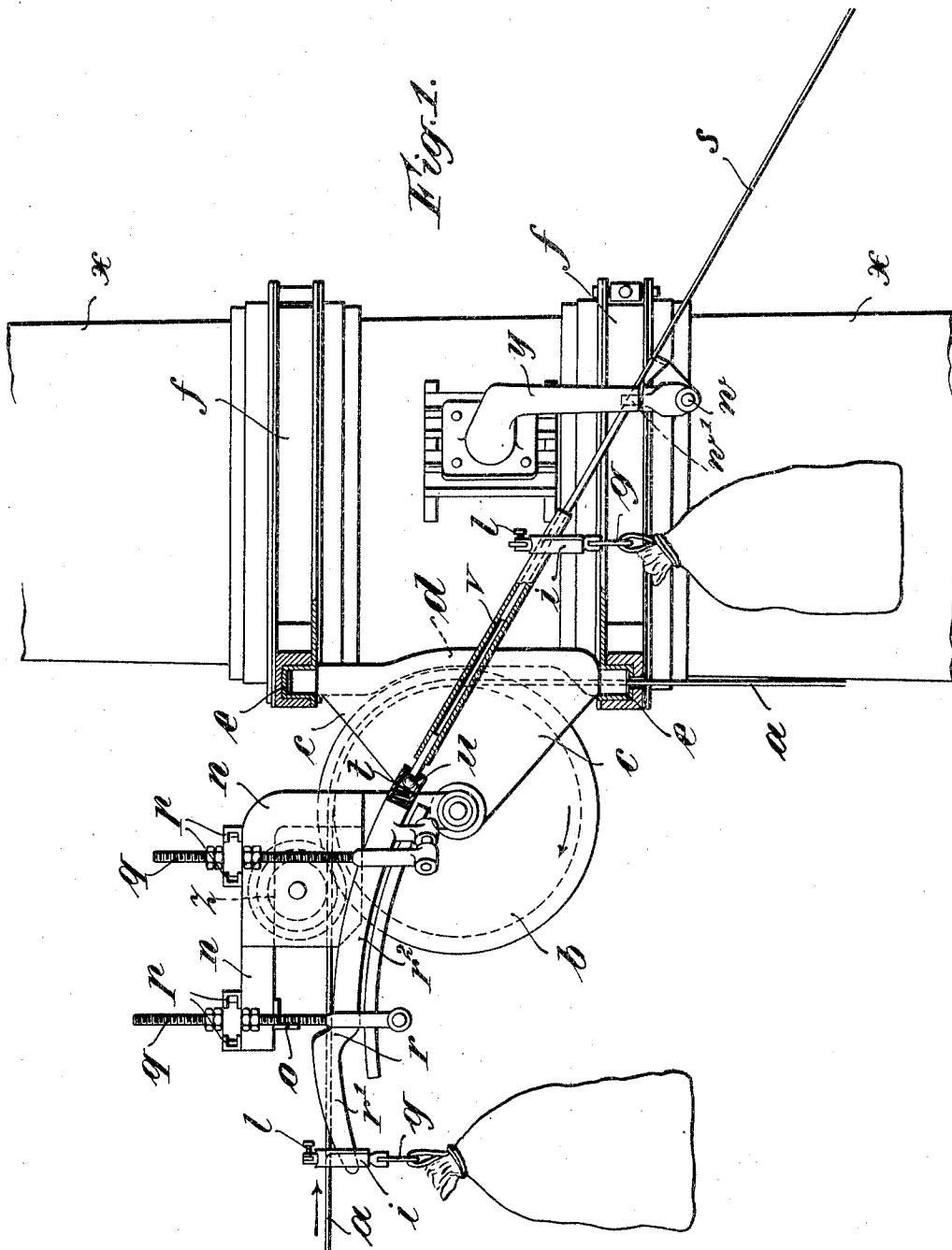
PATENTED MAY 2, 1905.

G. LEUE.

GOODS DETACHING DEVICE IN ENDLESS ROPE TRANSPORT APPLIANCES.

APPLICATION FILED SEPT. 29, 1904.

3 SHEETS—SHEET 1.



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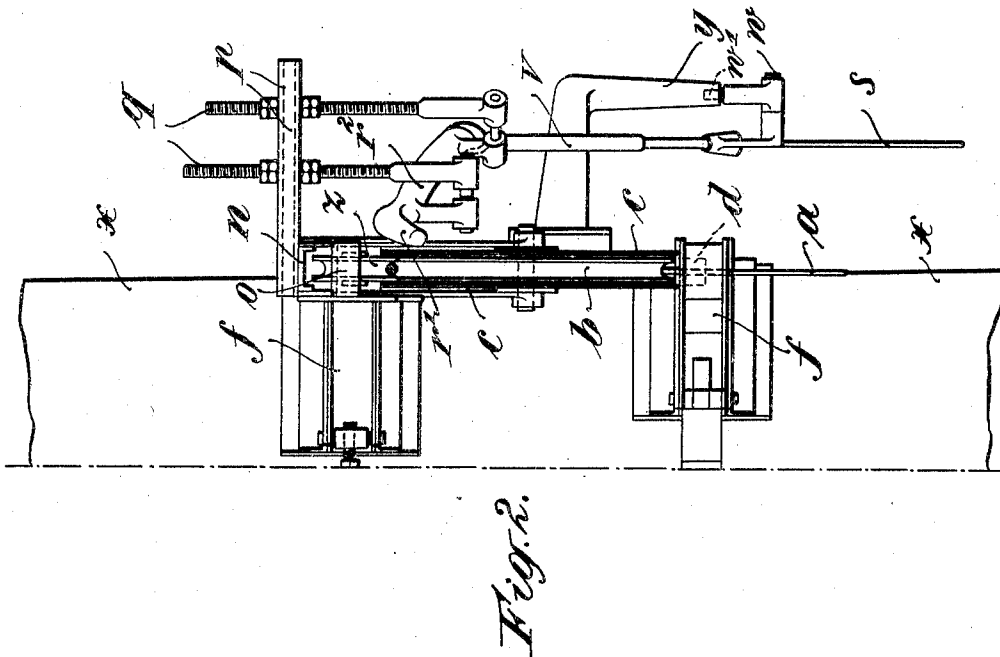
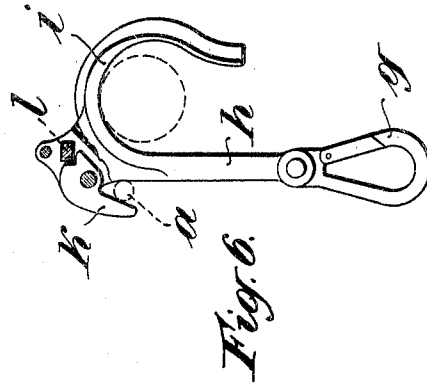
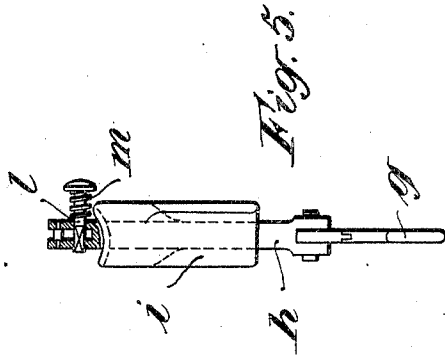
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

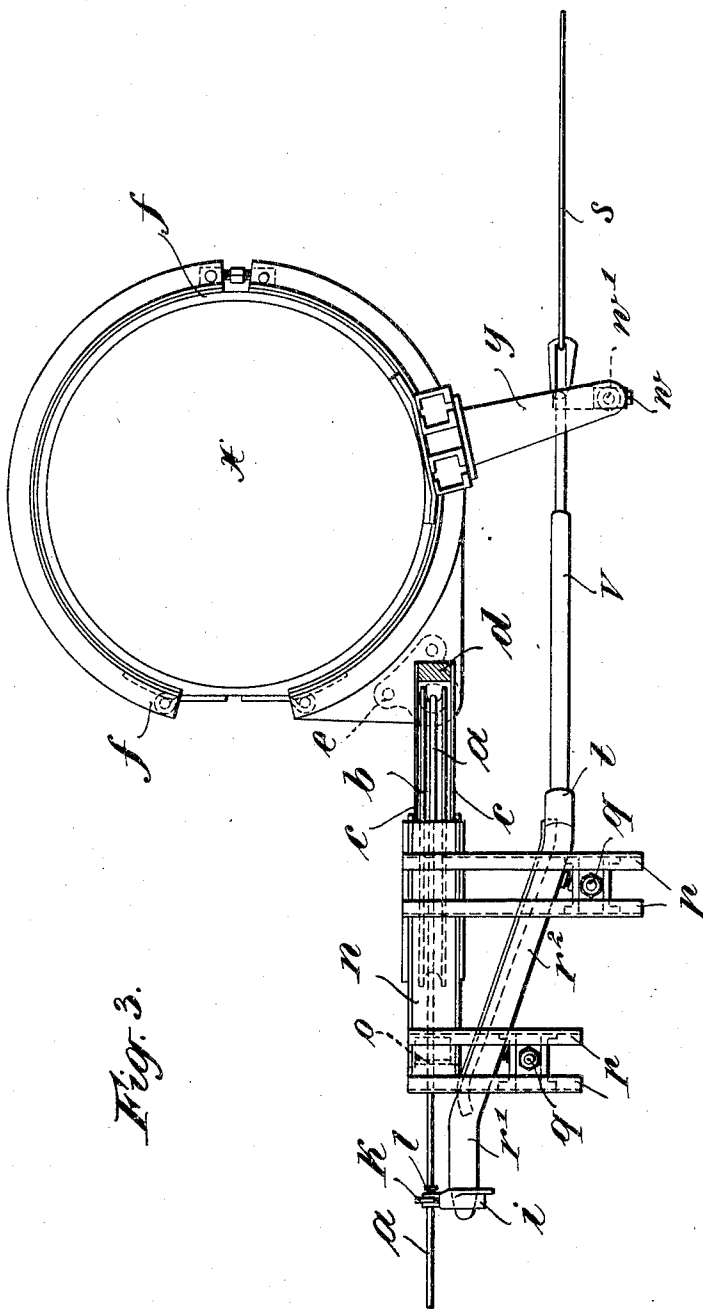


Fig. 3.

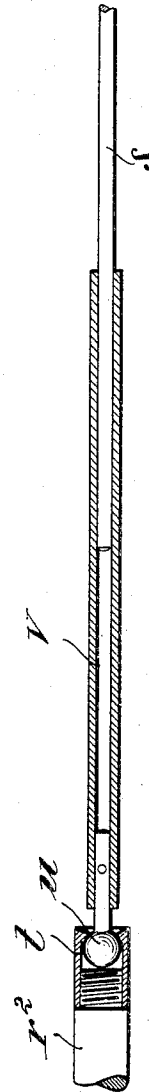


Fig. 4.

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UNITED STATES PATENT OFFICE.

GEORG LEUE, OF BERLIN, GERMANY.

GOODS-DETACHING DEVICE IN ENDLESS-ROPE TRANSPORT APPLIANCES.

SPECIFICATION forming part of Letters Patent No. 788,543, dated May 2, 1905.

Application filed September 29, 1904. Serial No. 226,591.

To all whom it may concern:

Be it known that I, GEORG LEUE, a citizen of the Empire of Germany, and a resident of Berlin, Germany, (whose post-office address is Kurfürstendamm 24,) have invented certain new and useful Improvements in Goods-Detaching Devices in Endless-Rope Transport Appliances, of which the following is a specification.

The subject of my invention is a device for automatically detaching and lowering the goods from endless-rope transport appliances, more especially those the points of suspension of the rope of which are movable, as is, for instance, the case in coaling apparatus for ships at sea.

My invention is illustrated in the accompanying drawings, which show one form of construction of the device as employed for coaling ships at sea—an endless transport-rope extending from the coaling-steamer to the warship in tow and running over pulleys secured to the masts of the two vessels.

Figure 1 is an elevation showing the improved apparatus and the adjacent portion of the endless-rope transport appliance. Fig. 2 is a side elevation seen from the left-hand side of Fig. 1, and Fig. 3 is a plan of same. Fig. 4 is a detail view, drawn to a longer scale, showing the means employed for connecting the delivery rail and wire. Fig. 5 is an edge view, and Fig. 6 a front view, of the goods-carrying hook, both being likewise drawn to a longer scale.

a is the endless transport-rope, which runs in the direction of the arrow on the grooved pulley b , the shaft of which is mounted in two plates c , carried by a bolt d . The ends of the latter turn in bearings e in the collars f , which embrace the mast x of the war-ship. Owing to this arrangement, the rope despite transverse movements of ship always remains in the plane of transport.

The rope a transports the sacks of coal uninterruptedly, the said sacks being hung on the rope in well-known manner by means of a double hook. For the sake of better understanding of the invention one of these double hooks is shown in Figs. 5 and 6. It consists of a safety-hook g , pivoted to a shank h , a

bill i , forming a large slide-hook, and a small hook k for engaging the transport-rope. The hook k is pivoted to the shank h in such manner that it can be turned back to release the rope immediately. A round pin l , having a larger rectangular end and sliding in the shank h , is pressed in against the action of the spring m so that the thinner round portion of the pin comes behind the hook k , thus allowing the latter space to pass by on being raised.

Immediately the sacks reach the end of the rope—that is to say, arrive at the mast x —they are removed automatically from the transport-rope and are transferred to a downwardly and laterally inclined delivery-wire, on which they slide down to the deck of the man-of-war. For this purpose an elbow-shaped arm n is loosely mounted on the shaft of the grooved pulley b , and to the top part of this arm is secured a roller z , resting on the rope a , so that the arm n shares all the vertical movements of the rope a . The arm n is provided with a stop o for the pin l of the hook k to strike against. The arm also has cross-bars p , into which are screwed bolts q , carrying the delivery-rail r . The latter consists of a somewhat ascending part r' , located close to the rope a , and descending part r'' , running away from the rope.

The delivery-wire s is not rigidly connected with the bottom end of the rail r , since the latter must follow the movements of the grooved pulley b caused by the motion of the ship and must always occupy the same position relatively to the transport-rope. For this purpose in the bottom end of the rail r is provided the socket t of a ball-joint, Fig. 4, in which socket a ball-head u , secured to a tube v , can freely turn. In the other end of the tube v there slides freely the upper end of the delivery-wire s . The latter turns on the horizontal pin w , passing through the lower part of an arm y , which is rigidly secured to the mast x , said lower part turning on a pin w' in the upper part of the arm y .

The operation of the apparatus is as follows: The sack of coals on the coaling-steamer is hung by hand or automatically, by means of the hook k , on the continuously-traveling endless rope a , which transports the sack to the

war-ship. Immediately the hook reaches the top end r' of the rail the large hook i will slide up the latter. At the highest point of the rail r the pin l of the hook will strike the stop o and will be pushed in in such manner that it releases the hook k , which now swings up so that the rope a is released. The hook i , with the sack, now slides down the part r^2 of the rail and over the tubular extension v on the wire s and thence to the deck, where the sack can be released from the hook. The empty sack, with hook, is then rehung on the other half of the rope a , whereby it is returned to the coaling-steamer.

15 In the herein-described apparatus the detachment of the goods from the transport-rope and the delivery of the same upon the deck goes on automatically without interruption and without any reference to the alteration of direction of the ship. This is due to the connection of the rope s to the rail r by means of the ball-and-socket joint $t u$ and the telescopic tube v and, further, to the universal joint at $w w'$, whereby the wire is rendered
25 wholly independent of the movements of the rail.

It will be understood that the constructional details of the apparatus may be greatly varied and the elements herein described replaced by
30 equivalent parts without departure from the essential features of the invention.

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

35 1. In a transport appliance for conveying loads in horizontal direction, in combination, an endless rope, a grooved pulley at the delivery end of the same, a horizontally-swinging arm secured to a suitable support and car-

rying the pulley, an arm carried by the pulley-shaft and having a roller resting on the endless rope, a vertically-adjustable, descending rail carried by the arm and laterally deviating from the rope, and a descending wire connected with the lower end of the rail by a
45 universal joint, substantially as described.

2. In a transport appliance for conveying loads in horizontal direction, in combination, an endless rope, a grooved pulley at the delivery end of the same, a horizontally-swinging arm secured to a suitable support and carrying the pulley, a descending rail located in the vicinity of the rope from which it laterally deviates, a suitably-supported descending wire, a tube receiving the upper end of the
55 wire, and a universal joint connecting the said tube to the bottom end of the rail, substantially as described.

3. In a transport appliance for conveying loads in horizontal direction, in combination 60 an endless rope, a grooved pulley at the delivery end of the same, a horizontally-swinging arm secured to a suitable support and carrying the pulley, an arm carried by the pulley-shaft and having a roller resting on the endless rope, a vertically-adjustable, descending rail carried by the arm and laterally deviating from the rope and a descending wire connected with the lower end of the rail by a universal joint and a universal-joint device
70 connecting the wire to a suitable support, substantially as described.

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

GEORG LEUE.

Witnesses:

WOLDEMAR HAUPT,
WILLIAM MAYNER.