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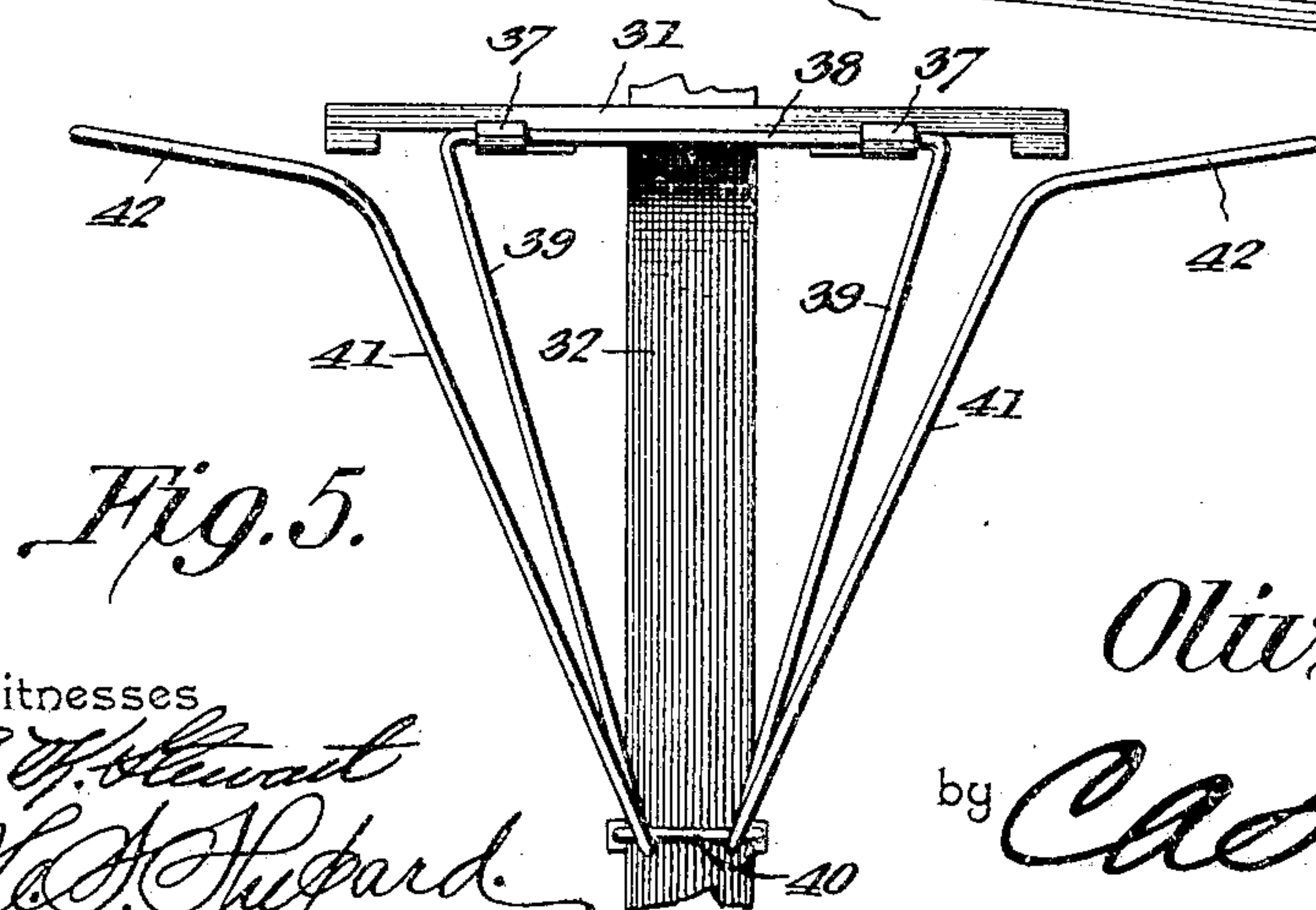
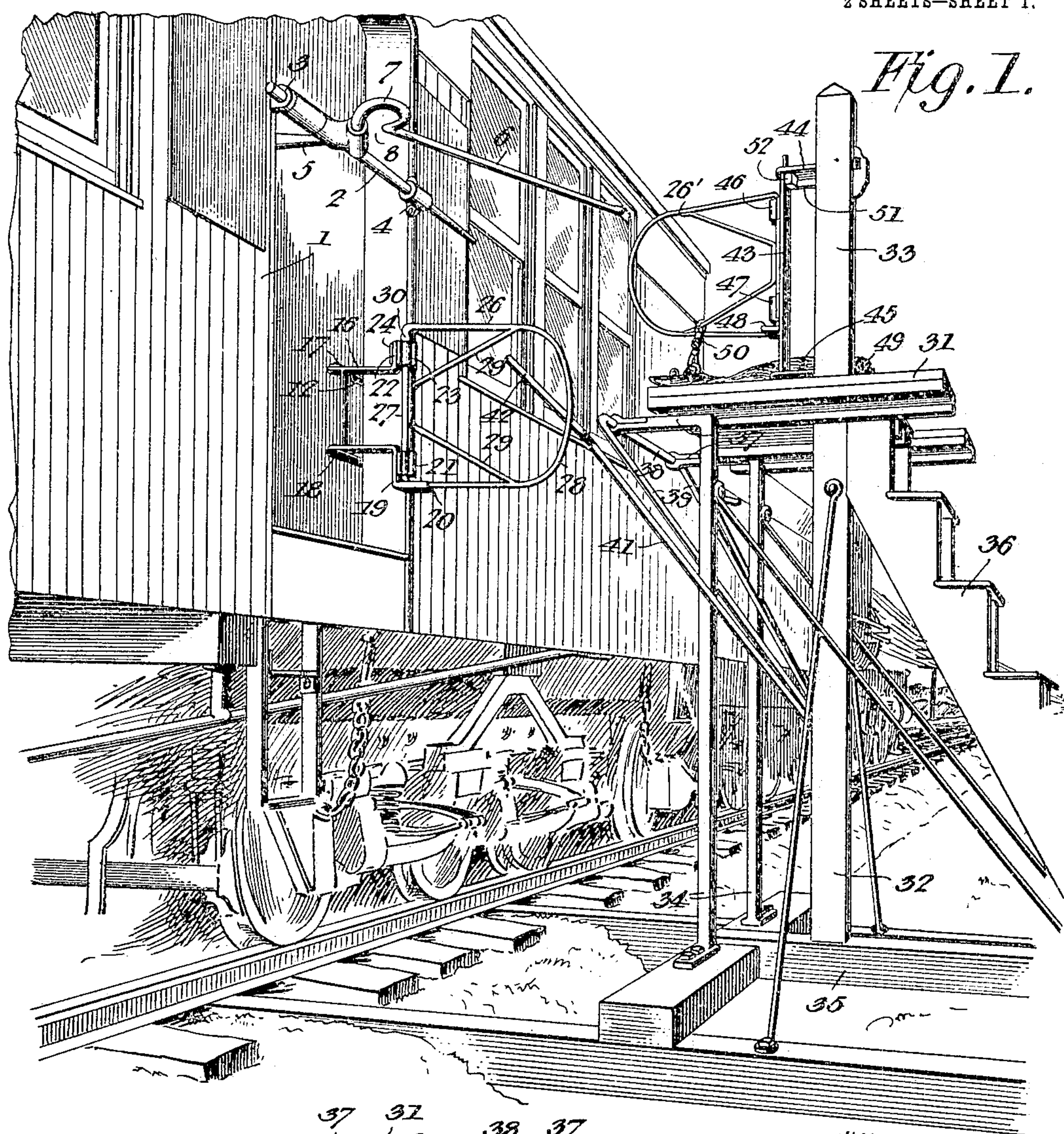
PATENTED APR. 25, 1905.

O. G. HOFF.

## MAIL BAG DELIVERING AND CATCHING APPARATUS.

APPLICATION FILED DEC. 23, 1904.

2 SHEETS—SHEET 1.



Witnesses

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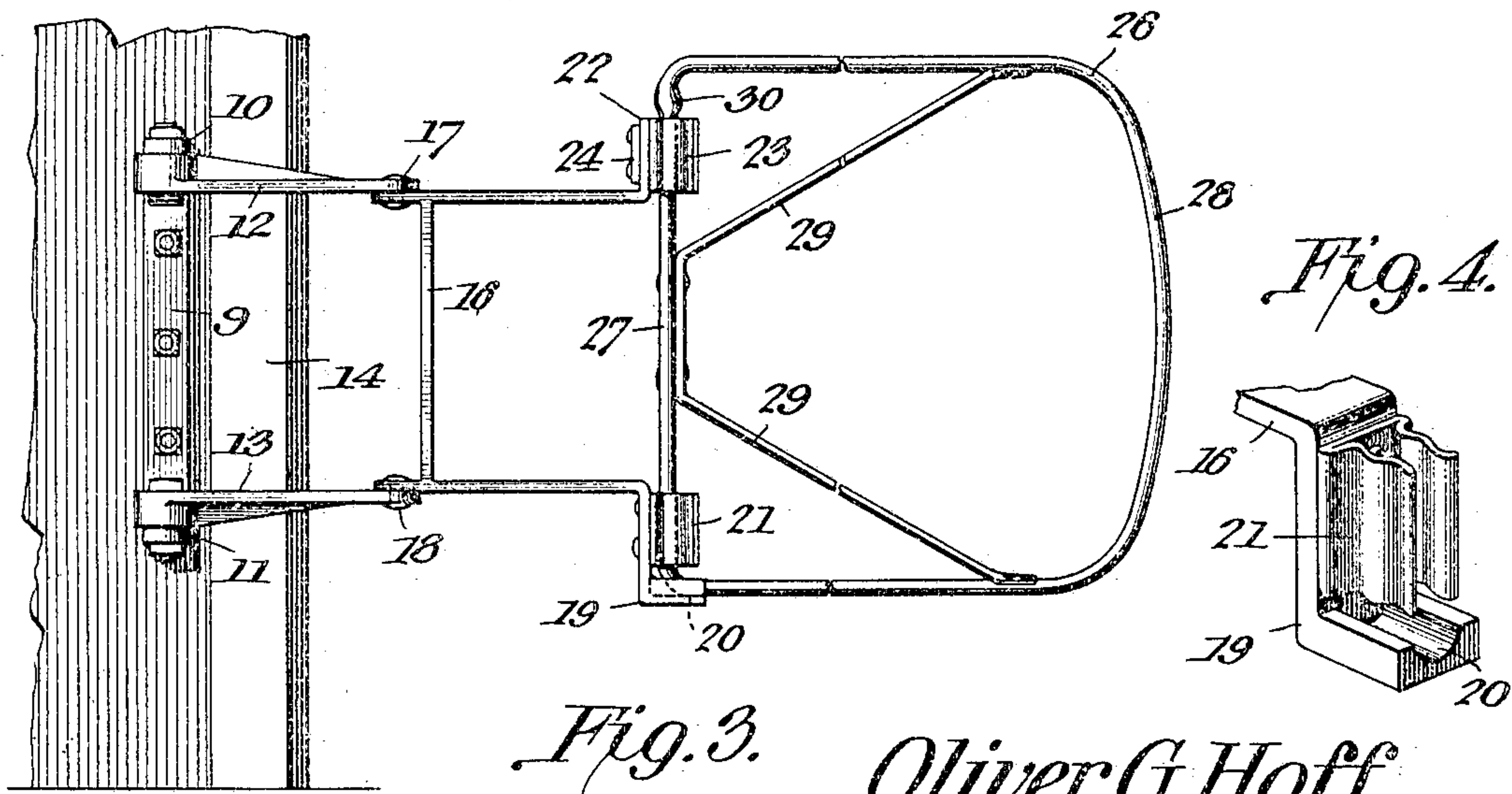
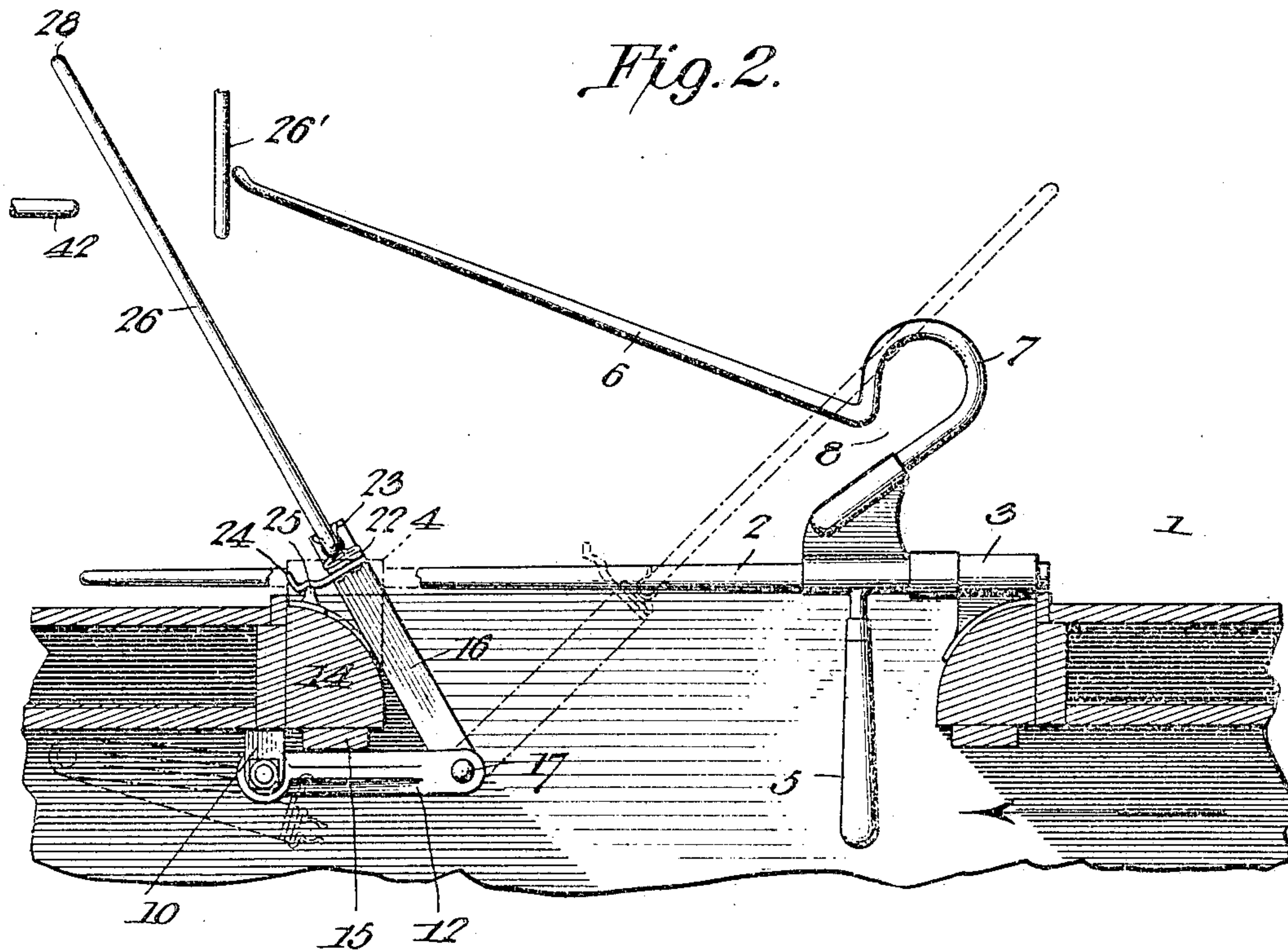
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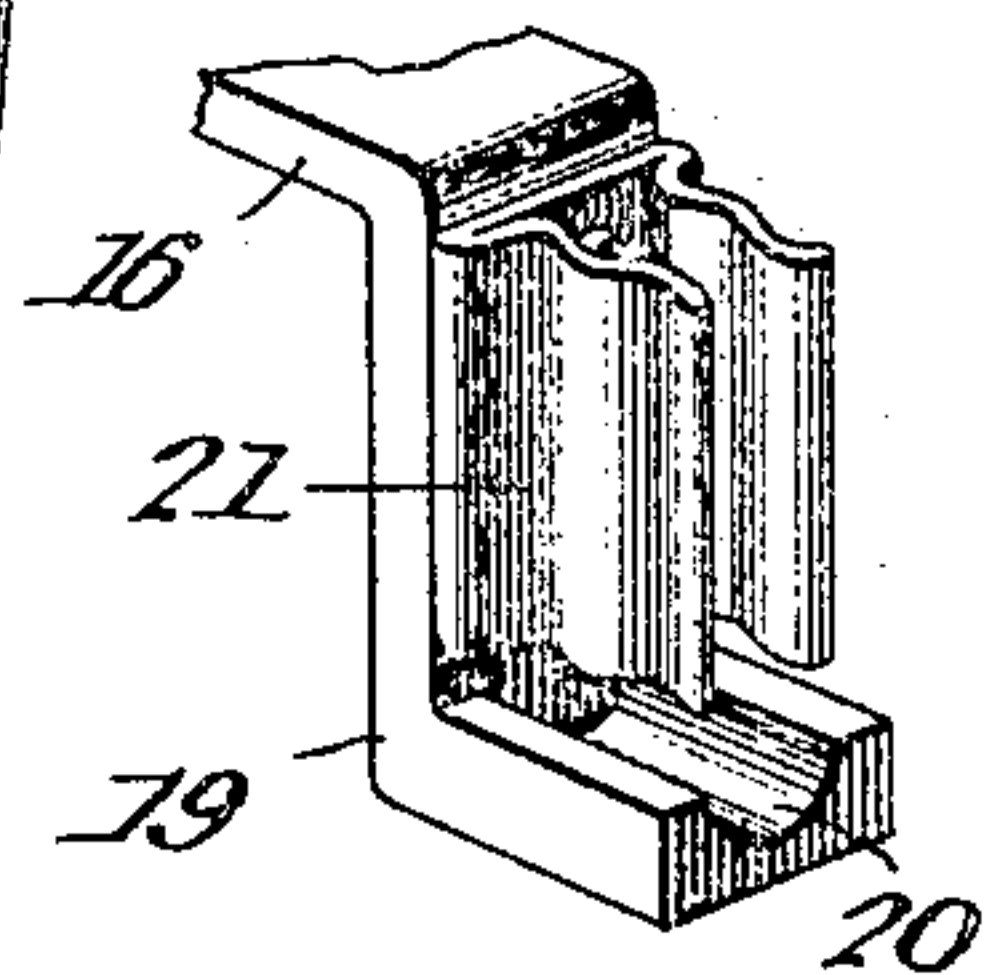
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*Fig. 4.*



Witnesses

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# UNITED STATES PATENT OFFICE.

OLIVER GARLAND HOFF, OF BALTIMORE, MARYLAND.

## MAIL-BAG DELIVERING AND CATCHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 787,983, dated April 25, 1905.

Application filed December 23, 1904. Serial No. 238,124.

*To all whom it may concern:*

Be it known that I, OLIVER GARLAND HOFF, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented a new and useful Mail-Bag Delivering and Catching Apparatus, of which the following is a specification.

This invention relates to apparatus for catching and delivering mail-bags with respect to a moving train, and has for its object to effect the transfer of the mail-bags in a simple and efficient manner without unnecessarily exposing the attendants during the operation of the apparatus. It is furthermore designed to provide for attaching the mail-bags to the car device within a car and then to effect the projection of the car device and the bag through the doorway of the car into operative position without requiring that the attendant expose any portion of his body at the exterior of the car. In this connection it is proposed to effect automatic locking of the car device in its projected operative position, so as to prevent displacement thereof by the rush of air past the car and to effect automatic releasing of the car device and throwing of the same back into the car by the operation of the stationary catching device in removing a bag from the car device.

A further object of the invention is to automatically withdraw a bag from a moving car by the stationary catching device to a point comparatively remote from the track and out of the current of air occasioned by the passing train, for the purpose of preventing the mail-bag from being swung back against the train and beneath the trucks thereof, as frequently happens with similar devices.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is

a perspective view of the improved apparatus in connection with a railway-car. Fig. 2 is an enlarged detail plan section taken through the car-door with the apparatus in position to simultaneously deliver and catch mail-bags. Fig. 3 is a detail elevation of the car device looking outwardly from the car. Fig. 4 is a detail perspective view of a portion of the car device. Fig. 5 is a detail view of the catching device which is independent of the car.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

In illustrating the present device there has been shown a portion of a mail-car 1, across the doorway of which is mounted the usual substantially horizontal rock-bar 2, terminally supported in suitable bearings 3 and 4 upon the door-frame and having a crank-handle 5 for rotating the bar to project and withdraw the arm 6, which inclines forwardly and outwardly from the rear portion of the bar and is provided at its rear end, where it joins the rock-bar, with a bend or loop 7, which is substantially circular in shape and has a contracted entrance-opening 8 located between the arm 6 and the bar 2, said contracted entrance-opening being a feature of the present invention, as will hereinafter appear.

Beneath the catching device and located at the forward side of the doorway is the delivering device, consisting of a stationary bracket 9, secured to the inner side of the car slightly in advance of the doorway, said bracket being provided with upper and lower substantially horizontal arms 10 and 11, whereby the bracket is yoke-shaped, and upon these arms the upper and lower links 12 and 13 are terminally and pivotally mounted so as to swing toward and away from the adjacent door-post 14, which latter operates as a stop to limit the outward swing of said links. A suitable metallic wear-plate 15 is applied to the inner side of the door-post 14 to take the wear of the links. A yoke-shaped swinging bracket 16 is pivotally supported between the outer free ends of the links 12 and 13, as indicated at 17 and 18, and is of a length to swing outwardly and forwardly against the exterior of the door-post. The outer end of the lower side of this



swinging bracket is provided with a pendent substantially L-shaped foot 19, which, as best indicated in Fig. 4 of the drawings, is provided in its upper side with a longitudinal groove or seat 20, intersecting the outer extremity of the foot, there being a substantially U-shaped spring-clip 21 secured to the front side of the upstanding part of the foot. The upper side of the swinging bracket terminates in an upstanding ear or extension 22 and carries upon its front side a substantially U-shaped spring-clip 23, similar to the spring-clip 21 and in vertical alinement therewith. Upon the rear side of the ear 22 is a spring-catch 24, designed to automatically snap into engagement with a keeper or catch projection 25 upon the outer side of the door-post 14 when the swinging bracket is swung out into its operative position, as indicated in Fig. 2, to prevent accidental displacement of the bracket by the rush of air past the train.

The stationary bracket 9 and the swinging bracket 16, connected thereto by the links 12 and 13, constitute a crane for the support of a mail-bag carrier 26 in the form of a continuous link, one upstanding side, 27, of which is straight, while its opposite outer side, 28, is bowed outwardly, there being internal brace-arms 29 extending from the side 27 to the top and bottom sides of the link. In fitting the carrier or link to the swinging bracket member 16 of the crane the straight side 27 of the carrier is snapped into the spring-clips 21 and 23 with the lower side of the carrier received within the seat 20 of the foot 19, there being an annular shoulder or enlargement 30 upon the upper end of the straight side 27, so as to engage the top of the clip 23, whereby the link-carrier will be rigidly supported upon the crane, so as to swing outwardly with the bracket 16 into the operative position shown in Fig. 2 of the drawings. By reason of the lower side of the carrier fitting in the seat 20 of the foot 19 the carrier is held against swinging movements upon its side 27 as a center, while the shoulder 30, engaging the top of the clip 23, prevents the carrier from tilting outwardly, while at the same time the carrier may be forcibly drawn outwardly from the clips in order that it may be delivered to a stationary receiving device mounted at one side of the railway-track in a manner as will now be described.

At one side of the track there is erected an elevated platform 31, which is supported upon an upright post 32, having its upper portion 33 rising centrally above the platform, there being suitable standards 34, rising from base-sills 35, to support that end of the platform which is adjacent the railway-track, access being had to the other end of the platform by means of a ladder or steps 36. A pair of substantially horizontal brackets 37 project at the front of the platform and carry a substantially horizontal bar 38, each end portion

of which is inclined rearwardly, as at 39, to form a brace which extends downwardly and is connected to the post 32 by a suitable fastening—such, for instance, as a clip 40—and from this clip the bar inclines upwardly toward the railway-track and away from the platform, as at 41, with its outer end 42 extended in a substantially horizontal position away from the platform and in approximate parallelism with the track to form an arm which is designed to be received within the bag-carrier 28, which is mounted upon the car, whereby the carrier will be dragged from the train without requiring that the latter be stopped.

In order that a bag may be delivered from the platform to the train, a carrier 26', which is a duplicate of the carrier 26, is supported upon the post 33 by means of a rotating crane 43, which is in the nature of an upstanding bar having its opposite ends journaled in brackets 44 and 45, projected forwardly from the post 43, there being upper and lower spring-clips 46 and 47, carried by the front of the crane for engagement by the straight side of the carrier in the manner hereinbefore described for the car device. The foot-piece 48 is carried by the crane 43 below the lower spring-clip 47 and is provided with a seat for the reception of the lower side of the carrier 26', as described for the foot 19, whereby the carrier 26' is held at substantially right angles to the passing train in position for the arm 6 of the catching device to enter the carrier, and thereby drag the latter from the crane 43 into the loop or seat 7 of the catching-arm 6.

In practice the mail-bag 49, which is to be delivered to a passing train, has its usual snap-hook 50 engaged with the lower side of the carrier 26', with the bag supported upon the top of the platform and the carrier disposed at substantially right angles to the railway-track, whereby as the train passes the platform the arm 6 will enter the carrier and drag the latter and the mail-bag from the platform, the bowed side of the carrier entering into the loop or seat 7 of the arm 6. By reason of the contracted entrance-opening 8 of the seat 7 the carrier will not be displaced therefrom by the swinging movement of the bag until the rock-bar 2 can be turned to bring the mail-bag within the car, wherefore it will be understood that this form of loop or seat having a contracted entrance-opening is a very advantageous feature of the present invention. While only one bag has been shown connected to the carrier 26', it will of course be understood that it is possible to connect several bags to the carrier, and thereby to simultaneously transfer or deliver all of them to the passing train.

To transfer or deliver a mail-bag from a passing train, a mail-bag is connected to the carrier 26 and the car-crane swung out to the positions indicated in Figs. 1 and 2 of the



drawings, whereby the carrier is located in a position to receive the arm 42 of the stationary catching device, and the car-crane and the carrier 26 will thereby be swung from their full-line positions in Fig. 2 to their dotted-line positions, when the pull of the car will be placed longitudinally upon the carrier and the latter will be drawn out of the spring-clips 21 and 23 without injury thereto, and then the carrier, with the bag, will slide down the gravity-chute formed by the shank 41 of the catcher, thereby to automatically draw the carrier and the mail-bag away from the train, so as to prevent the mail-bag from being swung back against the side of the car and drawn in beneath the wheels, as frequently happens.

In setting the car device the carrier 26 is of course engaged with the swinging bracket member 16 of the crane when the latter is within the car, and then the crane is swung out into the position indicated by full lines in Fig. 2, whereupon the spring-latch 24 will snap into engagement with the catch 25, and thereby automatically lock the crane against displacement by the current of air passing the car. This manipulation of the crane may be accomplished entirely within the car, and therefore the mail clerk need not expose any portion of his body at the exterior of the car. When the carrier 26 engages the stationary catcher and removes the carrier therefrom, the initial swinging movement imparted to the crane will automatically swing the latter around to its folded dotted-line position in Fig. 2 of the drawings without any manual manipulation whatsoever, and therefore the mail clerk need not expose himself to withdraw the crane.

It will now be understood that the crane 43 upon the platform 31 is mounted to rotate in order that the carrier 26' may be drawn in an endwise direction out of the spring-clips 46 and 47 in the manner described for the car device, and in order that the crane may be yieldably held in the position indicated in Fig. 1 there is a leaf-spring 51 secured to the post 33 with its free end bearing against a block or cam 52, carried by the back of the crane 43, so as to prevent rotation of the crane by the rush of air occasioned by the train before the catching-arm 6 reaches the carrier 26'.

While one delivery-crane 43 is sufficient for delivering a mail-bag to the train, it is of course necessary to have two catchers 42, one at each side of the platform and extending in opposite directions, so as to take the bags from trains passing in either direction.

From the foregoing description it will be understood that the delivering-carriers may be very quickly engaged with the respective cranes, and there is no possibility of the carriers becoming jammed or interlocked with the cranes, and therefore a prompt delivery of the carriers to the catching devices is as-

sured. Moreover, by reason of the downward and rearward inclination of the shank or standard portion of the catcher which receives the carrier from the train said carrier and its mail-bag are quickly and effectually drawn away from the crane, so as to prevent the bag from being swung back into engagement with the car, and thereby damaged. Another advantage of this invention resides in the fact that all of the parts of the stationary receiving and delivering part of the apparatus are located sufficiently remote from the track to prevent injury thereby to any of the trainmen, and there are no vertically-swinging members which are liable to swing down into close proximity with the train after a bag has been removed therefrom, as in other catching and delivering devices.

Having fully described the invention, what is claimed is—

1. An apparatus of the class described having a car device including a bracket supported within the car at the inner side of the door-frame, a horizontal swinging member mounted upon the bracket and limited in its movement by the door-frame, and a horizontally-swinging bracket carried by the outer end of the pivotally-mounted member and capable of being swung outwardly through the doorway of the car, and a mail-bag carrier having a detachable supporting engagement with the swinging bracket.

2. An apparatus of the class described having a car device including a bracket mounted within the car, upper and lower links pivotally supported upon the bracket, a yoke-shaped swinging bracket pivotally supported upon the outer ends of the links and capable of being swung outwardly through the car-door, and a bag-carrier having a detachable supporting engagement with the swinging bracket.

3. An apparatus of the class described having a car device including a crane mounted within the car and capable of being projected outwardly through the door, a bag-carrier having a detachable supporting engagement with the crane, and means to automatically interlock the crane with one side of the door-frame when the former is projected outwardly through the doorway into operative position.

4. An apparatus of the class described having a car device including a horizontally-swinging crane mounted to be swung outwardly through the doorway of the car and limited in its swinging movement by the door-frame, a catch upon the door-frame, a spring-latch upon the crane for engagement with the catch in the operative position of the crane, and a bag-carrier having a detachable supporting engagement with the crane.

5. An apparatus of the class described having a bag-carrier to be carried by a train, a carrier-catcher, and a downwardly-inclined chute communicating with and leading away from the catcher and upon which the carrier



is adapted to travel after being engaged with the catcher.

5 6. An apparatus of the class described having a bag-carrying link to be carried by a car, and a link-catching device including an arm to enter the link and an arm-supporting shank leading from the rear end of the arm and inclined downwardly therefrom and away from the railway-track.

10 7. An apparatus of the class described including a bag-carrier to be removably carried by a car, a support at one side of the railway-track, a rod carried by the support and inclined upwardly toward the railway-track, and  
15 a substantially horizontal carrier-catching arm carried by the upper end of the rod, said rod constituting a chute upon which the carrier is adapted to travel away from the catching-arm after being engaged therewith.

20 8. An apparatus of the class described comprising a support erected at one side of a railway-track, an elevated substantially horizontal bar carried by the support with its opposite ends inclined downwardly away from

the railway-track and connected to the support and then inclined upwardly toward the railway-track with the extremities of the bar extending outwardly in opposite directions in substantial parallelism with the railway-track. 25 30

9. In an apparatus of the class described, a crane having a foot provided with a seat in its upper face, vertically-alined substantially U-shaped spring-clips carried by the crane above the foot, and a bag-carrying link having a straight vertical side for detachable engagement with the spring-clips, the lower side of the link being formed to removably fit the seat of the foot and the straight side of the link having a shoulder to engage the top of the upper spring-clip. 35 40

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

OLIVER GARLAND HOFF.

Witnesses:

LOTTIE BROOKE,  
ALBERT S. GILL.