F. HANSEN.

MAIL CRANE.

APPLICATION FILED MAY 31, 1911.

1,009,509.

Patented Nov. 21, 1911.

3 SHEETS—SHEET 1.

Fig. 1.

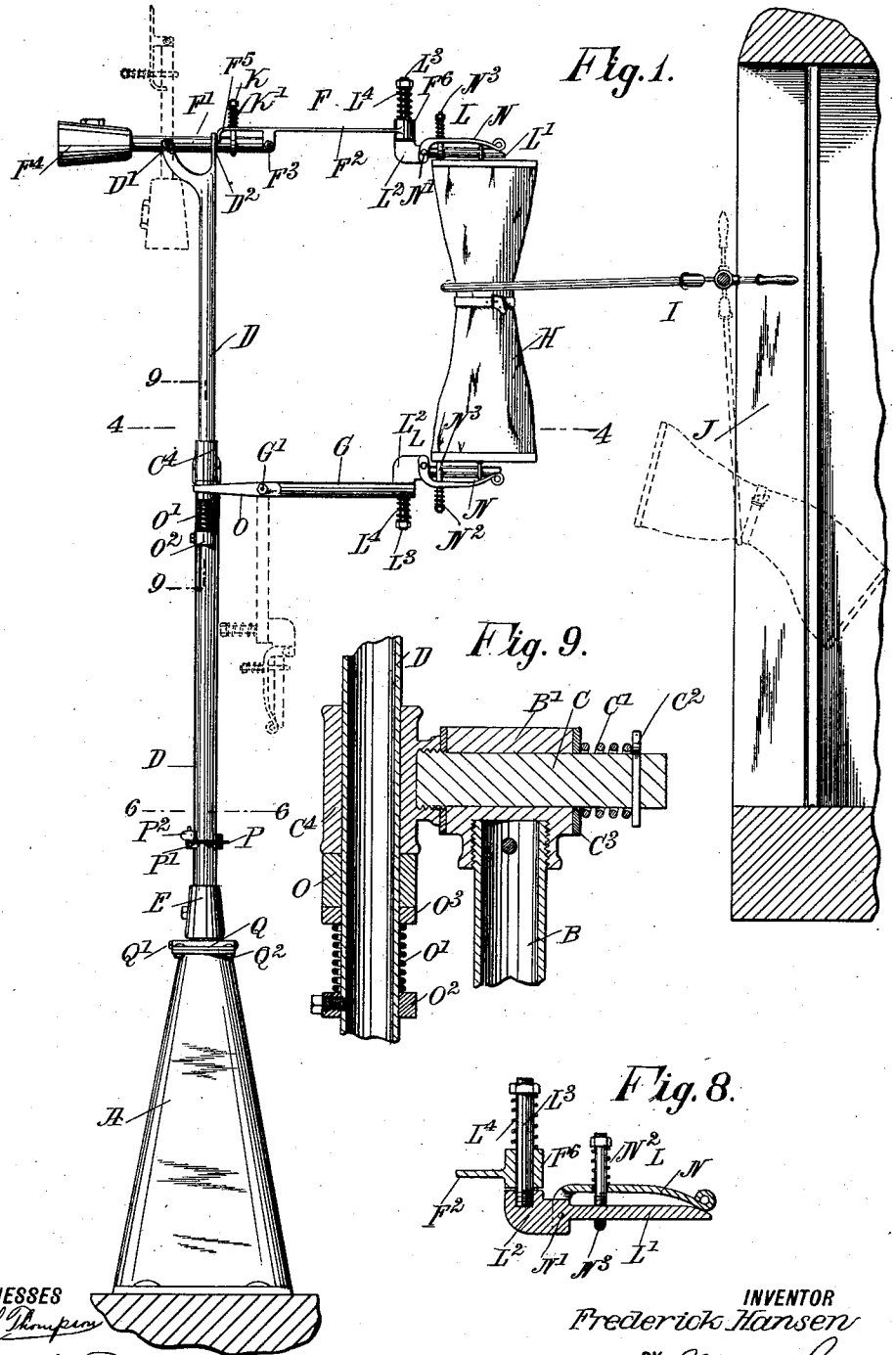

Fig. 9.

Fig. 8.

WITNESSES

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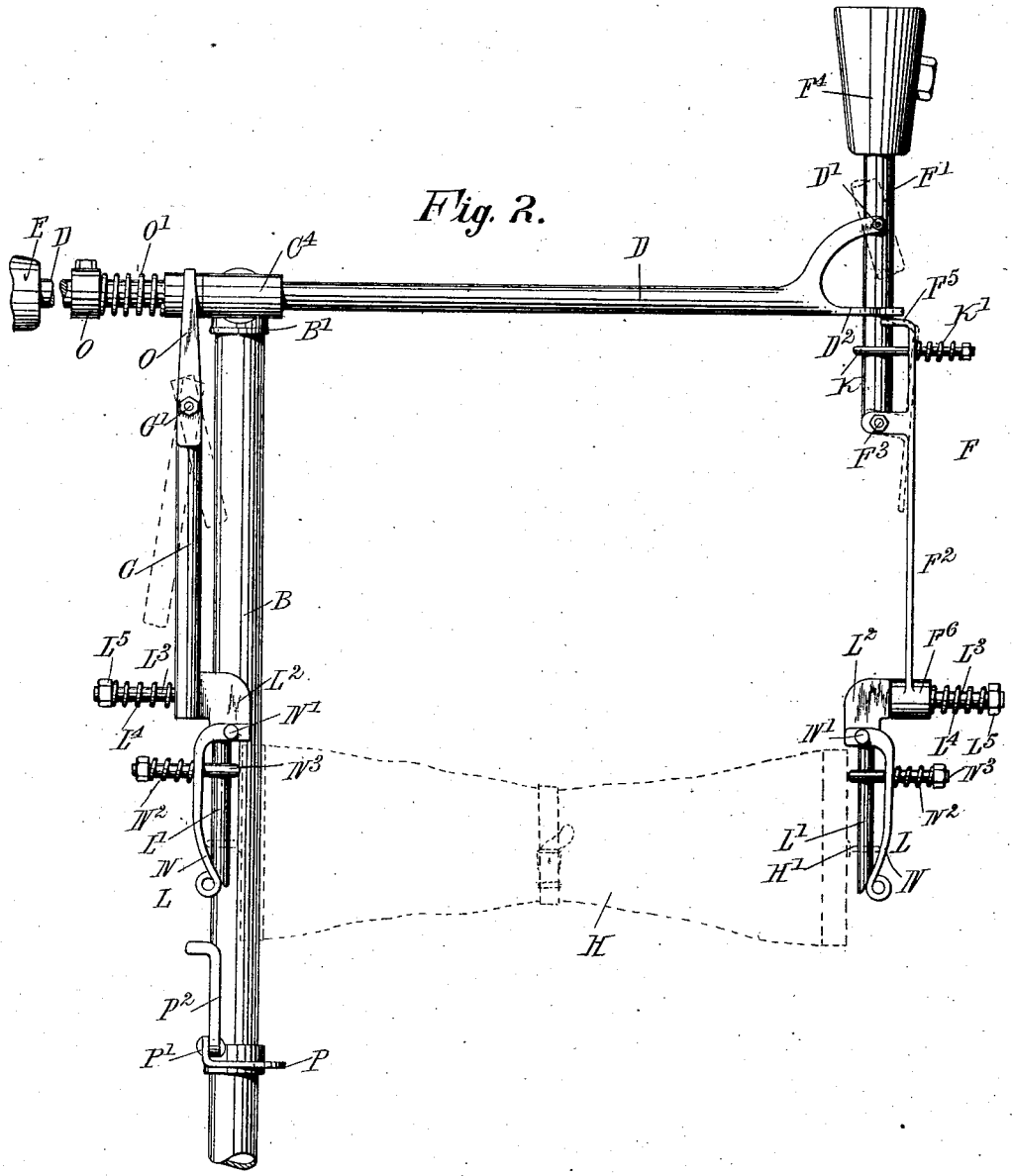
3 SHEETS—SHEET 2.

Fig. 2.



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3 SHEETS—SHEET 3.

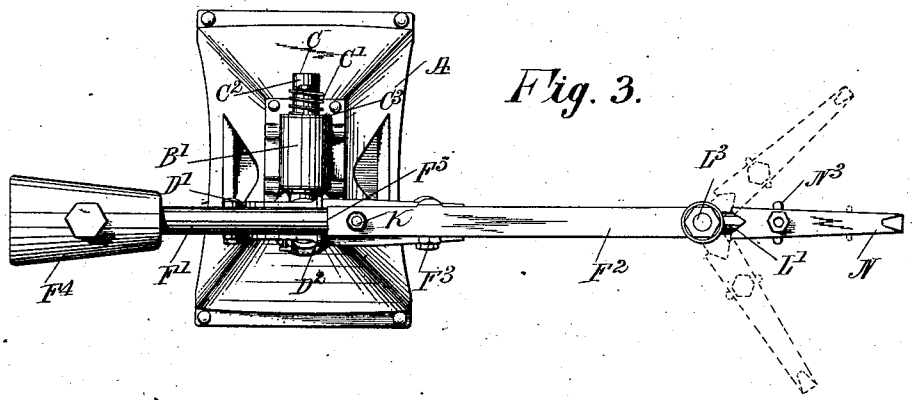


Fig. 3.

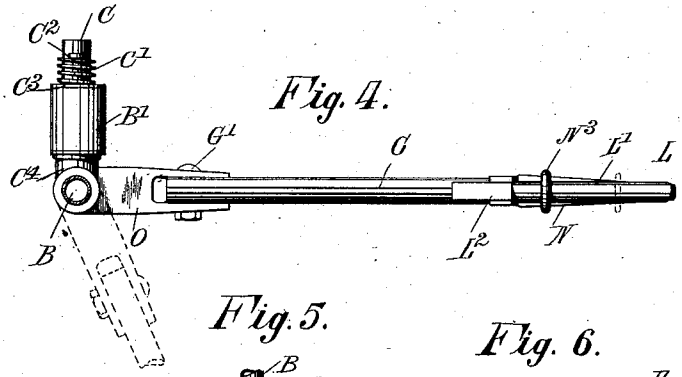


Fig. 4.

Fig. 5.

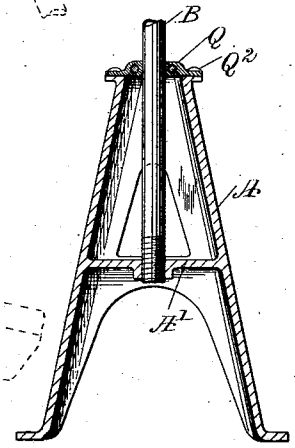


Fig. 6.

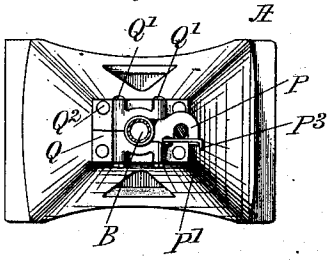
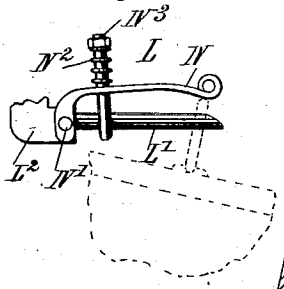


Fig. 7.



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MAIL-CRANE.

1,009,509. Specification of Letters Patent. Patented Nov. 21, 1911.

Application filed May 31, 1911. Serial No. 630,335.

To all whom it may concern:

Be it known that I, FREDERICK HANSEN, a citizen of the United States, and a resident of Woodbine, in the county of Harrison and State of Iowa, have invented a new and Improved Mail-Crane, of which the following is a full, clear, and exact description.

The invention relates to mail bag delivery, and its object is to provide a new and improved mail crane arranged to properly support the mail bag for accurate engagement by the catcher, with a view to unfailingly deliver the mail bag to the mail car.

For the purpose mentioned, use is made of a post, on which is mounted to swing a counterbalanced arm, supporting pivoted hangers provided at their ends with catchers for engagement with the rings on the ends of the mail bag to freely support the latter.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the mail crane with the mail bag in position and engaged by the catcher on the car, the latter being shown in cross section; Fig. 2 is an enlarged side elevation of the upper portion of the mail crane with the parts in position for placing a mail bag in place; Fig. 3 is a plan view of the mail crane; Fig. 4 is an enlarged sectional plan view of the same on the line 4—4 of Fig. 1; Fig. 5 is a vertical section of the stand and the post carried thereby; Fig. 6 is a sectional plan view of the same on the line 6—6 of Fig. 1, and showing the means for locking the swing arm in vertical position; Fig. 7 is an enlarged side elevation of the upper holder for the mail bag; Fig. 8 is a sectional side elevation of the same; and Fig. 9 is an enlarged vertical section of the pivotal connection between the post and the swing arm, the section being on the line 9—9 of Fig. 1.

On the stand A of the mail crane is secured a post B provided at its upper end with a bearing B′ (see Fig. 9), in which is mounted to turn a pivot C attached to a swing arm D, normally standing in a vertical position and provided at its lower end with a counter-weight E. On the upper end of the swing arm D is mounted an upper hanger F, and on the swing arm a short distance below the pivot C is mounted a lower hanger G, the said hangers F and G being adapted to support between them the mail bag H adapted to be taken hold of by the usual catcher I arranged on the car J, or disconnecting the mail bag H from the hangers F and G and delivering the same to the inside of the car. The pivot C is pressed on by an actuated spring C′ (see Fig. 9) to prevent too easy turning of the pivot C in the bearing B′, and the said spring C′ rests with its outer end on a cotter pin C^2 engaging the pivot C, and the inner end of the spring C′ rests against a washer C^3 abutting against the bearing B′. The upper hanger F is made in two sections F′ and F^2, pivotally connected with each other at F^3, so as to permit the outer section F^2 to swing on the inner section F′. The section F′ is fulcrumed at D′ on the arm D, which latter is provided with a fork D^2 forming a seat for the forward end of the rear section F′ to rest on. The rear end of the rear section F′ of the hanger F is provided with a counterbalancing weight F^4. An eye bolt K is held on the rear section F′ in the rear of the pivot F^3, and on the said eye bolt K is mounted a spring K′ pressing on the rear end of the forward section F^2 so as to form a yielding connection between the sections F^2 and F′. The rear terminal of the forward section F^2 is in the form of a fork F^5, normally seated on the section F′, as plainly shown in Figs. 1 and 2.

The forward end of the hanger F^2 is provided with a holder L consisting of a rod L′ projecting from a stock L^2 provided with a pivot pin L^3 mounted to turn in a bearing F^6 formed on the free end of the hanger section F^2. A spring L^4 is coiled on the projecting end of the pivot L^3 and bears with one end on a nut L^5 screwing on the outer end of the pivot L^3, the other end of the spring L^4 abutting against the bearing F^6, so that the pivot L^3 is held against accidental turning in the bearing F^6. On the block L^2 is fulcrumed at N′ a retaining arm N adapted to rest with its free end on the free end of the rod L′, so as to hold the mail bag ring H′ in place on the rod L′, for to allow of pulling the ring H′ off the rod L′ when the mail bag H is engaged by the catcher I. The retaining arm N is pressed on by a spring N′ held on an eye bolt N^2 en-

gaging the rod L′ extending through the retaining arm L. A similar holder L and retaining arm N is mounted on the free end of the lower hanger G pivoted at G′ on a bearing O, mounted to turn on the spring arm D and pressed on by a spring O′ coiled around the swing arm D and resting at its lower end on a collar O^2 secured to the swing arm D, as plainly indicated in Fig. 9. The upper end of the spring O′ presses against a washer O^3 engaging the bearing O, the latter abutting against the T C^3 secured to the swing arm D and carrying the pivot C.

On the lower portion of the post B is secured a fork P for receiving the lower end of the swing arm D at the time the latter is in a vertical position, and the members of the fork P are provided with upturned lugs P′, on one of which is pivoted a latch P^2 adapted to swing across the opening in the fork and against the other lug P′ so as to securely lock the swing arm D in vertical position, as will be readily understood by reference to Fig. 6.

The post B is preferably screwed at its lower end in a threaded plate A′, formed integrally on the stand A, and the said stand is provided at its top with a bearing Q made in two sections fastened together by plates Q′, the sections being fastened by bolts Q^2 to the top of the stand A. By the arrangement described, the post B can be conveniently placed in position on the stand A or removed therefrom whenever it is desired to do so.

The operation is as follows: When it is desired to place a mail bag in position on the mail crane, the operator unlocks the swing arm D by opening the latch P^2, and then swings the swing arm D into horizontal position, as indicated in Fig. 2, whereby the hangers F and G hang downward to permit of conveniently engaging the rings H′ of the mail bag H with the rods L′ of the holders L held on the hangers F and G (see dotted lines in Fig. 2). When this has been done the operator swings the swing arm D back into vertical position, so that the several parts assume the position shown in Fig. 1, the swing arm D being locked against swinging by the latch P^2. When the catcher I engages the mail bag H it exerts a pull thereon so as to pull the rings H′ off of the rods L′, and when this takes place the counter-weight F^4 imparts an upward swinging motion to the upper hanger F (see dotted lines in Fig. 1), while the lower hanger G swings downward by its own weight into vertical position, as shown in dotted lines in Fig. 1. Thus both hangers F and G are completely out of the way of the following cars to prevent injury to the crane or cars.

The mail crane shown and described is very simple in construction, and properly supports the mail bag for accurate engagement by the catcher and for delivery to the mail car.

By arranging the hangers F and G in the manner described, the parts are sufficiently yielding to prevent injury to the same when pulling the mail bag H off the rods L′, as the holders L are free to turn on the hangers F and G.

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

1. A mail crane, comprising a post, a counterbalanced swing arm mounted to swing on the said post, means for locking the said arm when in vertical position on the said post, upper and lower hangers pivoted on the said counterbalanced arm, and catches on the free ends of the said hangers for engagement by the ends of the mail bag to support the latter.

2. A mail crane, comprising a post, a counterbalanced swing arm mounted to swing on the said post, means for locking the said arm when in vertical position on the said post, upper and lower hangers pivoted on the said counterbalanced arm, the upper hanger being made in sections pivotally connected with each other to allow an up and down swinging motion of one section relative to the other section, and catches on the free ends of the said hangers for engagement by the ends of the mail bag to support the latter.

3. A mail crane, comprising a post, a counterbalanced swing arm mounted to swing on the said post, means for locking the said arm when in vertical position on the said post, upper and lower hangers pivoted on the said counterbalanced arm, the upper hanger being made in sections pivotally connected with each other to allow an up and down swinging motion of one section relative to the other section, and catches having pivotal connections with the free ends of the said hangers to allow lateral turning of the catches.

4. A mail crane, comprising a post, a counterbalanced swing arm mounted to swing on the said post, means for locking the said arm when in vertical position on the said post, upper and lower hangers pivoted on the said counterbalanced arm, the upper hanger being made in sections pivotally connected with each other to allow an up and down swinging motion of one section relative to the other section, and catches on the free ends of the said hangers for supporting a mail bag at top and bottom, each catch having a rod, and a spring-pressed retaining arm pivoted on the rod and having its free end in contact with the rod.

5. A mail crane, comprising a post, a counterbalanced swing arm mounted to

swing on the said post, means for locking the said arm when in vertical position on the said post, upper and lower hangers pivoted on the said counterbalanced arm, the upper hanger being made in sections pivotally connected with each other to allow an up and down swinging motion of one section relative to the other section, and catches on the free ends of the said hangers for supporting a mail bag at top and bottom, each catch having a rod, and a spring-pressed retaining arm pivoted on the rod and having its free end in contact with the rod, the latter having a vertical spring-pressed pivot engaging the hanger.

6. A mail crane provided with a swing arm having a fork, upper and lower hangers, the lower hanger being pivoted on the said swing arm and the upper hanger being made in rear and forward sections pivotally connected with each other, the rear section being pivoted on the said swing arm and adapted to rest on the said fork, an eye bolt held on the said rear section, a spring on the eye bolt pressing the said forward section, and spring catches on the free ends of the said forward section and the said lower hanger.

7. A mail crane provided with a swing arm having a fork, upper and lower hangers, the lower hanger being pivoted on the said swing arm and the upper hanger being made in rear and forward sections pivotally connected with each other, the rear section being pivoted on the said swing arm and adapted to rest on the said fork, an eye bolt held on the said rear section, a spring on the eye bolt pressing the said forward section, and spring catches on the free ends of the said forward section and the said lower hanger, each spring catch having spring-pressed vertical pivots mounted to turn in the said free ends.

8. A mail crane, provided with a swing arm having a fork, upper and lower hangers, the lower hanger being pivoted on the said swing arm and the upper hanger being made in rear and forward sections pivotally connected with each other, the rear section being pivoted on the said swing arm and adapted to rest on the said fork, an eye bolt held on the said rear section, a spring on the eye bolt pressing the said forward section, spring catches on the free ends of the said forward section and the said lower hanger, and a counterweight on the said rear section of the upper hanger.

9. A mail crane, comprising a post, a counterbalanced swing arm mounted to swing on the said post, means for locking the said arm when in vertical position on the said post, upper and lower hangers pivoted on the said counterbalanced arm, catches on the free ends of the said hangers for engagement by the ends of the mail bag to support the latter, a fork held on the said post for receiving the said swing arm, and a latch pivoted on the said fork to lock the swing arm in place in the fork.

10. A mail crane, comprising a post, a counterbalanced swing arm mounted to swing on the said post, means for locking the said arm when in vertical position on the said post, upper and lower hangers pivoted on the said counterbalanced arm, catches on the free ends of the said hangers for engagement by the ends of the mail bag to support the latter, a fork held on the said post for receiving the said swing arm, and a latch pivoted on the said fork to lock the swing arm in place in the fork, the free ends of the fork members having upturned lugs for the said latch to rest against.

11. A mail crane, having a post provided with a bearing, a swing arm carrying hangers for supporting the mail bag, a pivot on the said swing arm engaging the said bearing, and a spring pressing the said pivot.

12. A mail crane provided with a swing arm, upper and lower hangers for supporting the mail bag, the upper hanger being made in sections pivoted together, one of the sections being pivoted on the swing arm and adapted to rest thereon, a yielding connection between the pivoted sections, and a spring-pressed bearing mounted to turn on the swing arm and on which the lower hanger is mounted to swing up and down.

13. A mail crane provided with upper and lower hangers, each provided with a catch for supporting a mail bag, each catch having a rod provided with a pivot mounted to turn in the corresponding hanger, a tension spring for the pivot, an eye bolt on the rod, a retaining arm pivoted on the rod and through which extends the said eye bolt, and a spring on the eye bolt pressing the said retaining arm.

14. A mail crane provided with a stand having a horizontal threaded plate, a post screwing in the said plate, a bearing for the post and made in sections secured to the top of the stand, and bolts for fastening the bearing sections together.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREDERICK HANSEN.

Witnesses:
C. C. HAAS,
HERMAN LOCKMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."