

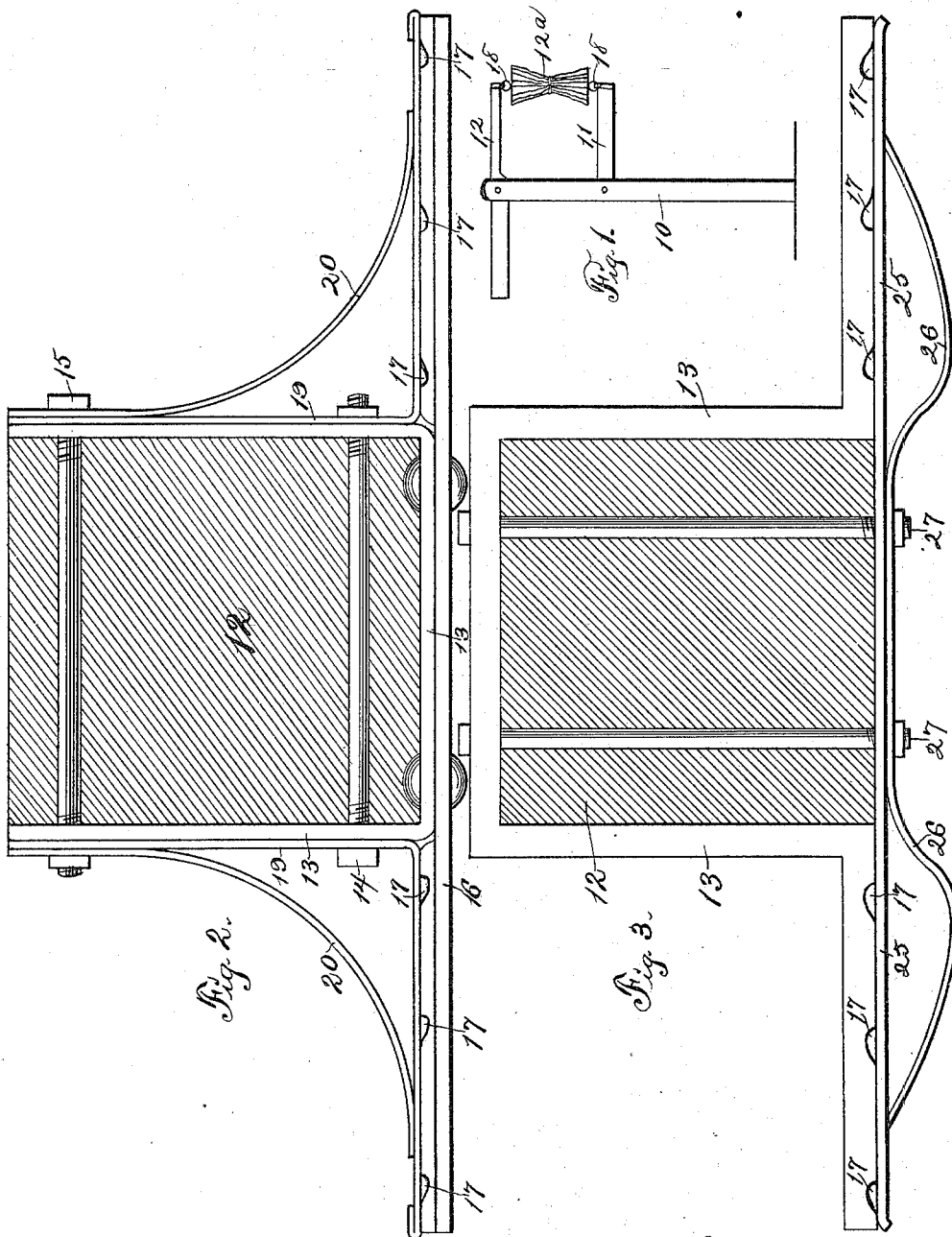
(No Model.)

2 Sheets—Sheet 1.

J. L. SULLIVAN.
MAIL BAG CRANE.

No. 572,916.

Patented Dec. 8, 1896.



Witnesses:
J. Ralph Orwig,
R. S. Orwig

Inventor:
John L. Sullivan,
By J. H. Sweet
Atty.

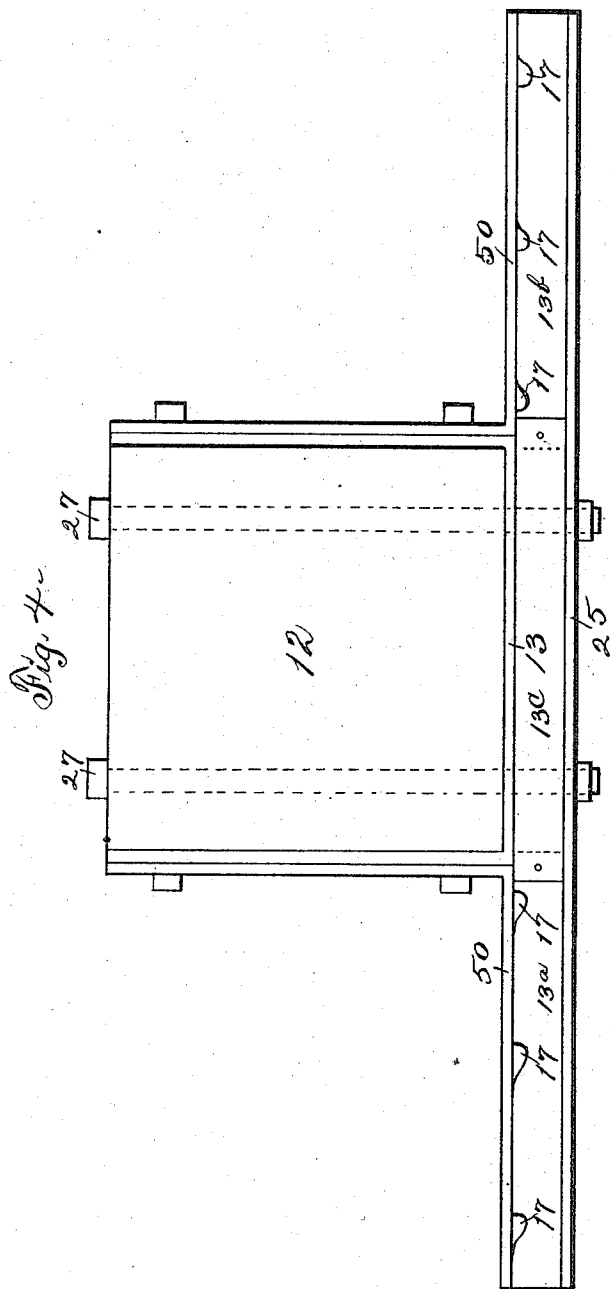
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Witnesses:
J. Ralph Owing,
R. G. Owing.

Inventor:
John L. Sullivan,
By J. H. Wood
Atty.

UNITED STATES PATENT OFFICE.

JOHN L. SULLIVAN, OF ALBIA, IOWA.

MAIL-BAG CRANE.

SPECIFICATION forming part of Letters Patent No. 572,916, dated December 8, 1896.

Application filed August 31, 1896. Serial No. 604,474. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. SULLIVAN, a citizen of the United States of America, and a resident of Albia, in the county of Monroe and State of Iowa, have invented a new and useful Mail-Bag Crane, of which the following is a specification.

The object of this invention is to provide improved means for supporting a mail-bag alongside of a line of railway and in such a position relative thereto as that said mail-bag may be seized by the catcher-arms on a passing mail-car.

A further object of my invention is to provide improved means to prevent the mail-bag being displaced from the crane until such time as the said bag is engaged by the catcher-arms provided to receive the same.

My invention consists in the combination, with the crane, of a bracket notched serially on one surface, springs mounted in opposition to the notched surface of the bracket, and supplemental springs acting to increase the resilience of the first said springs.

My invention consists, further, in the construction, arrangement, and combination of elements hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which—

Figure 1 is an elevation of the crane, showing a mail-bag mounted thereon and in position to be received by catcher-arms of a passing railway mail-car. Fig. 2 is an elevation, partly in section, of the crane and upper bracket at right angles to the line of the railway. (The upper and lower brackets are identical in construction, save that they are inverted relative to each other.) Fig. 3 is an elevation showing a modified form of bracket and representing in the positioning the upper bracket of the pair employed in a single crane. Fig. 4 is an end elevation showing a modified form of bracket different from that shown in Fig. 3.

In the construction and application of the device as shown the numeral 10 designates a post, 11 the lower arm, and 12 the upper or weighted arm, of the crane now in common use. The arms 11 12 are pivoted to the post or standard 10, and when employed to support a mail-bag 12^a extend in horizontal planes

parallel or approximately parallel with each other. Referring to the illustration in Fig. 2, the end portion of the arm 12 nearest the railway-track is shown in section, and mounted thereon and extending across the bottom and upwardly along either side of the arm 12 is a yoke 13, which is secured to the arm by transversely-positioned bolts 14 15. A bracket or bar 16 is extended longitudinally of the horizontal portion of the yoke 13 and across the arm 12 and is riveted to said horizontal portion of the yoke 13. The bracket or bar 16 is bossed on its end portions on opposite sides of the yoke 13 upwardly, and the bossed portions thereof are provided with notches 17. The notches 17 have abrupt walls nearest to the yoke 13 and long sloping walls farthest from the yoke 13. Rings 18, one at a time, are mounted in one or the other of the notches 17 and are attached to one end of the mail-bag 12^a. An angle-plate 19 is provided at each end of the bracket or bar 16, and the vertical portions of the angle-plates are secured to the bolts 14 15 rigidly. The horizontal portions of the angle-plates 19 extend parallel with the bossed portions of the bracket or bar 16 and in contact with the face of the bracket or bar, which is notched. Leaf-springs 20 are connected at their upper ends to the bolt 15 and extend downwardly and outwardly therefrom to points of contact with the angle-plates 19, adjacent to the outer ends of the said angle-plates.

One of the devices as illustrated in Fig. 2 is mounted on the arm 12, as shown in Fig. 1, and one of the brackets constructed as shown in Fig. 2, but inverted relative thereto, is mounted on the arm 11, as shown in Fig. 1. The mail-bag 12^a being provided with rings 18, one on each end, the said rings are inserted between the horizontal portions of angle-plates 19 and the notched faces of brackets or bars 16 and seated in one of the notches 17 in each bracket or bar. The mail-bag is mounted on that side of the arm 11 12 farthest from the cardinal point from which the mail-car to receive this particular bag will approach, and in the approach of the mail-car the central portion of the bag is engaged by the catcher-arm on said car and forcibly moved, pulled, jerked, or snapped away from

the crane, the angle-plates 19 yielding away from the brackets or bars 16 and the rings moving outwardly from the notches 17 along the gradually-sloped walls of said notches.

5 By the employment of the notches the bag is secured against accidental removal either through the influence of natural air-currents or the excessive air-current occasioned by the approach and passage of the railway-train at
10 a high rate of speed, as is common in the operation of the fast-mail system, and the walls of the notches which resist the removal of the bag being gradually sloped insure that the rings will act as wedges to separate the spring and angle plates from the brackets instan-
15 taneously when the impact of the catcher-arms with the bag occurs. The employment of the supplemental springs 20 insure the proper seating of the angle-plates 19 and the reten-
20 tion of the rings against accidental removal.

Referring to the construction illustrated in Fig. 3, it will be observed that the bracket or bar 13' is arched around three sides of the arm 12 and notched on the outer faces of its end
25 portions. The retaining-plate 25' in this instance is straight and traverses from one end of the arched bracket or bar 13' directly across the arm 12 and to the other end of said bracket or bar and the extremities of said plate are
30 bent downwardly to a slight degree. The retaining-plate 25' is made of spring-steel or similar yielding elastic resilient material and is supplemented by a double elliptical spring
35 26, the spring 26, retaining-plate 25', arm 12, and bracket or bar 13' being retained in mutual assemblage and rigid connection by vertically-positioned bolts 27. The spring 26 engages at its outer ends with the retaining-
40 plate 25 adjacent to the ends of said retaining-plate. The use and operation of this construction are almost identical with that of the device heretofore described and differs therefrom only in the provision that the rings depend from the bracket or bar 13' when in
45 use and when suddenly and forcibly withdrawn from the device act to approximate the retaining-arms of one device to the retaining-arms of the other device, draw the rings out of the notches, and move said rings longitudi-
50 nally of the retaining device and without material friction thereon. The distinction may be better stated in other words, viz: In Fig. 2 when the bag is being withdrawn from the de-
55 vice it is grasped by the catcher-arm on the car near its center and necessarily flexed to a slight degree, which more rigidly seats the rings in the notches 17, while in the employment of the device shown in Fig. 3 the flexure of the bag under the influence of the catcher-
60 arm would contract and draw the retaining-arms away from the brackets and thereby draw the rings out of the notches instead of more rigidly seating them in said notches.

It will be observed that the retaining-arms
65 and the angle-plates are parallel with the notched portions of the brackets and that the

rings when seated in the notches are held against oscillation or accidental movement by constant pressure of said arms and plates.

In the construction of the device as shown
70 in Fig. 4 the yoke 13 is employed in conjunction with angle-plates 19' 19', secured to the crane-arm 12 by horizontally-positioned bolts, in the manner shown in Fig. 2. In Fig.
75 4 the bracket or notched bar is formed in three sections, one section, 13^c, being secured to and parallel with the horizontal portions of the yoke 13 and notched sections 13^a and
80 13^b are secured by hinging or pivoting to the end portions of the section 13^c. The sections 13^a and 13^b have notches 17 in their upper faces adjacent to the horizontal portions of the angle-plates 19' 19'. The several sections of the
85 bar or bracket are held normally in alignment by a spring-bar 26', located beneath and parallel therewith and held in mutual connection with the crane-arm by vertically-po-
90 sitioned bolts 27' 27'. If it is desired, the section 13^c and spring-bar 26' may be attached to the yoke by rivets, as shown in Fig. 2.

In the practical use of the device shown in Fig. 4 the sections 13^a and 13^b are yieldingly held in approximation to the angle-plates by the spring 26', and yield downwardly to permit of the removal of the rings when the bag
95 is forcibly drawn away from the device.

I claim as my invention—

1. In a mail-bag crane, a bag-hanging device comprising a bracket serially notched to receive a bag-ring, and a spring in opposition
100 to the notched face of the bracket to maintain or retain a ring in contact therewith.

2. In a mail-bag crane, a yoke, a bracket fixed to said yoke, angle-plates in opposition to the bracket, and supplemental springs
105 pressing said angle-plates into approximation to the bracket.

3. In a mail-bag crane, a yoke fixed to the crane, a bracket having notched faces to receive mail-bag rings, angle-plates fixed to the
110 yoke in opposition to the notched faces of the bracket and springs engaging said angle-plates and holding the same in proximity to or contact with the brackets.

4. In a mail-bag crane, the combination of
115 a crane-arm and a bag-hanging device comprising the bracket or bar provided with a series of notches in each of its end portions and laterally extended in opposite directions from the crane-arm, and spring-arms located
120 in opposition to the notched faces of the said bracket or bar, whereby bag-rings are retained normally in the said notches.

5. A crane-arm, a yoke 13 embracing three sides of said crane-arm, angle-plates 19, 19 lo-
125 cated in contact with said yoke and on opposite sides of the crane-arm, a bolt 14 extended through and connecting said angle-plates yoke and crane-arm, supplemental springs 20, 20 mounted in the angles of said angle-plates
130 and impinging against the lower outer end portions thereof, a bolt 15 extended through

and connecting the springs, angle-plates,
yoke and crane-arm and a bracket or bar 16
fixed at its central portion to the central por-
tion of the yoke 13, the end portions of said
5 bracket or bar extend approximately through
the lower outer ends of the said angle-plates
and are provided with notches 17 in their
faces adjacent said angle-plates, the springs

20, 20 serving to retain the angle-plates in ap-
proximation to the notched face of the bar or 10
bracket.

JOHN L. SULLIVAN.

Witnesses:

S. C. SWEET,

REUBEN G. ORWIG.