

No. 883,547.

L. F. KURPGEWIT. PATENTED MAR. 31, 1908.
MAIL BAG RECEIVER AND DELIVERER.
APPLICATION FILED MAY 18, 1907.

3 SHEETS—SHEET 1.

Fig. 1.

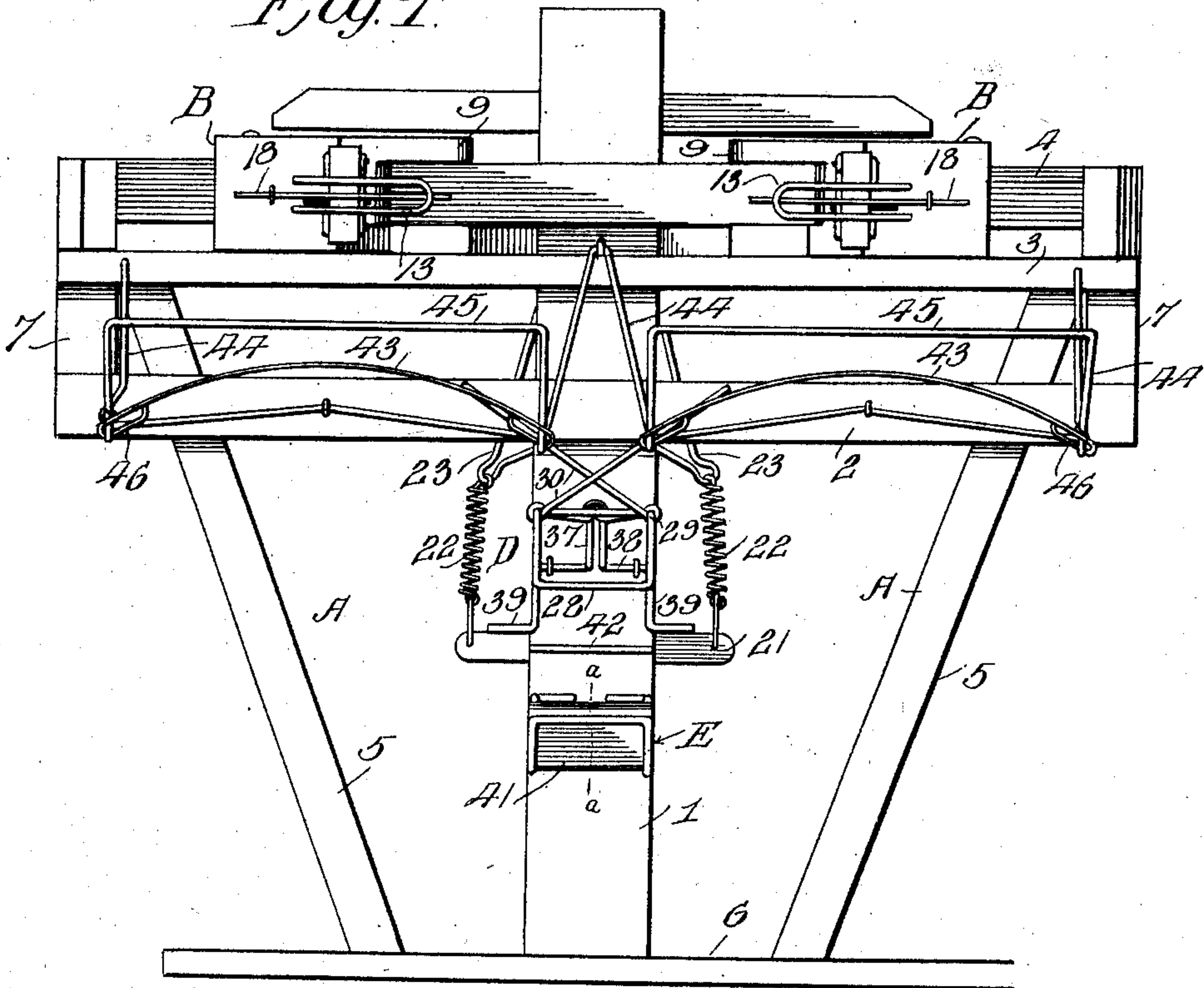


Fig. 7.

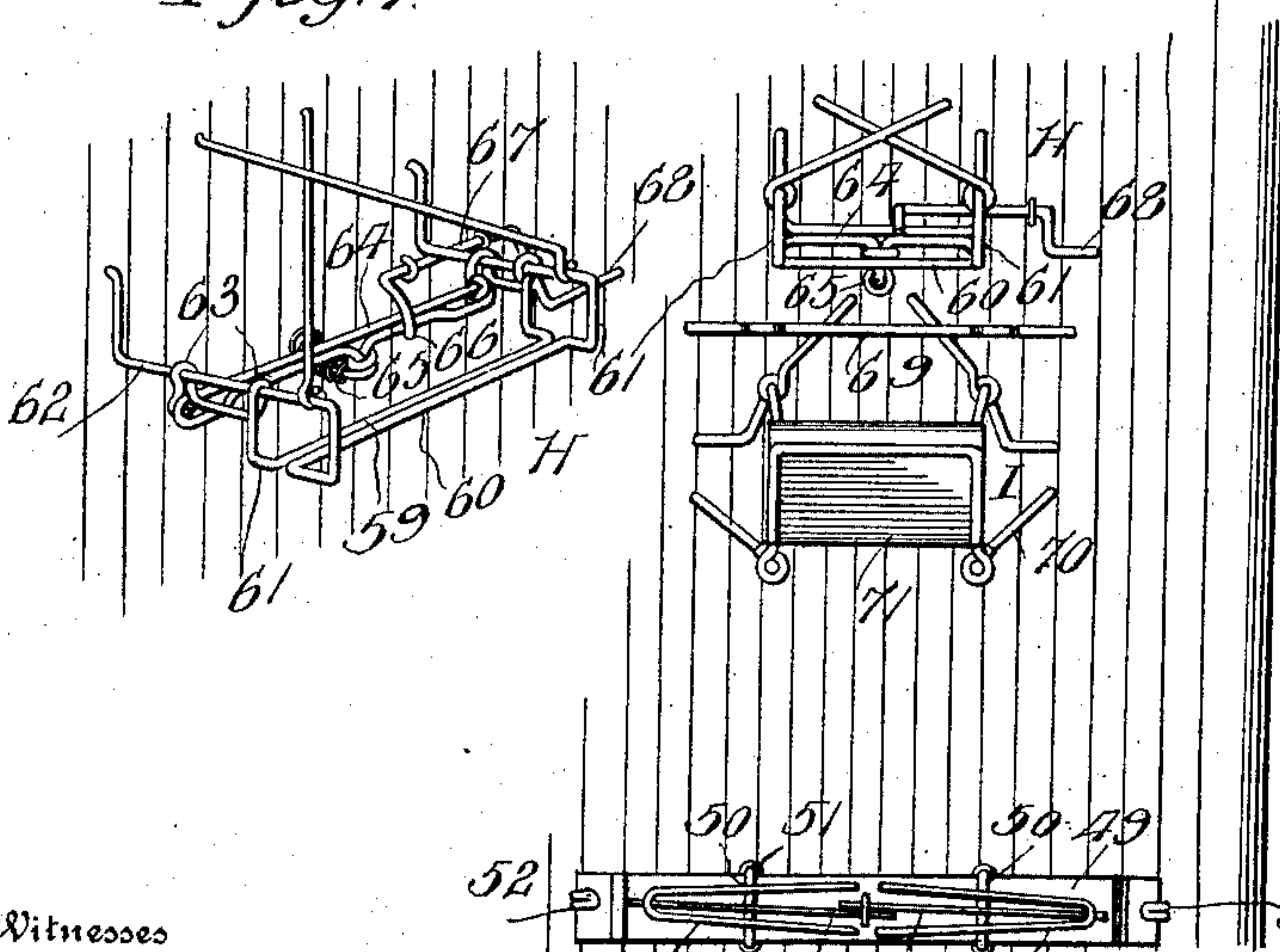


Fig. 8.

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3 SHEETS—SHEET 2.

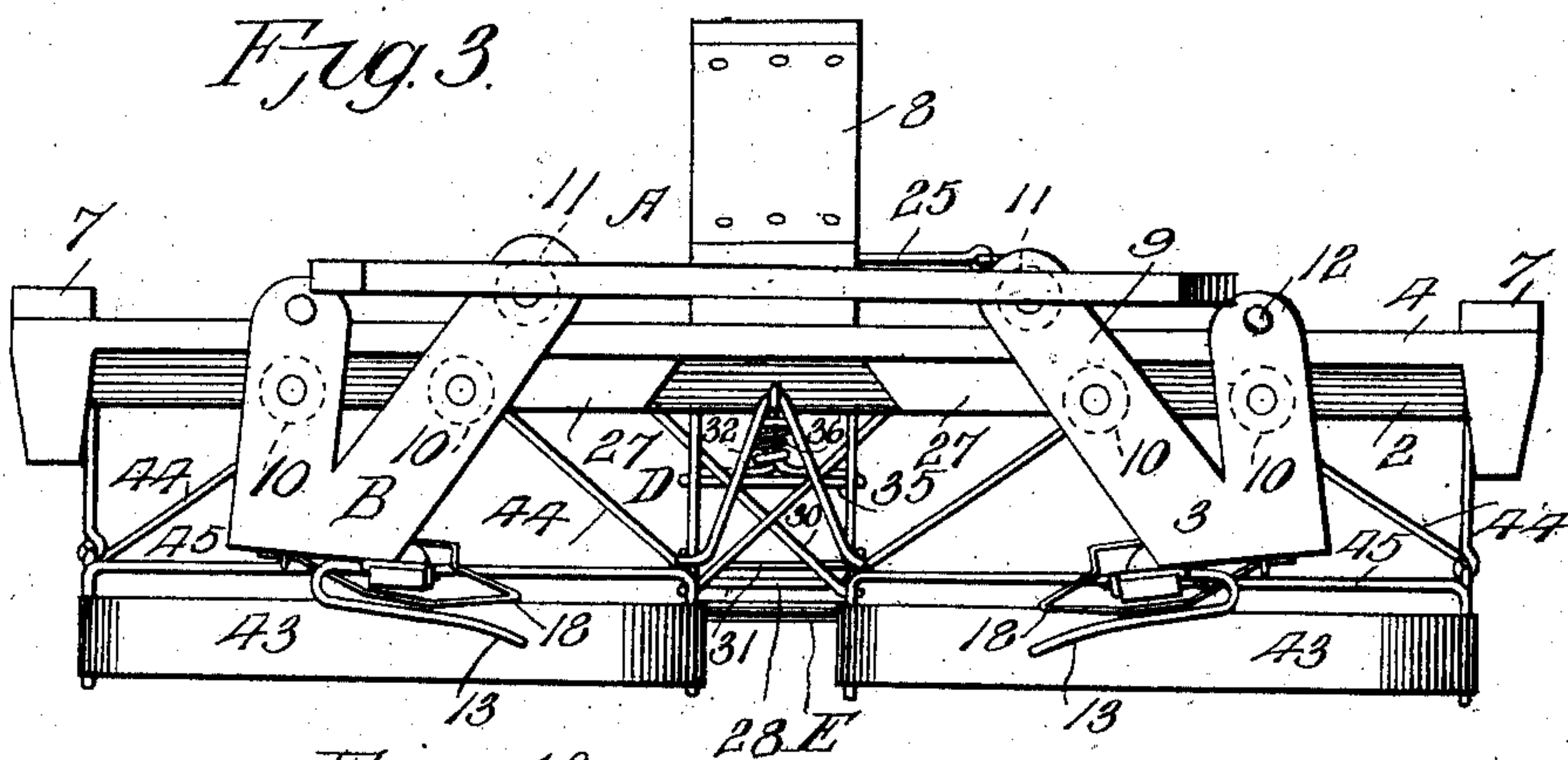
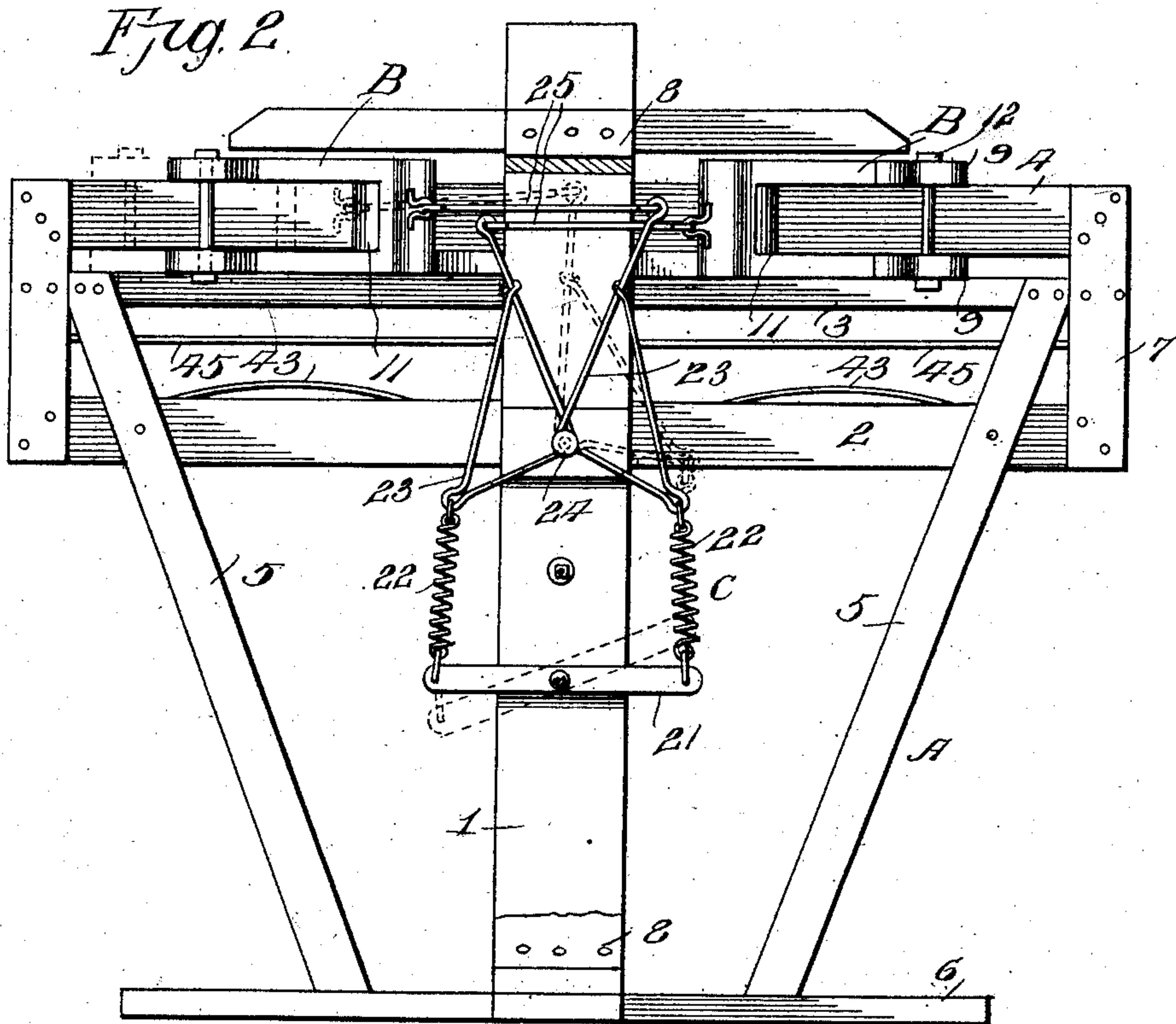
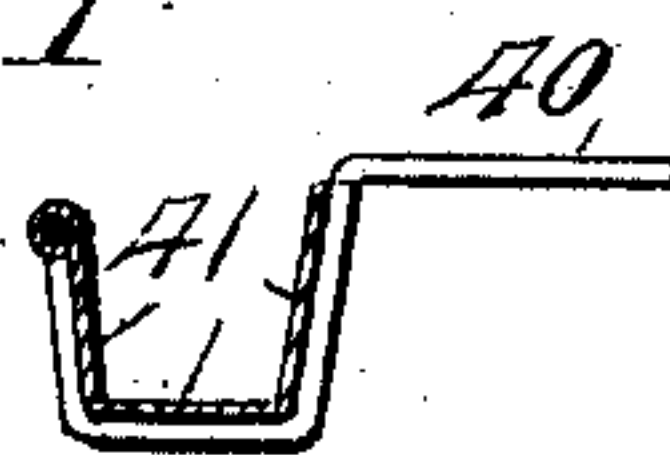


Fig. 1^a



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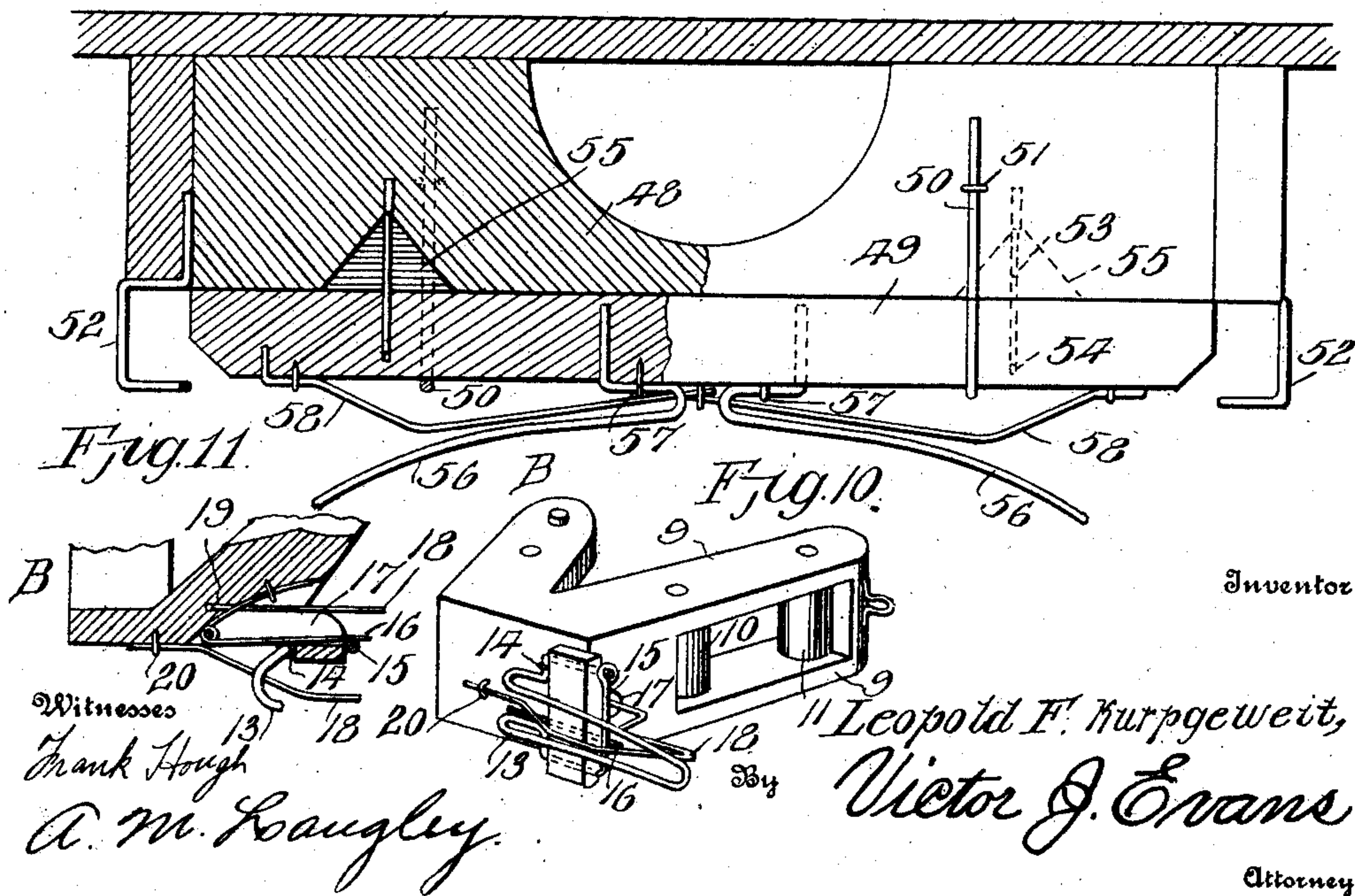
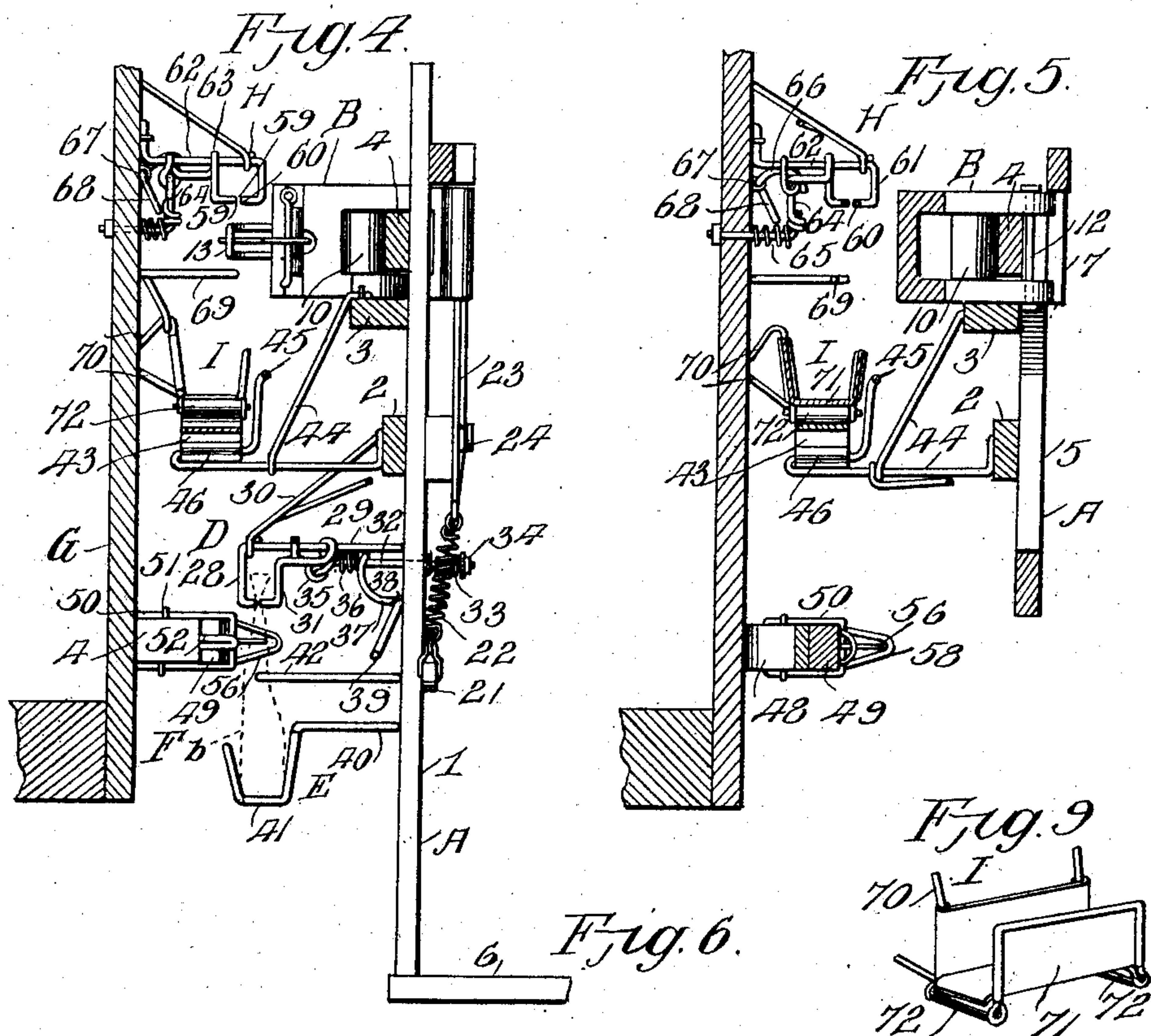
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

LEOPOLD F. KURPGEWIT, OF GREENMONT, SOUTH DAKOTA.

MAIL-BAG RECEIVER AND DELIVERER.

No. 883,547.

Specification of Letters Patent.

Patented March 31, 1908.

Application filed May 18, 1907. Serial No. 374,459.

To all whom it may concern:

Be it known that I, LEOPOLD F. KURPGEWIT, a citizen of the United States, residing at Greenmont, in the county of Lawrence and State of South Dakota, have invented new and useful Improvements in Mail-Bag Receivers and Deliverers, of which the following is a specification.

This invention relates to an automatic mail bag receiver and deliverer, whereby mail bags can be picked up from or delivered to a mailing station by a moving train, or vice versa, without any attention required of the railway mail clerk on the train or the postmaster at the station except to place the bags in proper position to be picked up or deposited and to remove the bag from the catcher or receiver on the train or at the station, as the case may be.

The invention has for one of its objects to improve and simplify the construction and operation of devices of this character, so as to be comparatively easy and inexpensive to manufacture, thoroughly reliable and effective in use and enabling the mail bags to be readily placed in the holders and removed from the catchers or receivers.

A further object of the invention is the provision of an apparatus of the class described, comprising a pair of bag holders one arranged at the mailing station and the other one the mail car of the train, and on the car and post or other support at the station are catchers or receivers that are adapted to pick up the mail bag from the post or car as the train travels in either direction, the catchers being mounted on yielding carriages so that the bags will not be torn or the mail matter therein destroyed.

A still further object is the provision of a common buffing device for the catchers, said device including means for returning the carriages of the catchers, to normal position after receiving a mail bag.

Another object is the employment of a mail bag holder having clamping jaws that are readily actuated for gripping a bag and designed to permit the bags to be readily released when caught by the catchers or receivers without tearing, there being associated with each holder a rest for supporting the weight of the mail bag when in position to be taken up by the catcher at the station or catcher on the mail car.

With these objects in view and others, as will appear as the description proceeds, the

invention comprises the various novel features of construction and arrangement of parts, which will be more fully described hereinafter and set forth with particularity in the appended claims.

In the accompanying drawing which illustrates one of the embodiments of the invention:—Figure 1 is a front view of the stationary bag receiving and delivering apparatus, arranged along a railroad track, at a mailing station or post office. Fig. 1^a is a vertical section on the line *a—*a**, Fig. 1. Fig. 2 is a rear view thereof. Fig. 3 is a plan view. Fig. 4 is a side view partly in section of the apparatus of the mailing car, a fragmentary section view of the latter being shown. Fig. 5 is a vertical transverse section taken through the mail bag holder and catcher on the mail car and through one of the catcher carriages of the station apparatus. Fig. 6 is an enlarged view partly in plan and in section of the catcher or receiving device on the mailing car. Fig. 7 is a perspective view of the mail bag holder on the car. Fig. 8 is a front view of a portion of the car showing the various devices thereon. Fig. 9 is a perspective view of the mail bag support or rest attached to the mail car for receiving the bottom of the mail bag when in position on the holder. Fig. 10 is a detailed perspective view of one of the carriages of the catchers of the stationary apparatus. Fig. 11 is a fragmentary sectional view of Fig. 10.

Similar reference characters are employed to designate similar parts throughout the several views.

Referring to the drawing, A designates generally the supporting frame at the mailing station, the same being of any approved construction and preferably comprising a center post 1 having a cross piece 2, and a pair of spaced rails 3 and 4, the latter of which and the cross piece 2 are braced at their outer ends by brace beams 5, that are secured on a base 6 to which the post 1 is attached. The horizontal members 1, 3 and 4, are connected together at their outer ends by upright pieces 7 and extending diagonally from the top of the post 1 to the base 6 is a brace beam 8 at the rear side of the frame. The construction of the frame can be modified to suit any given requirements, it being essential, however, that horizontal guide-ways be provided for the carriages of the station catchers or receivers. In the present instance, the guide-ways are formed by the

top member 4 that is suitably spaced from the cross beam 3 so that the said member or beam 4 constitutes a guide-rail. Movable along the rail or member 4 and disposed at opposite sides of the center posts 1 are carriages B for the catchers on the station apparatus. Each carriage is provided with a pair of upper and lower horizontal arms 9, as clearly shown in Figs. 3 and 10, that projects rearwardly along the top and bottom surfaces of the rail or member 4, rollers 10 being arranged on the arms to bear on the front side of the rail 4 while the longer arms of the carriages are provided with rollers 11 engaging on the rear side of the rail or member thereby permitting the carriage to freely move back and forth.

The shorter arms of each carriage has a pin 12 that serves to retain the carriage in proper position but is held normally out of engagement with the rail by the joint buffing and centering device, as will be hereinafter more fully explained. On the front of each carriage is a mail bag catcher and receiver. This comprises a hook-shaped jaw 13 constructed of wire or any other suitable material and pivoted at 14, Figs. 10 and 11, so that it can yield inwardly toward the carriage and bearing against the cross bar 15 forming a part of the catching hook is a spring 16 housed in a slot 17 of the carriage and disposed to normally hold the carriage outwardly. Associated with the hook 13 and disposed under the same is a spring keeper or jaw 18, anchored at one end in the wall of the slot 17, as indicated at 19, Fig. 11, and extending outwardly therefrom and bent backwardly under the hook or jaw 13 of the catcher with its free end guided in a staple 20 for equivalent means. The gripping jaws of the catchers or receivers extend in opposite directions so that one catcher will pick up a mail bag from a train going in one direction and the other catcher from a train going in the opposite direction.

In order to permit the mail bag to freely pass the catcher that is inoperative, the jaw or hook 13 thereof is permitted to yield inwardly as the mail bag brushes by the same. The centering or buffing device, designated generally by C comprises a walking beam 21 fulcrumed on the rear side of the post 1 with its ends connected by helical springs 22 with bell crank levers 23 mounted on a common fulcrum 24 and connected with their respective carriages B by links 25, as clearly shown in Fig. 2. The springs operate through the bell crank levers 23 to hold the carriages in-drawn toward the center post 1, this being the normal position of the parts. The links 25 are connected with the long arms of the carriages B and pull in a direction parallel with the guide rail or member 4, and as a mail bag is caught up in one of the catchers or receivers, the carriage will yield and move them in the

dotted line position, shown in Fig. 2, thereby eliminating any shock on the mail bag that might tend to destroy the same or the matter contained therein. As soon as the catcher has pulled the mail bag from the holder of the mail car, the parts return to their normal position, the long arms 9 thereof are held in engagement with stops 27 on the member 4, as shown in Fig. 3.

Disposed on the front side of the frame A and below the catchers is a mail bag holding device designated generally by D. This comprises a stationary jaw 28 formed of a metal rod or other suitable structure having parallel horizontal arms 29 secured to the post 1 and braced by the inclined braces 30. Coöperating with the fixed jaw 28 is a movable jaw 31 slidably mounted on the arms 29. This movable jaw is connected with a push rod 32 extending rearwardly through the post 1 and having a helical spring 33 interposed between the post 1 and nut 34, the spring serving to hold the push rod rearwardly with the movable jaw in open position. The push rod has a cross head 35 that is directly connected with the movable jaw and operating through a cushion spring 36 on the rod 32 is a locking cam 37, whereby the movable jaw is clamped in locking position. This cam is mounted on a shaft 38 having crank arms 39 whereby the postmaster can open and close the jaws to place the mail bag thereon. Arranged under the mail bag holder D is a trough-shaped rest E having its ends open so that the lower end of the mail bag which normally rests therein, can pass out of the rest in either direction, the purpose of the rest being to support the weight of the bag when clamped in the holding device D, as shown by dotted lines in Fig. 4. This rest or supporting device E comprises a suitably shaped wire frame 40 secured to the post and a sheet metal U-shaped structure 41 secured thereto, as clearly shown in Fig. 1^a. In order to hold the mail bag in proper position with respect to the catchers on the mail cars, a guard 42 that bears against the mail bag at about a middle point to prevent the bag from bulging inwardly from out of the path of the mail car catchers.

Disposed directly below each carriage B is a downwardly yielding spring member 43 that constitutes a mail bag support to receive the weight of the bag when the latter is taken up by the catchers, thus relieving the catchers of the weight of the mail bag and contents therein. This yielding support 43 is mounted on a frame 44 constructed of iron rods and suitably braced, the said members 43 being located directly under the catchers on the carriages B and extending along one side of each member 43 is a guard rail 45, co-operating to prevent the mail bag from swinging after it leaves the train and is taken up in the catcher or receiver. The ends of

each member 43 are formed into loops 46 which are attached to the frame 44, the loops serving to permit the middle of the member, which is arched upwardly, to yield downwardly as the mail bag support on the train passes thereover.

The catching device F on the mail car G consists of a horizontally extending plate 48 or equivalent means on which is guided a carriage 49, as clearly shown in Figs. 4, 5 and 6. On the base plate 48 are U-shaped guides or yokes 50 secured in position by staples 51 that serve to retain the carriage 49 in position and at the ends of the member 48 are stops 52 for limiting the movement of the carriage. The buffing device for the carriage comprises a pair of outwardly extending springs 53, anchored at their inner ends in the supporting plate 54 on the carriage. V-shaped notches 55 are arranged in the supporting plate to permit the springs to be flexed from one side or the other and when the parts are in normal position the springs 53 are disposed centrally of the notches 55. On the carriage 49 are oppositely disposed hooks 56 on the catchers, the hooks having their mouths opening in opposite directions. These hooks are secured in any suitable manner as by extending the inner ends of the wire of which they are constructed into the carriage and securing the same in place by staples 57, as clearly shown in Fig. 6. Coöperating with each hook 56 is a spring keeper 58 that serves to form the grip and mail bag after the same has entered the hook. As shown in Fig. 4, the catchers on the car are disposed between the bag holder D on the post and the guard 42 so as to take hold of the mail bag at a point near its upper end.

The bag holding device on the mail car, which is designated generally by H, is approximately of the same construction as the bag holder at the station receiving and delivering apparatus. This device comprises a pair of relatively movable jaws 59 and 60, as clearly shown in Fig. 7, that are composed of horizontal rod-like members having their outer ends 61 bent laterally and then upwardly to permit the mail bag to be readily drawn out from between the jaws at either end.

The fixed jaw 60 is attached to the car by means of arms 62 and a movable jaw has its ends bent into loops 63 slidably engaging the arm 62 so as to move back and forth thereon and attached to the rear loops is a horizontal member 64, which is acted upon by helical springs 65 to move the said jaw in one direction. The member 64 is actuated against the tension of the spring 65 by an arm 66 on the end of a horizontal shaft 67 that has an operating crank 68. By pressing the crank 68, the member 64 is pressed inwardly toward the side of the car so as to open the jaws for the reception of the mail bag and

when the crank 68 is released the bag will be clamped in position. Below the bag holder H is a guard 69 answering the same purpose as the guard 42 on the station post and below the guard 69 is a mail bag rest or support I comprising a supporting frame 70 and a sheet metal body 71, substantially the same as the rest E, as clearly shown in Figs. 4, 5 and 9. On the bottom of the mail bag rest I are rollers 72 that are adapted to engage with the yielding bag supporting members 43 on the frame A, whereby the said members are depressed.

In briefly describing the operation of the device, as a whole, let it be assumed that a bag of mail matter is to be delivered to a moving train. The postmaster places the mail bag in the holder D and clamps it therein, as indicated by dotted lines *b* in Fig. 4. The bottom of the back is held in the rest E and the guard 42 insures the holding of the bag in the path of the catchers or receivers of the mail car. Assuming that the car is moving to the right, Fig. 6, the right hand hook 56 will engage the mail bag and the movement of the car will cause the bag to be fully engaged in the hook and the carriage 49 will be moved to the left under the tension of the springs 53. Simultaneously the bag will be automatically released from the holder D to be firmly gripped in the hook 56 by the spring 58. The yielding of the carriage 59 prevents the bag from being torn and the mail matter therein destroyed. The mail clerk in the car can then remove the bag at his convenience. If it is desired to deposit a bag of mail at the station apparatus, the mail clerk places the bag in the holder H with the bottom of the bag resting on the device I, the guard 69 holding the middle portion of the bag in the path of the catchers of the station apparatus. As the train approaches the station apparatus, the right hand catcher, Fig. 3, will be engaged by the mail bag and removed inwardly thereby and as soon as the mail bag reaches the left hand catcher it will be gripped therein and released from the bag holder of the train. The bottom of the bag will rest on the left hand member 43 so that it is prevented from dropping to the ground. In case the train is moving in the opposite direction, the right hand catcher will be the active one, as will be readily understood.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and method of operation will be readily apparent to those skilled in the art to which the invention appertains and while I have described the principle of operation of the invention together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes

may be made when desired as are within the scope of the appended claims.

What is claimed, is:—

1. In an apparatus of the class described,
5 the combination of a supporting structure, a mail bag holder thereon designed to suspend a bag from the top, oppositely disposed bag receivers or catchers, and a rest on the supporting structure disposed intermediate the
10 holder and catchers for receiving the bottom of the bag.

2. In an apparatus of the class described, the combination of a supporting structure, a mail bag holder thereon, oppositely disposed
15 bag catchers and receivers, a common means carried by the supporting structure and on which the catchers or receivers are yieldingly mounted to move in either direction, and stops on the supporting structure for limiting the movement of the said means.
20

3. In an apparatus of the class described, the combination of a supporting frame, oppositely disposed mail bag receivers, a common buffing and returning device for the re-
25 ceivers, and ratchet members disposed under the receiver and arranged to support the weight of the bags in the latter.

4. In an apparatus of the class described, the combination of oppositely disposed bag
30 receiving hooks, spring keepers coöperating therewith, and a yieldingly mounted carriage for the hooks.

5. In an apparatus of the class described, the combination of a supporting structure,
35 slidably mounted mail bag catchers thereon, bell crank levers mounted on the structure, links connecting the levers with the catchers, and springs connected with the levers for cushioning the catchers and maintaining
40 them in normal position.

6. In an apparatus of the class described, the combination of a spring pressed and hing-
edly mounted bag receiving hook, a yielding keeper for clamping the bag in the hook, and
45 a carriage on which the hook and keeper are mounted.

7. In an apparatus of the class described, the combination of a spring pressed and
hingedly mounted bag receiving hook, a
50 yielding keeper for clamping the bag in the hook, a carriage on which the hook and keeper are mounted and a buffing device for the carriage.

8. In an apparatus of the class described,
55 the combination of a supporting frame having a guide, a horizontally movable carriage on the guide, a device for serving as a buffer and means for returning the carriage, and a bag receiving mechanism mounted on and
60 movable with the carriage.

9. In an apparatus of the class described, the combination of a mail bag holder, a rest below the same for receiving the bottom of the bag, and a device between the holder and rest for supporting the intermediate portions
65 of the bag.

10. In an apparatus of the class described, the combination of a bag holder, a stationary rest receiving the bottom of the bag, and a stationary guard extending horizontally be-
70 tween the rest holder.

11. In an apparatus of the class described, the combination of a holder for a mail bag arranged to permit the latter to be with-
drawn from either end and oppositely dis- 75 posed catchers yieldingly mounted and arranged to move in the path below the holder.

12. In an apparatus of the class described, the combination of a holder comprising rela-
tively movable clamping jaws, a cross-shaped
80 rest below the holder having its ends open, and a horizontal guard extending over the rest to hold a middle portion of the bag in position.

13. In an apparatus of the class described,
85 the combination of two relatively movable elements, a mail bag holder on one of the elements, a support below the holder, a receiver carriage on the other element, and a yielding member disposed under the catcher
90 for engaging the bottom of the bag to prevent the dropping of the latter.

14. In an apparatus of the class described, the combination of a receiver carriage, with
a downwardly yielding member disposed be- 95 low the carriage for supporting the mail bag after being caught by the receiver.

15. In an apparatus of the class described, the combination of a receiver carriage, with
a downwardly yielding member disposed be- 100 low the carriage for supporting the mail bag after being caught by the receiver, and a guard extending along the member at a point intermediate the same and carriage.

16. In an apparatus of the class described,
105 the combination of two relatively movable elements, a mail bag holder on one, and a rest below the holder to receive the bottom of the bag, a catcher or receiver on the other element and a downwardly yielding member
110 arranged below the catcher and in the path of the rest to receive the bag after being caught in the catcher.

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

LEOPOLD F. KURPGEWIT.

Witnesses:

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WILLIAM HOCKING.