

No. 644,232.

Patented Feb. 27, 1900.

V. A. JONES.

MAIL SUPPLYING AND DELIVERING APPARATUS.

(Application filed Apr. 4, 1899.)

(No Model.)

2 Sheets—Sheet 1.

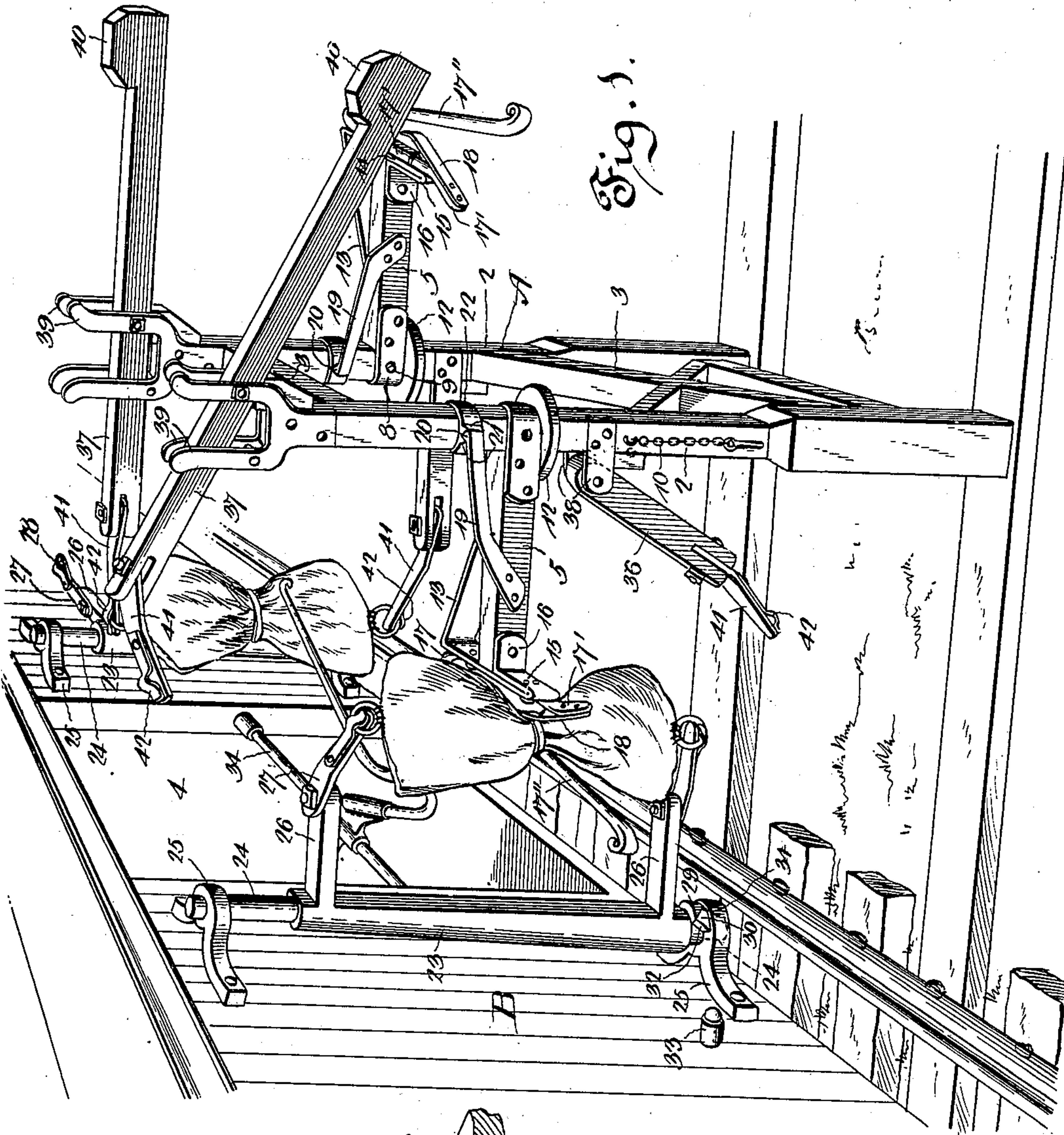
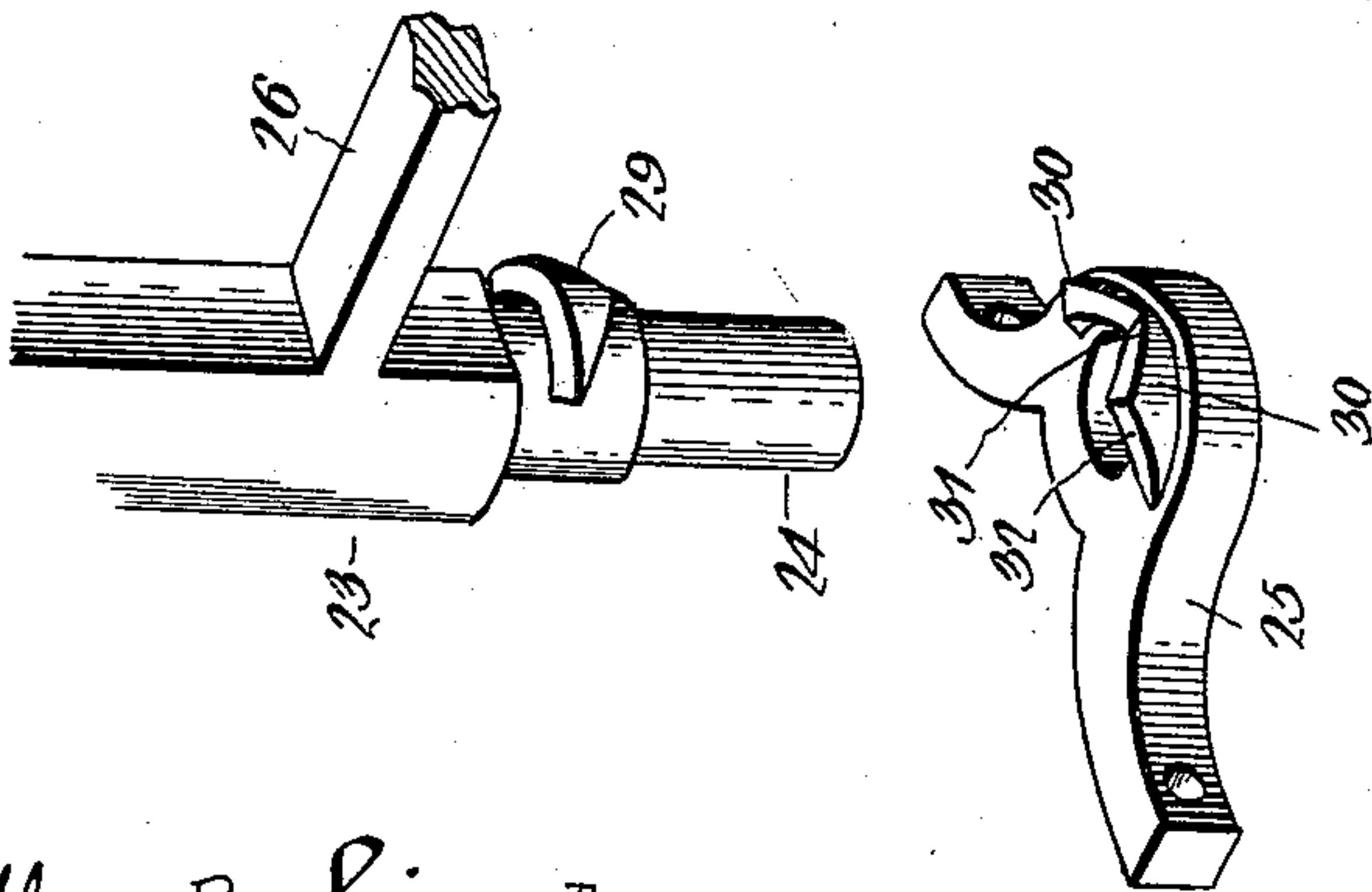


Fig. 2.



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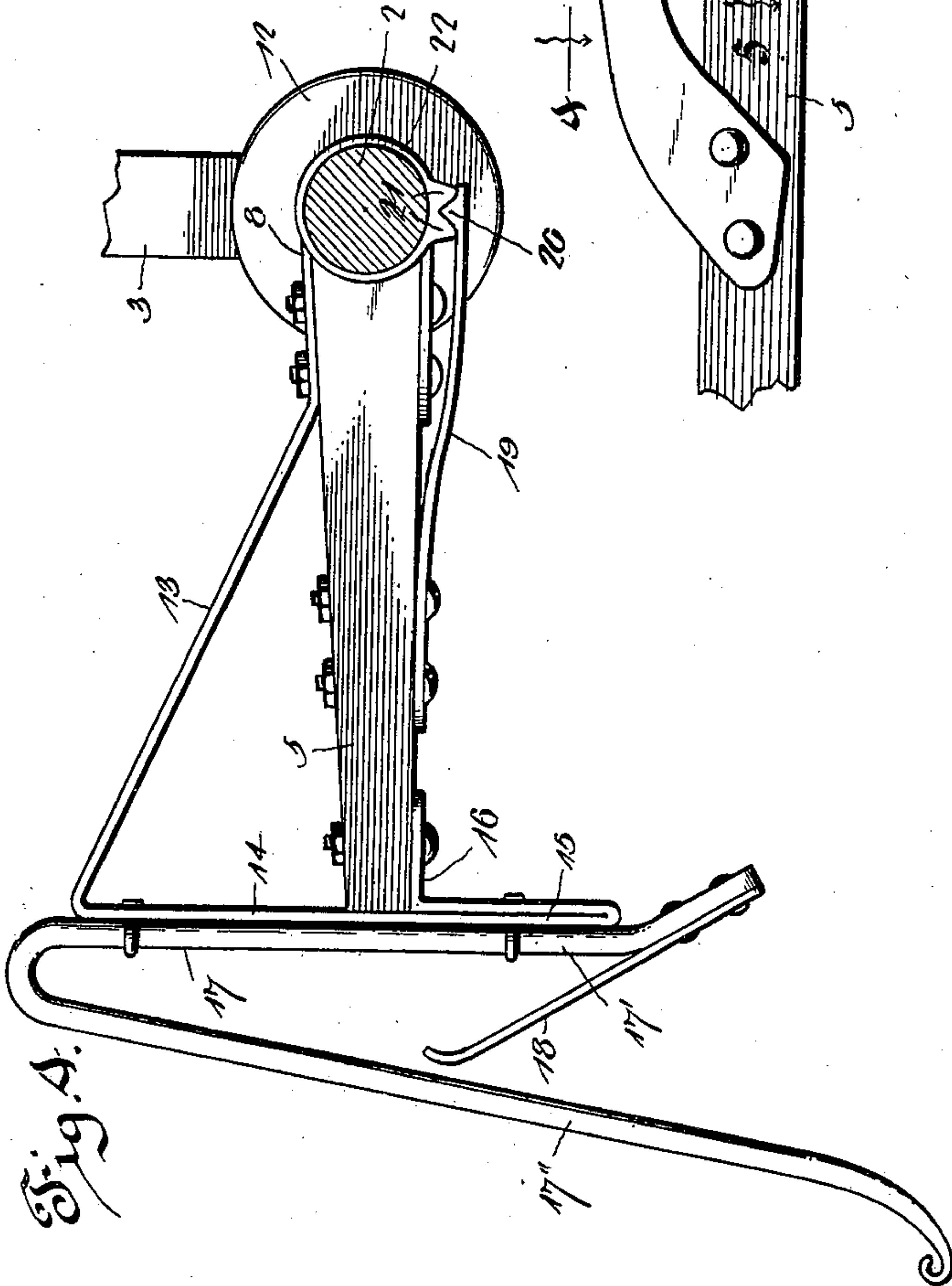
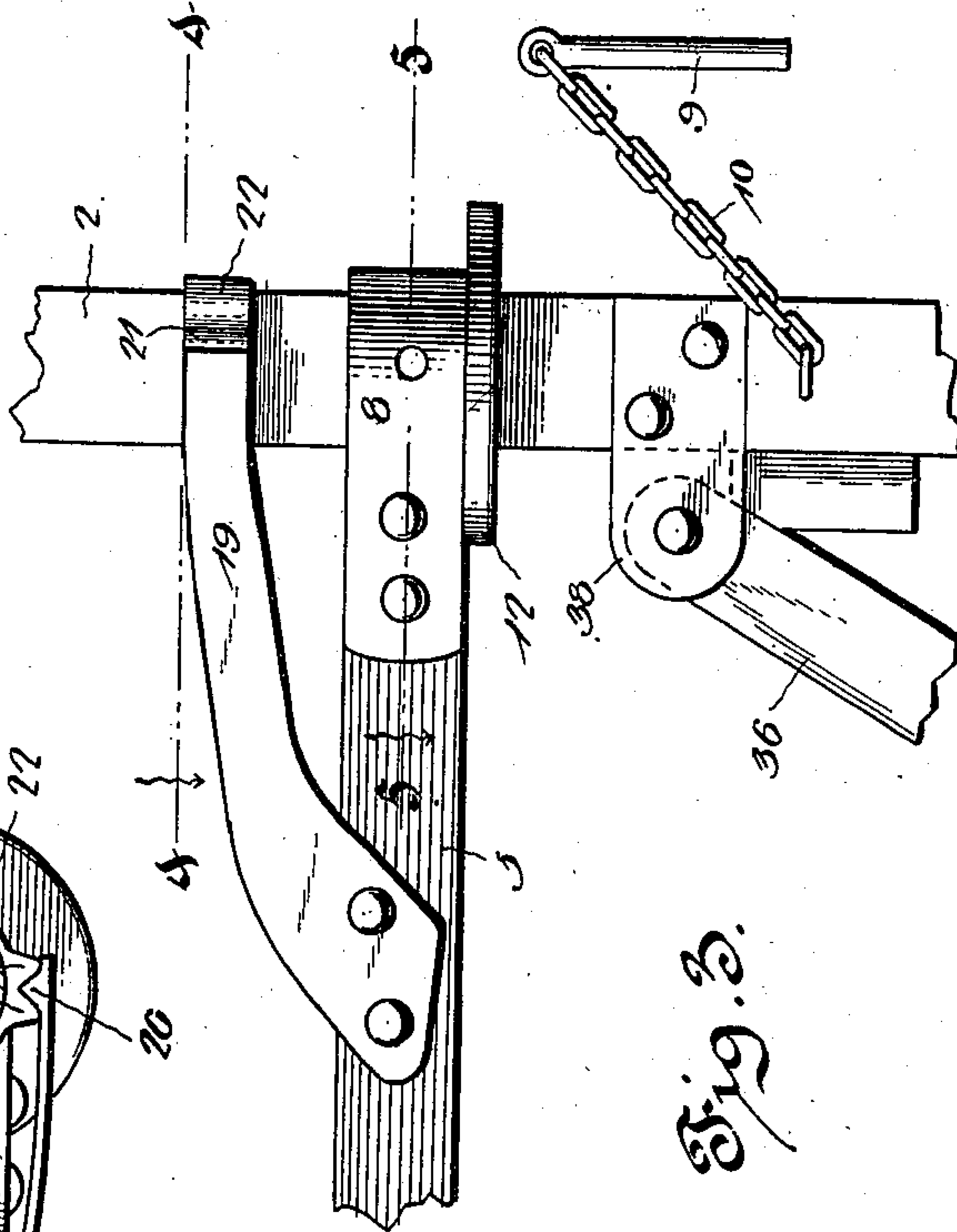
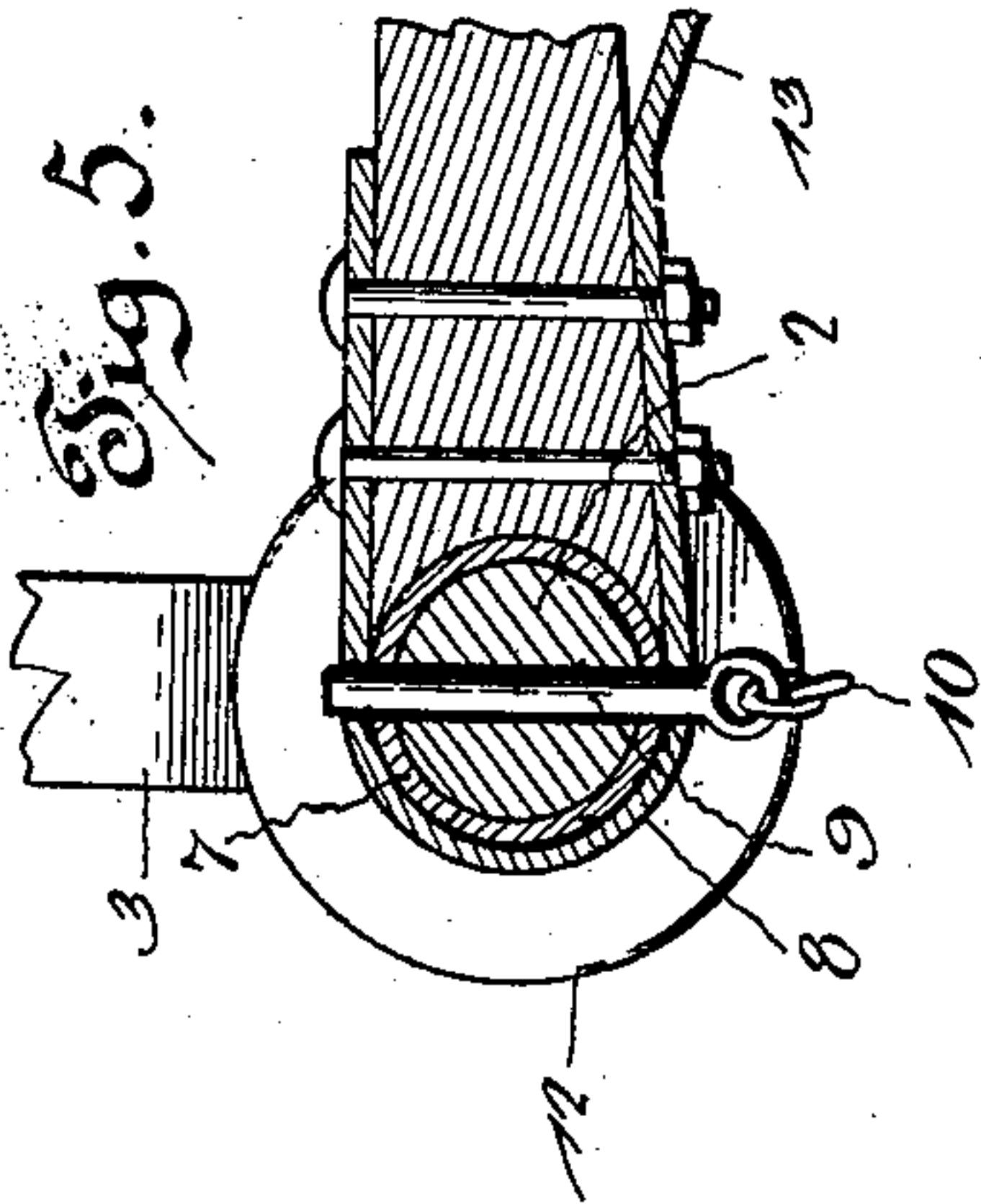
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

VIRGIL A. JONES, OF WAVERLY, NEBRASKA.

MAIL SUPPLYING AND DELIVERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 644,232, dated February 27, 1900.

Application filed April 4, 1899. Serial No. 711,687. (No model.)

To all whom it may concern:

Be it known that I, VIRGIL A. JONES, a citizen of the United States, residing at Waverly, in the county of Lancaster and State of Nebraska, have invented a new and useful Mail Supplying and Delivering Apparatus, of which the following is a specification.

This invention relates to an apparatus for discharging mail-matter from and supplying the same to a moving railway-car; and the object of the invention is to provide an effective and positively-operable appliance of the character specified which is adapted for performing the above-named functions with rapidity and accuracy.

The apparatus includes in its construction a crane which carries pouch transmitting and receiving mechanisms, while the car is equipped with similar means, so that bags can be discharged from or taken onto trains while the same are rapidly moving, and it will be evident that in this case the necessity of manually discharging the bags is avoided, as when they are thrown off by hand they are apt to lodge in mud and snow and are occasionally lost or destroyed.

With these ends in view the invention consists in the novel combination of elements and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of my apparatus and the position occupied by the car just prior to the delivery of a bag from said car to the crane and the receipt of a bag by the car from the crane. Fig. 2 is a detail perspective view of one of the discharging-posts on the bracket and locking-lugs. Fig. 3 is a side elevation of a portion of the crane-post and the arm. Fig. 4 is a plan view, partly in section, on line 4 4 of Fig. 3. Fig. 5 is a plan view, partly in section, on the line 5 5 of Fig. 3, showing the arm turned back and the pin in position.

Like characters denote like and corresponding parts in each of the several figures of the drawings.

The apparatus includes in its construction a crane, which may be of any suitable character, but which is represented as consisting of two uprights or posts 2, vertically disposed and connected and braced at suitable intervals by cross-beams 3, and the crane, which is designated for convenience by A, is mounted at one side of the railway-track when used in connection with a single-track system, or between the tracks when used in connection with a double system, although the apparatus illustrated is intended primarily for use in connection with the former.

The car is denoted by B, and it has an opening 4 in its side through which the pouches are passed.

The posts 2 support at suitable points in their height the aligned arms 5, supported for swinging movement thereby and movable about vertical axes and having means for catching pouches from a moving car, one arm being adapted to receive the pouch from the car when the latter is traveling in one direction, while the other arm is adapted to receive a bag from the car when it is traveling in the other direction, and it will be apparent that only one of these arms is employed at a time, the arm which is not in use being swung around to the rear of the frame and locked. The arms are curved, as at 6, at their inner ends, and the curved surfaces fit against the bearing-rings 7 upon the posts 2, and the rings are partially surrounded by straps 8, curved to fit against the bearing-rings and having their opposite ends secured in some suitable manner to the opposite faces of the horizontal swinging pouch-catching arms 5.

The arms 5 are locked in their rearward positions and at approximately right angles when not in use by means of pins, as at 9, adapted to be thrust into registering openings in the straps 8 and bearing-rings 7, respectively, and one of these arms is shown in its ineffective position. The pins 9 have eyes to receive the chains 10, which in turn are united to the opposite sides of the frame and prevent the pins being lost.

The arms 5 are supported near their inner ends upon the disks 12, secured to the posts 2 at substantially their middles.

The straps 8, to which I have hereinbefore referred, are each bent outwardly, as at 13,

and then inwardly, as at 14, and these inwardly-bent portions 14 are secured to the outer edges of the arms 5 and project beyond the same, as at 15, and the projecting portions in turn have L-shaped bends 16 fitting against the arms, and this organization furnishes a strong structure.

As heretofore stated, the arms 5 are alternately effective, and they are positively locked in their ineffective positions and out of the way of trains, and they are adapted to catch pouches from the car B, which is equipped with transmitting or discharging means co-operative with the two bag-receivers.

The arms carry pouch receiving and holding hooks 17, between the branches 17' and 17'' of which the pouches are thrust, and these hooks are secured to the straps 8 by means of staples or otherwise, while the branches or arms 17'' are flared outward to a considerable extent to insure the proper guidance of the pouches between the same and the complementary branches. The inner branches 17' are provided with longitudinal springs 18, adapted to bear against the bag when the same is received by the hook, thereby to hold said bag against dislodgment.

The arms are held yieldingly in their bag-receiving position, so that they can give slightly, and the pressure will be sufficient to hold the arms in their effective positions and against the action of the wind or the suction caused by the moving train, and for this purpose I mount upon the arms yielding locking devices, such as spring-pawls, adapted to engage catches on the crane, and in Fig. 1 one of these arms is shown as being in a position to receive a pouch. To the sides of the arms I secure the spring-pawls 19, disposed, respectively, at angles thereto and having teeth 20 at their free ends to engage between the projections 21 on the rings 22, surrounding the posts at points above the swinging arms, and the adjacent faces of the projections 21 are oppositely beveled, so as to permit proper lateral movement of the swinging arms as occasion requires.

The car B carries at opposite sides of the door-opening 4 the vertical longitudinally-reciprocative posts 23, constituting elements of the bag-discharging mechanism, and these posts have rounded ends 24, slidable in correspondingly-shaped openings in the brackets 25, which extend outward from the car, and these posts cooperate, respectively, with the arms 5, one of them being adapted to thrust a pouch into one of said arms when the car is traveling in one direction and vice versa when said car is traveling in the other direction. These posts are provided near their opposite ends with the arms 26, between which the bag is carried, the rings of the bags being hooked over the plates or extensions 27, pivoted to the arms 26, and the rings being secured in place by the spring-fingers 28, secured, respectively, to the upper and lower sides. The resistance caused by the bag

striking one of the hooks 17 will of course disconnect said bag from the plates 27, the pressure exerted by the spring-fingers 28 being comparatively slight.

Means are provided for locking the posts 23, so that the arms 26 thereon will be disposed at right angles to the car, and such means consists, respectively, of cooperating lugs 29 and 30, secured, respectively, to the lower ends of the rotative post and to the adjacent brackets, and the upper lugs 29 are of angular shape to fit in correspondingly-shaped pockets 31 of the lower lugs, so as to lock the arms in their bag-discharging positions, and it will be understood that only one of these bag-discharging mechanisms is in use at a time, the other being swung out of position.

When a bag-discharging device is in its active position, the beveled lug 29 will be fitted within the corresponding seat in the lower lug 30, and when the bag is discharged the post 23 will be turned, causing the beveled lug to ride up that inclined face of its pocket farthest from the door-opening, which results in slightly elevating the post. When the lug passes out of the pocket, it is adapted to ride down either one of the oppositely-inclined faces 32, the same result following with respect to the other bag-discharging device, and it will be evident that the lugs 29 are adapted to ride down the inclined faces 32 by gravity. The lower lugs present, in effect, two teeth or projections, the faces of which serve to lock the posts 23 in their two extreme and intermediate positions.

When the bags are removed, the shock resulting is reduced by buffers 33, secured to the side of the car upon each side of the opening 4 and in position to be struck by the lower arms 26 on the posts.

The door-opening is crossed by the bar 34, located at a convenient point in its height and provided with the reversible hook 35, of familiar construction, adapted to take mail-pouches from discharge instrumentalities located at opposite sides of the crane.

The mail-bag-catching arms 5 are disposed between superposed arms 36 and 37, pivotally mounted upon the posts of the crane and adapted to support a bag and movable about horizontal axes and each adapted to drop into an ineffective position when the bag is removed from them. The lower arms 36 are pivotally supported between the plates 38, secured to and extending from the posts 2 below the disks 12, and the upper arms 37 are supported between the rear branches or arms of the forked plates 39, disposed in pairs and secured to the upper ends of said posts 2, and these upper arms are provided with counterweights 40, adapted to elevate the bag-supporting arms when the bag is removed. The arms 36 and 37 are provided with pivoted plates or extensions 41 over which the rings at the ends of a mail-bag are hooked, the rings being held thereon by spring-fingers 42. Each of the pairs of arms

is adapted to support a bag and which is taken therefrom by the reversible hook 35 on the car, and prior to this operation a bag will be discharged from the car and will be received by one of the arms.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what I claim is—

1. The combination with a car and with a crane, of bag supplying and receiving devices carried respectively by the car and by the crane, a spring-pawl on the bag-receiving device, and a catch on the crane adapted to be engaged by said spring-pawl, substantially as described.

2. The combination with a car and with a crane, of bag supplying and receiving devices carried respectively by the car and by the crane, two projections secured to the crane, and a spring-pawl fixed to said bag-receiving device and provided with a tooth adapted to engage between said projections, substantially as described.

3. The combination with a car and with a crane, of bag supplying and receiving devices carried respectively by the car and by the crane, a ring secured to the crane above said bag-receiving device and provided with two teeth the faces of which are beveled, and a spring-pawl secured to the bag-receiving device and provided with a tooth adapted to engage between said projections, substantially as described.

4. The combination with a car and with a crane, of bag supplying and receiving devices carried respectively by the car and by the crane, means for holding the bag-receiving device yieldingly in its effective position, and a spring-arm on said receiving device having a frictional engagement with the crane for holding said device in its operative position, substantially as described.

5. The combination with a car and with a crane, of bag-supplying devices carried respectively by the car and by the crane, means for holding the bag-receiving device yieldingly in its effective position, a pin adapted to engage in an opening in said bag-receiving

device, and a chain on the crane to which said pin is connected, substantially as described.

6. The combination with a car and with a crane, of a bag-supplying device on the car, a swinging arm on the crane, a strap secured to said arm and having an angular portion and an inwardly-bent portion secured to the outer end of said arm, a bearing on the crane upon which said arm and strap fit, a hook secured to the inwardly-bent portion of said strap, and a bag-holding spring secured to one of the branches of the hook, substantially as described.

7. The combination with a car and with a crane, of bag supplying and receiving devices carried respectively by the car and by the crane, said bag-supplying device including a longitudinally-reciprocative, rotative post, two projections with reversely-inclined sides, and a single projection on said post adapted to fit between said first-mentioned projections and having reversely-inclined sides which cooperate therewith, substantially as described.

8. The combination with a car and with a crane, of bag supplying and receiving devices carried respectively by the car and by the crane, said bag-supplying device including a longitudinal reciprocative, rotative post, a lug having a beveled pocket with reversely-inclined sides, and a beveled lug on said post adapted to fit in said pocket, and provided with reversely-inclined sides which cooperate therewith, substantially as described.

9. The combination with a car and with a frame, of bag supplying and receiving devices carried respectively by the car and by the crane, said bag-supplying device including a longitudinally-reciprocative, rotative post provided with arms between which a bag can be supported, bearings for said post, a lug secured to the post, a cooperating lug on one of said bearings having a pocket to receive said first-mentioned lug and also having inclined faces, substantially as described.

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

VIRGIL A. JONES.

Witnesses:

JONATHAN REITZ,

JOHN G. ELLENWOOD.