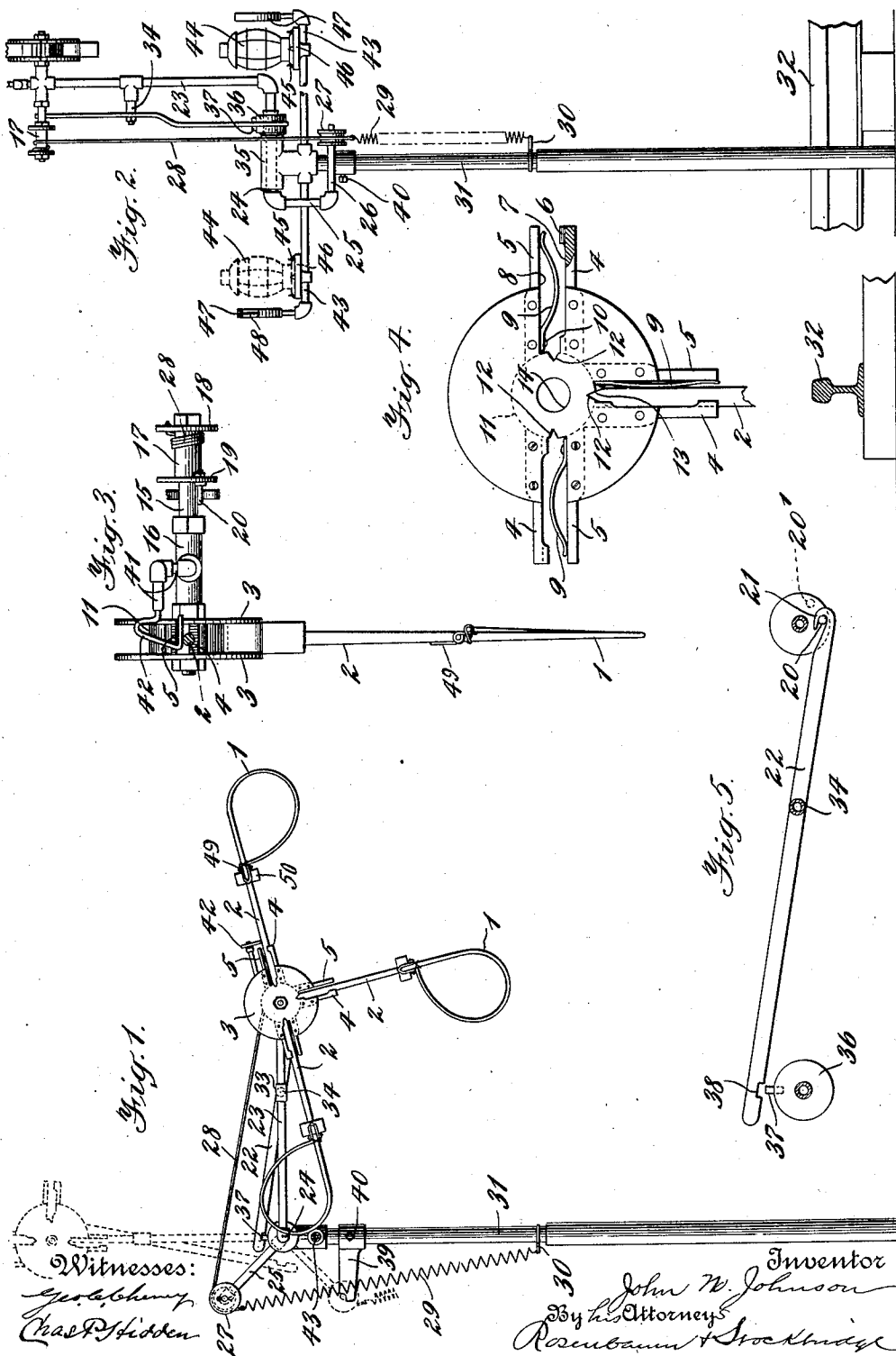


J. N. JOHNSON.
DELIVERING APPARATUS.
APPLICATION FILED JAN. 23, 1912.

1,037,629.

Patented Sept. 3, 1912.

2 SHEETS—SHEET 1.



Witnesses:
Geo. Schumy
Chas. P. Hidden

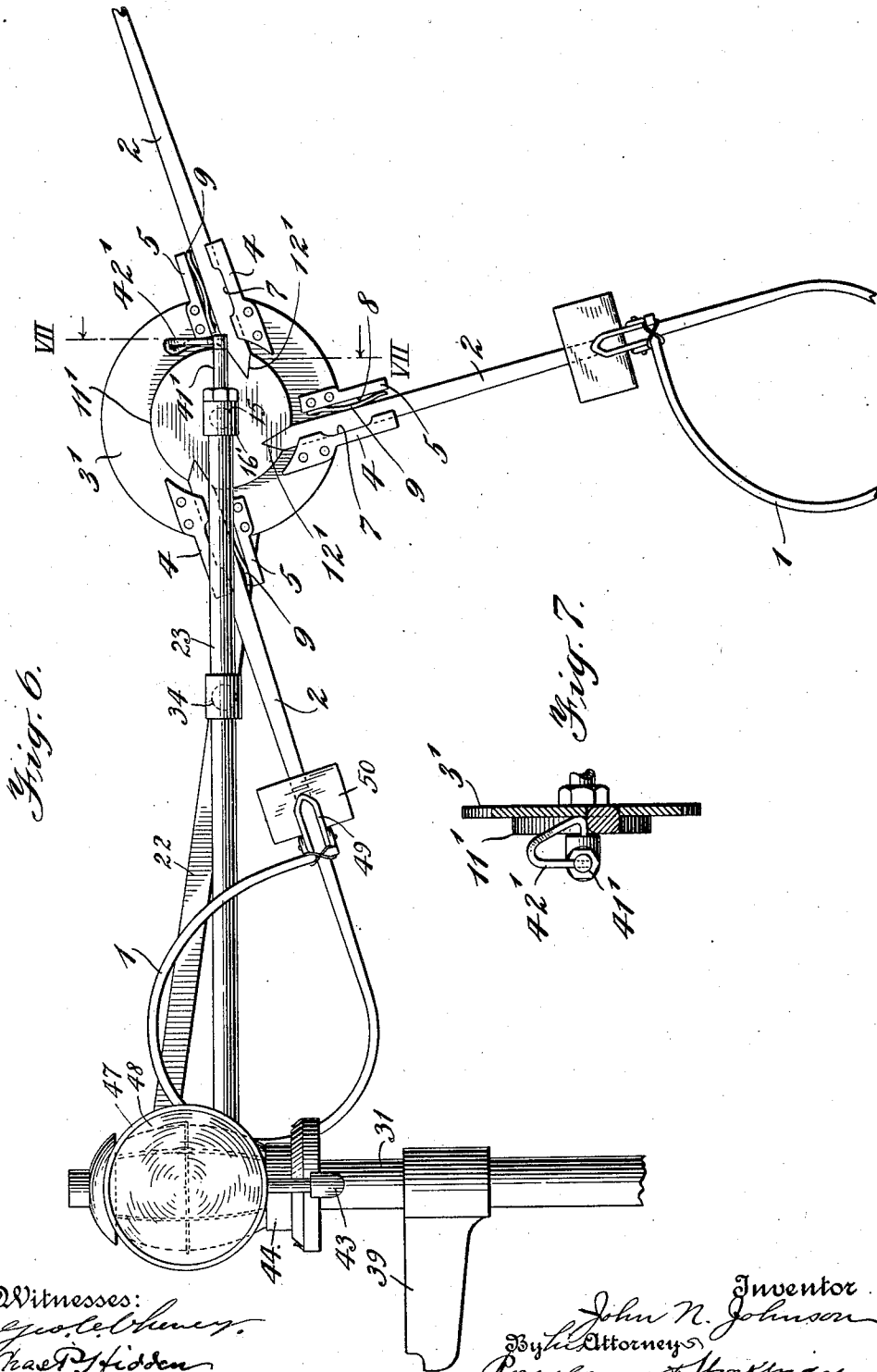
Inventor
John W. Johnson
By his Attorneys
Rosenbaum & Stockbridge

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Witnesses:
Charles H. Cheney
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UNITED STATES PATENT OFFICE.

JOHN N. JOHNSON, OF ALBUQUERQUE, NEW MEXICO.

DELIVERING APPARATUS.

1,037,629.

Specification of Letters Patent.

Patented Sept. 3, 1912.

Application filed January 23, 1912. Serial No. 672,953.

To all whom it may concern:

Be it known that I, JOHN N. JOHNSON, a citizen of the United States, residing at Albuquerque, in the county of Bernalillo and State of New Mexico, have invented certain new and useful Improvements in Delivering Apparatus, of which the following is a full, clear, and exact description.

This invention relates to delivering appliances, such as order cranes and like devices used for delivering and receiving messages, respectively, to or from moving vehicles, and more particularly to devices of this character used for delivering messages to rapidly moving trains.

In railroad practice there is a form of order known as "19" orders which are delivered to trains by means of a hoop held in the hand and caught by proper persons on the train; commonly, one to the engineer, or to each engineer if there be two engines, and one to the conductor. There are several disadvantages in this hand delivery. It is dangerous to the party handing the hoop up, on account of possible projecting parts or objects carried by the train, and there is also danger of matter or objects thrown from the windows of the passing train by heedless passengers. Again, the hoops are not held uniformly with respect to the train, and as a result the hoops are frequently missed, especially at night, or in fog or smoke. This necessitates stoppage of the train and at least occasions delay, if nothing more serious happens. Passenger trains, especially, have to slow down to catch the hoops, as it is almost impossible for one to stand as close to a rapidly moving train as the hand delivery requires. I am aware that attempts have been made to provide mechanical means for delivering these hoops, but for various reasons these devices have not been commonly accepted. One reason, apparently, for this lack of acceptance of so necessary a device, is that it is very important that objects should not normally project too closely to the track. It is therefore highly desirable that the hoop-carrying member be promptly removed from its hoop delivering position after the hoops have been removed therefrom. This action should be automatic so as to overcome the necessity for keeping

an operator in attendance, and in fact to substantially eliminate the personal equation. In so far as I am aware this has never been attempted.

One of the objects of my invention therefore is to provide such an automatic structure.

Another object is to simplify the construction as far as practicable and to reduce the cost thereof to a minimum.

Still another object is to provide means for aiding the engineer or conductor to locate the hoop, regardless of darkness or fog.

These and other objects of the said invention will be hereinafter referred to and the novel elements and combinations of elements whereby they may be attained will be more particularly set forth in the appended claims.

I am aware that various modifications and changes may be made within the purview of my invention as herein exemplified, and I hence desire to be limited only by the scope of the said claims.

In the drawings which form a part hereof and in which like reference characters designate like parts throughout the several views: Figure 1 is a side elevation of a train order crane constructed in accordance with the principles of my invention, the lantern arms or brackets being broken off for clearness of illustration. Fig. 2 is a rear elevation of the same. Fig. 3 is a detail view, drawn to an enlarged scale, of the hoop-carrying disk and parts adjacent thereto. Fig. 4 is a detail elevation of the said disk. Fig. 5 is a detail of the arm releasing mechanism. Fig. 6 is a side elevation of a modified form of the device, which for certain purposes is also the preferred form, and Fig. 7 is a detail section of the device shown in Fig. 6, the section being taken on line VII—VII of Fig. 6.

Referring first to Figs. 1, 2 and 3, a plurality of hoops 1, each having a stem 2 laterally projecting therefrom, are adapted to be mounted upon a carrier, such for example, as a disk 3. In this form of the device the said carrier comprises two of the said disks 3 spaced apart, in practice, somewhat over an inch and having therebetween a plurality of fingers arranged in pairs, one

of each of said pairs of fingers being herein designated 4 and the other 5. As best shown in Fig. 4 the fingers marked 4 are recessed longitudinally thereof as at 6 and are also laterally cut away as at 7. The finger 5 corresponding to any given finger 4 is preferably placed parallel thereto and may have a flat opposed face 8 to which is secured a flat spring 9; said spring being riveted as at 10 to the finger 5; or secured thereto in any other suitable manner. Fixedly secured to the disks 3 at the center thereof is a core 11 which spaces them apart, and against which, in this particular form of the device, the inner extremities of the fingers abut. This core is notched as at 12 at a plurality of points therearound. In this instance three V-shaped notches have been provided spaced apart substantially 90°.

The free extremity of each of the stems 2 is more or less pointed as at 13 by beveling opposite sides of the stem, which beveled portions diverge at an angle corresponding to that between the walls of the notches 12. Thus when the stem of a hoop has been inserted between a pair of fingers, this tapered or pointed extremity of the stem of the hoop enters the corresponding notch 12 and by reason of the flattened formation of the said point holds the hoop against inadvertent rotation around the axis of the stem thereof. When inserting this stem between a pair of fingers the spring 9 will be flattened somewhat and will firmly press the opposite face of the stem against the finger 4, holding it in the longitudinal recess 6 thereof. The disks and the core are centrally apertured as at 14 for the reception of a spindle 15, being secured to said spindle in any suitable manner so as to be rotatable therewith.

Spindle 15 extends through a bearing 16 and the end thereof opposite that which carries the hoop-holder above described has mounted thereon a spool 17. This spool preferably consists of a cylindrical body at the respective ends of which are flanges 18 and 19. It may be here noted that the spool 17 is also secured fast to the spindle and constitutes a portion of the means by which the same is rotated. The flange 19 is provided with a stop pin 20 which projects therefrom toward the bearing 16. This pin is adapted for engagement with the hook-shaped end 21 of a latching member broadly designated 22.

As shown in Fig. 5, when the several hoops have been placed in position in the holder and the device has been set preparatory to delivering the said hoops to a train, pin 20 will occupy substantially the position indicated by the dotted circle 20' in Fig. 5. As the hoops are withdrawn from the holder, the said holder rotates in the manner hereinafter described and the pin 20

moves from position 20' by successive steps until it has first engaged the extremity of the latch member 22 adjacent to hooked end 21 thereof, thereby depressing said end and subsequently moving into locking engagement with said hooked end as shown in Fig. 5.

The bearing 16 is mounted securely upon the outer extremity of arm 23, said arm being pivoted upon a lateral extension or spindle 24. In practice I prefer to form the arm 23, the extension 24, and indeed many of the other parts of the device, of pipe sections and fittings. The rear extremity of the extension 24, as viewed in Fig. 1, carries a rearwardly projecting arm 25, a portion of which is bent around into substantial parallelism with the spindle 24. In effect the arms 23 and 25 therefore constitute one member, since all portions of the same are rigidly connected together and move as one piece about a pivotal axis. The free extremity of the laterally directed part 26 carries a roller 27 over which passes a flexible element, such as a cord or chain 28; one extremity of this flexible element being wrapped around the spool 17 any desired number of turns, while the other extremity of said element is attached to a spring 29; the lower extremity of said spring being secured to a suitable bracket 30 which projects laterally from an upright or standard 31. This latter may be of any desired material, but I prefer to make it of pipe sections, as shown. The said standard projects upwardly from the ground, for example, to one side of the railroad track 32, being spaced therefrom in the manner shown in Fig. 1, at such a distance as to afford proper clearance between a train passing over the track and the hoops when in position in the holder. The arm 23 is preferably provided with a sleeve 33 to which is pivotally connected, as at 34, the latch member 22 above referred to.

The spindle 24 is journaled in a suitable casting, or bearing, 35 upon the upper extremity of the standard 31, and fixedly secured to this bearing 35 is a collar 36 which carries a projection or key 37 adapted for engagement with a notch 38 upon the under side of the inner extremity of the latch member 22; and when the said latch member is not in engagement with the pin 20, the portion thereof to the left, as shown in Fig. 5, of the pivotal point 34 is sufficiently heavy to drive this part of the arm down into engagement with the key 37. This obviously prevents upward movement of the arm 23, since the innermost shoulder of the notch 38 will bear against the key 37 if there be any tendency toward upward movement of said arm. Means are provided for exerting such an upward tendency, the said means being the spring 29. This spring is intended to

serve a dual function. It operates to rotate the hoop holder, and any hoops that may be therein, until the pin 20 has been driven into its locking engagement with the latch member and thereafter, as soon as this action unlatches or disengages the said member from the key 37, the tension of the spring serves to elevate the entire hoop-holder together with its arm substantially in the position shown in dotted lines in Fig. 1. It is desirable that some limit for this movement of the arm 23 be provided, and to this end a stop bracket 39 may be mounted upon the upright 31, being secured thereto in any suitable manner, as by means of a set screw 40. The portion 26 of the arm 25 engages a recess in the outer extremity of this bracket 39 as shown in Fig. 1, and this engagement serves to prevent further movement of the arm 23. If stop 39 be omitted, the arm movement is still limited, however.

It is obvious that some means must be provided for preventing the inadvertent rotation of the hoop-holder or carrier, and to this end a series of pipe sections 41, of quarter-inch pipe or the like, may be secured to the bearing 16 and are so disposed as to present a stop 42 to the stems 2 of the hoops. This stop is preferably resilient in character so that the shock of engagement between a stem 2 and the said stop is reduced to a minimum. As shown in Fig. 3, the shape of this spring stop is such as to permit the stems of the hoops being moved downwardly past the same without material interference, while any upward movement of such a hoop stem is impeded. It is for this reason that the said stop is bent in the manner shown in Fig. 3 with the exposed downwardly directed surface of the same located at an angle to the path of movement of the hoop stem, while the lower extremity of the stop is bent around sharply back toward the adjacent pipe sections 41. I also prefer to provide suitable arms or brackets 43 adapted to support a lamp 44, the said brackets in this instance being also made of pipe sections and being screwed into the lower portion of the casting 35; said brackets being oppositely disposed and in substantial alinement with the railroad track 32. The lamp or lantern 44 is held in place upon one of the said brackets by means of spring clips 45 or the like which project upwardly from small tables 46 secured on the pipes or brackets 43. The outermost extremity of each of these brackets is also provided with a frame 47, each of said frames serving to retain a sheet of colored glass 48; which, by reason of the disposition of a lamp upon one or the other of the brackets 44 (according to the direction of the approaching train) will show a definite colored signal to the engineer on the train. In Fig. 1, for clearness of illustration, the lamps and the colored glass and

frames have been omitted but it will be observed that this bracket is so disposed as to bring the lamps supported thereby substantially in a plane with the hoop which is exposed adjacent the track. This serves to aid the engineer or conductor of said train in locating the hoop; which is of value at night, or in fog or mist. Furthermore the adjacency of the lamp permits direct rays therefrom to fall upon the hoop, which further aids in locating the same.

The operation of this form of the device is substantially as follows: Assuming that the stems of the hoops have been inserted between the respective fingers, three of these hoops being provided, as shown in Fig. 1, and that as each has been placed in position it has been wiped down past the spring stop 42. This action will wind the cord or chain 28 upon the spool 17, elongating spring 29. It will probably be found most convenient, ordinarily, to have first lowered the arm 23 into its horizontal position before applying the hoops to the holder carried by said arm, and this action of lowering the said arm also serves to elongate the spring 29. One of the hoops is now presented toward the train and as the latter passes the device the said hoop may be withdrawn from the holder by the engineer. Upon the withdrawal of a stem from its engagement with the stop, the spring 29 immediately causes the spool, and with it the spindle 15 and the entire hoop-holder to rotate, bringing the next hoop up into the position occupied by the former, the upward advance of the second hoop being prevented by the spring stop 42 which had previously served to hold the hoop in position. In like manner this second hoop may be withdrawn by the conductor of a train or by the engineer or conductor of a following train, which will permit further rotation of the hoop-holder by its actuating spring so that the third hoop will now be presented toward the track. Finally when this hoop has been withdrawn in corresponding fashion there will be nothing to hinder continued rotation of the hoop-holder until the pin 20 carried by the spool has been driven down into engagement with the latch member, releasing the latch and thereafter locking itself within the hooked end thereof. Immediately after the latch has been released, spring 29, by reason of its downward pull upon the arm 25 lifts arm 23 into approximately the vertical position, in the manner described.

Withdrawal of the hoop stem is facilitated by the construction of the supports or fingers for the same; the lateral recesses 7 permitting the stem to be swung around out of alinement with the fingers, the stem merely snapping over the inwardly projecting portions of the finger 4.

I have shown in Fig. 6 a modified form of

the device in question which while similar in many respects to that shown in Fig. 1, possesses certain advantages thereover. In this construction the hoop-holder comprises but a single disk 3' and the fingers 4 and 5, projecting laterally from this disk, may in fact be integrally united thereto. The disk 3' is slotted between these fingers so as to permit of free lateral disengagement of the hoop holder stems 2 therefrom. The core 11' is also preferably integrally united to the disk 3'. In this form of the device I show the notches 12' as directed other than radially as indeed are also the retaining parts for the hoop stems. These stems are inserted between the fingers and have their sharpened extremities in engagement with the notches 12' in much the same fashion as in the preceding construction. One advantage of disposing the hoop stems angularly or diagonally rather than radially about the hoop is that it brings the center of the hoop in a line with the center of the hoop holder, and simplifies the support for the stop 42'. It is considered also that this disposition of the hoops facilitates their disengagement from the holder; and lessens the possibility of the hoop being dropped when being withdrawn from its support. The stop which prevents inadvertent rotation of the hoop holder is here again preferably a resilient one and in this instance is formed by screwing an extension 41' of pipe section or the like into the free extremity of which is inserted the spring stop proper 42' which may be of much the same shape as that shown in Fig. 3; in this instance the stem being engaged adjacent the pointed extremity thereof rather than out beyond the fingers which engage the hoops. The advantage of this construction is that the shock of stopping the rotation of the holder is borne by a part of the hoop stem which is supported upon either side of the part which the stop engages, thereby substantially eliminating all possibility of breakage of the said stem, which might occur when the stop is disposed in the manner shown in Fig. 1. The provision of the stop at this point also tends to hold the engaged hoop more firmly in its holder as the hoop by its own pressure against the stop pin is driven against the recessed finger 5. It also renders the device somewhat more compact, the stop not being in such an exposed position as in the previously described construction. The remaining portions of the device herein exemplified are much the same as in those shown in Figs. 1 and 2, so that they need not be further described.

It may be noted in conclusion that the hoops while intended primarily to serve as handles for messages or orders may be used to support various articles. When used for train orders they are each properly pro-

vided with a holder or clip 49 adapted to engage orders 50.

Having described my invention, I claim:

1. A delivering apparatus comprising a hoop having a stem, a hoop holder having parts adapted to receive and to resiliently engage at least one side of said stem, means independent of said parts for engaging the end of said stem which is remote from the hoop, said independent means adapted to hold the stem against axial rotation.

2. A delivering apparatus comprising an article carrier having a stem, a holder for said article carrier having parts adapted to receive and to resiliently engage at least one side of said stem, means independent of said parts for engaging the end of said stem which is remote from the article carrier, said independent means adapted to hold the stem against axial rotation.

3. A delivering apparatus comprising an article carrier having a stem the free extremity of which has a beveled side, a holder for said carrier having parts adapted to receive and to resiliently engage at least one side of said stem, and independent means for engaging said beveled side, said independent means adapted to hold the stem against axial rotation.

4. A delivering apparatus comprising an article carrier, a support for said article carrier, means for rotarily displacing said support about one axis and for rotarily displacing said support about a second axis, and means for holding said support against movement about said second axis, until it has been rotated a determined distance about said first axis.

5. A delivering apparatus comprising an article carrier, a support for said article carrier, unitary means for rotarily displacing said support about one axis and for rotarily displacing said support about a second axis, and means for holding said support against movement about said second axis until it has been rotated a determined distance about said first axis.

6. A delivering apparatus comprising an article carrier, a support for said article carrier, means for rotarily displacing said support about one axis and for rotarily displacing said support about a second axis, and means for holding said support against movement about said second axis until it has been rotated a determined distance about said first axis, said axes being normally substantially parallel.

7. A delivering apparatus comprising at least one article carrier adapted for movement toward a given point of delivery, a support for said carrier, yielding means for engaging said carrier, automatic mechanism for moving said support away from said point of delivery after said carrier has been disengaged from said support, and means

co-acting with said carrier for holding said support against such movement when said carrier is in position.

8. A delivering apparatus comprising at least one movable article carrier adapted for movement toward a given point of delivery, a support for said carrier, said carrier being adapted to be readily withdrawn from said support, automatic mechanism for moving said support to a point relatively remote from said point of delivery after said carrier has been disengaged therefrom, and means co-acting with said carrier for holding said support against such movement when said carrier is in position.

9. A delivering apparatus comprising a plurality of hoop shaped members adapted for successive movement toward a given point of delivery, a support for said members, said members each adapted to be readily withdrawn from said support, said support being movable and having a bias for movement to a point relatively remote from said point of delivery, locking means for normally holding said support against such movement, and means co-acting with said members for releasing said locking means after the last member has been removed from said support.

10. A delivering apparatus comprising a plurality of hoop shaped members, adapted for successive movement toward a given point of delivery, a support for said members, said members each adapted to be readily withdrawn from said support, said support being movable and having a bias for movement to a point relatively remote from said point of delivery, locking means for normally holding said support against such movement, mechanism co-acting with said members for releasing said locking means after the last member has been removed from said support, said mechanism including means for successively delivering said members toward said given point.

11. A delivering apparatus which comprises a support, a plurality of article carriers, means for supporting said carriers in spaced relationship on said support, an arm for said support, means for moving said support upon said arm and for moving said arm together with said support, means for holding said arm against movement, auxiliary means adapted to co-act with said carrier for holding said support against movement, and a device for releasing said arm holding means.

12. A delivering apparatus which comprises a support, a plurality of article carriers, means for supporting said carriers in spaced relationship on said support, an arm for said support, unitary means for moving said support upon said arm and for moving said arm together with said support, means for holding said arm against

movement, auxiliary means adapted to co-act with said carrier for holding said support against movement, and a device for releasing said arm holding means.

13. A delivering apparatus which comprises a rotarily mounted support, a plurality of article carriers, means for supporting said carriers in spaced relationship on said support, an arm for said support, means for rotating said support upon said arm and for moving said arm together with said support, means for holding said arm against movement, auxiliary means adapted to co-act with said carriers for holding said support against movement, and a device for releasing said arm holding means.

14. A delivering apparatus which comprises a rotarily mounted support, a plurality of article carriers, means for supporting said carriers in spaced relationship on said support, an arm for said support, means for rotating said support upon said arm and for moving said arm together with said support, means for holding said arm against movement, auxiliary means adapted to co-act with said carriers for holding said support against movement, and a rotatable device for releasing said arm holding means.

15. A delivering apparatus comprising a support, hoop engaging means carried by said support, a hoop detachably engaged by said means, a stop, said hoop adapted when in position on said support to co-act with said stop to limit a movement of said support, means for moving said support together with said hoop in one manner, co-acting means for moving said support in another manner, when said hoop is removed therefrom, and means for limiting said last mentioned movement.

16. A delivering apparatus comprising a support, a hoop detachably engaged with said support, a stop, said hoop adapted when in position on said support to co-act with said stop to limit movement of said support, means for moving said support together with said hoop in one manner, co-acting parts for automatically moving said support in another manner when said hoop is removed from said support, and locking means for normally preventing said last mentioned movement until said hoop is removed.

17. A delivering apparatus comprising a rotary hoop-carrier, a pivoted arm upon which said hoop-carrier is mounted, a plurality of hoops detachably engaged with said carrier, stopping means, each of said hoops adapted when in proper engagement with said carrier to successively co-act with said stopping means to limit movement of said hoop-carrier, means for rotating said carrier together with said hoops about one axis, co-acting parts for automatically ro-

tating said support about another axis when said hoops have all been removed therefrom, and locking means for normally preventing said last mentioned movement until the last hoop has been removed.

5 18. A delivering apparatus comprising a rotary hoop-carrier, a pivoted arm upon which said hoop-carrier is mounted, a plurality of hoops detachably engaged with
10 said carrier, stopping means, each of said hoops adapted when in proper engagement with said carrier to successively co-act with said stopping means to limit movement of
15 said hoop-carrier, means for rotating said carrier together with said hoops about one axis, coacting parts for automatically rotating said support about another axis when
20 said hoops have all been removed therefrom, and a latch for normally preventing said last mentioned movement until the last hoop has been removed.

19. A delivering apparatus comprising a rotary hoop-carrier, a pivoted arm upon

which said hoop-carrier is mounted, a plurality of hoops detachably engaged with
25 said carrier, stopping means, each of said hoops adapted, when in proper engagement with said carrier, to successively co-act with said stopping means to limit movement of
30 said hoop-carrier, means for rotating said carrier together with said hoops about one axis, coacting parts for automatically rotating said support about another axis when
35 said hoops have all been removed therefrom, a latch for normally preventing said last mentioned movement until the last hoop has been removed, and means for actuating said latch when said last hoop has been removed.

In witness whereof, I subscribe my signature, in the presence of two witnesses.

JOHN N. JOHNSON.

Witnesses:

H. B. RAY,
WM. WATSON.

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