April 5, 1966 C. A. HOLLAND 3,244,359

CRATE SUPPORTING AND DOOR OPERATING STRUCTURE

Filed Oct. 16, 1964 2 Sheets-Sheet 1

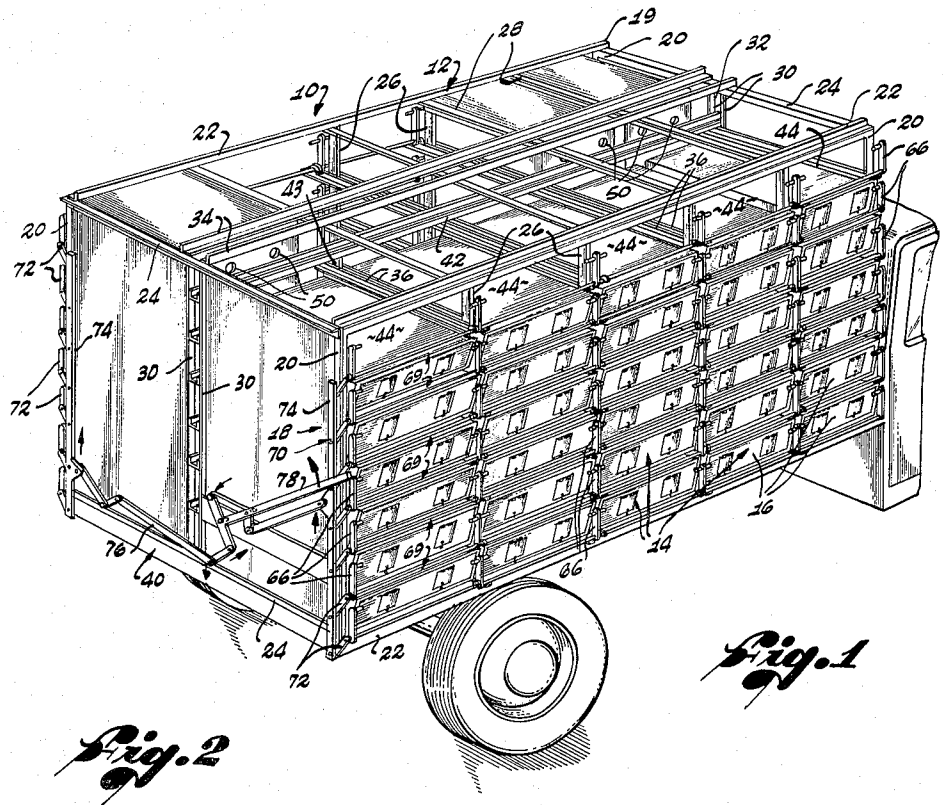
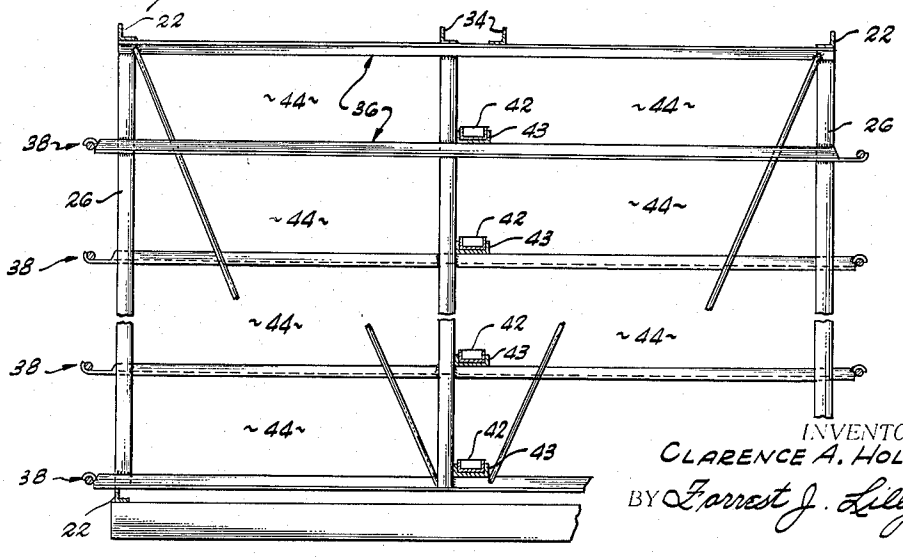


Fig. 1

Fig. 2



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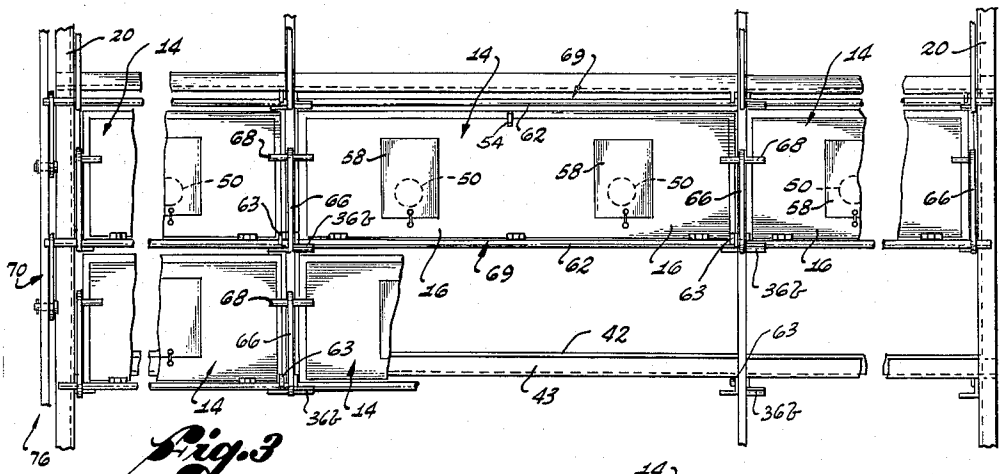

Fig. 3

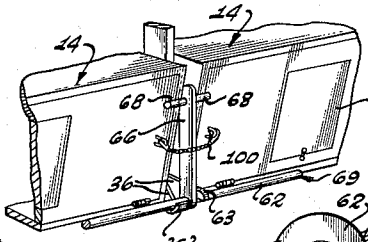

Fig. 8

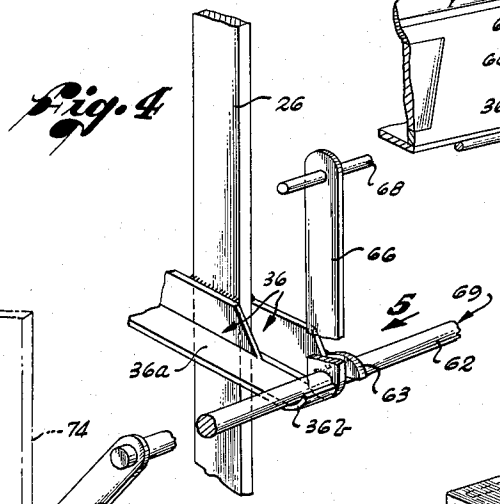

Fig. 4

Fig. 5

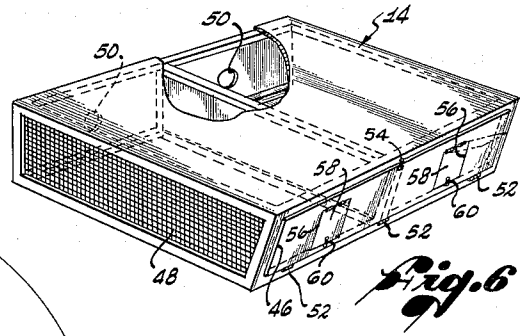

Fig. 6

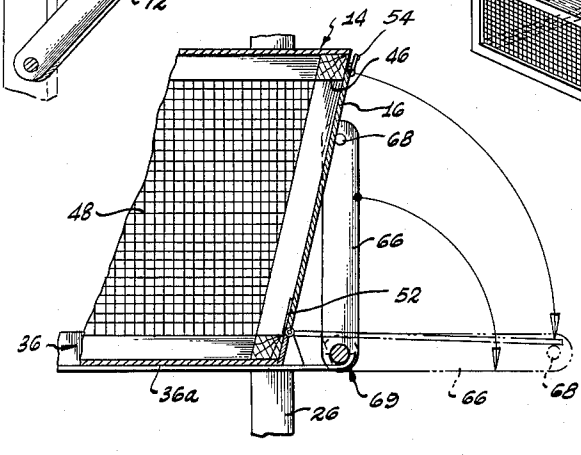

Fig. 7

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CRATE SUPPORTING AND DOOR OPERATING STRUCTURE

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Filed Oct. 16, 1964, Ser. No. 404,534
13 Claims. (Cl. 232—43.4)

This invention is concerned generally with individually portable containers or crates of the kind which have an access opening closed by a movable door, and with the problem of supporting a plurality of these crates and moving their doors in unison between closed and open positions without interfering with the individual portability of the crates. The invention relates more particularly to a novel crate supporting and door operating structure for supporting a number of crates of the character described and operating, in unison, the doors of selected crates, or of all crates, between their open and closed position, all in such manner as to permit the individual crates to be readily removed from and replaced on the rack, when desired.

Generally speaking, the invention provides a crate supporting and door operating structure including a rack with shelves for supporting containers or crates of the character described in side-by-side relation and in such manner that each crate may be removed from and replaced on the rack independently of the remaining crates, thereby to permit the crates to be handled individually. When positioned on the rack, a number of the crates are disposed with their access openings facing in the same direction so as to permit access to all of the crates from one side of the rack. A door operating mechanism for the crates is mounted on the rack in a position for convenient operation and is uniquely constructed and arranged to effect opening and closing of the doors of selected crates in unison. The door operating mechanism also permits individual operation of the crate doors under certain conditions and allows the doors of selected crates to remain in closed position while the doors of the remaining crates are operated between their open and closed positions.

From the foregoing discussion, it is apparent that the crates supporting and door operating structure of the invention may be used to advantage in any application involving containers or crates of the character described which are to be individually handled at certain times and whose doors are to be opened and closed in unison at other times. The present structure, however, is intended primarily for use in the racing of pigeons. For this reason, the invention will be described in connection with this particular application. In view of what has just been said, it will be apparent that this disclosed application of the invention is intended to be purely illustrative and not limitative in nature.

Pigeon racing and other forms of competition involving the flight of pigeons from one point to another is a pastime or sport which is widely practiced in the United States as well as in other parts of the world. Common pigeon racing procedure involves the transportation of the pigeons to be raced from a pigeon racing club to the starting point of the races and release of the pigeons at the starting point for return of the pigeons in flight to their home lofts. In order to assure an absolutely fair

race, it is essential that all of the pigeons be released at one time. It is apparent, therefore, that pigeon racing involves two basic problems to wit, transportation of the pigeons from the racing clubs to the starting point of the race and simultaneous release of the pigeons at the starting point.

Various types of equipment have been devised in the past for transporting the pigeons from the racing clubs to the starting point of a race and for releasing the pigeons at the starting point. The existing equipment for this purpose, however, is not entirely satisfactory. For example, one type of pigeon racing procedure consists of separate pigeon cages, or pigeon crates as they are commonly called, which are transported by truck or in some other way from the racing clubs of the various contestants to the starting point of the race and from which the pigeons are released at the start of the race. These crates are deficient in that the doors of the crates must be opened individually to release the pigeons. Accordingly, all of the pigeons are not released simultaneously as required for a completely fair race.

In an effort to overcome this inherent problem of individual pigeon crates, a mobile unit has been devised which includes a plurality of fixed individual pigeon stalls or compartments closed by movable doors which are connected to a common operating mechanism, whereby the doors may be opened in unison to effect simultaneous release of the pigeons from the stalls. While such units permit simultaneous release of the racing pigeons, they still render difficult the task of readying the pigeons for racing. That is to say, when a mobile racing unit is employed, the racing pigeons must either be transported to the starting point in separate pigeon crates or the unit must travel to the pigeon clubs of the various contestants to pick up the racing pigeons. The use of separate crates for transportation to the starting point, of course, necessitates transfer of the pigeons from their individual crates to the mobile racing unit at the starting point. Transportation of the pigeons to the starting point in the mobile racing unit itself, on the other hand, requires individual transfer of the pigeons at their home clubs to the mobile racing unit. In either case, this individual transfer of the pigeons to the mobile unit is tedious and time consuming and substantially prolongs the initial phase of readying the pigeons for a race. Another disadvantage of the existing racing equipment resides in the fact that their door operating mechanism does not permit independent operation of the doors of the individual pigeon stalls, with the result that initial placement of the pigeons in the stalls is rendered more diffiucult, and it is impossible to open the doors of only selected stalls at the start of a race, as is sometimes desirable to release selected pigeons for racing.

It is apparent, therefore, that there is a definite need for improved pigeon racing equipment which will provide a satisfactory solution to both the problem of transporting racing pigeons from their home clubs to the starting point of a race and of simultaneously releasing selected pigeons or all of the pigeons at the start of the race. The combined crate supporting and door operating structure of this invention, together with the containers or crates to be used with the structure, is uniquely constructed for use in pigeon racing in that it permits both handling and transportation of the racing pigeons in separate pigeon crates and simultaneous release of selected

pigeons or all pigeons from the crates at the start of a pigeon race. As discussed earlier, however, and as will become apparent from the ensuing description, the present invention is susceptible of other uses and applications and thus should not be regarded as limited in application to pigeon racing.

Accordingly, it is a general object of this invention to provide a novel supporting and door operating structure for containers or crates of the character described.

A more specific object of the invention is to provide a crate supporting and door operating structure of the character described wherein the door operating mechanism is uniquely constructed to effect operation of the doors of selected or all crates in unison between their open and closed positions.

Another object of the invention is to provide a crate supporting and door operating structure of the character described which permits each crate to be removed from and replaced on the crate support or rack, independently of the remaining crates.

A further object of the invention is to provide a crate supporting and door operating structure of the character described wherein the doors of selected crates may be independently moved between their open and closed positions and the doors of selected crates are permitted to remain in their closed positions during operation of the doors of the remaining crates by the door operating mechanism.

A still further object of the invention is to provide a crate supporting and door operating structure of the character described which is uniquely adapted for use as a mobile racing pigeon unit to permit both handling of racing pigeons in separate pigeon cages for convenience of transportation from their home clubs to the starting point of a race and simultaneous release of the racing pigeons from their respective crates at the start of the race.

Other objects, advantages, and features of the invention will become readily apparent as the description proceeds.

Briefly, the objects of the invention are attained by providing a crate supporting and door operating structure comprising a rack equipped with shelves for supporting crates of the character described in side-by-side relation, all in such manner as to permit each crate to be removed from the rack for individual handling and replaced on the rack independently of the remaining crates. When in position on the rack, the access openings of a number of the crates face in the same direction, so that when the crate doors are open, access to the interiors of all of the crates may be had from the same side of the rack. The crate door operating mechanism includes a multiplicity of door operating elements which are mounted on the rack, opposite the positions to be occupied by the crates, for movement between extended positions wherein the elements engage the doors of adjacent crates to retain the doors in closed position and retracted position wherein the elements are disposed to release the doors of the adjacent crates for movement to their open position. The several door operating elements are operatively connected to a common actuator whereby the doors of the several crates on the rack may be opened and closed in unison by movement of the actuator.

According to the preferred practice of the invention, no direct mechanical connection is provided between the door operating elements and the doors of the crates, so as to permit each crate to be easily and independently removed from and replaced on the storage rack. In this case, the crate doors move to their open positions, in response to retraction of the door operating elements, under the action of gravity or springs, or by some other means which do not mechanically connect the crate doors to the door operating mechanism. This absence of a mechanical connection between the crate doors and the door operating mechanism also permits the door of each crate to be independently opened and closed while the door operating elements are retracted and further permits the door of each crate to remain in its closed position during operation of the doors of the remaining crates between their open and closed positions by the door operating mechanism.

As will be immediately apparent to those skilled in the art, the above features of the present invention, to wit, the ability of the crates to be individually handled, the ability of the crate doors to be opened and closed independently, and the ability of the doors of selected crates to remain in their closed position while the doors of the remaining crates are operated by the door operating mechanism, uniquely adapt the crate supporting and door operating structure to use as a mobile pigeon loft for pigeon racing.

The invention will now be described in greater detail by reference to the attached drawings, wherein:

FIG. 1 is a perspective view of a container or crate supporting and door operating structure according to the invention;

FIG. 2 is an enlarged vertical section through the structure;

FIG. 3 is an enlarged elevation of one side of the structure;

FIG. 4 is an enlarged fragmentary perspective view of a portion of the door operating mechanism of the structure;

FIG. 5 is an enlarged section through a portion of the mechanism in FIG. 4;

FIG. 6 is an enlarged perspective view of a pigeon crate to be used in the structure;

FIG. 7 is an enlarged vertical section through the door end of one pigeon crate in position on the structure; and

FIG. 8 illustrates an alternative way of operating the crate doors to their open positions.

Referring now to the drawings, there is illustrated a crate supporting and door operating structure **10** which is primarily intended for use as a mobile pigeon loft. Structure **10** includes a rack **12** for supporting a plurality of pigeon crates **14** with hinged doors **16**, and a door operating mechanism **18** for operating the crate doors **16** in unison between their open and closed positions. The rack **12** comprises an open rectangular frame structure **19** including vertical posts **20** at the four corners of the structure and upper and lower frame members **22** and **24** which extend between and are rigidly joined to the upper and lower ends, respectively, of the posts to form a rigid framework. The two upper and lower longitudinal frame members **22** at each side of the rack are joined, at generally uniform intervals, by vertical interconnecting frame members **26**. The two upper longitudinal frame members **22** and the two lower longitudinal frame members **22** are joined, in line with the interconnecting frame members **26**, by cross frame members **28**.

Extending between and joined to the upper and lower frame members **24** at each end of the frame structure **19** are a pair of vertical end frame members **30**. These vertical end members are generally centered between the adjacent posts **20** and are spaced to define therebetween a narrow gap **32**. The two upper and two lower horizontal end frame members **24** are joined by central longitudinal frame members **34** which are also secured to the intervening cross frame members **28**.

Indicated at **36** are horizontal frame members which extend between and are joined at their ends to each pair of laterally aligned corner posts **20** and interconnecting frame members **26**. Several frame members **36** are secured to the inner sides of each pair of corner posts **20** and to each side of the intervening pairs of interconnecting frame members **26**. As will appear presently, frame members **36** serve as supporting slides for the crates **14** and, to this end, preferably comprise angles having horizontally disposed flanges **36***a*. It will be readily observed in the drawings that the several angles, or slides, **36** are

uniformly spaced along their respective posts **20** and interconnecting frame members **26** and, in addition, the several slides are disposed at corresponding levels, whereby the slides are arranged in horizontal rows or tiers **38**.

As mentioned earlier, the illustrated crate supporting and door operating structure **10** is intended primarily for use as a mobile racing pigeon unit. To this end, the rack **12** is shown to be mounted on the bed of a truck **40** to permit the rack to be easily transported from one location to another. In addition, the rack is equipped with a removable food and water tray **42** at the level of each row or tier **38** of crate slides **36**. These trays are shown to be slidably supported in channels **43** secured in the gaps **32** between the vertical end frame members **30**.

The crate slides **36** define, with the remaining frame members of the frame structure **19**, a plurality of stalls **44**, each of which is proportioned to receive a pigeon craft **14** with the lower longitudinal edges of the crate resting on the horizontal flanges **36***a* of the adjacent lower crate slides **36**, as shown in FIG. 7. The crates are inserted into the stalls at one side of the longitudinal center line of the rack **12** through the corresponding side of the rack. The crates are inserted into the stalls to positions in which the inner end walls of the crates are located adjacent trays **42**. As will be observed in the drawings, the crates are positioned in the stalls in such manner that the doors **16** of the crates face outwardly. When properly positioned within the stalls, the outer ends of the crates are generally flush with the sides of the rack **12**.

Referring to FIGS. 6 and 7, it will be observed that each pigeon crate **14** comprises a rectangular container structure having an access opening **46** in one end and screened ventilation openings **48** in its sides. The rear ends of the crates have openings **50** through which pigeons confined in the crates may insert their heads to reach the food and water trays **42** behind the crates when the latter are positioned on the rack **12**. The access opening **46** of each crate is closed by the door **16**. The lower edge of the door is connected to the lower wall of the crate by hinges **52**, whereby the door rotates in a downward direction when open in an upward direction when closed. In FIG. 7, it will be observed that in its closed position, the door **16** seats against the end of the crate and that this end of the crate is beveled in such manner that the upper edge of the door is located a short distance beyond the lower hinged edge of the door when the door is closed. As a result, when the crate occupies its normal horizontal position, the force of gravity will open the door unless the latter is retained in closed position. To thus retain the door in closed position, the crate is provided with a latch **54**.

Within the door **16** of each crate **14** are one or more secondary access openings **56**. These secondary openings are closed by doors **58** having latches **60** for locking the doors **58** in closed position. Pigeons are inserted into the crates **14** through the secondary access openings **56**.

The door operating mechanism **18** of the present crate supporting and door operating structure **10** comprises a pivot shaft **62** in line with each row or tier **38** of crate slides **36**. Each pivot shaft extends the full length of the rack **12**. The pivot shafts **62** are rotatably supported at intervals on the ends **36***b* of the crate slides **36** which extend beyond the sides of the rack for this purpose. The vertical flanges of the crate slides will be seen to be cut away within the extending ends **36***b* thereof and the horizontal flanges **36***a* of the slides are turned upwardly, as shown in FIG. 7, about the pivot shafts. Bearing members **63** welded to the slides fit over the pivot shafts in the manner shown in FIG. 5 to cage the shafts. According to the preferred practice of the invention, the several slides **36** of the rack **12** are identical and are alternately turned end for end as shown, so that the ends **36***b* of certain of the slides support the pivot shaft **62** at one side of the rack and the ends **36***b* of the remaining slides support the pivot shafts at the opposite side of the rack.

Welded or otherwise rigidly fixed to each pivot shaft **62**, in the vertical planes of the interconnecting frame member **26**, respectively, are crate door operating arms **66**. The arms **66** on each pivot shaft are substantially equal in length and are aligned lengthwise of the shaft. Fixed in the outer end of each arm **66** is a crosspin **68** which parallels the respective pivot shaft **62**. The crosspins **68** on the two outer arms **66** project inwardly only. The crosspins **68** on the remaining arms project beyond opposite sides of the respective arms.

In FIG. 7, it will be observed that because of the location of the arms **66** along each pivot shaft **62**, rotation of the shafts is effective to rotate the arms in vertical planes passing between adjacent crates in each horizontal row or tier of crates supported on the rack **12**. The length of the crosspins **68** is such that when each pivot shaft **62** is turned in a direction to rotate its respective arms **66** from their phantom line horizontal position in FIG. 7 to their solid line upright position, the crosspins on the arms engage the doors **16** of the adjacent crates **14** and thereby rotate these doors upwardly to their closed positions. If the pivot shaft is turned in the opposite direction to rotate its respective arms **66** from the upright position back to the horizontal position, the engaged crate doors **16** are released for rotation to their open positions under the action of gravity.

At this point, therefore, it is apparent that each pivot shaft **62** and its respective door operating arms **66** form a rotary door operator **69** which is rotatable in one direction to simultaneously close the doors **16** of the crates **14** in the adjacent horizontal crate row on the rack **12** and in the opposite direction to simultaneously release the crate doors for opening under the action of gravity. In the ensuing description, the angular position of each door operate **69** wherein its arms **66** are vertically disposed to retain the crate doors **16** in closed position is referred to as its extended position. The angular position of each operator wherein its arms are horizontally disposed to release the crate doors for opening is referred to as its retracted position. The crosspins **68** on the arms **66** of each door operator form door engaging elements on the operator.

Included in the door operating mechanism **18** is an operating means **70** for simultaneously rotating the several door operators **69** between their extended and retracted positions. This operating means includes an operating arm **72** rigid on each pivot shaft **62**, adjacent one end of the rack **12**. The operating arms **72** at each side of the rack extend inwardly across the adjacent end of the rack and are pivotally connected to a vertical operating link or bar **74** located at the latter end of the rack. Operating arms **72** are attached to their respective operating bars **74** in such manner that the corresponding door operators **69** are simultaneously rotated to their extended positions in response to longitudinal movement of the respective operating bar in one direction and to their retracted positions in response to longitudinal movement of the bar in the opposite direction. Upward movement of the operating bars **74** in FIG. 7, for example, retracts the door operators **69** to permit the crate doors **16** to open. Downward movement of the bars extends the operators to close the crate doors.

The two operating bars **74** are interconnected by linkage **76** including a lever handle **78**. Linkage **76** will be observed to be so constructed and arranged that pivotal movement of the handle **78** in one direction simultaneously elevates the operating bars **74** to open the crate doors **16**. Pivotal movement of the handle **78** in the opposite direction lowers the operating bars in unison to simultaneously close the crate doors **16**.

It is apparent from the preceding description that the doors **16** of the several pigeon crates **14** on the rack **12** may be opened and closed in unison by moving the operating handle **78**. Each crate is equipped with the latch **54** for locking its respective door **16** in closed position

while the doors of the remaining crates are operated in unison by the operating handle 78. In this way, for example, pigeons may be released from selected crates only. When the door operators 69 are retracted, the door 16 of each crate may be independently opened and closed. In addition, when the door operators are extended to close the crate doors, access to each crate may be had by opening the smaller access doors 58 in each main crate door 16. Rotation of the door operators 69 to the retracted positions permits each crate 14 to be removed from the rack for separate handling and to be placed on the rack independently of the remaining crates.

This construction of the present crate supporting and door operating structure 10, whereby the crates 14 may be handled individually and yet the crate doors 16 may be opened in unison, constitutes a highly important and novel feature of the structure and uniquely adapts the latter to use as a pigeon racing loft. Thus, because of this unique construction of the structure 10, it is possible to handle the racing pigeons in individual crates which each contestant may use to contain his own racing pigeons and which each contestant may deliver to a convenient pick-up point or to the starting point of the race. The pigeon crates of several contestants may be gathered by truck from several pick-up points for transportation to the starting point of the race. Upon arrival at the starting point, the crates may be quickly and easily transferred to the crate supporting and door operating structure 10. In the alternative, the present crate supporting and door operating structure may be mounted on the bed of the truck 40 or other mobile platform for transportation to the various pigeon crate pick-up points. In this case, the crates are placed directly on the rack 12 at each pick-up point. After all of the pigeon crates have thus been picked up, the structure 10, with its contained pigeon crates, is driven to the starting point of the race and is there utilized as the means for simultaneously releasing the pigeons at the start of the race. In either case, that is, whether the present crate supporting and door operating structure 10 is retained at the starting point of the race and the pigeon crates 14 are transported in some other way to the starting point, or the crate supporting and door operating structure itself is transported to the various crate pick-up points, the time and difficulty involved in readying the pigeons for racing are materially reduced as compared to the time and difficulty involved in readying pigeons for racing with conventional pigeon transporting and releasing equipment.

It is apparent, of course, that when the present crate supporting and door operating structure 10, with its contained pigeon crates, is properly situated at the starting point of a race, the racing pigeons are simultaneously released from their respective crates by shifting the operating handle 78 to open the crate doors 16. As already noted, the doors of selected crates may be latched closed to effect release of only selected pigeons at the start of each race.

At this point, it is apparent that the crate doors 16 may be opened by other than gravity in response to retraction of the door operators 69. For example, the crate doors may be spring loaded to open position or a chain may be connected between the doors of adjacent crates and looped around the intervening door operating arm 66, as indicated at 100 in FIG. 8. This latter means for opening the crate doors insures positive opening. However, it involves disconnecting the chain from one or both crates prior to removal from the rack since otherwise it interferes with free removal of the crates 14 from the rack.

From the foregoing discussion, it is apparent that the invention herein described and illustrated is fully capable of attaining the several objects and advantages preliminarily set forth.

While a presently preferred embodiment of the invention has been disclosed for illustrative purposes, various modifications in the design, arrangement of parts, and instrumentalities of the invention are possible within the spirit and scope of the following claims.

I claim:

1. In combination:
an upright supporting rack,
a plurality of containers arranged side by side in a horizontal row on said rack,
each container having an end exposed at one side of said rack,
said rack including means slidably supporting each container for removal of the respective container from and placement of the respective container on said rack through said one side thereof independently of the remaining containers on the rack,
each container having an access opening in said one end thereof and a hinged access door movable between open and closed positions relative to the access opening of the respective container,
door operating mechanism on said rack including a horizontal shaft extending lengthwise of the rack adjacent said row of containers, means mounting said shaft on said rack for movement between first and second positions, means for moving said shaft between said positions, and means on said shaft releasably operatively engaged with said doors, respectively, for effecting unified movement of said doors between said open and closed positions in response to movement of said shaft between said first and second positions thereof, and
said door operating mechanism clearing said containers for removal of the containers from and placement of the containers on said rack when said shaft occupies one of said positions thereof.

2. The subject matter of claim 1 wherein:
said doors are hinged to their respective containers for rotation about horizontal axes between their respective open and closed positions,
said shaft of said door operating mechanism is rotatably mounted on said rack for turning about the longitudinal axis of the shaft, and
said door engaging means on said shaft comprise radial arms on said shaft releasably operatively engaging said doors, respectively, for rotating the latter between said open and closed positions thereof in response to rotation of said shaft between said first and second positions.

3. In combination:
a supporting rack,
a plurality of containers on said rack arranged in a series of vertically spaced, horizontal rows and horizontally spaced, vertical rows,
each container having one end exposed at one side of said rack,
said rack including means slidably supporting said containers on the rack for removal of each container from and replacement of each container on the rack through said one side thereof independently of the remaining containers on the rack,
each container having an access opening in said one end thereof and a hinged door movable between open and closed positions relative to the access opening of its respective container,
door operating mechanism on said rack including shafts extending lengthwise of certain of said rows and disposed adjacent said latter rows, respectively, means mounting each shaft on said rack for movement between first and second positions, means on each shaft releasably operatively engaging said doors of the containers in the adjacent container row for effecting unified movement of the doors between their open and closed positions in response to movement of the respective shaft between its first and second positions, respectively, and means for moving said shafts in unison between said first and second positions thereof, and

said door operating mechanism exposing said containers for removal of the latter from and replacement of the latter on said rack when said shafts occupy one of said positions thereof.

4. The subject matter of claim 3 wherein:
said shafts of said door operating mechanism extend lengthwise of said horizontal rows of containers.

5. The subject matter of claim 3 wherein:
said doors are hinged to their respective containers for rotation between their open and closed positions about horizontal axes,
said shafts of said door operating mechanism extend lengthwise of said horizontal rows adjacent the hinges for the access doors, and
said door engaging means comprise radial arms on each shaft releasably operatively engageable with the access doors of the containers in the adjacent horizontal container row for effecting rotation of the respective access doors between their open and closed positions in response to rotation of the respective shaft between said positions thereof.

6. The combination comprising:
a supporting rack on a vehicle;
a plurality of containers removably and slidably supported by said rack for individual placement in and removal from the rack, said containers being arranged in a horizontally extending row;
each container having an access opening closed by an access door hinged on the container and movable between open and closed positions relative to said access opening;
and door operating mechanism comprising:
arm means pivotally mounted on the rack and engaging all said doors in the row of containers to hold said doors closed when the arm means occupy an upright position,
and means on the rack swinging all said arm means simultaneously outwardly away from the doors to release the doors for swinging movement from the closed position to an open position extending outwardly away from the containers.

7. The combination comprising:
a supporting rack on a vehicle;
a plurality of containers removably and slidably supported by said rack for individual placement in and removal from the rack, said containers being arranged in a horizontally extending row;
each container having an access opening closed by a hinged access door movable between open and closed positions relative to said access opening;
and door operating mechanism comprising;
a horizontally extending shaft rotatably mounted on the rack and extending lengthwise of the row adjacent said containers,
means on the rack for rotating said shaft between first and second positions,
and arm means coupled to said shaft for movement therewith and holding said doors in said row of containers closed when the shaft is in the first position, said arm means releasing all said doors simultaneously when said shaft is moved away from the first position and rotating to extend outwardly away from the rack when the shaft is in the second position.

8. The combination as in claim 7 in which the horizontal shaft is vertically offset from the containers in the row to permit substantially horizontal movement of the containers into and out of the rack.

9. The combination as in claim 7 in which the doors are hinged adjacent the lower edge of the crates and project outwardly over the shaft when in open position.

10. The combination comprising:
a supporting rack on a vehicle;
a plurality of containers removably and slidably supported by said rack for individual placement in and removal from the rack, said containers being arranged in a horizontally extending row;
each container having an access opening closed by an access door hinged on the container and movable between open and closed positions relative to said access opening;
and door operating mechanism comprising:
arm means pivotally mounted on the rack and engaging all said doors in the row of containers to hold said doors closed when the arm means occupies an upright position,
means on the rack swinging all said arm means simultaneously outwardly away from the doors to release the doors from the closed position,
and means detachably connecting the doors to the arm means whereby said swinging movement of the arm means moves all doors simultaneously to an open position.

11. In combination:
a supporting rack,
a plurality of containers removably supported on said rack in such manner as to permit removal of each container from and placement of the container on the rack independently of the remaining containers on the rack,
each container having an access opening closed by an access door which is movable between open and closed positions relative to said opening,
door operating means on said rack including elements releasably engaging said doors for effecting unified movement of the doors between said open and closed positions without interfering with free removal of the containers from and placement of the containers on said rack,
and a latch on each container for selectively retaining said door of the respective container in its closed position while the doors of the remaining containers are operated between their open and closed positions by said door operating mechanism.

12. In combination:
a supporting rack,
a plurality of containers removably supported on said rack in such manner as to permit removal of each container from and placement of the container on the rack independently of the remaining containers on the rack,
each container having an access opening closed by an access door which is movable between open and closed positions relative to said opening,
door operating means on said rack including elements releasably engaging said doors for effecting unified movement of the doors between said open and closed positions without interfering with free removal of the containers from and placement of the containers on said rack,
and each of said doors having an access opening and a movable access door closing the latter access opening,
said latter access door of each container being exposed to permit opening and closing thereof when said door operating mechanism is positioned to retain said first-mentioned access doors in their closed positions.

13. In combination:
a supporting rack,
a plurality of containers arranged in vertically spaced, horizontal rows and removably supported on said rack in such manner as to permit removal of each container from and placement of the container on the rack independently of the remaining containers on the rack,

said rack including means slidably supporting each container for removal from the rack through one side of the rack,

each container having an access opening exposed at said one side of the rack and closed by an access door which is movable between open and closed positions relative to said opening,

and door operating means on said rack including elements releasably engaging said doors for effecting unified movement of the doors between said open and closed positions without interfering with free removal of the containers from and placement of the containers on said rack.

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