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RACE STARTING APPARATUS

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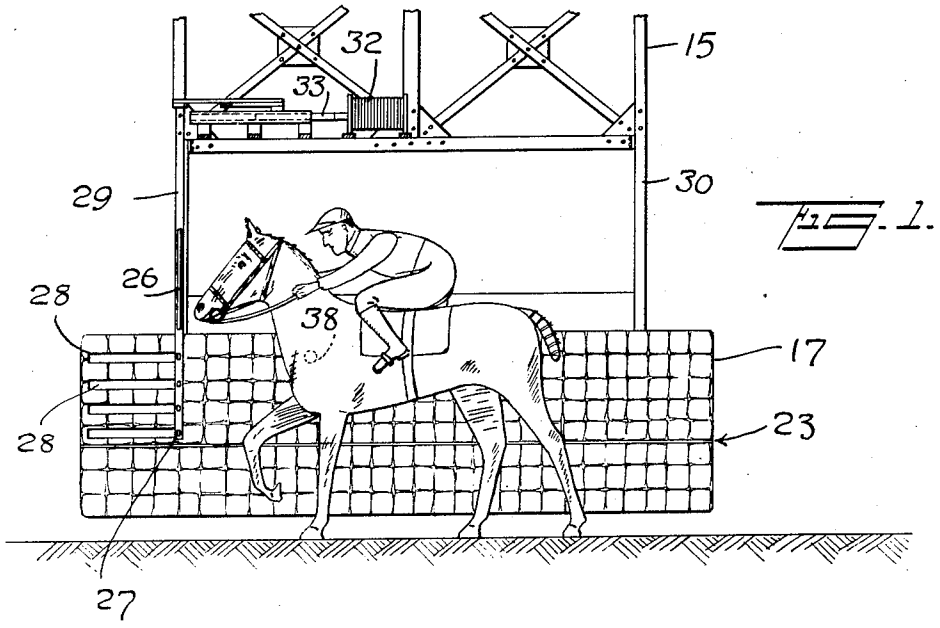


FIG. 1.

FIG. 6.

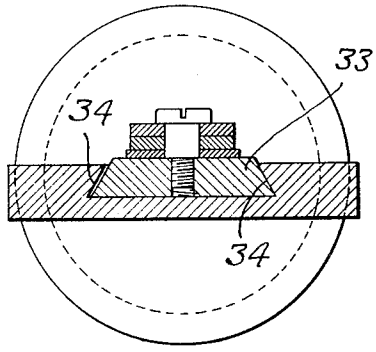
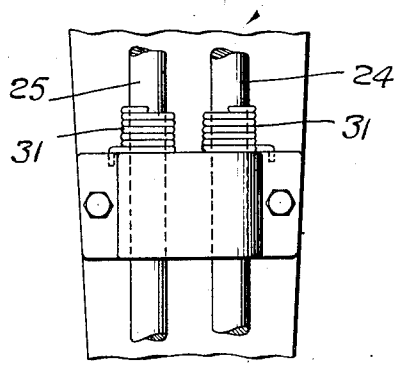


FIG. 7.



INVENTORS
Irwin Comfort and
Bertram Clifford
BY
Wm. Wallace White
ATTORNEY

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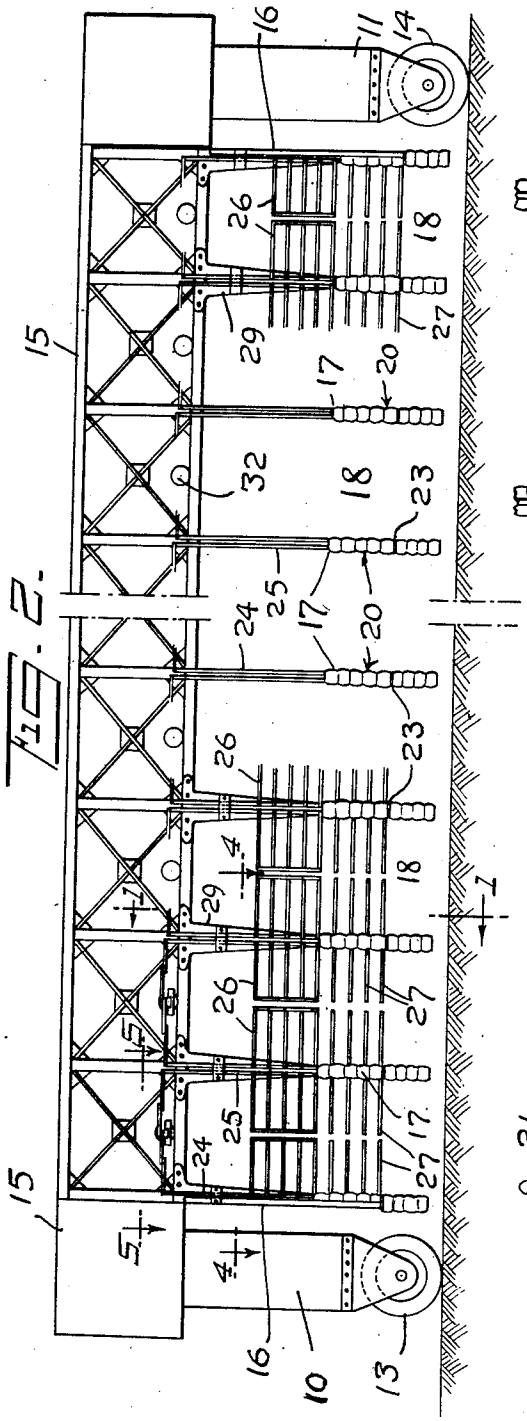


FIG. 2.

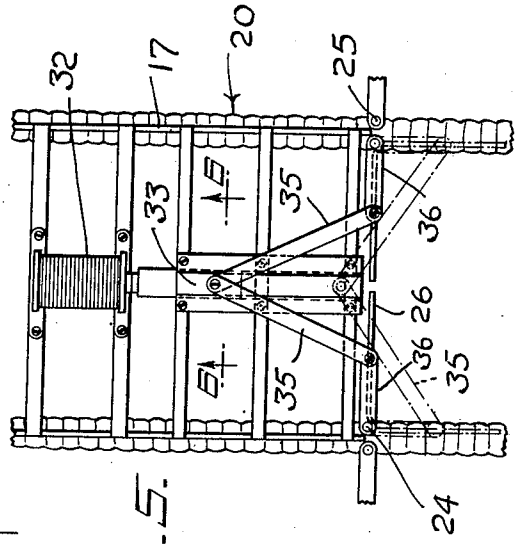


FIG. 5.

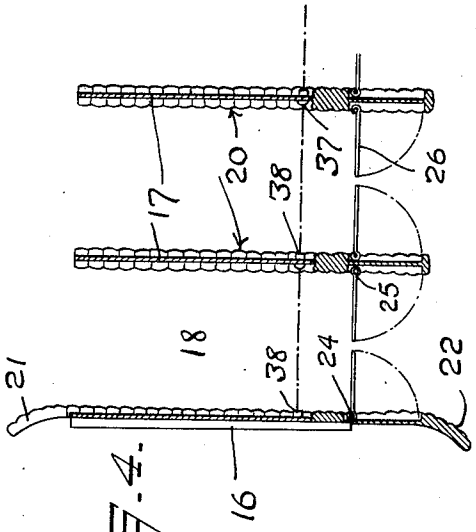


FIG. 4.

INVENTORS
Irwin Comfort and
Bertram Clifford.
BY
Wm Wallace White
ATTORNEY

Aug. 9, 1932. I. COMFORT ET AL 1,870,768

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Fig. 3.

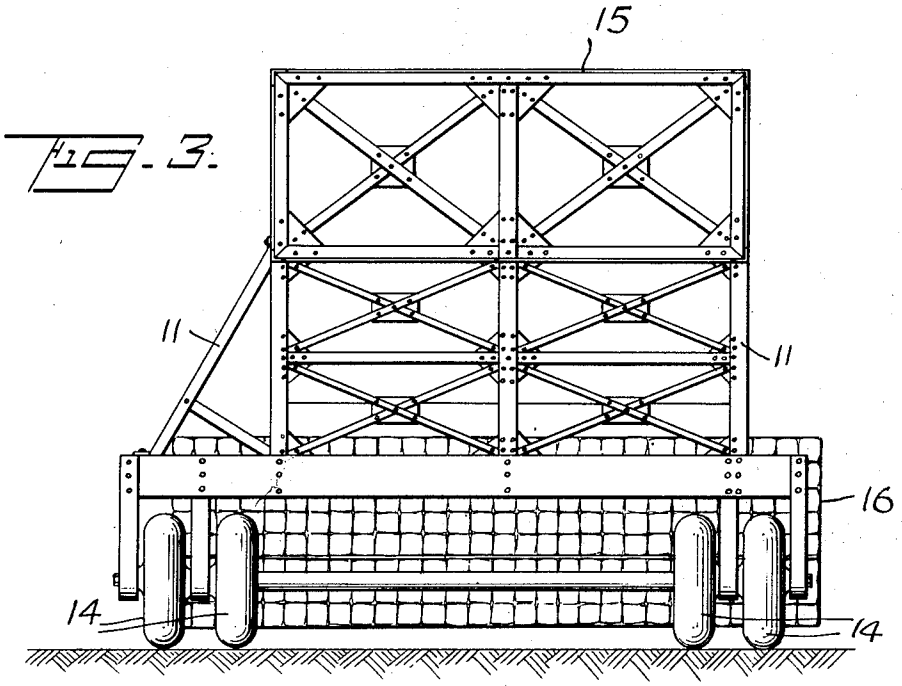
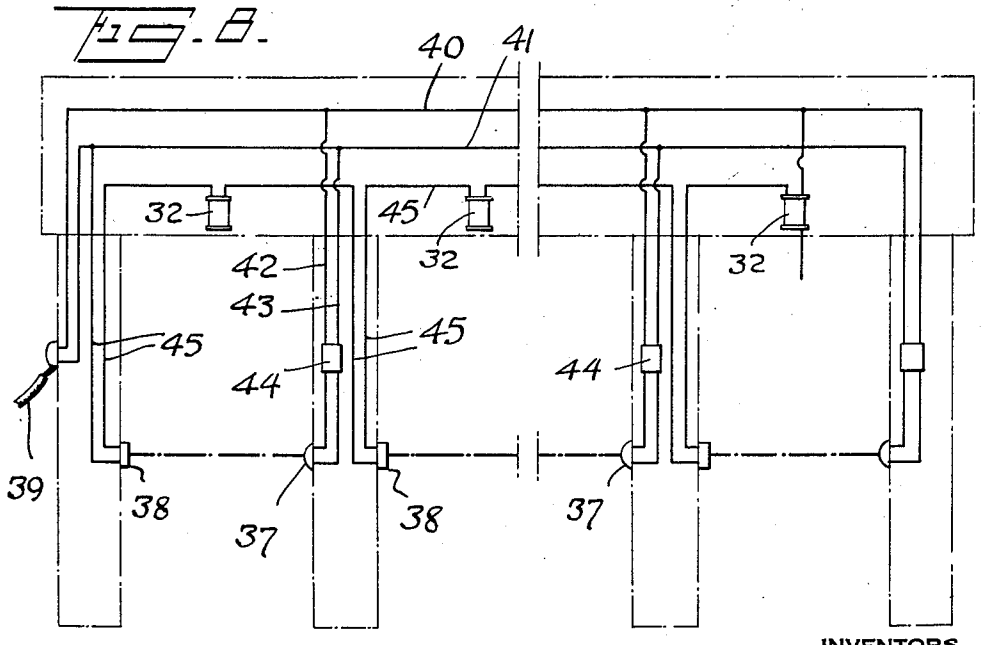


Fig. 8.



INVENTORS
Irwin Comfort and
Bertram Clifford.
BY
Wm Wallace White.
ATTORNEY

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UNITED STATES PATENT OFFICE

IRWIN COMFORT AND BERTRAM CLIFFORD, OF BROOKLYN, NEW YORK

RACE STARTING APPARATUS

Application filed January 27, 1932. Serial No. 589,142.

This invention relates to apparatus for use in the starting of races and more particularly in the starting of horse races.

At present in the starting of horse races it is usual to provide suitable barriers or gates behind which the horses are assembled and to simultaneously remove or open the barriers or gates on a given signal being given after the horses are all in starting position, but great difficulty is frequently experienced in definitely determining when all the horses are actually in starting position and so that the starting signal may be given with absolute fairness to all the racers.

One object of our invention is to provide means whereby the race is automatically started by the racers themselves as soon as all are in proper starting position. A further object is to employ automatic means whereby the movement of the last horse into starting position automatically and simultaneously removes the barriers or opens the gates to allow all horses to start at the same time. A still further object is to provide a light-sensitive device adapted to be affected by the movement of each horse to the starting position and means operated or controlled by such devices for automatically throwing open the barriers or gates when all the horses are in proper starting position.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form and construction may be made without departing from the spirit of the invention or sacrificing any of the advantages thereof.

In the drawings, Fig. 1 is a sectional view taken on the line 1—1 Fig. 2 and showing the starting apparatus with the upper part broken away; Fig. 2 is a front view of the apparatus with the central portion broken away; Fig. 3 is an end view of the apparatus—looking on the right hand end of Fig. 2; Fig. 4 is a sectional plan view taken on the line 4—4 of Fig. 2; Fig. 5 is a similar view taken on the line 5—5 Fig. 2; Fig. 6 is a sectional detail view taken on the line 6—6 of Fig. 5; Fig. 7 is an enlarged detail front view showing parts of the gate carrying posts; and Fig. 8 is a diagrammatic view showing the electric wiring for the apparatus.

Referring to Figs. 1 to 5 of the drawings, the apparatus comprises a portable structure having end frames 10, 11 mounted on wheels 13, 14 and connected by an overhead structure 15 of any suitable or well known design and material. Depending from the overhead structure 15 are two depending end walls 16 and intermediate depending partition walls 17 suitably spaced from each other to provide the desired number of stalls or compartments 18 to accommodate the horses entered for the race.

The inner surface of the walls 16 and the surfaces of the walls 17 are preferably provided with padded facings 20 and the front and rear edges of the end walls 16 are provided with outwardly flared portions 21, 22 (Fig. 4). The walls 16, 17 may be provided with horizontal joints at 23 so that the portions beneath the joints are free to yield or swing in a sidewise direction when necessary.

At the front of each stall or compartment 18 a pair of upright gate posts 24, 25 are provided and mounted on each of these posts is a gate or barrier preferably comprising a frame 26 having horizontal and vertical slats forming the upper part and a plurality of horizontal slats 27 forming the lower part, the frames 26 being arranged above the level of the walls 16, 17 and the slats 27 being adapted to enter suitably formed recesses 28 in said walls when the barriers or gates are thrown open. The walls 16, 17 are suspended from the overhead structure 15 by means of depending front and rear bars or frames 29, 30 so that the space between the upper edges of the said walls and the upper structure is open to permit a substantially unobstructed view of the horses in the stalls.

In the operating mechanism shown on the drawings the gate posts 24, 25 are provided (see Fig. 7) with coil springs 31 that normally hold the barriers in the open position. The overhead structure 15 is provided above each stall 18 with an electromagnetic device

32 adapted to engage and retain a slide member 33 (see Figs. 5 and 6) adapted to move in dove-tailed guides 34 and having secured thereto a pair of links 35 which are also connected to crank arms 36 secured on the upper ends of the gate posts 24, 25 and the arrangement is such that as long as the electromagnets 32 are energized the gates remain closed as shown at Figs. 1, 2 and 4 and in full lines at Fig. 5, and as soon as the slide bars 33 are released by the electromagnets 32 the gates or barriers are instantly thrown open by the action of the springs 31 into the position indicated in dotted lines at Fig. 5. It will of course be readily understood that instead of providing an electromagnetic retaining device for each barrier one such device may be provided and all the barriers may be so connected up as to operate simultaneously.

For the control of the electromagnets 32 each of the stalls 18 is equipped with a source of light 37 (see Fig. 8) and with a light-sensitive device such as a photoelectric cell 38 (see Fig. 8 and Fig. 1) and the arrangement is such that when a race horse is in the position indicated in Fig. 1 the beam of light from the source 37 is obstructed, thus affecting the device 38 and the circuit controlling the electromagnets.

Referring particularly to Fig. 8 in which the overhead structure and the stalls are indicated in broken lines, a flexible lead 39 supplies power to the main circuit comprising the leads 40, 41 and each of the lights 37 is connected by means of leads 42, 43 with the main leads 40, 41, individual switches 44 being provided in the leads 42, 43 so that any one or more of the lights 37 may be cut out when so desired. The light sensitive devices 38 and the electromagnets 32 are all connected with each other and with the main leads 40, 41 by means of a lead 45 in such manner that the circuit through the electromagnets is broken only when the devices 38 are not affected by any of the lights 37. When the number of horses entered for a race is less than the number of stalls available certain of the stalls are rendered inoperative by throwing certain of the switches 44 and extinguishing the lights 37 so that the remaining stalls are ready to receive the horses, and the barriers are automatically opened only when all the horses are in position.

Although the drawings and the above specification disclose the best modes in which we have contemplated embodying our invention, we desire to be in no way limited to the details of such disclosure for, in the further practical application of our invention, many changes in form and construction may be made, as circumstances require, or experience suggests, without departing from the spirit of the invention within the scope of the appended claims, and while the apparatus has been described and shown in connection with the starting of a horse race it will be understood that this may be readily adapted for dog races or for the starting of other races.

What we claim is:

1. Race starting apparatus comprising a plurality of barriers for the racers in combination with means whereby the location of all the racers in starting position automatically starts the race.

2. Race starting apparatus comprising a plurality of stalls for the racers, means in the stalls affected by the presence of the racers, and means controlled thereby for automatically starting the race when all the racers are in starting position.

3. A race starting apparatus comprising a plurality of stalls for the racers, barriers in front of the stalls, and means automatically affected by the presence of all the racers for removing the barriers.

4. Race starting apparatus comprising a plurality of light-sensitive devices, and means actuated by the presence of the racers in starting position for affecting the said devices to automatically start the race.

5. Apparatus for use in the starting of races comprising a plurality of stalls for the racers, barriers at the front of the stalls, light-sensitive devices in the stalls, and means affected by the light-sensitive devices to automatically start the race when all the racers are in starting position in their stalls.

6. A portable race starting apparatus comprising end frames, an overhead structure on said frames, stall forming partitions depending from the overhead structure, light-sensitive devices affected by the presence of the racers in starting position, and barrier actuating means affected by the light-sensitive devices to automatically start the race when all the racers are in position in their stalls.

7. Apparatus for use in the starting of races comprising a plurality of stalls for the racers, barriers at the front of the stalls, means for opening all the barriers simultaneously, light-sensitive devices in the stalls, lights for affecting such devices until the racers are in starting position, and means controlled by said devices for controlling the operation of said barrier opening means.

In testimony whereof we have signed our names to this specification.

IRWIN COMFORT.
BERTRAM CLIFFORD.