No. 727,633. PATENTED MAY 12, 1903.

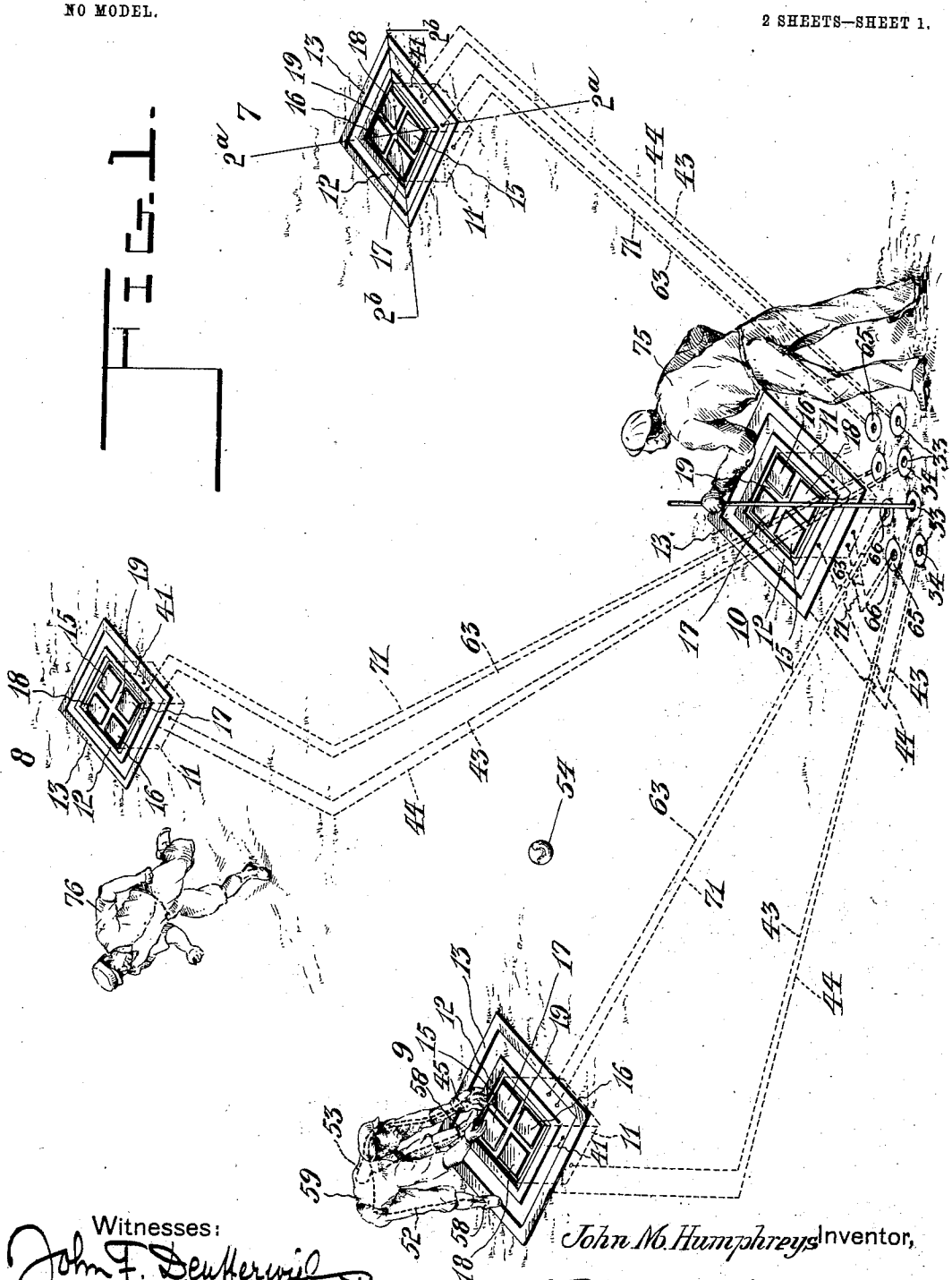
J. M. HUMPHREYS.

ELECTRIC BASE BALL REGISTER.

APPLICATION FILED JUNE 21, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

FIG. 1.



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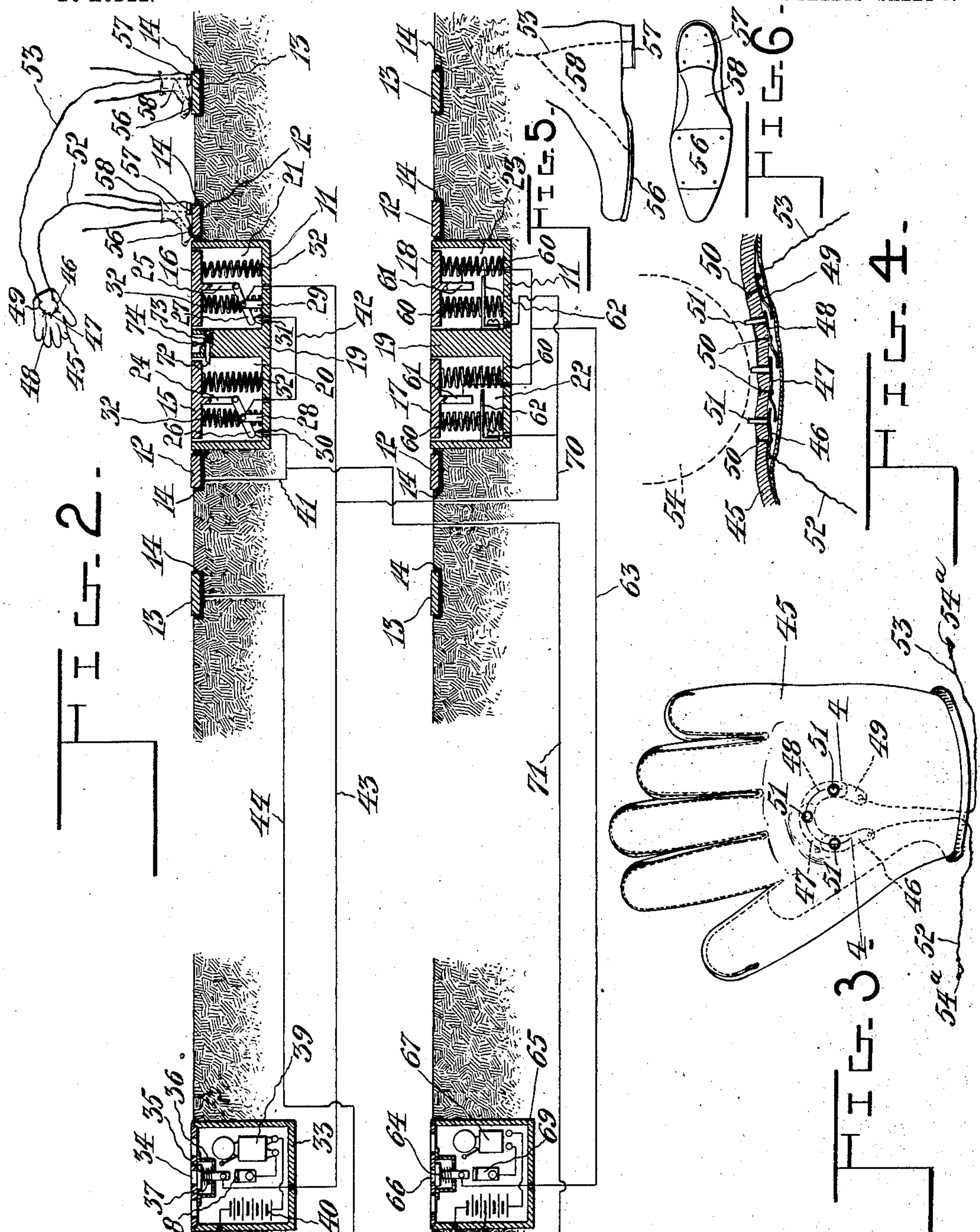

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UNITED STATES PATENT OFFICE.

JOHN MARSHALL HUMPHREYS, OF TRENTON, CANADA.

ELECTRIC BASE-BALL REGISTER.

SPECIFICATION forming part of Letters Patent No. 727,633, dated May 12, 1903.

Application filed June 21, 1902. Serial No. 112,561. (No model.)

To all whom it may concern:

Be it known that I, JOHN MARSHALL HUMPHREYS, a subject of the King of Great Britain, residing at Trenton, county of Pictou, Province of Nova Scotia, Canada, have invented certain new and useful Improvements in Electric Base-Ball Registers; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an electric registering device for base-ball fields, by which it may be immediately, accurately, and unerringly ascertained on every occasion whether or not a base-runner has made his base or has been put out by the baseman assigned thereto.

The object of my invention is to avoid a feature of the game which is a great defect—to wit, that of undecided events and close decisions by the umpire as to base-hits, runs, and put-outs, so that by mere partiality the umpire is often enabled to practically decide the game in favor of one or the other side or at least to cause general dissatisfaction among all parties which favor the side against which the decision is made, and often it is quite impossible for the umpire himself to state certainly in whose favor a point should be decided.

My device therefore has for its object to produce an electric registering or signaling apparatus, which is adapted to be automatically operated by the baseman at the instant the ball is caught or at the instant he has succeeded in putting out the base-runner unless the latter has succeeded in first reaching the base, in which case the device is so arranged as to render it impossible for the baseman to operate the device.

There are in general two methods open to the baseman in putting out the base-runner, one when he is playing off the base and the other on the base, and it is therefore a further object of my invention to so arrange the device as to operate equally well in either of these two cases, whereby the baseman is enabled to actuate the signal either by standing upon the base or by running up to it after having caught the ball. Furthermore, a base-runner may make a base, especially in the case of the first base, in either of two different ways—that is to say, in some cases he must touch and hold the base, while in others he is permitted to run over, and my device is so arranged that in those cases in which the base-runner is allowed to run over the base the device is held against being operated by the baseman thereafter; but in other cases—as, for instance, where the base-runner is attempting to steal a base—the device is so arranged that he cannot hold the signal against being operated by the baseman, except by holding onto the base itself.

To these ends my invention consists in a connection of operative circuits which lead between each of the four bases and a number of operating-buttons which are located behind the home-plate and in the immediate vicinity of the umpire's position, and these are so connected up that the operator by pressing on the appropriate button can throw into operation any base which is in contest, and thereby it becomes adapted to be operated by the baseman; but at all other times the device is inoperative by either party, so that the signal from each of the four bases is at all times under the control of the umpire, while the latter himself does not need to leave his post for an instant in order to decide a close point.

More specifically, my invention consists, first, in providing a pair of metal plates surrounding each base which are broad enough to form sufficient standing-ground for the baseman, and these plates are electrically insulated from each other, and each has an electric wire connected thereto which runs to an operating-button behind the home-plate, and the circuit of which these two wires form a part contains also a bell and an operating-battery beside the said operating-button, so that when the said operating-button is depressed and the two plates are electrically connected, and only in this case, the bell is adapted to be rung. The baseman himself is arranged to coöperate with these plates, so as to complete the circuit automatically, this being performed by means of wires or conductors contained in his clothing and connecting between each of his shoes and his catching-glove in the following manner—that is to say, the glove contains press-buttons which are normally open, but are arranged

to be closed only when the hand on which the glove is placed is closed over the ball—and from these buttons run wires which pass up the baseman's arms and down each of his legs and form electric contacts with metal plates upon his shoes, so that when the baseman has one foot on each of the said insulated plates and has the ball in his hand and only in this condition is he adapted to complete the circuit and ring the bell, provided also the umpire at the same time presses his operating-button.

My invention consists, secondly, in forming the base itself in the form of a case or box set in the ground and having four square plates level with the ground and forming its upper surface, these plates being connected, respectively, with depressible electric buttons so connected that the baseman may by pressing certain of these plates make the circuit independently of the means just mentioned; but this he can only do when the umpire presses an independent operating-button.

My invention consists, thirdly, in providing the other two plates of the base with means whereby the base-runner by pressing on the same can at all times break the circuit absolutely and prevent the baseman from ringing the bell, and one of these plates is so arranged as to be held down by a latch or other device, so as to permit the base-runner to run over the base in those cases in which he is entitled to do so, and these plates are both arranged in connection with each of the circuits, by which the baseman is adapted to close the circuit in the manner which will be seen more explicitly hereinafter.

My invention consists, further, in the construction and contrivances for accomplishing the ends I have in view, which will be hereinafter specifically and completely described, and more particularly set forth in the claims.

I have illustrated my base-ball register diagrammatically and otherwise in the accompanying drawings, wherein—

Figure 1 is a perspective or bird's-eye view showing a ball-field provided with my invention and the manner of operating the same. Fig. 2 is a diagrammatic profile-section taken in two ways through a base and showing also the two electric circuits connected therewith, the two operating-buttons, and the manner of automatically connecting the circuit by means of the baseman. Fig. 3 is a front elevation of a baseman's glove adapted for the operation of my invention. Fig. 4 is a cross-section taken through the glove shown in Fig. 3 on the line 4 4 thereof. Fig. 5 is a side elevation of a baseman's shoe employed by him in operating the invention, and Fig. 6 is a reverse plan view of the shoe shown in Fig. 5.

The same numerals of reference denote like parts in all the figures of the drawings.

In Fig. 1 is shown a ball-field provided with four bases 7, 8, 9, and 10, representing, respectively, the first, second, and third bases and the home-plate, located, as usual, at the four corners of a diamond or square. Each of these bases, as shown in Fig. 1, is provided with my invention; but of course it will be understood that in those cases where a less elaborate arrangement is desired it may be found sufficient to provide only the first base or two or more of the bases with the device, and I will therefore herein describe the construction of only one of the said bases, as these bases are all alike. Each base consists, substantially, of a box or case 11, set in the ground, so that its upper side is substantially level therewith or projects but slightly above it, the case being chambered internally and containing the apparatus which will be presently referred to. These boxes may be suitably made of insulating material, such as waterproof cement or other material adapted to resist moisture and keep the interior dry, and each is surrounded by a pair of square or diamond shaped metal strips or plates 12 13, which are of sufficient dimensions to provide easy standing-room thereon—as, for instance, the inner plate 12 may be six inches wide and the outer plate 13 eight inches wide. These plates are surrounded on their bottom and sides by insulating material 14, which separates them electrically from the ground. The surface of the case 11, forming the base, is divided into four parts or subsquares 15, 16, 17, and 18, which are separated from each other by partition-walls 19, so as to form four separate chambers 20, 21, 22, and 23, these being shown in section in Fig. 2, it being understood that the upper portion on the right of this figure is a profile taken on the line 2^a and the lower profile on the right is taken on the line 2^b. The subplates 15 and 16, forming the covers of the chambers 20 and 21, are provided with depending tongues 24 and 25, which are pivotally connected at their lower ends to switch-contacts 26 and 27, these being pivoted on posts 28 and 29, such that when one of the plates 15 or 16 is depressed the contact 26 or 27 is broken by raising the pivoted contact-arm, whose free end contacts when the plate is raised with stationary contacts 30 and 31. These plates are normally supported resiliently by springs 32, so that the electric contact between the parts 26 and 30 and 27 and 31 is normally complete.

Mounted behind the home plate and in a position convenient for operation by the umpire are a series of boxes 33, sunk in the ground, there being, in case all the bases are provided with my invention, four of these boxes, one for each base and appropriately set in a row. These boxes have at the center of their cover-plates holes 34, and immediately below each hole 34 and closing the same is an electric press-button 35, which is mounted to reciprocate in a suitable socket 36 and held pressed against the end face of the hole 34 by a spring 37. The button 34 is therefore so located that it can only be pressed by the insertion of a cane through the aperture

34, which cane is carried by the umpire for marking the balls and strikes and other like purposes. Immediately below the button 35 is a stationary contact-piece 38, with which the lower end of the button is adapted to engage, so as to make contact therewith. Each box 33 contains also a bell or like signaling device 39 and a battery 40 for operating the same. These are all indicated diagrammatically in Fig. 2.

From the inner plate 12, surrounding the base, proceeds an electric conductor 41, which is electrically connected therewith and passes through the ground, being covered with a suitable insulating coating, and into the box 11, forming the base where the circuit passes in series through the two electric contacts 26 and 27—that is to say, the other end of the wire 41 is electrically connected to the stationary contact-piece 30. The movable contact-piece 26 is connected by a wire 42 to the stationary contact 31, and the movable contact 27 is connected by a wire 43 with the battery 40 in the appropriate box 33, to which the base is connected, the other pole of the battery being connected, as shown, to the stationary contact-piece 38, while the bell 39 is introduced at some intermediate point of the circuit. In like manner the outer metal plate 13, surrounding the base, is connected by a countersunk conductor 44 to the press-button 35. It will be seen, therefore, that by this connection the circuit will be complete so soon as the two metal plates 12 and 13 are electrically connected together, and the press-button 35 is depressed, so as to make contact with the piece 38 by means of the umpire's cane, and when the circuit is complete the bell 39 will be rung until it is broken again. The method of accomplishing this will be described presently. To operate this connection, the base-keeper is provided with an equipment forming a part of the electric circuit, as follows—that is to say, he has a catching-glove 45, which, as shown in elevation in Fig. 3 and in section in Fig. 4, has in the palm thereof a set of four electric contact-plates 46, 47, 48, and 49, which are a set of spring-plates riveted by means of rivets 50 to the material of the glove, and having knobs or posts 51 projecting slightly through the face of the glove, these being mounted on one side of the rivets 50, while the contact-plates are prolonged on the other side of the rivets, so as to overlap one another, as indicated. The contact-plate 46 at one end has connected thereto an electric conductor 52, while the contact-plate 49 at the other end has connected to it a conductor 53. It will be seen that the circuit between these two conductors will be completed only when all of the posts 51 are depressed, so as to bring the ends or tongues of the contact-plates into contact with each other, and this can be accomplished only when the ball 54 has arrived in the hand of the baseman and is securely held therein. The wires 52 and 53 are carried out of the glove and have electric connectors 54^a attached to their ends, by which they can be readily hooked or joined onto continuations of these wires which are carried within the clothing of the baseman, and these wires are carried one down each of the baseman's legs, so as to connect with metal plates 56 and 57, which are set in or on the sole of each of the baseman's shoes 58. Now it will be seen that when a baseman 59 stands with one foot on each of the plates 12 13, as shown in Fig. 1, and the umpire 75 presses on the appropriate button 35 belonging to the base to which the baseman belongs the circuit is ready to be made, and it will be made as soon as the baseman has the ball 54 in his hand, so as to complete the circuit through his glove, and thus the bell will be rung, supposing, of course, that the base-runner 76 does not arrive at the base before this is accomplished. If the latter be the case, the base-runner on arriving at the base immediately presses one of the plates 15 or 16, and this immediately breaks the circuit, so that it cannot possibly be made by the baseman. In the former case the ringing of the bell will indicate that the base-runner has been put out, while in the latter the base-runner will of course be safe, so that all that the umpire has to do in this case is to press on the button 35 the moment he sees that the outcome is doubtful, while at other times the baseman cannot ring the bell of his own accord, because the button 35 is raised, so as to keep the circuit normally broken.

The above operation of the invention is intended for those cases in which the baseman is at all times located on the base—that is to say, for instance, in the case of the first base when the game is in condition for a strike by the batter; but in other cases, where the baseman is playing off the base, it is desirable to provide some other means for his making the circuit, as in case he catches the ball while off the base and runs to the base with it he will have no time to measure his steps so as to make contact simultaneously with the two plates 12 and 13. For this reason I provide the plates 17 and 18, which are located in the other two corners between the plates 15 and 16, and these plates are intended for the use of the baseman only. The plates 17 and 18 are also arranged to be depressed, so as to operate electric contacts, being resiliently supported on springs 60 in like manner to the plates 15 and 16; but these plates are intended by depression not to break but to make the circuit, being provided with depending tongues 61, which are normally separated by a slight distance from the spring contact-plates 62. These two pairs of contacts are connected in parallel—that is to say, the depending tongues 61 are electrically connected together by means of a wire 63, whose other end is connected to a press-button 64, mounted in the cover of one of a series of four boxes 65, which have holes 66 in the center

of their covers, and each contain a bell 67, a battery 68, and a stationary contact-piece 69, precisely the same as in the case of the boxes 33, there being a row of these boxes 65 mounted parallel and adjacent to the row of boxes 33 and one of these boxes being arranged to connect with each base, respectively. The contact-plates 62, which coöperate with the tongues 61, are in like manner connected together and to the wire 43 by means of a wire 70, while another wire 71 is connected to the wire 41 and at its other end through the battery 68 and bell 67 to the stationary contact-piece 69. It will be seen that the effect of this electrical connection is to connect the battery, bell, press-button, and contacts 26 and 27 together in series and the two break-contacts 61 in parallel with each other and in series with the other parts. This connection can of course be made in a multitude of different ways, that herein shown being merely by way of illustration, and of course any electrician will understand how to connect up the parts so as to produce the desired effect, which is that by pressing either of the plates 17 or 18 the circuit shall be completed, while by pressing either of the plates 15 or 16 the circuit shall be prevented from being completed. It will be seen, therefore, that in the event of a baseman with the ball in his hand running toward the base to put the runner out the umpire seeing the doubtfulness of the outcome will immediately press upon the button 64, so as to throw the circuit into action, and in case the baseman reaches the base first he will press upon one of the plates 17 18, and thereby complete the circuit; but should the base-runner reach the base first he will press upon one of the plates 15 16, and thus prevent the circuit absolutely from being completed and the bell from being rung. In either case, therefore, the result is that the bell is rung only in case the runner is put out, and at no other time can the bell be rung, so that the responsibility for decisions is taken entirely away from the umpire and made absolutely automatic, mechanical, and hence infallible.

In some cases—as, for instance, immediately after a base-hit—the rules of the game allow a base-runner to run over the base after reaching the same, and in this case it is desirable to provide means for preventing the baseman from completing the circuit and ringing the bell after the base-runner has passed over the base and depressed one of the plates 15 or 16. To this end I provide any suitable means, such as a latch 72, adjacent to one of the plates—that is to say, the plate 15 on the outer side of the base-line—which latch is reciprocably mounted in one of the partitions 19 and pressed outwardly by a spring 73 and is adapted to catch on the upper side of the plate and hold it depressed, so that the circuit remains broken until the plate is intentionally raised again by drawing back the handle 74 of the latch.

It will of course be understood that the illustration given herewith and the exact definition of the collocation of the wires and switches are merely by way of illustration, because other alternative arrangements may be readily adopted and different forms of switches, according to whatever design may be found convenient; but this lies within the skill of an ordinary mechanic or electric-wire man, and it will be understood, of course, that I do not limit myself to the forms herein shown, nor do I intend them to be the actual precise forms which the invention will assume in operation; but they serve to explain my invention and in what manner the same is performed.

While I have shown in the accompanying drawings the preferred form of my invention, it will be understood that I do not limit myself to the precise form shown, for many of the details may be changed in form or position without affecting the operativeness or utility of my invention, and I therefore reserve the right to make all such modifications as are included within the scope of the following claims or of mechanical equivalents to the structures set forth.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a base-ball field, the combination of a base having a pair of insulated electric plates, an electric circuit connected to the respective plates, and a signal apparatus located in said circuit whereby the electric connection of said plates is adapted to operate said signaling apparatus.

2. In a base-ball field, the combination of a base having depressible switch-plates therein, an electric circuit connected with said plates and adapted to be made or broken thereby, and a signaling apparatus in said circuit, the connection being such that the depression of certain of the plates is adapted to make the circuit, and the depression of other plates is adapted to prevent the circuit from being made.

3. In a base-ball field, the combination of a base having switches mounted beneath the same, depressible operating-pieces connected with said switches and located in the surface of the base, and an electric circuit connected with said switches in such manner that depression of certain of the depressible pieces will cause circuit to be made and the signal to be sounded and the depression of other of the depressible pieces will prevent the circuit from being made and the signal from being sounded.

4. In a base-ball field, an electric register for base-runners comprising a base having metallic insulated contacts at the surface of the ground, a switch located beneath the base, a depressible piece in the surface of the base adapted to operate the switch to break contact of the parts thereof, and an electric circuit containing signaling apparatus, one pole

of said circuit being connected to one of said metallic plates and the other pole to the other said plate and said switch being interposed in the circuit, whereby the electric connection of the two plates causes the circuit to be completed and the depression of said depressible piece prevents the circuit from being completed.

5. An electric register for base-ball fields comprising an electric circuit, means operated by the baseman for completing the same, means operated by a base-runner for preventing the circuit from being completed, and an electric signaling apparatus located in said circuit.

6. An electric register for base-ball fields comprising an electric circuit, means operated by a member of the infield team for completing said circuit, means operated by a base-runner for preventing the completion of said circuit, signaling apparatus contained in said circuit, and means operable by the umpire for throwing said signaling apparatus temporarily into action.

7. An electric register for base-ball fields comprising an electric circuit, means operated by a member of the infield team for completing said circuit, means operated by a base-runner for preventing the completion of said circuit, signaling apparatus contained in said circuit, and means operable by the umpire for throwing said signaling apparatus temporarily into action, said umpire-operated means comprising a press-button located in the surface of the ground and adapted to be depressed by the umpire's cane to complete the circuit.

8. An electric register for ball-fields comprising a base having a pair of insulated contact-plates located in the surface of the ground, an electric circuit connected to the respective plates, a circuit-breaker located in said circuit at the base and operable by the base-runner to prevent the completion of said circuit, signaling apparatus located in said circuit, and means located behind the home-plate for throwing said signaling apparatus temporarily into action, whereby to enable a baseman to complete the circuit and operate said signaling apparatus unless said circuit-breaker is first operated by the base-runner.

9. An electric register for ball-fields comprising a case or box set in the ground and forming the base and having a circuit-breaker located therein and operable by depressing a part of the surface of said base, a pair of insulated contact-plates surrounding said base at a distance from one another, an electric circuit having said circuit-breaker interposed therein and having the terminals thereof connected to the respective plates and signaling apparatus such as a bell located in said electric circuit, and a press-button set in the surface of the ground and adapted when pressed on to temporarily complete said circuit.

10. An electric register for ball-fields comprising a case or box set in the ground and forming the base and having a circuit-breaker located therein and operable by depressing a part of the surface of said base, a pair of insulated contact-plates surrounding said base at a distance from one another, an electric circuit having said circuit-breaker interposed therein and having the terminals thereof connected to the respective plates and signaling apparatus such as a bell located in said electric circuit, and a press-button set in the surface of the ground and adapted when pressed on to temporarily complete said circuit, in combination with a complementary circuit carried by a baseman and adapted to complete the main circuit only when said baseman stands with one foot on each of said plates and has the ball in his hand.

11. An electric register for ball-fields comprising a case or box set in the ground and forming the base and having a circuit-breaker located therein and operable by depressing a part of the surface of said base, a pair of insulated contact-plates surrounding said base at a distance from one another, an electric circuit having said circuit-breaker interposed therein and having the terminals thereof connected to the respective plates and signaling apparatus such as a bell located in said electric circuit, and a press-button set in the surface of the ground and adapted when pressed on to temporarily complete said circuit, in combination with a complementary circuit carried by a baseman and being terminated by metallic contact-plates on each of said baseman's shoes, said complementary circuit being also arranged to extend into the baseman's glove and being normally broken therein but adapted to be closed when the hand carrying said glove grasps a ball.

12. In an electric register for ball-fields, a catching-glove having electric wires therein and one or more spring-contacts in the palm of said glove connected in series with said wires, said contacts being normally separated and adapted to be pressed together so as to complete the circuit between said wires when the hand wearing the glove holds the ball.

13. In an electric register for base-ball fields, a catching-glove containing a pair of wires forming a portion of an electric circuit, and a plurality of spring-contacts mounted in series with one another and with said electric wires, said spring-contacts being normally separated but adapted to be pressed together by a ball held within the glove.

14. In an electric register for base-ball fields, the combination of a base consisting of a chambered box or casing, resiliently-supported depressible pieces mounted in the upper side of said box, a switch connected with one of said depressible pieces and adapted to be closed when said piece is depressed, a circuit-breaker connected with another depressible piece and arranged to be normally closed but opened by the depression of said piece, and an electric circuit containing signaling

apparatus and having said switch and circuit-breaker mounted in series therein, whereby a member of one team is adapted to close said circuit and operate the signaling apparatus and a member of the other team is adapted to prevent said circuit from being closed.

15. In an electric register for base-ball fields, the combination of a base consisting of a chambered box or casing, resiliently-supported depressible pieces mounted in the upper side of said box, a switch connected with one of said depressible pieces and adapted to be closed when said piece is depressed, a circuit-breaker connected with another depressible piece and arranged to be normally closed but opened by the depression of said piece, an electric circuit containing signaling apparatus and having said switch and circuit-breaker mounted in series therein, whereby a member of one team is adapted to close said circuit and operate the signaling apparatus and a member of the other team is adapted to prevent said circuit from being made, and an umpire's button mounted at a convenient point for operation by the umpire, whereby the depression thereof throws the signaling apparatus temporarily into action.

16. In an electric register for base-ball fields, the combination of a base consisting of a chambered casing set beneath the surface of the ground and divided into four subsections, a depressible plate covering each section, springs resiliently supporting each of said plates, electric contacts connected to two of said plates diagonally opposite from one another, corresponding contacts coöperating with said first-named contacts but normally separated therefrom, circuit-breakers connected to each of the other two sections of the base, and an electric circuit having said circuit-breakers and contacts mounted therein, whereby the depression of either of said first set of plates will cause the circuit to be completed and the depression of either of said second set of plates will prevent the circuit from being completed.

17. In an electric register for base-ball fields, the combination of a base consisting of a chambered casing set beneath the surface of the ground and divided into four subsections, a depressible plate covering each section, springs resiliently supporting each of said plates, electric contacts connected to two of said plates diagonally opposite from one another, corresponding contacts coöperating with said first-named contacts but normally separated therefrom, circuit-breakers connected to each of the other two sections of the base, and an electric circuit having said circuit-breakers and contacts mounted therein, whereby the depression of either of said first set of plates will cause the circuit to be completed and the depression of either of said second set of plates will prevent the circuit from being completed, one of said second set of plates being provided with retaining means for holding it depressed until positively released by manual operation.

18. In an electric register for base-ball fields, the combination of a base consisting of a chambered casing set beneath the surface of the ground and divided into four subsections, a depressible plate covering each section, springs resiliently supporting each of said plates, electric contacts connected to two of said plates diagonally opposite from one another, corresponding contacts coöperating with said first-named contacts but normally separated therefrom, circuit-breakers connected to each of the other two sections of the base, an electric circuit having said circuit-breakers and contacts mounted therein, whereby the depression of either of said first set of plates will cause the circuit to be completed and the depression of either of said second set of plates will prevent the circuit from being completed, an umpire's operating-box set in the surface of the ground and having an apertured cover-plate and press-button mounted beneath the aperture of said cover-plate, a battery and a bell mounted in said operating-box, and connections forming a part of said electric circuit, whereby said battery, bell and press-button are all connected in series with said circuit.

19. In an electric register for base-ball fields, the combination of a base composed of a set of four resiliently-supported depressible pieces set on a level with the ground and forming a square, electric switches connected with two diagonally opposite pieces and adapted to be closed by the depression of said pieces, circuit-breakers connected with each of the other diagonally opposite pieces and adapted to be thrown open by the depression of the same, a pair of insulated contact-plates mounted on a level with the ground and forming a part of the base, a pair of umpire's operating-boxes set in the ground and having cover-plates at a level therewith, resiliently-supported depressible pieces mounted in the cover-plates of each box and adapted to be depressed by the umpire's cane, electric switches connected with said last-named depressible pieces and adapted to be closed by the depression of the same, a signaling apparatus such as a bell mounted in each of said operating-boxes, an electric circuit having one terminal connected with one of said contact-plates and having the bell belonging to one of said operating-boxes, the umpire's operating-switch belonging thereto, and each of the circuit-breakers successively connected in series therein and having its other pole connected to the opposite said contact-plate, and a second circuit having the bell of the other operating-box, the operating-switch corresponding thereto, the two base-switches, and the said circuit-breakers mounted in series therein, the two base-switches being mounted in parallel with one another, whereby on the closure of the first umpire's oper-

ating-switch the circuit is adapted to be closed by connecting the two metal plates belonging to the base but to be prevented from being closed by the opening of either of said circuit-breakers and on the depression of the second umpire's operating-switch the circuit is adapted to be completed by the closure of either of said base-switches but to be prevented from being closed in like manner by the opening of either of said circuit-breakers.

20. In an electric register for base-ball fields, the combination of a base composed of a set of four resiliently-supported depressible pieces set on a level with the ground and forming a square, electric switches connected with two diagonally opposite pieces and adapted to be closed by the depression of said pieces, a circuit-breaker connected with each of the other diagonally opposite pieces and adapted to be thrown open by the depression of the same, a pair of insulated contact-plates mounted on a level with the ground and forming a part of the base, a pair of umpire's operating-boxes set in the ground and having cover-plates at a level therewith, resiliently-supported depressible pieces mounted in the cover-plates of each box and adapted to be depressed by the umpire's cane, electric switches connected with said last-named depressible pieces and adapted to be closed by the depression of the same, a signaling apparatus such as a bell mounted in each of said operating-boxes, an electric circuit having one terminal connected with one of said contact-plates and having the bell belonging to one of said operating-boxes, the umpire's operating-switch belonging thereto, and each of the circuit-breakers successively connected in series therein and having its other pole connected to the opposite said contact-plate, and a second circuit having the bell of the other operating-box, the operating-switch corresponding thereto, the two base-switches, and the said circuit-breakers mounted in series therein, the two base-switches being mounted in parallel with one another, whereby on the closure of the first umpire's operating-switch the circuit is adapted to be closed by connecting the two metal plates belonging to the base but to be prevented from being closed by the opening of either of said circuit-breakers and on the depression of the second umpire's operating-switch the circuit is adapted to be completed by the closure of either of said base-switches but to be prevented from being closed in like manner by the opening of either of said circuit-breakers, in combination with a complementary circuit carried by a baseman and having its terminals in the form of metallic plates on the soles of the baseman's shoes and adapted to contact with the respective insulated plates at the base, spring contact-plates mounted in the baseman's glove and forming a part of said complementary circuit, said spring contact-plates being held normally open but adapted to close said complementary circuit by the compression of a ball within the hand carrying the glove, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

JOHN MARSHALL HUMPHREYS.

Witnesses:
E. H. HUMPHREYS,
ED. C. HUMPHREYS.