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COIN CONTROLLED SCOREBOARD

Filed Oct. 25, 1938

2 Sheets-Sheet 1

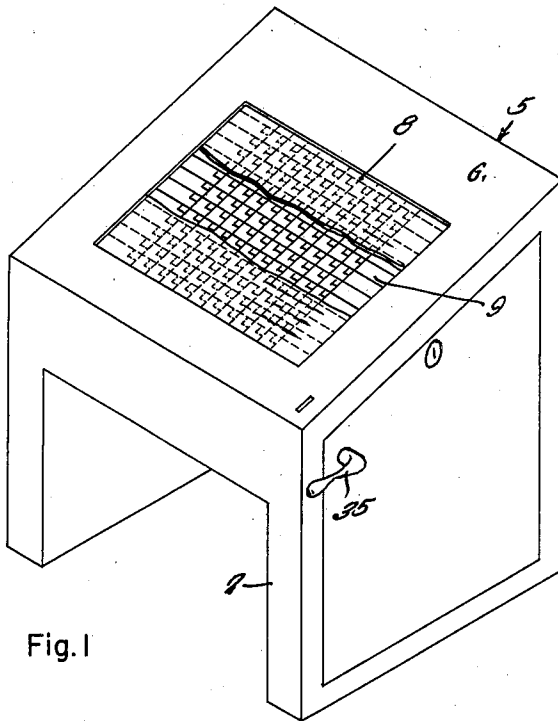


Fig. 1

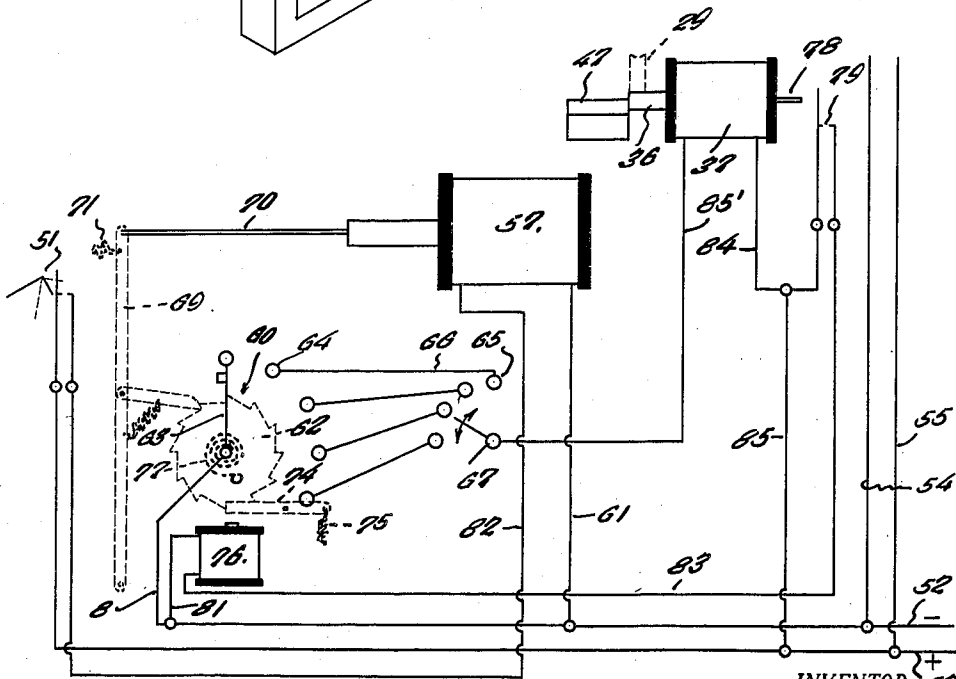


Fig. 2

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2 Sheets-Sheet 2

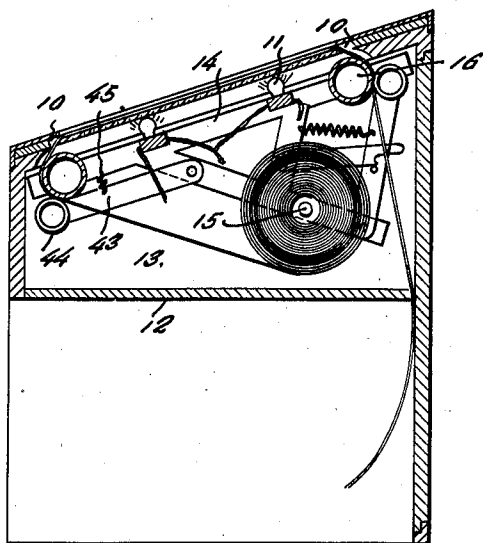


Fig. 3

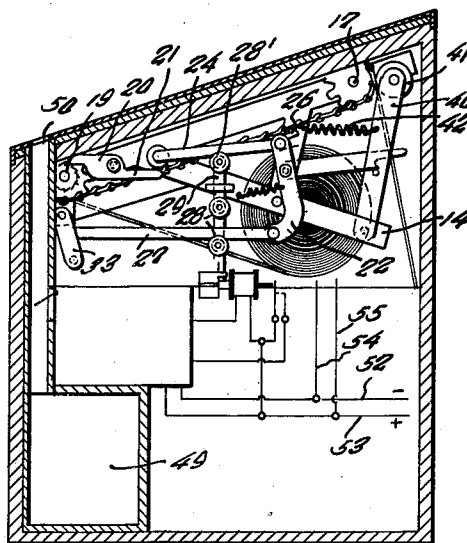


Fig. 4

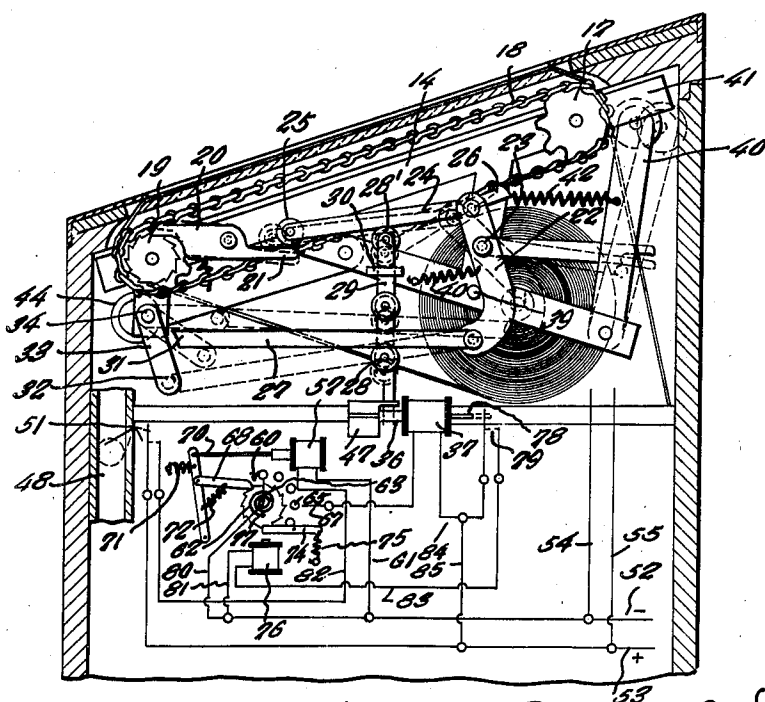


Fig. 5

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COIN CONTROLLED SCOREBOARD

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6 Claims. (Cl. 281—8)

This invention relates to coin controlled scoreboards to be employed for keeping scores of various games, such as ten pins, and has for the primary object, the provision of a machine of the above stated purpose in which plain paper may be used instead of the usual ruled forms, resulting in a large saving in the cost of operation, such plain paper may be purchased at a much lower cost than the ruled forms.

Another object of this invention is to provide a scoring board which will collect payments for the game before delivering scoring paper for use.

With these and other objects in view, the invention consists in certain novel features of construction, combination and arrangement of parts to be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawings, in which Figure 1 is a perspective view illustrating a coin controlled scoreboard constructed in accordance with my invention.

Figure 2 is a diagrammatical view illustrating the wiring diagram of the coin controlled mechanism.

Figure 3 is a transverse sectional view illustrating the means of supporting the rolled paper in the machine and in respect to the score board.

Figure 4 is a transverse sectional view showing the mechanical mechanism for advancing the paper in combination with the electric coin controlled mechanism.

Figure 5 is an enlarged fragmentary transverse sectional view showing in dotted lines the movements of the various parts of the mechanical mechanism when the coin controlled mechanism is actuated by a coin.

Referring in detail to the drawings, the numeral 5 indicates a casing which may be of any desired shape, preferably of a general outline representing a desk having an inclined top wall 6 and vertical supporting walls 7. The top wall 6 is provided with an opening 8 to expose a ruled transparent panel 9. Said panel bears the markings usually found on forms employed for keeping score in the game of ten pins. The upper and lower edges of the panel 9 are spaced from the upper and lower edges of the opening 8 to define paper feed slots 10 so that paper of a transparent nature may be fed out of the casing and across the panel and back into the casing as suggested in Figure 3. The markings on the panel will be visible through the paper due

to the arrangement of electric lamps 11 arranged under the panel.

A horizontal partition 12 is arranged in the casing to define a compartment 13 in which the mechanical mechanism is located for the feeding of the paper over the panel 9 and is provided with a slot through which the paper may be fed after passing across the panel to allow the paper to become exposed and torn off if desired by a player or players for the purpose of keeping a record of their scores.

Located in the compartment 13 is a skeleton frame 14 for supporting the electric lamps directly under the panel and the paper in rolled form, as clearly shown in Figures 3 to 5 of the drawings. A shaft 15 is journaled in the frame 14 on which the roll of paper is mounted. Feed rollers 16 are journaled on the frame 14 directly below the paper feed slots 10 and have secured thereon sprocket gears 17 over which a sprocket chain 18 is trained. The paper as it unrolls passes over the lowermost feed roller then outwardly of the casing by one of the slots 10 and across the panel 9 and back into the casing by way of the other slot 10 and in engagement with the other feed roller, whence it passes downwardly and through the slot in the partition 12.

A ratchet gear 19 is secured on one of the feed rollers and is engaged by a gravity actuated dog 20 pivoted on the frame 14 and is provided with a reduced extension 21. The heavier side of the dog from the pivot is next to the ratchet gear so that said dog will maintain automatically a position in engagement with the ratchet gear to prevent rotation of the feed rollers until the dog has been disengaged from the ratchet gear.

A lever 22 is pivotally mounted on the frame 14, as shown at 23, and is substantially in the form of a bell crank and has pivoted to one end an arm 24 carrying a roller 25 engageable with the extension 21 of the dog 20. A dog 26 is carried by said end of the lever 22 to engage with the sprocket chain 18. The other end of the lever 22 has pivoted thereto an arm 27 slidable between guide rollers 28 journaled on a guide member 29 slidably supported by guides 30 mounted on the frame 14. The free end of the arm 27 is arcuately curved, as shown at 31, to engage with a pin 32 of an operating lever 33 when said arm 27 is allowed to assume its lowermost position, as shown in dotted lines in Figure 5. The operating lever 33 is secured on a shaft 34 journaled in the frame 14 and extends through a wall of the casing 5 and has secured thereon an operating handle 35.

The member 29 is supported in a raised position by a catch 36 which forms a core of a solenoid 37. The member 29 also has journaled thereon a roller 28' to engage with the arm 24 and to support the arm 24 in a raised position out of engagement with the extension 21 of the dog 20 when the member 29 is in its uppermost position supported by the catch 36.

A stop 39 is provided on the frame 14 for limiting the pivotal movement of the lever 22 in one direction under the influence of a spring 40. The lever 22 is free to assume the dotted line position, as shown in Figure 5, when the catch 36 releases the member 29 and allows the latter to gravitate to position the arm 27 in its lowermost dotted line position as shown in Figure 5 to lie in the path of movement of the pin 32 of the operating lever 33 so that when the operating handle 35 is rotated in the proper direction the lever 33 will impart an endwise movement to the arm 27 causing the lever 22 to assume the dotted line position, as shown in Figure 5, the arm 27 moving into the uppermost dotted line position as shown in Figure 5. As the lever 22 moves into the dotted line position the arm 24 forces the extension 21 of the dog downwardly disengaging the dog from the ratchet gear 19 freeing the feed rollers for operation. As the lever 22 moves into dotted line position, the dog 26 being in engagement with the sprocket chain pulls thereon and thereby drives the feed rollers to feed the paper across the panel 9. As the operating lever 33 continues its rotation past the uppermost dotted line position in Figure 5 it becomes disengaged from the arm 27 allowing said arm to assume a full line position. When the arm 27 assumes the full line position in Figure 5, the spring 40 returns the lever 22 to its full line position against the stop 39 and withdraws the roller of the arm 24 from the extension 21. As the lever 33 moves beyond the uppermost dotted line position shown in Figure 5 to become disengaged from the arm 27 the member 29 is elevated so that the catch 36 may move thereunder for supporting the member 29 in a raised or elevated position, as shown in full lines in Figure 5.

An arm 40 is pivoted on the frame 14 and carries a pressure roller 41 which rides on the paper as the latter passes over the uppermost feed roller. A tension spring 42 connects the arm 40 to the frame 14 for urging the pressure roller 41 against said feed roller. An arm 43 is pivoted on the frame 14 and carries a pressure roller 44 urged into engagement with the lowermost feed roller by a spring 45, it being understood that the paper passes between the pressure roller 44 and the lowermost feed roller.

Whenever it is desired to adjust the paper on the feed roller or to place new paper in the device, the roller 41 may be positioned as shown in dotted lines in Figure 5 and held in this position by a prop provided on the frame engageable with a pin on the arm 40.

As before stated, the catch 36 forms a part of the core of the solenoid 37 and an expansion spring 46, shown in dotted lines in Figure 5 is arranged in the solenoid for the purpose of urging the catch 36 normally into engagement with a keeper 47. The catch 36 when in engagement with the keeper 47 underlies the member 29 and supports the latter against downward movement so as to position the arm 27 in the full line position, as shown in Figure 5.

Arranged in the casing 5 is a coin chute 48 emptying into a coin drawer 49 and having its upper end in communication with a coin slot 50

located in the top wall 6 of the casing. A coin operated switch 51 extends into the coin chute 48 to be engaged by a coin as the latter gravitates through the coin chute to the coin receptacle. The switch is of any well known construction and controls an electric circuit which will be hereinafter fully described in detail. Positive and negative electric feed wires 53 and 52 extend into the casing 5 and are connected to an electric output in any well known manner. The feed wires 52 and 53 have connected thereto conductors 54 and 55 providing an electric circuit for the electric lamps 11 used for the illumination of the panel 9. The positive electric feed wire 53 connects with the switch 51 and also connected to the switch 51 is a conductor 56 which is in turn connected to a solenoid 57. The solenoid 57 is employed for operating a rotary type circuit closer 60 which will be hereinafter described in detail. A conductor 61 is connected to the solenoid 57 and to the negative electric feed wire 52.

The rotary switch or circuit breaker 60 consists of a rotatably mounted ratchet gear 62 carrying an arm 63 providing a movable contact adapted to move into and out of engagement with a series of contacts 64. Matching the contacts 64 are contacts 65 connected by conductors, as shown at 66. Operable from one contact 65 to another is a manually actuated switch 67. A dog 68 coacts with the ratchet gear 62 and is pivotally mounted on a lever 69 and the latter is pivotally supported at one end and has its other end connected to the core of the solenoid 57 by a link 70. The lever 69 is urged in one direction by a spring 71 and in a direction opposite to the movement thereof by the solenoid 57 when energized. A spring 72 influences the dog 68 in engagement with the ratchet gear 62 of the switch 60. A pivotally mounted holding dog 74 engages with the ratchet gear 62 of the switch 60 by the action of a spring 75. The holding dog 74 is pivotally mounted and associated therewith is an electric magnet 76 which when energized will attract the holding dog 74 and disengage the same from the ratchet gear 62. A clock type spring 77 is provided for rotating the ratchet gear 62 in a direction opposite to its rotation by the dog 68 and solenoid 67. The core of the solenoid 37 has an extension 78 for operating a switch 79. The contact arm 63 is connected to the negative wire 52 by a conductor 80 and the electromagnet 76 is also connected to the negative wire 52 by a conductor 81. The electromagnet 76 is connected to the switch 79 by a conductor 83. The switch 79 is connected to the electromagnet 28 by a conductor 84 and the latter is connected to the positive feed wire 53 by a conductor 85. The solenoid 37 is connected to the switch 67 by a conductor 85'.

Through the use of the switch 67 and the contacts 65 the electrical parts of the device may be manually adjusted to require the payment of one or more coins for the operation of the machine. For instance, if the switch 67 is positioned as shown in Figure 2 it will require the payment into the machine of three coins. As the first coin is deposited in the coin slot and gravitates to operate the switch 51 the solenoid 57 is energized advancing the contact 63 one step or into engagement with the first of the series of contacts 64. The ratchet gear of the switch 60 is held from reverse movement by the holding dog 74. The second coin when dropped into the coin chute operates the switch 51 for the second time energizing the solenoid 57 which through

the dog 68 advances the contact 63 a second step and into engagement with the second contact of the group of contacts 64. On the deposit of the third coin the switch 51 is actuated again energizing the solenoid 57 advancing the contact 63 into engagement with the third contact of the group of contacts 64. The switch 67 being in engagement with the third contact of the group of contacts 65 brings about an energization of the solenoid 37. The energization of the solenoid operates the catch 36, allowing the member 29 to gravitate and the arm 27 to assume its lowermost dotted line position, as shown in Figure 5. On operation of the handle 35 the lever 33 moves in the direction as illustrated in dotted lines in Figure 5 causing an endwise movement of the arm 27 rocking the lever 22 on its pivot and advancing the arm 24 to disengage the dog 20 from the ratchet gear 19 freeing the feed rollers and at the same time advancing the sprocket chain to operate the feed rollers for advancing the paper across the panel 9. When the solenoid 37 is energized the extension 73 thereof closes the switch 79. The closing of the switch 79 energizes the electromagnet 75 which disengages the holding dog 74 from the ratchet gear 62 allowing the clock type spring 77 to return the contact arm 63 to its initial position, thereby resetting the machine ready to receive the payment of additional coins.

The description heretofore given for the operation of the machine by three coins is primarily intended to show that the machine can collect payments wherein one or more coins are involved in each payment.

It is believed that the foregoing description, when taken in connection with the drawings will fully set forth the construction and advantages of this invention to those skilled in the art to which a device relates, so that further detailed description will not be required.

What I claim is:

1. A scoreboard comprising a casing, an illuminated transparent panel carried by said casing and exposed to view and bearing ruled markings, feed rollers mounted in said casing, means for supporting paper in roll form for movement over the panel by engaging said feed rollers, sprocket gears and a sprocket chain connecting the feed rollers, a ratchet gear secured to one of the rollers, a gravity actuated dog in engagement with said gear for releasably securing the paper against movement over the panel, and means for simultaneously releasing the dog from the ratchet gear and for advancing the sprocket chain to feed the paper over the panel.

2. A scoreboard comprising a casing, an illuminated transparent panel carried by said casing and exposed to view and bearing ruled markings, feed rollers mounted in said casing, means for supporting paper in roll form to engage with the feed rollers for movement over the panel, sprocket gears and a sprocket chain connecting the feed rollers, a ratchet gear secured to one of the rollers, a gravity actuated dog in engagement with said gear for releasably securing the paper against movement over the panel, a lever pivotally mounted in the casing, a dog carried by said lever to engage the sprocket chain, an arm pivoted on said lever to engage with the dog, spring means acting to urge the lever in one direction, a stop for limiting the movement of said lever in the latter-named direction, and means for imparting pivotal movement to the lever in the opposite direction for the actuation of the dog

out of engagement with the ratchet gear and for advancing the sprocket chain to advance the paper over the panel.

3. A scoreboard comprising a casing, an illuminated transparent panel carried by said casing and exposed to view and bearing ruled markings, feed rollers mounted in said casing, means for supporting paper in roll form to engage the feed rollers for movement over the panel, sprocket gears and a sprocket chain connecting the feed rollers, a ratchet gear secured to one of the rollers, a gravity actuated dog in engagement with said gear for releasably securing the paper against movement over the panel, a lever pivotally mounted in the casing, a dog carried by said lever to engage the sprocket chain, an arm pivoted on said lever to engage with the dog, spring means acting to urge the lever in one direction, a stop for limiting the movement of said lever in the latter-named direction, an arm pivoted to said lever, a slidably mounted guide member in said casing, spaced rollers on said guide member and receiving the latter-named arm therebetween, an operating lever journaled in said casing, a handle for effecting operation of said operating lever and arranged exteriorly of the casing, a pin carried by the operating lever to engage with the latter-named arm for imparting pivotal movement to the first-named lever for advancing the paper over the panel and for disengaging the dog from the ratchet gear.

4. A scoreboard comprising a casing, an illuminated transparent panel carried by said casing and exposed to view and bearing ruled markings, feed rollers mounted in said casing, means for supporting paper to engage the feed rollers for movement over the panel, sprocket gears and a sprocket chain connecting the feed rollers, a ratchet gear secured to one of the rollers, a gravity actuated dog in engagement with said gear for releasably securing the paper against movement over the panel, a lever pivotally mounted in the casing, a dog carried by said lever to engage the sprocket chain, an arm pivoted on said lever to engage with the dog, spring means acting to urge the lever in one direction, a stop for limiting the movement of said lever in the latter-named direction, an arm pivoted to said lever, a slidably mounted guide member in said casing, spaced rollers on said guide member and receiving the latter-named arm therebetween, an operating lever journaled in said casing, a handle for effecting operation of said operating lever and arranged exteriorly of the casing, a pin carried by the operating lever to engage with the latter-named arm for imparting pivotal movement to the first-named lever for advancing the paper over the panel and for disengaging the dog from the ratchet gear, a catch for supporting the slidable member in an elevated position for normally supporting the latter-named arm in a position out of the path of movement of the pin of the operating lever, and means for effecting operation of the catch.

5. A scoreboard comprising a casing, an illuminated transparent panel carried by said casing and exposed to view and bearing ruled markings, feed rollers mounted in said casing, means for supporting paper to engage the feed rollers for movement over the panel, sprocket gears and a sprocket chain connecting the feed rollers, a ratchet gear secured to one of the rollers, a gravity actuated dog in engagement with said gear for releasably securing the paper against

movement over the panel, a lever pivotally mounted in the casing, a dog carried by said lever to engage the sprocket chain, an arm pivoted on said lever to engage with the dog, spring means acting to urge the lever in one direction, a stop for limiting the movement of said lever in the latter-named direction, an arm pivoted to said lever, a slidably mounted guide member in said casing, spaced rollers on said guide member and receiving the latter-named arm therebetween, an operating lever journaled in said casing, a handle for effecting operation of said operating lever and arranged exteriorly of the casing, a pin carried by the operating lever to engage with the latter-named arm for imparting pivotal movement to the first-named lever for advancing the paper over the panel and for disengaging the dog from the ratchet gear, a catch for supporting the slidable member in an elevated position for normally supporting the latter-named arm in a position out of the path of movement of the pin of the operating lever.

6. A scoreboard comprising a casing, an illuminated transparent panel carried by said casing and exposed to view and bearing ruled markings, feed rollers mounted in said casing, means for supporting paper to engage the feed rollers for movement over the panel, sprocket gears and a sprocket chain connecting the feed rollers, a ratchet gear secured to one of the rollers, a gravity actuated dog in engagement with said gear for releasably securing the paper against

movement over the panel, a lever pivotally mounted in the casing, a dog carried by said lever to engage the sprocket chain, an arm pivoted on said lever to engage with the dog, spring means acting to urge the lever in one direction, a stop for limiting the movement of said lever in the latter named direction, an arm pivoted to said lever, a slidably mounted guide member in said casing, spaced rollers on said guide member and receiving the latter-named arm therebetween, an operating lever journaled in said casing, a handle for effecting operation of said operating lever and arranged exteriorly of the casing, a pin carried by the operating lever to engage with the latter named arm for imparting pivotal movement to the first named lever for advancing the paper over the panel and for disengaging the dog from the ratchet gear, a catch for supporting the slidable member in an elevated position for normally supporting the latter named arm in a position out of the path of movement of the pin of the operating lever, a solenoid for operating said catch, an electric circuit connected to said solenoid, a switch in said circuit, means for operating said switch, and electrically operated means connected in said circuit and with said solenoid for effecting energization of said solenoid on the operation of the switch to effect release of the slidable member by the catch.

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