

Sept. 1, 1936.

I. MARKS

2,052,890

TOY PIANO

Filed Oct. 18, 1935

3 Sheets-Sheet 1

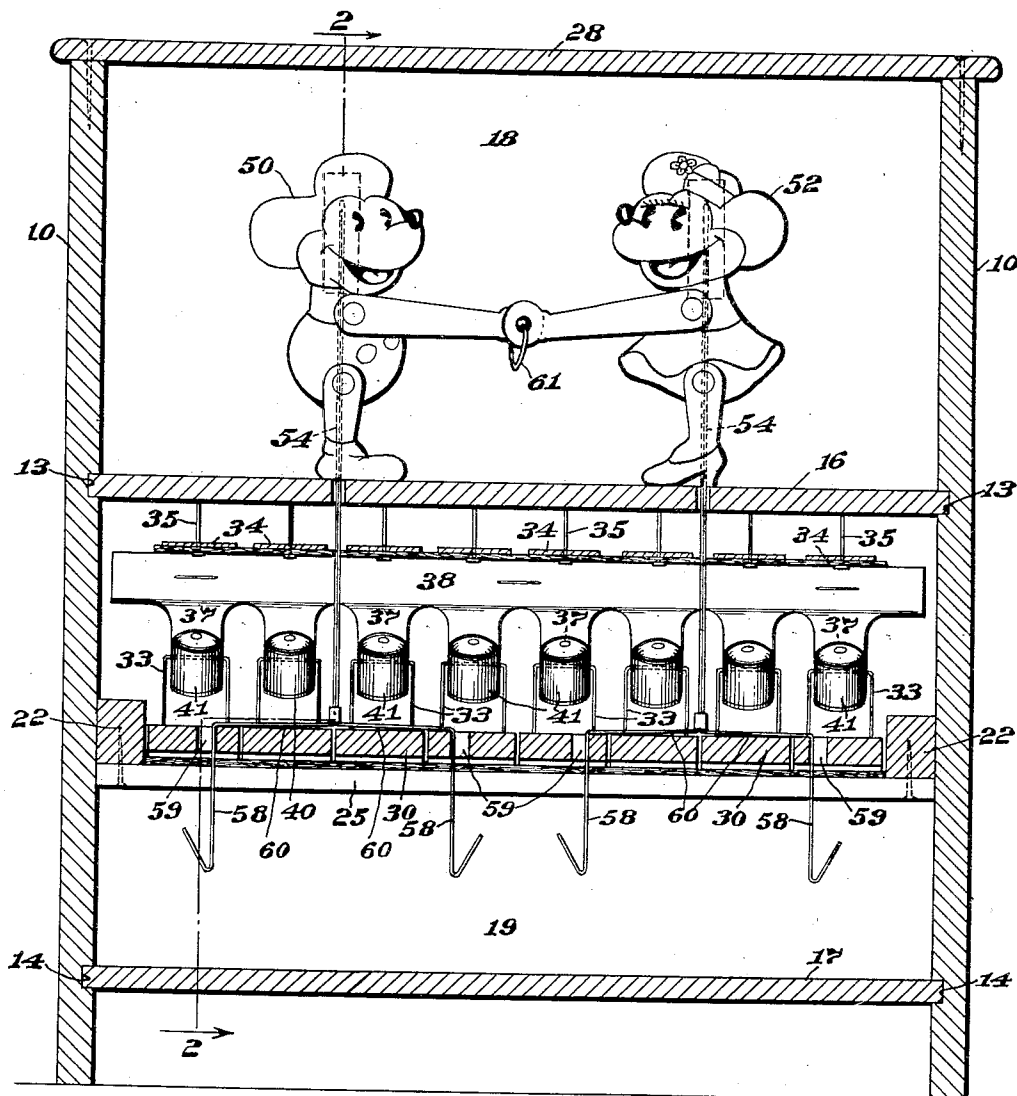


Fig. 1

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3 Sheets-Sheet 2

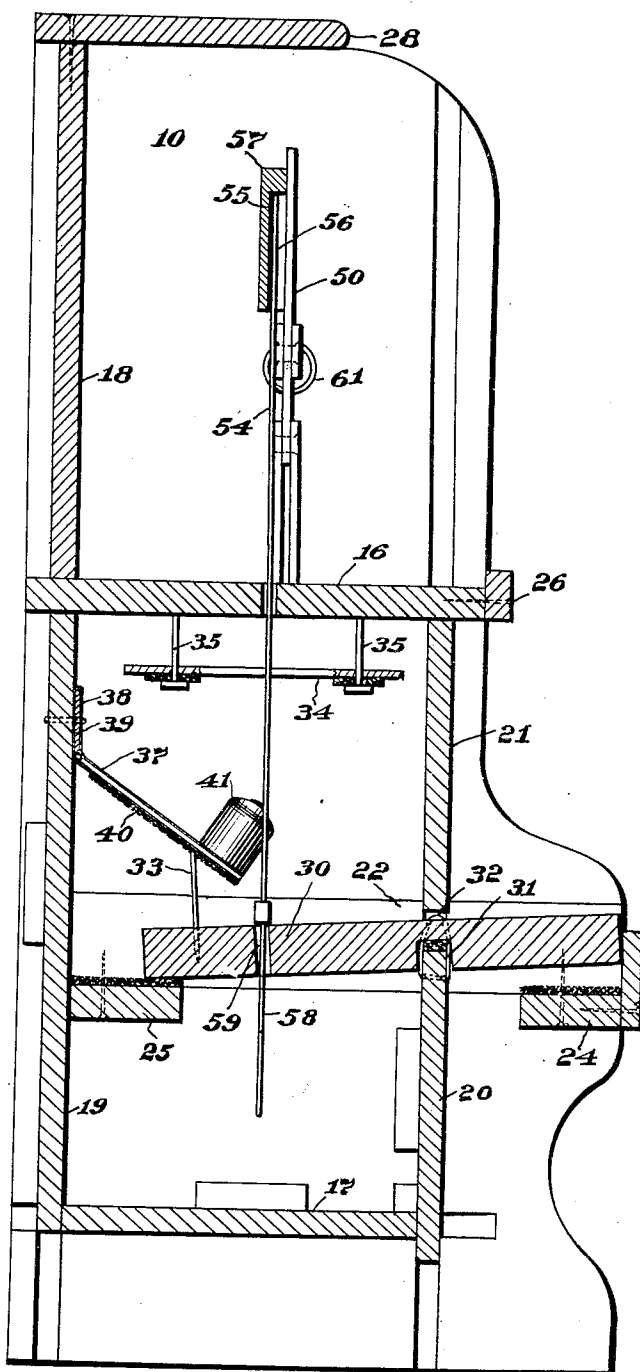


Fig. 2

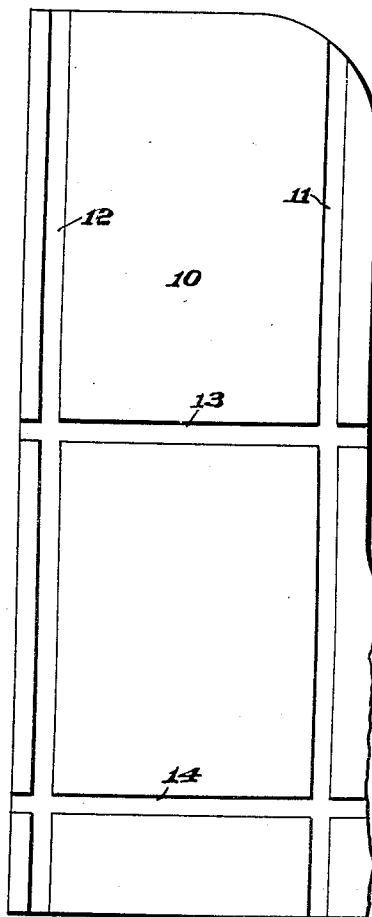


Fig. 3

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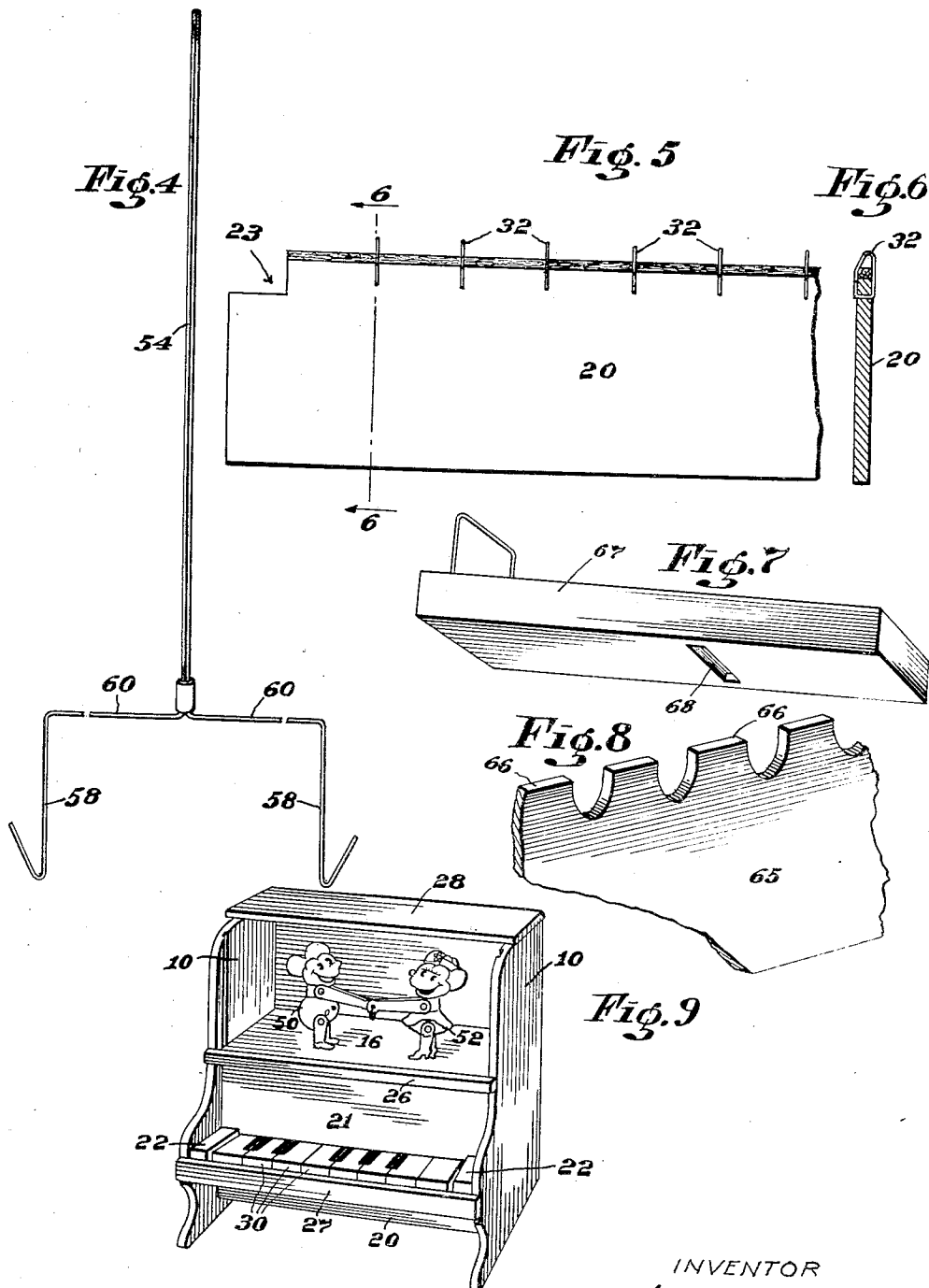
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Filed Oct. 18, 1935

3 Sheets-Sheet 3



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2,052,890

TOY PIANO

Isidore Marks, Boston, Mass.

Application October 18, 1935, Serial No. 45,565

12 Claims. (Cl. 46—118)

This invention relates to mechanical toys of the kind having an animated figure or figures which simulate dancing on operating the toy. The invention is embodied herein in a toy piano provided with a dancing floor having figures apparently standing thereon which become animated and dance upon the floor when the piano is played.

The objects of the invention are to insure a continuous movement of the dancing figures while playing the piano through actuation from all of the keys of the keyboard with free action of the articulated parts of the dancing figures; to so mount a pair of dancing figures that they cannot rotate or turn their backs to the piano player; and to so simplify the construction of toys of this character that they may readily be assembled by the unskilled labor employed in toy factories.

To the accomplishment of these objects and such others as may hereinafter appear, as will readily be understood by those skilled in the art, the invention comprises the features and combinations of parts hereinafter described and then particularly pointed out in the appended claims.

In the embodiment of the invention illustrated in the drawings:

Figure 1 is a view of a toy piano, in transverse section, in which the improvement of this invention has been incorporated;

Fig. 2 is a view, in fore and aft section, on the line 2—2 of the toy piano shown in Fig. 1;

Fig. 3 gives an inside view of an end board of the toy piano showing how it is cross-grooved to facilitate assembly;

Fig. 4 is a detail view of the support for a dancing figure;

Figs. 5 and 6 are front and sectional views, respectively, of the key-board support for the piano keys;

Fig. 7 is a view, in underside perspective, of a piano key having a modified form of notch;

Fig. 8 is a view, in perspective, of a portion of a modified form of spacer bar for supporting notched keys as shown by Fig. 7; and

Fig. 9 is a view, in perspective and on a smaller scale, of the toy piano as it appears after assembly.

Describing the illustrated toy piano as one practical embodiment of the invention the piano case comprises two end boards 10 each provided at its inner face with a front vertical groove 11, a rear vertical groove 12, an upper horizontal groove 13 and a lower horizontal groove 14, all of which are continuous from edge to edge of

the end board (Fig. 3). A floor board 16 for the dancing figures has its ends seated in the two upper grooves 13 and a bottom board 17 is similarly seated in the two lower grooves 14 thus spacing the end boards 10 apart. The spacing may be such that the key-board of the piano consists of one octave or eight keys, as shown, or there may be two or more octaves, the length of the key-board depending on the size of the piano. The back comprises two boards set in the rear grooves 12, one, 18, above the dancing floor and one, 19, below it. The front also comprises two boards set in the front grooves 11, one 20, which serves as a key supporting and spacing bar (Figs. 5 and 6) below the key-board and one 21, above the key-board. A fore and aft bracer 22 is secured to each end board intermediate the horizontal grooves 13 and 14, passing through cut-out corners 23 (Fig. 5) of the spacer bar, and serving to support a front felted mute 24 for the forward ends of the piano keys and a rear felted mute 25 for the rear ends of the piano keys (Fig. 2). Trim strips 26 and 27 are placed across the front edge of the dancing floor and the front mute, respectively. A top board 28 forms a sort of stage for the dancing figures.

Proceeding now to a description of the piano action and its effect upon the figures on the dancing floor before describing novel method of assembling the various parts, the key-board as herein shown for convenience of delineation comprises eight keys 30 which may be painted to simulate sharps and flats even though the notes produced sound but a single octave. Each key has an under notch 31 (Fig. 2), conveniently a cross groove by which it may be pivotally seated on the cushioned top edge of the spacer bar 20. The spacer bar (Fig. 6) carries a series of spaced wire clips 32 clenched into the bar thus insuring separation of the keys, preventing rubbing and preserving their individual action. The notches 31 are somewhat forward of center so that the keys normally assume a tilted position with their rear ends resting on the rear mute 25 (Fig. 2). Each key carries a wire loop 33 at its rear end which engages the cushioned under side of a movable hammer that may be thrown upward by the key action to engage one of a series of xylophone plates to sound the notes.

The xylophone plates 34 may conveniently be strung in a row, each on two headed nails 35 driven into the lower face of the dancing floor 16, strips of felt or the like being threaded on the nails and lying beneath the plates to mute the

notes as they fall back after being struck and lifted by the hammers.

The eight note strikers are conveniently secured as a single unit to the lower back board 19. To accomplish this a piece of relatively strong fabric is cut with eight tabs 37 depending from a top strip 38 which may be folded over a reinforcement 39 for strength and is secured, as by stapling, to the back board. Each tab is provided with a stiffener 40 and its under face and the stiffener is felted for silence. At its free end each tab carries a wood hammer 41 which may have a nail for striking a note-plate 34 located above it and in its path of movement. The hammers move individually upon the strip 38 as a hinge when actuated by an upward movement of the rear end of a co-acting piano key.

It will be observed that the construction just described provides for a preliminary assembly of the strikers and back board and of the xylophone plates and dancing floor thus permitting these otherwise loose parts to be handled as a unit as the piano is being built. These preliminary assemblages also facilitate placing the keys as a unit in co-acting position as will appear later.

Referring now to the animated figure and to the manner in which it is actuated to simulate dancing when the piano is played, the figure or, as illustrated, the figures 50 and 52 may be made of cardboard, colored to represent a well known cartoon subject if desired, and having the arms and legs loosely pivoted to the body. In the present instance two dancing figures are shown each mounted loosely on the upper end of a reciprocatory rod 54 passed upward through a hole in the dancing floor 16. The back of each figure carries a block 55 (Fig. 2) conveniently grooved at its inner face. This groove 55 has an open bottom for receiving the rod 54 and has a closed top 57 so that the figure is suspended on the end of the rod and will be thrown upward when the rod rises and settle back thereon when the rod descends.

The rod 54 is reciprocated, and the figure suspended thereon thus animated, by movement of the piano keys. The rod 54 is conveniently formed of a pair of wires soldered at the upper end, or a single doubled wire (Fig. 4) which may be soldered at the upper end. The two strands are branched laterally at their lower ends forming an inverted T, finally terminating in two spaced legs 58. An eyelet may be placed at the branch if desired to prevent spreading. The spacing of the legs 58 may be any desired distance but with an eight-key key-board and two dancing figures it is appropriate to animate each figure from any one of four keys. Accordingly as illustrated, the legs 58 are so spaced as to pass downward through enlarged holes 59 in the first and fourth key for one leg and in the fifth and eighth key for the other leg. As a safety device each leg 58 may be hooked at its lower end as shown in Fig. 4 said hook yielding as it is forced down through the hole in a key and then springing outward again. When the piano is not being played the lateral branches 60 (Fig. 1) of each figure-supporting rod, as illustrated, lie above and rest upon the rear portions of four adjacent keys. Playing any one of these four notes will cause said rod to reciprocate, throwing the figure upward and permitting it to drop back thus jiggling its arms and legs. A sharp striking of a key might throw the figure off of the rod but the proportionate size of the figure to the height of

the "stage" purposely is such that the figure's head will strike the top board 28 before the figure can leave its supporting rod. With the construction shown both figures will dance continually while the piano is being played.

The loose mounting would permit a figure to rotate on the rod 54 unless constrained. In order to ensure that the two figures are continually forwardly-facing a connecting ring 61 is passed through holes in the four hands of the two figures thus preventing either figure from rotating relatively to the other.

Figs. 7 and 8 illustrate a modified, but a simpler and thus probably a preferable, form of key mounting. In this instance the key supporting and spacing bar 65 is provided with a heavy sawtooth formation at its upper edge, each comparatively wide tooth 66 forming a support for a single key 67. Each such key has a notch 68 in its under face corresponding to the notch 31 (Fig. 2) but of less length than the width of the key and comparatively of such dimensions as to fit a little loosely over the squared end of a tooth 66. Engagement of the side walls of a tooth with the end walls of a notch 68 positively prevents lateral displacement of any key and the spacing of the teeth is such that each key has free individual action. This form of key mounting eliminates key spacing elements and it is not essential to use a soft packing on the edge of the key support. The front board 21 (Fig. 9) holds the entire key-board down.

The various parts of the piano action are purposely designed for ease of assembly by unskilled labor. In the toy factory the strikers are preliminarily fastened to the back board 19 and xylophone plates to the dancing floor 16 thus facilitating their assembly. The end boards having been spaced by the connected fore-and-aft bracers 22, the key-supporting bar 23 may then be slipped into the spaced end board grooves 11 below said bracers. Each figure supporting wire carrying the two perforated keys is threaded through its appropriate hole in the dancing floor 16 and the floor is then slipped into the end board grooves 13 and pushed well back while all the keys are fitted on the spacer bar and the front board 21 is slipped in the end board grooves 11. Sliding the dancing floor well forward the back board 19 may be slipped into the end board grooves 12, tilting the assembly at this time so that the strikers will seat upon the key loops 33. The dancing floor being re-centered, the bottom and back boards 17 and 18 may be slipped into and secured in their grooves, the figures placed on the wires, and finally the top board 28 and trims secured in place. It will be understood that the felts are all secured on their respective supports prior to assembly. The principal securement is by glue and cleats as in the manufacture of furniture. Thus a simple mode of assembly by slipping the parts into prepared guides is provided for a toy having a piano action.

Having described the nature of the invention in its preferred form but recognizing that changes may be made in the structure and its mode of assembly may be varied, the described embodiment is intended as an exploitation of the underlying essentials of the invention the true scope of which will be found in the claims herewith.

What is claimed as new, is:—

1. In a toy piano of the type described having a figure mounted above the key-board on a movable means and animated by a movement of said means on playing the piano, characterized by the

fact that said movable means is associated with and actuated by any one of a plurality of the piano keys.

2. The construction according to claim 1 in which said movable figure supporting means consists of a reciprocatory rod having a lower part extending laterally, and contacting the upper rear portions of said plurality of the piano keys.

3. In a toy piano of the type described having a figure above the key-board and reciprocatory means intermediate said figure and the key-board serving, on playing the piano, to jiggle the figure and simulate dancing, characterized by a socket carried by said figure, and said reciprocatory means comprising a rod the upper end of which enters said socket loosely and the lower end of which is branched to contact several keys, whereby said rod is reciprocated to jiggle said figure by the movement of any one of a plurality of keys.

4. In a toy piano of the type described having a dancing figure above the key-board mounted on a rod adapted to be reciprocated on playing the piano, said rod having the form of an inverted T the figure supporting stem of which consists of two strands of wire, the lower ends of said strands branching laterally in opposite directions and overlying certain piano keys and the upper ends thereof being connected.

5. The construction according to claim 4 characterized by the fact that said T-rod is formed from a single piece of wire bent upon itself to form its two strand stem.

6. The construction according to claim 4 characterized by the fact that said T-rod is provided with a leg depending from each lateral branch having a hook at its lower end.

7. A toy piano having, in combination, a key-board, two dancing figures above the key-board each having a body with jointed arms and legs, each figure being mounted loosely on the upper end of a rod, both rods passing downward and each associated with certain of the piano keys to be reciprocated by rocking said keys, said figures facing each other with arms extended and said extended arms being connected, thereby pre-

venting a rotation of either figure as it jiggles on its supporting rod when the piano is played.

8. In a toy piano of the type described having a stage above the key-board, a rod adapted to be reciprocated on playing the piano and passing upward through the stage and a figure on said stage supported by the rod, characterized by a key-board including at least one octave having two non-adjacent perforated keys, the lower end of said rod being branched laterally in opposite directions, each branch having a leg and said legs passing downward each through one of said perforated keys, whereby said lateral branches will overlie both said perforated and the intervening keys.

9. The construction according to claim 8 characterized by a plurality of said branched rods with a figure supported on each, and the branches of each rod overlying a portion of the keys but together overlying the entire key-board.

10. The construction according to claim 8 characterized by two branched rods with a figure supported on each, the branches of each rod overlying one half of the keys of the key-board, some of the members of said figures extending toward each other and such members being secured together.

11. In a toy piano of the type described having a stage above the key-board, a rod passing upward through the stage and associated with one or more of the keys for reciprocation thereby when the piano is played and a figure on said stage supported by the rod, said support for the figure consisting of a socket on the figure having an open lower end and closed upper end for receiving the upper end of the rod and loosely suspending the figure thereon, permitting the figure to move up and down on the rod as the rod reciprocates during the playing of the piano.

12. The construction according to claim 11 characterized by a cover above the dancing floor at a height above the figure such that upward movement of the figure on the rod will be terminated by the figure hitting said cover before said socket can leave the rod.

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