Sept. 3, 1968 W. S. JURKIEWICZ 3,399,892

MECHANICAL FOOTBALL CENTER TRAINING DEVICE

Filed Aug. 1, 1966 2 Sheets-Sheet 1

Fig. 1

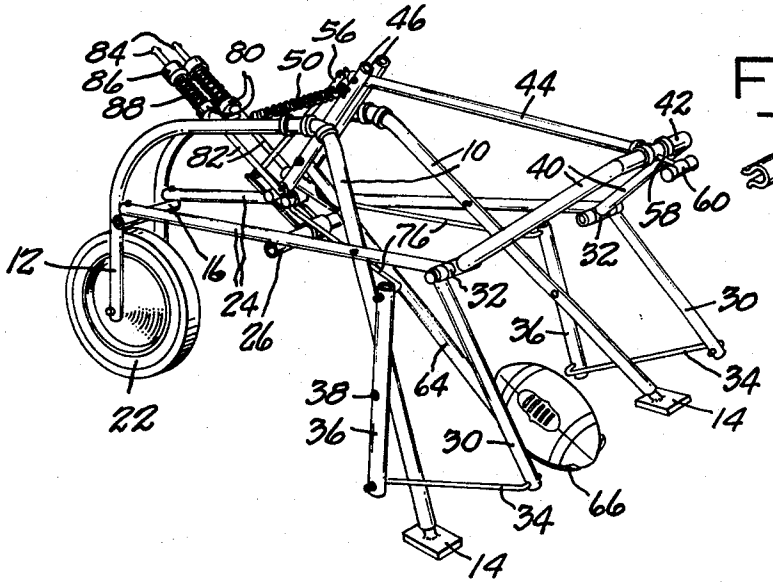

Fig. 7

Fig. 2

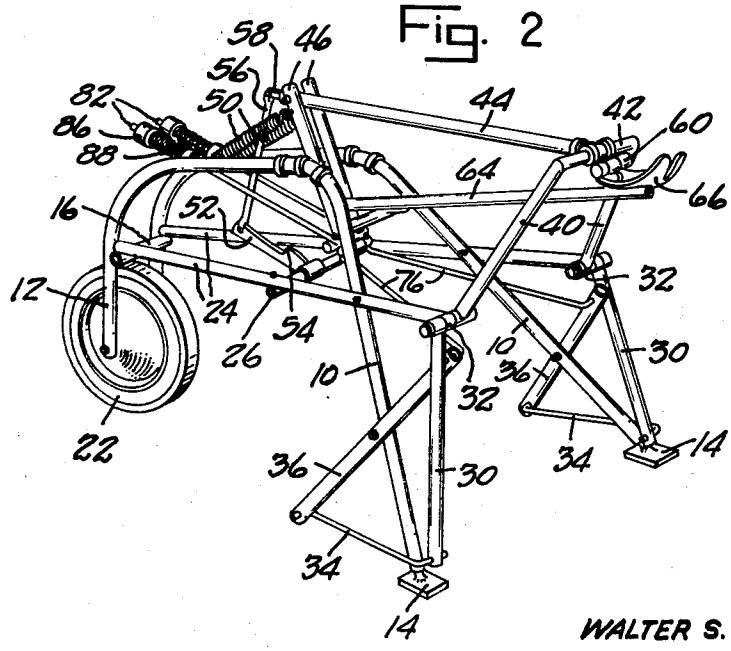

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Fig. 3

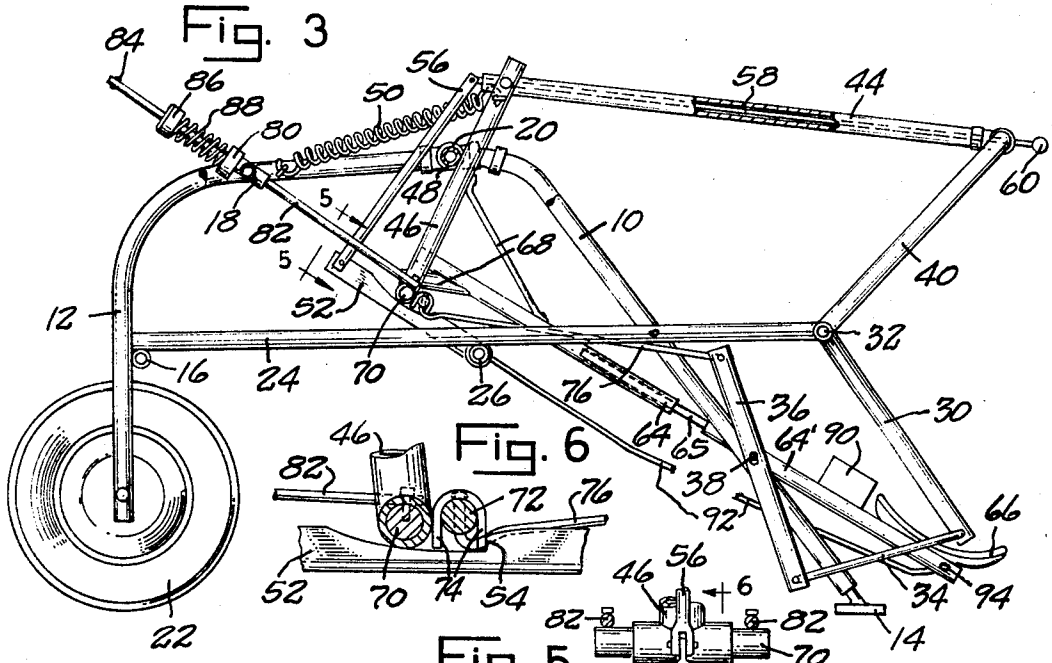

Fig. 6

Fig. 5

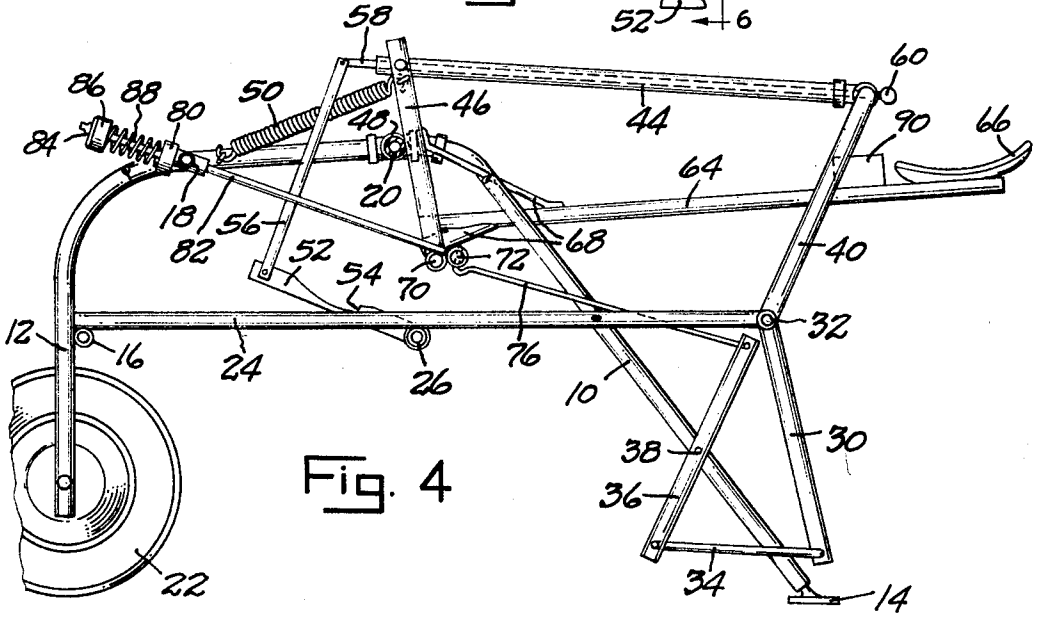

Fig. 4

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MECHANICAL FOOTBALL CENTER TRAINING DEVICE

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10 Claims. (Cl. 273—55)

This invention is related to improvements in football training mechanisms. Particularly, it relates to a training device to be used by quarterbacks in practicing reception of the ball at the start of a play.

The primary object of this invention is to provide a novel, simple, spring operated movable device for delivering a football into the hands of the player in an action simulating the motion of the player at the center position of a football team at the snap of the ball which starts a football play.

The further object is to provide a device of this character which is easily set in starting position, which can be released by a motion comparable to that exercised by a quarterback in signaling a center to "snap" the ball, and which entails a movement of parts of the device incident to the delivery of the ball to the quarterback in a manner which simulates the charging movement of a player at center position occurring simultaneously with the delivery of the ball.

The further object is to provide a device of this character which enables a quarterback to assume any position or maneuver in ball handling which he desires; such as those maneuvers known as roll-outs, sprint-outs, spin-outs, reverse-pivots, drop-backs and split-T techniques.

Other objects will be apparent from the following specifications:

In the drawings:

FIG. 1 is a perspective view of the device in its "cocked" position.

FIG. 2 is a perspective view of the device in its ball delivering position.

FIG. 3 is a view of a modified construction of the device in its "cocked" position in side elevation, with parts broken away.

FIG. 4 is a view of the device in side elevation and in ball-releasing position, with parts broken away.

FIG. 5 is a fragmentary detail sectional view taken on line 5—5 of FIG. 5.

FIG. 6 is a detailed sectional view taken on line 6—6 of FIG. 5.

FIG. 7 is a perspective view of an attachment usable with the device.

Referring to the drawings which illustrate the preferred embodiment of the device, the numeral **10** designates a pair of generally arch-shaped rigid frame members preferably formed of metal tube stock, bent to provide a forward downturned end portion **12** and a rear downturned end part mounting a ground-engaging plate **14**. The frame members **10** are preferably similar and are fixedly interconnected by a crossbar **16**, a front upper transverse pivot member **18**, and a rear upper transverse pivot member **20**. A wheel **22** is rotatable on an axle **24** interconnecting the lower parts of frame parts **12**. The rear portions of frame members **10** which mount the plates **14** preferably diverge downwardly and rearwardly so that a firm or stable support is provided by the rear plates **14** and the wheel **22**. A pair of rigid horizontal bars **24** are fixedly secured to the front of the frame at or adjacent the transverse frame member **16** and project rearwardly divergently therefrom. Bars **24** are preferably secured to the rear portions of the frame members **10** and project therebeyond to terminate at points spaced above the respective plates, **14**. A transverse member **26** is secured to and extends between the

bars **24** intermediate the length thereof and adjacent to and below the transverse member **20**.

A pair of lower leg-simulating members **30** are provided in the device respectively pivotally mounted at **32** at the rear ends of the bars **24**, and extend downwardly therefrom. A guide bar or link **34** is pivotally connected to the lower end of each bar **30**, being preferably of substantially L-shape to pass outwardly around the lower end of the adjacent part **10** and forwardly therefrom for pivotal connection to a pivoted lever **36** having a pivotal connection at **38** intermediate its ends with the adjacent part of part **10**.

Two upper leg-simulating members **40** are pivoted to frame members **24** at **32** at their lower ends, and are interconnected by a crossbar **42** at their upper ends. A tubular member **44** is pivoted to the crossbar **42** and extends forwardly therefrom for pivotal connection at its forward end to a lever unit **46**, here shown as consisting of a pair of spaced substantially parallel interconnected members between which the member **44** extends. Lever unit **46** is pivoted intermediate its length at **48** upon the rear pivot member **20**. Spring means, here shown as one or more coil springs **50** connected to the upper end of the lever unit **46** and to a frame member or members **10** forwardly of the pivot member **20**, serve normally to urge the lever unit **46** to the position illustrated in FIG. 4.

A latch bar **52** is pivoted at one end to the transverse member **26** to extend forwardly therefrom. The latch bar **52** is provided with a notch in its upper surface providing a latching shoulder **54**. A link **56** is pivoted to the forward free end of the latch bar **52**, and in turn is pivotally connected at its opposite end to a trip-rod **58** which is slidable within the tubular member **44** and projects therefrom at both ends. The rear end of the trip-rod **58** preferably mounts a handle or crossbar **60**. If desired, a cushioning member **62** as seen in FIG. 7 can be mounted upon the handle **60**.

The lever unit **46** fixedly mounts thereon adjacent its lower end and spaced from the pivot **48** an elongated rearwardly extending delivery arm **64** upon the free end of which is secured a ball holder **66**. Suitable brace means **68** secure the delivery arm **64** in desired angular relation to the lever unit **46** which supports it.

At the lower end of the lever unit **46** is mounted a crossbar or latching assembly or unit preferably including a front crossbar **70** and a rear crossbar **72** fixedly secured to the front crossbar and to a brace **68**. A latch member **74**, here shown as an inverted channel-shaped member, is carried by part **72** and is adapted to seat in the notch of the handle bar and to engage the latching shoulder **54** thereof in the cocked position of the device illustrated in FIGS. 1, 3 and 6. Link members **76** are carried by the rear crossbar **72** and are pivotally connected to the upper ends of the pivoted levers **36**.

One or more guide members **80** are pivotally mounted upon the front transverse pivot member **18** and slidably guide therein elongated rods **82** whose rear ends are secured to the latching assembly, as at the front crossbar **70**. The rods **82** project forwardly from the guide members **80** and are provided with stops **84** at their free ends. An abutment member **86** is slidable upon each rod **82** and a coil spring **88** encircles each rod **82** between the slidable abutment member **86** and the guide member **80**.

In use the device is readily moved between storage and usage locations. Thus, the rear end of the device can be grasped at the rear portions of the frame members **10** or at the members **30** or **40** to lift the rear of the device to effect clearance of the plates **14** above the ground. The device can then be trundled like a wheelbarrow with the major portion of the weight thereof supported upon the

wheel 22. The major parts of the device, such as parts 10, 16, 18, 20, 24, 26, 30, 36, 40, 44, 46 and 64 may be formed of metal tubing to hold the weight of the device at a minimum and yet provide adequate strength.

FIGS. 1 and 3 illustrate the cocked or operative position of the parts of the device and FIGS. 2 and 4 illustrate the release or ball-delivering position of the device. The device is moved from its released to its cocked position by swinging the delivery arm 64 downwardly to cause the same and the lever unit 46 to swing about the rear transverse pivot member 20. This action produces rearward movement of the tubular member 44 and swinging of the upper leg-simulating members 40 in a clockwise direction and swinging the lower leg-simulating bars in counterclockwise direction. When the delivery arm 64 reaches operative position in which the ball holder 66 is adjacent ground level, the latch member 74 will be adjacent to the latching bar 52 and the latching shoulder 54 thereof. An outward pull upon the handle 60 and trip-rod 58 will effect engagement of latch member 74 with the latch shoulder 54 as illustrated in FIG. 6, thereby holding the parts in the operating position illustrated in FIG. 3. It will be understood that the movement of the parts to the cocked or operative position will be resisted by the spring 50 and that said spring will function to hold the parts in the cocked or operative position.

It will be observed from FIG. 3 that, in the cocked or operative position of the device, the ball carrier 66 is at a low level comparable to the grounded position of a game ball prior to the snap of the ball during the play, and the upper end of the upper leg-simulating parts 40 terminate at or adjacent hip-height of a crouching football center preparing to deliver the ball to the quarterback upon the snap of the ball. Also, the crouching position of the upper end and lower parts of the legs of a player prior to a play is simulated by the angular relation of parts 40 and 30 shown in FIG. 3.

The quarterback can take any stance he desires adjacent to the leg portions 30 and 40 of the device while holding his hands at or adjacent the level of the handle 60.

Thereupon a slight movement of a hand, comparable to that made by a quarterback in touching an upper leg of a center player during play to signal a snap of the ball, will contact and actuate the handle 60 as required to shift the trip-rod longitudinally in the tube 44 and swing the latch bar 52 to effect disengagement of the shoulder 54 thereof from the latching member 74. The release of the latching members permits the spring means 50 to come into the play, swinging the lever unit 46 counter-clockwise from the FIG. 3 position of the FIG. 4 position. This movement produces three actions concurrently; namely, (1) the delivery arm 64 is swung upwardly to deliver the ball to the outreaching hands of the quarterback, (2) the lower leg-simulating members swing forwardly and, (3) the upper leg-simulating members swing forwardly and upwardly. The movement of the members 30 and 40 resembles the movement of the lower and upper parts of the legs of a football center as he charges forwardly to block players on the opposing team incident to and immediately following the delivery of the ball into the hands of the quarterback.

Suitable snubbing of the operation of the movable parts of the device incident to the delivery of the ball is provided by the coil springs 88 which are so arranged relative to parts 80, 84 and 86 that, as the movable parts of the device approach limit positions, the abutment member 86 engages the stop 84 and provides for compression of the spring 88 between the abutment member 86 and the end of the guide member 80. In other words, at some intermediate point in the stroke of the delivery member 64 the abutment member 86 is pushed into engagement with stop 84 so that subsequent movement of member 64 will entail compresesion of spring 88. If desired, an abutment member 90 formed of resilient compressible material, such as sponge rubber or foam plastic, may be mounted upon the member 64 to engage the crossbar 42 and thereby cushion the stopping of member 46 by the crossbar 42.

It will be apparent that the device operates by movement of the parts in a manner simulating the movements of a center player both as to delivery of the ball into the outstretched hands of a quarterback at the position normally assumed by a quarterback, and with respect to the movements of the leg-simulating parts 30 and 40 which resemble the leg movements of a football player at center position while charging or blocking an opponent. This close simulation of the actions of a football player at center position minimizes the need for practice of a quarterback with a center, thus freeing the center during practice to engage in other activities. Another interesting characteristic of the device is that it may be used either indoors or outdoors with equal effect and enables the quarterback to practice a stance from which he can perform any of the plays which he is required to perform during a game, such as roll-outs, sprint-outs, spin-outs, reverse pivots or drop-backs.

It will be understood that suitable means (not shown) may be provided to vary the point of connection of the spring 50 with the upper end of the lever 46, and this adjustment will make possible variations of the speed at which the device operates. Also, it will be seen that in the movement of the members 40 and 30 forwardly from the stance taken by the quarterback will enable him to move freely in performing various maneuvers without danger of injury due to contact with the device after he receives the ball.

A slight modification of the device is illustrated in FIG. 3. In this construction, the ball delivery arm 64 is tubular and is formed of two sections 64 and 64', one of which mounts a reduced part 65 having a telescopic slide fit in the other part. A link 92 is pivoted to the frame spaced from arm pivot 48, as at 26, and is pivoted to the free end of delivery arm section 64' at 94. By this arrangement, the delivery arm is longitudinally extensible and contractible, being extended by link 92 when the device is in cocked or starting position and being contracted in the delivery position. This produces a movement of the ball between starting and delivery positions in a curved path different from that produced in a device having a single solid delivery arm, and facilitating delivery of the ball near part 42.

While the preferred embodiment of the invention has been illustrated and described, it will be understood that changes in the construction may be made within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. A football training mechanism comprising

a rigid frame,

a lever pivoted intermediate its ends to said frame on a transverse horizontal axis and swinging between an operative position and a ball delivery position,

a ball delivery arm carried by said lever and swinging in a longitudinal vertical plane,

leg-simulating means pivoted to said lever and to said frame at the rear portion of said frame and including a part swinging forwardly and upwardly,

spring means for urging said lever and connected parts to said ball delivery position,

latch means including interengaging latching parts for releasably holding said lever in said operative position,

said latch means including trip mechanism shiftable on said frame and having a member guided by and projecting from the forwardly upwardly swinging part of said leg-simulating means,

said lever simultaneously swinging said arm to ball delivery position and swinging said leg-simulating parts forwardly upon actuation of said trip mechanism while said lever is in operative position.

2. A football training mechanism as defined in claim 1, and

means for slowing the movement of said ball delivery arm by said spring as it nears ball delivery position.

3. A football training mechanism as defined in claim 1, and

lost motion mechanism connected with said lever and having an abutment, abutment means on said frame, and

spring means interposed between said abutments and compressed thereby at a selected portion of the movement of said lever from operative position to ball delivery position,

4. A football training mechanism as defined in claim 1, wherein

said latch means includes a latch bar pivoted to said frame and shiftable by actuation of said trip mechanism and a latch member fixedly carried by said lever spaced from its pivot.

5. A football training mechanism as defined in claim 1, and

a second leg-simulating part swinging forwardly relatively to said frame below said first named leg-simulating part and connected with said lever to be actuated thereby.

6. A football training mechanism as defined in claim 1, wherein

said forwardly and upwardly swinging part of said leg-simulating means includes a stop portion engaged by said arm and defining said ball delivering position.

7. A football training mechanism as defined in claim 1, wherein

said forwardly and upwardly swinging part of said leg-simulating means is pivoted on said frame intermediate the height thereof and in operative position extends rearwardly and upwardly from its pivot on said frame, and a

second part pivoted to said frame adjacent the pivot of said first named part and in operative position extends rearwardly and downwardly from its pivot; and

means connecting said second part to said lever to swing forwardly upon release of said latch means.

8. A football training mechanism as defined in claim 1, wherein

said leg-simulating means includes upper and lower parts pivoted to swing forwardly of said frame, and

said lever is pivoted to said frame intermediate its ends and has pivotal connection at one end thereof with said upper part of said leg-simulating means and at its other end with said lower part of said leg-simulating means,

whereby to simultaneously swing said parts in the same direction.

9. A football training mechanism is defined in claim 1, wherein

said frame comprises a pair of arch-shaped longitudinal members rigidly connected in spaced rearwardly diverging relation,

a wheel supporting the front end of said frame, and

ground-engaging members carried by said longitudinal frame members at the rear end of the frame,

said leg-simulating members being positioned rearwardly of said ground-engaging members when in operative position.

10. A football training mechanism comprising a rigid frame,

a ball delivery member pivoted to said frame to swing vertically between a lower starting position and an upper delivery position,

spring means urging said delivery member to said delivery position,

latch means for releasably locking said delivery member in starting position,

upper and lower leg-simulating members pivoted to said frame at the rear thereof and swinging between a leg-crouch-simulating position and a charge-simulating position,

means interconnecting said leg-simulating members and ball delivery member for conjoint operation whereby said legs shift toward charging position as said delivery member shifts toward delivery position, and

means carried by said last named means and operative to trip said latch means, and including a handle projecting from said upper leg-simulating member.

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