

Aug. 4, 1931.

L. L. BRAY

1,817,872

TESTING DEVICE

Filed June 28, 1929

Fig. 1

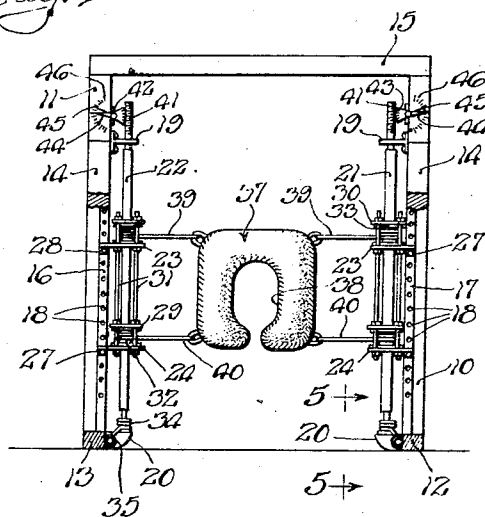


Fig. 2

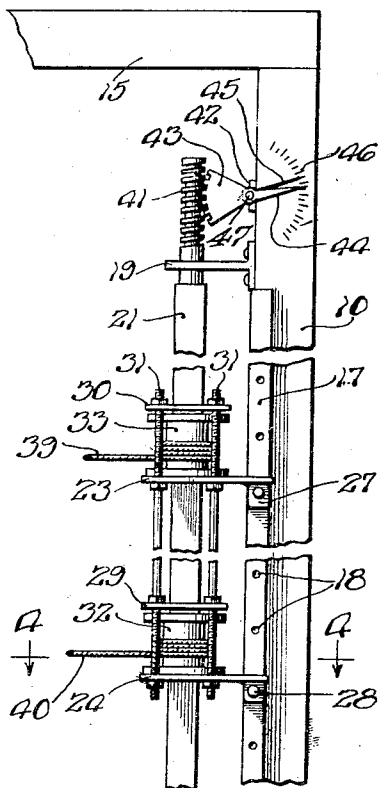


Fig. 3

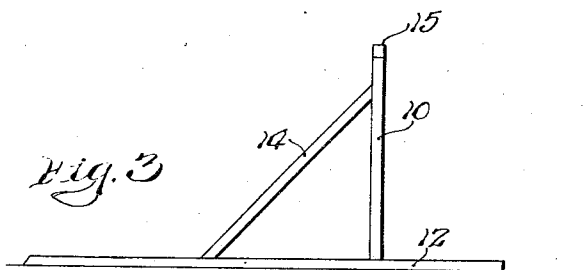


Fig. 4

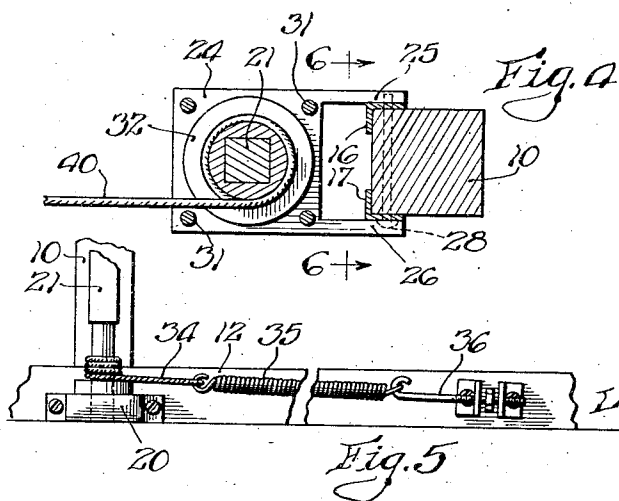
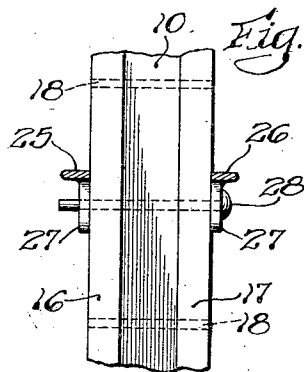


Fig. 6



Lawrence L. Bray INVENTOR
BY Victor J. Evans
HIS ATTORNEY.

UNITED STATES PATENT OFFICE

LAWRENCE L. BRAY, OF FOND DU LAC, WISCONSIN

TESTING DEVICE

Application filed June 28, 1929. Serial No. 374,565.

This invention relates to certain novel improvements in testing devices and has for its principal object the provision of an improved construction of this character which will be highly efficient in use and economical in manufacture.

The salient object of my invention is to provide a testing device which will be particularly adapted for testing the strength of a football player and it is especially adapted to test the drive stamina of such a player and to determine his fatigue point.

Another object of the invention is to provide a device of the above described character which may be employed to determine the development of the player.

A still further object of the invention is to provide a device of the above described character which will be readily adjustable.

A still further object of the invention is to provide a device of the above described character which may be readily transported.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings, showing the preferred form of construction and in which:

Fig. 1 is a front elevational view of a preferred form of construction for my invention;

Fig. 2 is a fragmental view drawn to an enlarged scale of a portion of the mechanisms illustrated in Fig. 1;

Fig. 3 is a side elevational view of the embodiment of my invention illustrated in Fig. 1;

Fig. 4 is a sectional view taken substantially on the line 4—4 on Fig. 2;

Fig. 5 is a view taken substantially on the line 5—5 on Fig. 1; and

Fig. 6 is a view taken substantially on the line 6—6 on Fig. 4.

In the accompanying drawings wherein I have illustrated the preferred form of construction for my invention 10 and 11 generically indicate upright post members which extend upwardly from horizontally disposed supporting members 12 and 13. Extending between the horizontally disposed members 12 and 13 and the upright members 10 and 11 are reinforcing members generically indicated by 14. Extended between the upper ends of the post members 10 and 11 is a connecting member 15. The foregoing construction is that which I provide as the main support or frame in which my improved testing device is arranged.

On the inwardly disposed face of the uprights 10 and 11 at the corners thereof I provide sections of angle iron indicated by 16 and 17. Extended through parallel portions of these sections of angle iron and through the posts 10 and 11 are a plurality of holes indicated by 18.

Brackets such as 19 and 20 extend inwardly from the posts 10 and 11 and bar members 21 and 22 are journaled in these brackets. The bar members 21 and 22 have rounded end portions to facilitate turning thereof in the brackets. The portions of the bar members 21 and 22 intermediate the rounded end portions are preferably formed so as to be square. Arranged in embracing relation with respect to the bar members 21 and 22 are plates 23 and 24. As best illustrated in Fig. 4 the plate 24 includes a substantially U-shaped end portion providing limbs 25 and 26 which extend past the angle irons 16 and 17 and as is clearly illustrated in Fig. 2 these irons 25 and 26 include depending lugs 27. The lugs 27 have openings provided therein and a bolt member 28 is extended through these openings and the openings 18 and in this manner the plate 24 is adapted to be selectively positioned on the post 10. In a similar manner the plate 23 is secured to the post 10 and similar plates

are similarly secured to the post 11. Arranged above the plate 24 is a plate 29 and arranged above the plate 23 is a plate 30. Suitable rod members 31 extend through the plates 30, 23, 29, and 24 adjacent the corners thereof and suitable nuts are arranged on the rod members 31 so as to hold these plates in position. A drum 32 is arranged on the rod 21 between the plates 24 and 29 and a drum 33 is arranged on the bar 21 between the plates 23 and 30. A similar construction is provided on the bar 22 and it is manifest that these constructions providing these drums are adjustable vertically on the uprights 10 and 11 with respect to the bars 21 and 22.

As best illustrated in Fig. 5 a cable 34 is wound about the rounded lower end portion of the bar 21. A spring 35 is connected to the free end of the cable 34 and the other end of the spring is connected to an adjustable spring anchor 36. The spring 35 is placed under tension and acts on the cable 34 which is wound about the bar 21 so as to tend to turn said bar 21 in a predetermined direction. A similar construction is provided on the bar 22.

A harness generically indicated by 37 is provided which is preferably padded and which has an opening 38 therein. Cables 39 are connected to the upper corners of the harness 37 and are wound about the drums 33 on the bars 21 and 22. Cables 40 are connected to the lower ends of the harness 37 and are wound about the drums 32. The springs 35 act on the bars 21 and 22 so as to tend to wind the cables 39 and 40 on the drums 33 and 32 and in this manner the harness 37 is yieldably supported.

A worm gear 41 is provided on the upper end of the bar 21. A bearing 42 is provided on the upright 10 and a gear segment 43 is mounted in this bearing 42, on the pin 47 and meshes with the worm 41. A pointer or needle 44 is fixed to the gear segment 43 so as to be movable therewith. Another pointer 45 is pivotally mounted on the pin 47 about the pointer 44 and is intended to be moved in one direction by means of the pointer 44.

In use the device is set up with the horizontal members 12 and 13 disposed on the flat surface. A player then runs toward the device and by causing his head to pass through the opening 38 the shoulders may be brought into engagement with the harness 37 which will tend to unwind the cables 39 and 40 from the drums 33 and 32 on the bars 21 and 22 which will cause rotation of these bars. This rotation of the bars will be transmitted through the worm gears 41 at the upper ends thereof to the gear segments 43 and thus to the needles 44 and pointers 45 which are disposed above the needles 44 so as to be in the path of movement thereof and so that movement of pointers 44 will pivot pointers 45 on

pins 47. Pointers 45 will thus move over the scales 46 and, therefore, the amount of force a player exerts will be indicated. The pointers 45 will be moved to the highest point at which the needles 44 are moved and will, therefore, indicate the maximum strength exerted by the player, the pointers 45 being adapted to be moved to zero position by hand or by any suitable means.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification, without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention what I claim as new and desire to protect by Letters Patent is:

1. A device of the character stated, comprising a supporting frame having calibrations thereon, rotatably mounted upright bars carried by said supporting frame, means for urging each of said bars for turning movement in one direction, a harness, cables connected to said harness and to said supporting bars whereby said cables will be wound on said supporting bars by rotation of said bars by said urging means, worm gears on said bars, gear segments mounted on said frames, said gear segments meshing with said worm gears, and indicating members pivotally mounted on said frame in the path of movement of said segments and movable in one direction by said segments, said indicating members being adapted to register with said calibrations on said supporting frame.

2. In a device of the character stated, a supporting frame having calibrations thereon, upright bars rotatably supported by said supporting frame, yieldable means for urging each of said bars in turning movement in one direction, drums on said bars, cables wound on said drums, a harness, said cables being connected to said harness and supporting said harness and said harness and cables resisting turning movement of said bars in the direction in which said bars are urged, worm gears on said bars, segments meshing with said worm gears, and pivotal indicating members in the path of movement of said segments and movable by said segments and adapted to register with said calibrations on said supporting frame.

3. A testing machine adapted to test the bucking strength of football players, comprising a supporting frame including spaced apart uprights having graduations thereon, a bucking harness disposed between said uprights, rotatably and vertically mounted rod members carried by said uprights, cables wound upon said rod members and includ-

ing portions connected to said harness whereby to support said harness between said uprights, yieldable means for urging said rotatable rod members in one direction, worm gears on said rotatable rod members, gear segments mounted on said uprights and meshing with said worm gears, and pointer arms pivotally mounted on said uprights and adapted to be moved in one direction by said gear segments, said pointer arms being adapted to register with said calibrations on said uprights, whereby when force is exerted on said bucking harness said gear segments will move said pointers to indicate the maximum force exerted on said harness.

In testimony whereof I affix my signature.
LAWRENCE L. BRAY.