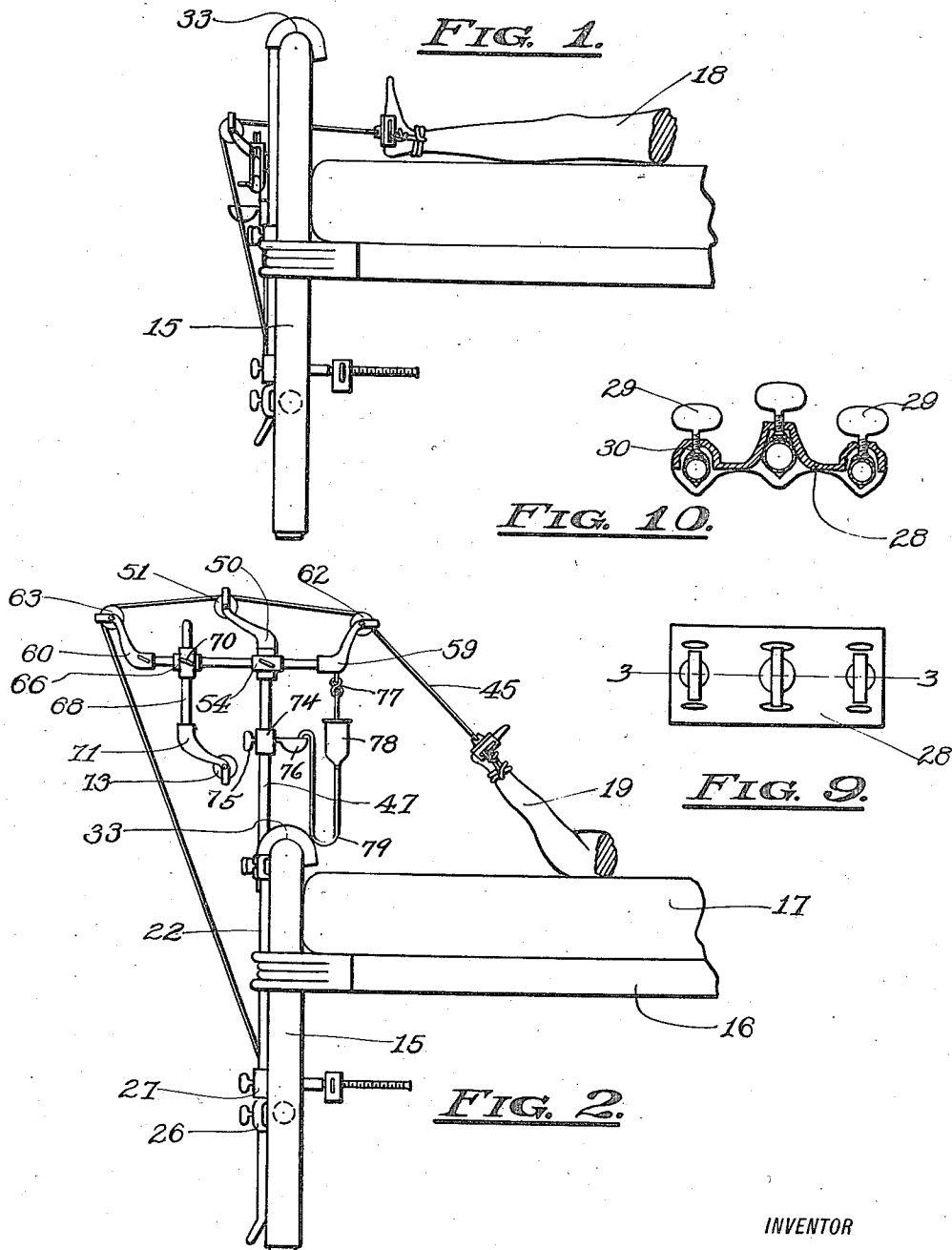


J. R. SIEBRANDT.
BUCK EXTENSION.
APPLICATION FILED APR. 12, 1917.

1,296,128.

Patented Mar. 4, 1919.
3 SHEETS—SHEET 1.



INVENTOR

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FIG. 3.

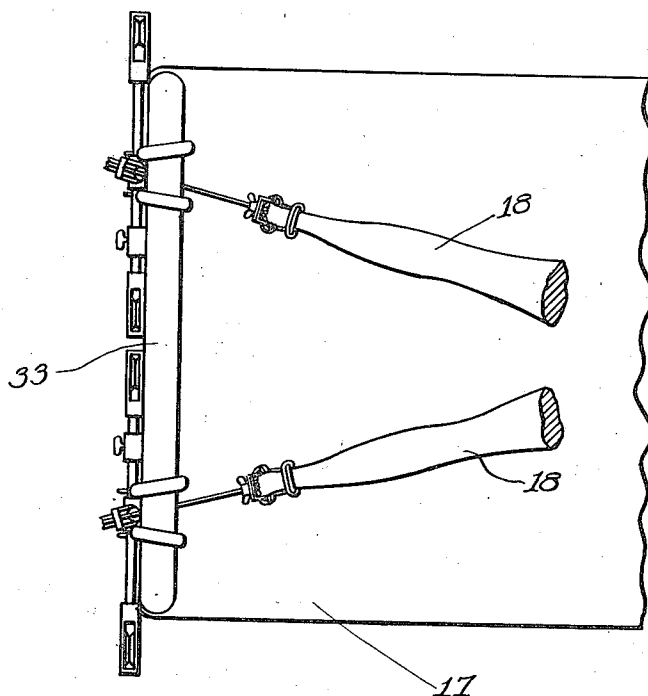
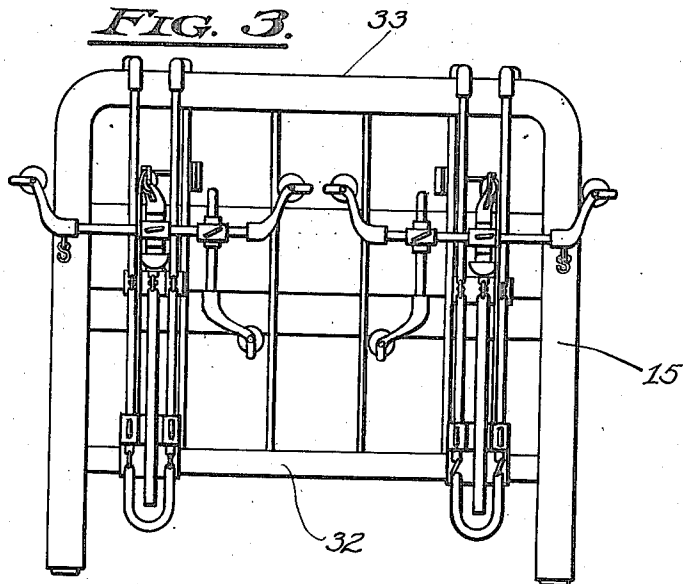


FIG. 4.

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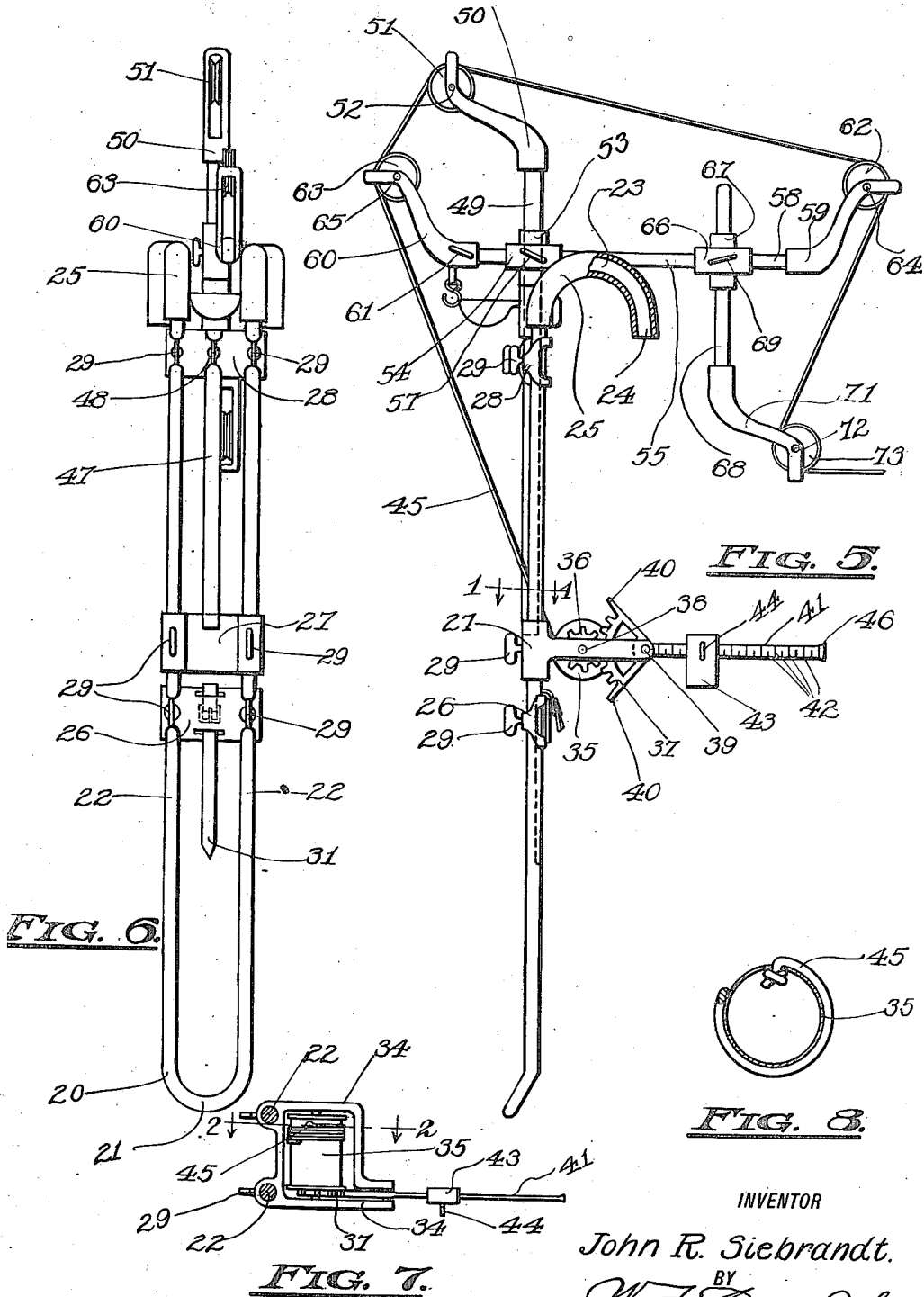
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JOHN R. SIEBRANDT, OF KANSAS CITY, MISSOURI.

BUCK EXTENSION.

1,296,128.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN R. SIEBRANDT, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Buck Extensions, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to buck extensions and seeks to provide a simple and efficient form of buck extension that will serve to treat a greater variety of conditions of the patient.

Bedsteads with low foot pieces as well as high ones are employed for supporting patients and the surgeon often desires to stretch the patient's limb in upward slanting positions, also to stretch both the limbs of the patient in separating angles.

The present invention seeks to provide an improved buck extension that is quickly adjustable to low as well as high bedsteads and which is easily adjustable to upward slanting positioned hitches and to horizontal positioned hitches, so that one or both limbs of the patient can be upward and both limbs can be stretched in diverging directions either upward or horizontally.

A further object of the invention is to provide an adjustable weight so that the usual accompanying collection of detached weights will be eliminated and any desired tension on the limb produced by the single weight.

A still further object of the invention is to so shape and construct the various parts of the buck extension as to eliminate a large portion of the usual cost of manufacture and attain more easily and quickly manipulated adjustments.

With these and other objects in view, the invention consists in the features of construction, shapes, combinations and arrangements of parts hereinafter set forth and more particularly pointed out in the appended claims, the accompanying drawings illustrating a buck extension embodying the improvements.

In the drawings:—

Figure 1 is a side view in elevation of the improved mechanism attached to the foot of an average height bed illustrating a straight horizontal pull on the patient's limb.

Fig. 2 is a side view in elevation of the

mechanism attached to the low foot piece of a bed illustrating the cross arm pulleys in use for a vertical angular pull and the irritating mechanism ready for use.

Fig. 3 is an end view in elevation of the bed with two extensions attached thereto illustrating the horizontal angular pulls from an average height foot piece.

Fig. 4 is a plan view of Fig. 3 with a portion of the bed and patient broken away.

Fig. 5 is an enlarged side view of the extension as placed on a solid wall foot piece giving a direct horizontal pull.

Fig. 6 is a view of Fig. 5 taken on an angle of 90° therefrom.

Fig. 7, is an enlarged sectional view taken on line 1—1 of Fig. 5, illustrating the adjustable weight and drum with a portion of the cord wound thereon.

Fig. 8 is a still further enlarged sectional view taken on line 2—2 of Fig. 7, illustrating the manner of attaching the cord to the drum.

Fig. 9 is a detailed view of the casting that supports the center pulley post, drawn to the same scale as Fig. 8.

Fig. 10 is a sectional view of Fig. 9 taken on line 3—3 of Fig. 9.

The bedstead foot piece 15, side rail 16, and mattress 17 are of common and well known construction, while the limbs 18 and 19 are merely shown to illustrate the advantageous features in the application of the buck extension.

The rod shaped frame 20 is curved at forming two parallel frame members 22, each member having a lateral extending portion 23 forming a semi-circle, and in common direction therefrom excepting that the ends 24 are separated to greater distance than are the parallel members so that when the extending portions are placed on the foot piece 15 as illustrated particularly in Figs. 3 and 4, they cross the foot piece in diverging angles and form a lock and brace so that the entire buck extension will stand rigidly when subjected to the angular hitches illustrated in Fig. 4.

The semi-circular extending portions 23 as shown are covered with cushioning material 25 to increase the grip on the foot piece when under angular stress and to prevent the parts from marring or scratching the foot piece 15.

On the parallel frame members 22 are mounted the slidable cross-head shaped con-

necting members 26, 27 and 28, each provided with thumb set screws 29 by which it can be locked in any desired position along the parallel frame members, and each set screw provided with an enlarged end 30 so that the screw can not be taken or lost from the companion connecting members, this feature being very advantageous, as usually when a buck extension is required the promptness with which it can be attached is very important, and often the screws have been lost or removed and the entire apparatus rendered inoperative. To the connecting member 26 is attached the strap 31 for the purpose of binding the frame members 22 downward and rigidly to the lower stay rod 32 of the foot piece 15, the downward pull of the strap also binding the semi-circular extending portions 23 rigidly to the upper edge 33 of the foot piece.

The connecting member 27 is provided with the arms 34 preferably integral therewith, and between which is mounted the winding drum 35, gear 36 and segmental gear 37, the drum being journaled in the arm at 38 and having the gear 36 mounted rigidly therewith, while the segmental gear 37 is pivoted in the arms at 39 and provided with the stop arms 40 and the weight arm 41, the gear and segmental gear meshing, and the stop arms limiting the rotary movement of the gears so that they can not become disengaged. The weight arm 41 is graduated with the lines 42 as shown and has mounted thereon, the slidable weight 43, the latter provided with the thumb set screw 44 for locking the weight in any desired position, it being understood that the further the weight from the pivot 39 the more stress will be placed upon the chain 45. The weight arm 41 is enlarged at the outer end 46 so that the weight can not be removed or lost from the arm, and the screw 44 is a duplicate of the screws 29 so that it can not be removed or lost.

The pulley supporting post 47 is slidably mounted centrally in the connecting member 28 and held in any desired position by the thumb set screw 48 which is a duplicate of the screw 29 and can not be removed or lost. On the upper end 49 of the post 47 is rigidly mounted the pulley supporting arm 50 in which is mounted the pulley 51, on the pin 52, the post being free to be revolved and adjusted to any desired position when the screw 48 is loosened and held rigid in position when the screw is tightened.

Mounted to slide freely on the post 49 is the vertical hub 53 and integral therewith is the horizontal hub 54, the rod 55 being mounted to slide freely in the latter, the thumb screw 56 locking the hubs to the post and the screw 57 locking the rod to the hubs, the screws being duplicates of the screw 29.

The rod 55 has rigidly mounted on the end 58 thereof, the pulley arm 59, and detachably mounted on the opposite end, the pulley arm 60, the latter arm being locked by the screw 61 a duplicate of the screw 29, and the arms provided with the pulleys 62 and 63 respectively, mounted on the pins 64 and 65 respectively.

The horizontal hub 66 is mounted to slide freely on the rod 55, and is integral with the vertical hub 67 in which is mounted freely the post 68, the hubs being provided with the locking set screws 69 and 70 respectively which are duplicates of the screw 29. On the lower end of the post 68 is rigidly mounted the pulley supporting arm 71 in which is journaled on the pin 72, the pulley 73.

Between the connecting member 28 and the hub 53 is mounted on the rod 47, the hub 74 which is locked by the thumb screw 75 a duplicate of the screw 29, and has extending therefrom the bowl 76 for the purpose of containing antiseptics, instruments and the like such as are employed in irrigating and like treatment.

The pulley supporting arm 59 is provided with the eye 77 and hook for the purpose of supporting the fountain 78 and hose 79 for the purpose of irrigating, flushing and like treatments, the providing of the supporting attachments for the bowl and fountain being very desirable, as usually they must be held in the hands by attendants, which require excessive help for treatments that are often very simple.

The various arrangements and applications of the buck extension are shown to illustrate a few of the many conditions that it is readily adapted to, Fig. 1 illustrating the connection to a high foot piece of an ordinary metal bedstead and exerting a horizontal tension on the line 18. Fig. 2 representing the attachments to the same type of bed with a low foot piece and exerting an upward tension, Figs. 3 and 4 representing duplicate buck extensions arranged on bedsteads of the same type with high foot pieces and arranged for exerting tension in diverging lines from a pair of limbs, while the views Figs. 5 and 6 represent the adjustment of the improved buck extension for connection to a bedstead having a high closed foot piece and arranged for a horizontal tension.

The views Figs. 1, 2, 3, 4, 5 and 6 represent duplicate structure, but differently adjusted to meet the various requirements encountered daily in the employment of the buck extension.

What I claim as new, and desire to secure by Letters Patent, is:—

1. In a buck extension, a frame, a connecting member mounted to slide along said frame, means to lock said connecting mem-

ber to said frame, arms extending from said connecting member, a winding drum journaled to said arms, a pinion rigid with said winding drum, a segmental gear pivoted to said arms and meshing in said gear, a graduated arm extending from said segmental gear, and a movable weight on said arm.

2. In a buck extension, a frame, a winding drum supported by said frame, limb connecting connections leading from said drum, a pivotally connected arm connecting with said drum, and a movable weight on said arm to regulate the tension on said limb connecting connections.

3. In a buck extension, a frame, limb connecting connections connecting to said frame, a beam pivoted to said frame and a single weight arranged to exert the required tension on said limb connecting connection by the adjustment of said weight, on said beam.

4. In buck extensions, a frame, a connecting member mounted to slide freely to and fro on said frame, means to lock said connecting member on said frame, a post mounted in said connecting member, said post arranged to be freely revolved in said connecting member, said post arranged to slide freely to and fro in said connecting member, means to lock said connecting member rigidly to said frame, means to lock said post rigidly to said connecting member and a pulley revolubly connected to said post.

5. In buck extensions, a frame, a connecting member on said frame, a post revoluble in said connecting member, said connecting member slidable along said frame, means to lock said connecting member rigidly to said frame, and a pulley on said post.

6. In buck extensions, a frame, a post mounted by suitable connections on said frame, said post movable longitudinally of said frame, said post revoluble with relation to said frame, means to lock said post in any

desired longitudinal position, and a pulley revolubly connected to said post.

7. In buck extensions, a frame, a transversely projecting arm revolubly and slidably mounted in suitable connections connecting to said frame, and a pulley revolubly mounted on each end of said transversely projecting arm.

8. In buck extensions, a frame, a post mounted in said frame, a transversely projecting arm revolubly and slidably mounted in suitable connections connecting to said post, and a pulley revolubly connected to said arm on each side of said post.

9. In buck extensions, a frame, a post connected to said frame, a transversely projecting arm slidably connected to said post, and a pulley revolubly connected to said arm on each side of said post.

10. In buck extensions, a frame, a transverse arm connected through suitable connections to said frame, said arm provided with a plurality of pulleys revolubly connected thereto, said pulley capable of traveling orbitally around said frame.

11. In buck extensions, a frame, a transverse arm connected through suitable connections to said frame, a supplemental post slidably and revolubly mounted on said transverse arm, said post capable of adjustment to any post of an orbit surrounding said frame, and a pulley revolubly connected to said post.

12. In buck extensions, a frame, a transverse arm connected through suitable connections to said frame, a post mounted on said transverse arm, said post adjustable throughout an orbit surrounding said arm, said post adjustable throughout an orbit surrounding said frame, and a pulley revolubly connected to said post.

JOHN R. SIEBRANDT.