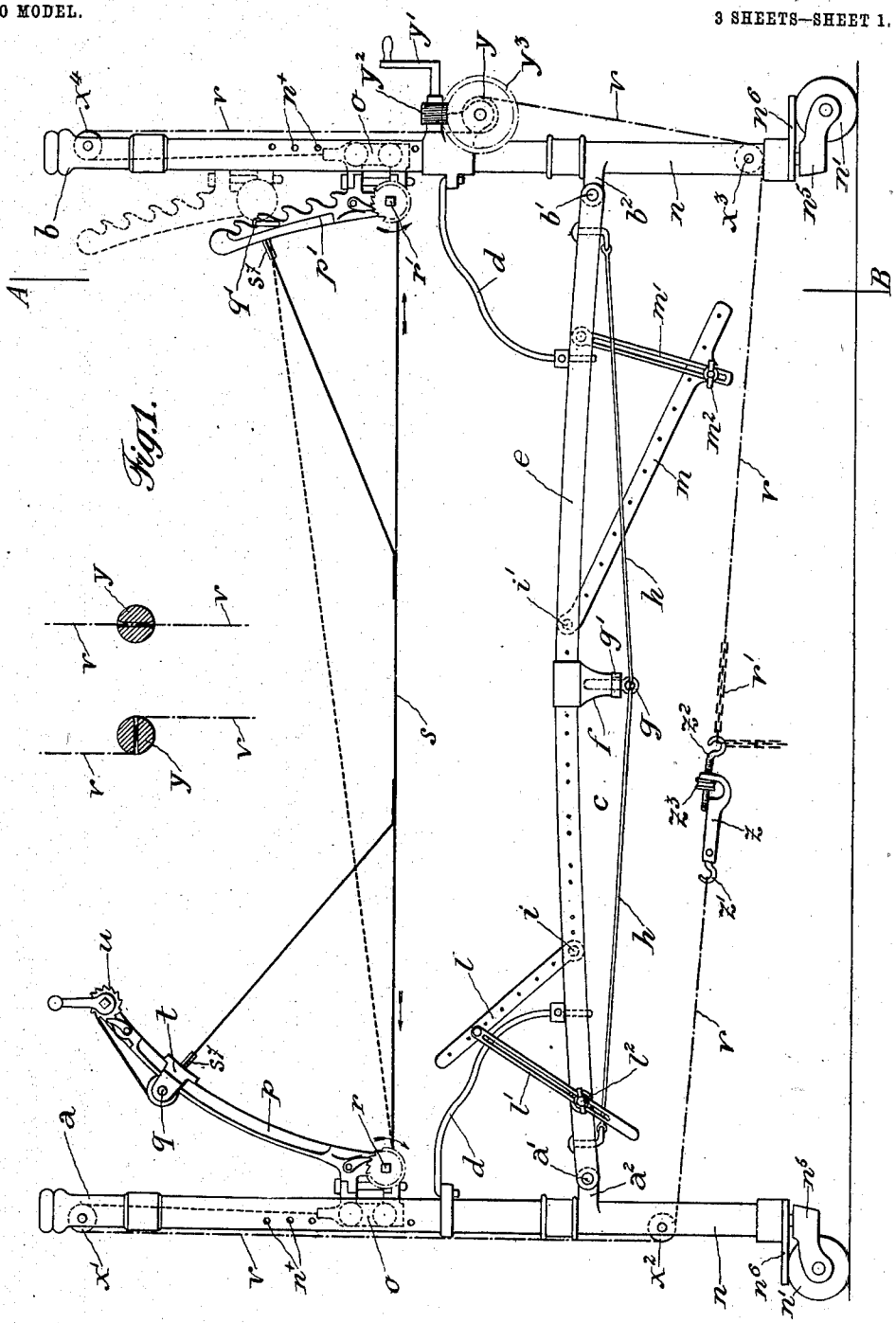
No. 736,188. PATENTED AUG. 11, 1903.

J. WYSSA.

BED.

APPLICATION FILED JUNE 12, 1902.

NO MODEL. 3 SHEETS—SHEET 1.



Witnesses:
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George Barry Jr.

Inventor:
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by attorneys
Brown & Sewall

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 3 SHEETS—SHEET 2.

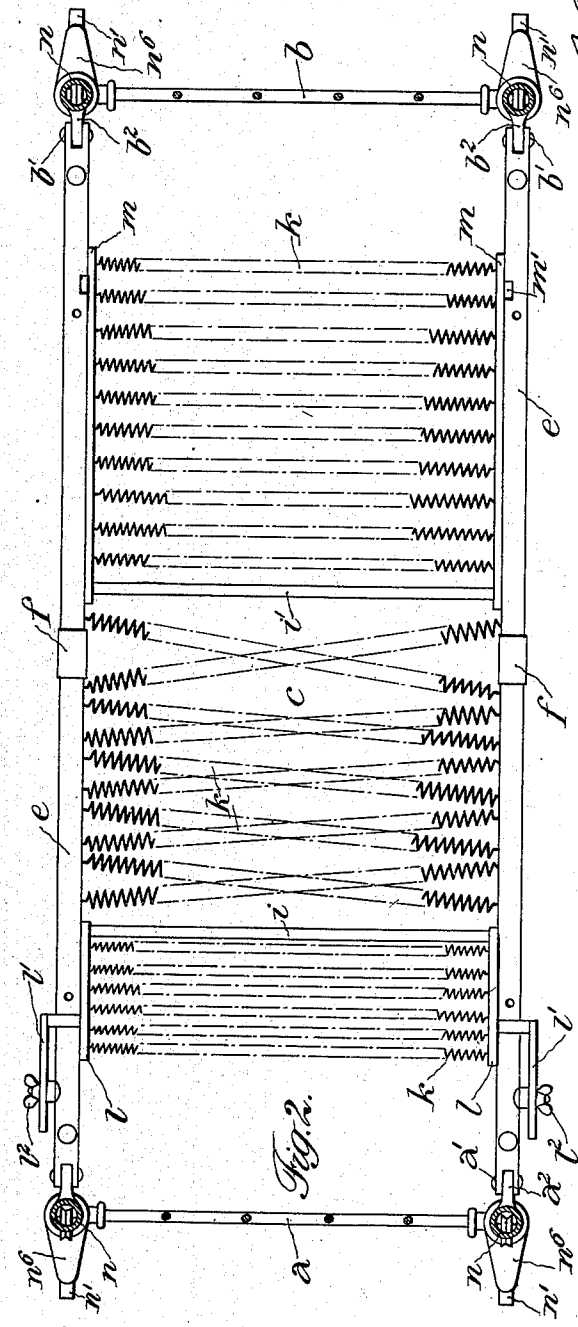

Fig. 2.

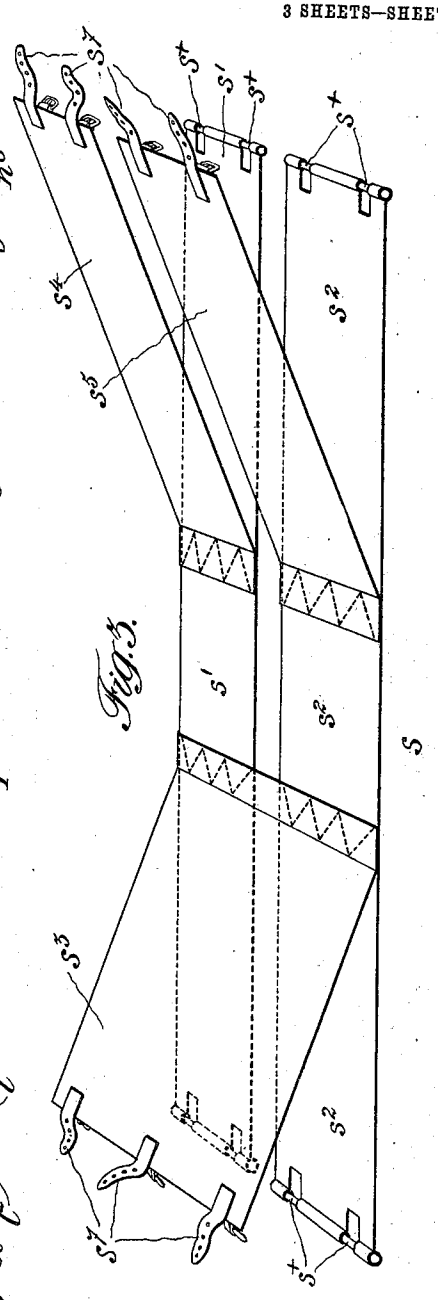

Fig. 3.

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NO MODEL. 3 SHEETS—SHEET 3.

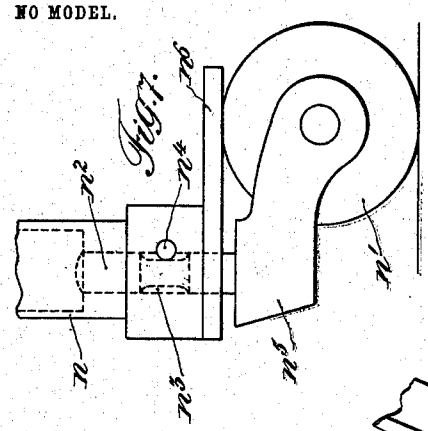

Fig. 7.

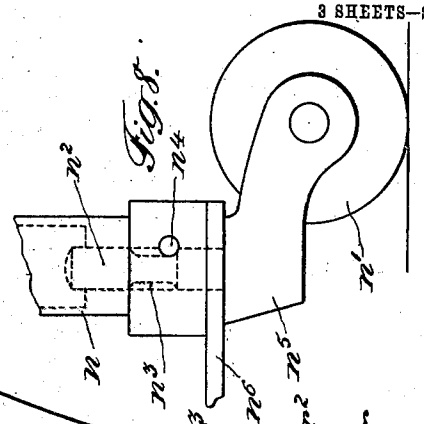

Fig. 8.

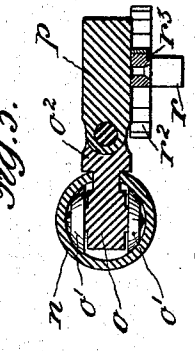

Fig. 5.

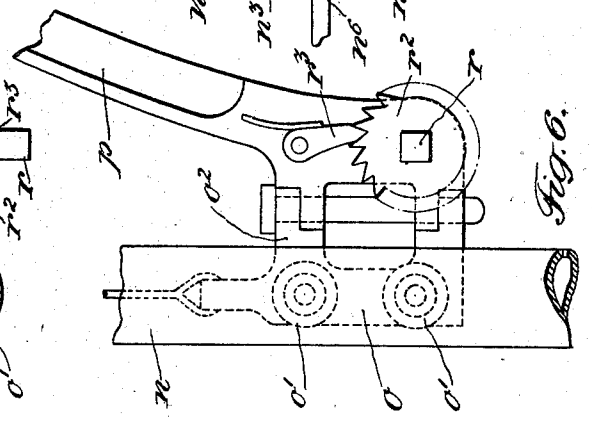

Fig. 6.

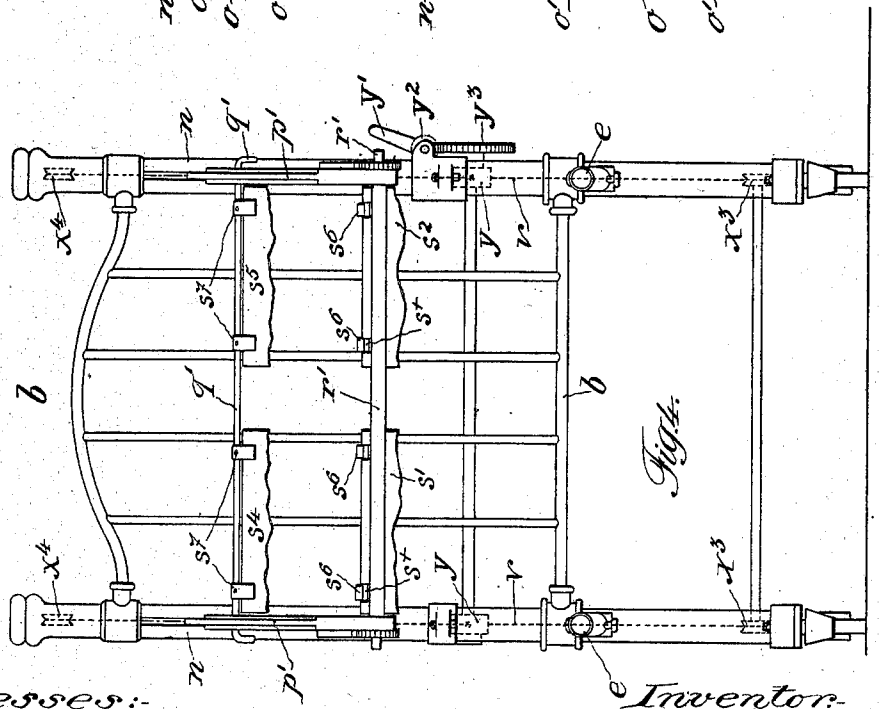

Fig. 4.

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No. 736,188. Patented August 11, 1903.

UNITED STATES PATENT OFFICE.

JEAN WYSSA, OF GENEVA, SWITZERLAND.

BED.

SPECIFICATION forming part of Letters Patent No. 736,188, dated August 11, 1903.

Application filed June 12, 1902. Serial No. 111,290. (No model.)

To all whom it may concern:

Be it known that I, JEAN WYSSA, manufacturer, a citizen of the Republic of Switzerland, and a resident of Geneva, Switzerland, have invented certain new and useful Improvements in and Relating to Beds, of which the following is a specification.

The invention refers to an improved construction of that class of beds which is intended to be used for sick persons—for instance, in hospitals—and which are provided with means for mechanically raising the body of the sick person from the mattress on which she is lying, and to support either the whole body in a horizontal or inclined position or the upper part of the body in an adjustable inclined position, and to also support one or both of the legs in such an adjustable inclined position.

The invention further comprises an improved construction of the spring-mattress and improved means for moving and fastening the different parts of the improved bed in their different positions.

The accompanying drawings, which make a part of the present specification, show one form of construction of the invention.

In the drawings, Figure 1 is a front elevation of the improved bed in which the device for raising the body of the sick person is raised to a certain height and incline. Fig. 2 is a horizontal section of the bed with plan view of the spring-mattress. Fig. 3 is a perspective view of the divided sheet forming the means for raising the body of the sick person. Fig. 4 is a vertical section of Fig. 1 on the line A B seen from left to right. Figs. 5 and 6 show separately at a larger scale the construction of the pistons o and supports p. Figs. 7 and 8 show separately the construction of the improved truckles in two different positions.

The frame of the improved bed is formed of a head portion a and of a foot portion b, which are connected with one another by means of the frame c of the spring-mattress, which is secured at a' and b', respectively, to suitable projections or ears a^2 b^2 of the said head a and foot b, and by means of suitable supports d hooked or otherwise connected to the said parts of the frame. The said spring-mattress, Fig. 2, is formed of two main tubes e e, having each in their middle portion a bearing f, provided with a screw g with screw-nut g'. A wire h or its equivalent is fixed to the two ends of each tube e and passes through a hole or a forked head of the said screw g, and the said wires h or their equivalent form with the main tube e a sort of arched armed beams, which are connected to one another by means of suitable rigid cross-bars or traverses i and i' and by means of spiral springs k, intended to support the body of the sick person. Those of the springs k which are intended to support the upper portion of the body are fixed to two bearings l l, which are pivotally connected to the main tubes e e by means of the traverse i, and those of the springs k which are intended to support the legs are fixed to two bearings m m, which are pivotally connected to the main tubes e e by means of the traverse i'. The said bearings l and m are respectively provided with adjustable supports l' m', which may be fixed to the desired position by means of setting-screws l^2 m^2.

The main frame of the bed is composed of four tubular posts n, provided with an improved construction of truckles intended to allow the bed to be easily rolled to and fro, if desired, and to lock the said truckles to prevent such rolling when it is preferred to have the bed remain stationary. To that effect each of the truckles n' is provided with a stem n^2, mounted to slide vertically within the post or leg of the bed-frame. The said stem n^2 is provided with a recess n^3, into which engages a pin n^4, crossing the said leg of the bed-frame and preventing the truckle from escaping out of the latter. Between the usual socket n^5 of the said truckle and the lower end of the leg of the frame there is provided a bolt n^6, capable of being rotated from its position shown in Fig. 7 to its position shown in Fig. 8. Now, as it is shown in the said figures of the drawings, the upper face of the socket n^5 is lower than the periphery of the roller, and if the bolt n^6 is placed into the position shown in Fig. 6 the truckle is firmly locked in its position, the portion of weight of the bed which bears upon the one leg of the bed to which the truckle is secured bearing by means of the bolt n^6 directly upon the periphery of the roller, thus preventing

its rotation. If one of the truckles of the bed is to be locked in the manner as described, one must raise the leg of the bed to which the said truckle is secured and rotate the bolt n^6 from its position shown in Fig. 5 into the one of Fig. 6. Each of the four tubular posts n is furthermore provided with an inner carriage or piston o, capable of moving up and down in the same and provided with suitable rollers o', intended to roll on the inner walls of the said tubular posts n. The said carriages or pistons o are provided with suitable ears o^2, projecting out of the tubes n through a longitudinal slot provided in each of them, and to the said ears o^2 of each carriage or piston o is hinged a bearing or support p or p', to which suitable cross-bars or traverses q or q' may be secured to support the ends of the adjustable portion of the piece of fabric s intended to raise and to incline certain portions of the body of the sick person.

The lower end of each of the two bearings or supports p of the head-frame and p' of the foot-frame are connected with one another by means of a cross-shaft r or r', to which are fixed the ends of the fixed portion of the divided sheet s, Fig. 3. The cross-shafts $r\,r'$ are each provided with a click-wheel r^2, in which engages a click or pawl r^3, pivotally connected to the support p or p', respectively. The said cross-shafts are further provided with a square portion, to which a suitable crank may be temporarily affixed with a view of imparting to the said cross-shafts r and r' a suitable rotation intended to cause the fixed portion of the divided sheet s to be firmly stretched between the shaft r and the shaft r', and to thus be liable to support the body of the sick person.

The divided sheet s is composed, as shown in Fig. 3, of two broad bands or straps s' and s^2, forming the fixed portion of the same and the ends of which are hooked by means of the loops $s^\times$ to suitable hooks s^6, provided to the rotative shafts r and r'. To the said bands or straps s' and s^2 there are fixed on the one end an adjustable piece of fabric s^3, intended to support in an inclined position the upper portion of the body of the sick person, and on the other end two adjustable pieces of fabric s^4 and s^5, intended to support in an inclined position the legs of the sick person. The ends of the pieces s^3, s^4, and s^5 are all provided with suitable straps s^7 $s^\times$, intended to be fixed to the cross-bars q or q', connected to the supports p or p'. The cross-bar q, to which the end of the adjustable piece of fabric s^3 is to be fixed, is fixed to sliding bearings t, capable of sliding up and down along the supports p of the bed-head, and a suitable windlass u is provided to raise or lower the said cross-bar q.

The carriages or pistons o, placed in the tubular posts n of the head portion of the bed-frame, are connected by a suitable wire passing on suitable rollers x', x^2, and x^3 and traversing diametrically the drum y of a suitable windlass acted upon by means of a crank y' and of a screw y^2 and screw-wheel y^3. The wire v after having thus crossed the drum y passes on suitable rollers x^4 and is affixed to the pistons o, placed in the tubular posts n of the foot portion of the bed-frame. From this arrangement it appears that if the said roller y of the windlass is rotated in either direction the four pistons o will be raised or lowered at same time, thus raising the sick person from the mattress upward or lowering her again to be laid down on the mattress.

The wire or chain v may be combined with a tension device, as shown in Fig. 1. The same is composed of a frame z, the one end of which forms a hook z', to which one portion of the wire v is fixed. The other end of the frame z bears an adjustable hook z^2, with screw-nut z^3, to which the other portion of wire v is fixed by means of a chain v'. By screwing or unscrewing the nut z^3 the wire v may be more or less stretched, and if the bed is to be taken to pieces the connection of the head-frame and foot-frame of the same may be easily interrupted by unhooking the chain v'.

The posts n of the bed-frame are furthermore provided with a series of holes $n^\times$, into which suitable pins are intended to be placed, crossing the said tubular studs, with a view of temporarily supporting the pistons o, and thereby releasing the suspension-wire v. This allows the fixed portion of the divided sheet—that is to say, the whole body of the sick person—to be suspended in an inclined position, as shown in dotted lines in Fig. 1.

Having thus fully described my invention, I claim—

1. In a bed, two tension devices adjustably mounted at the head and foot of the bed, a divided sheet, one portion of which is stretched between the said tension devices and separate adjustable supports for the other portions of the sheet for supporting certain parts of the person in an inclined position, substantially as set forth.

2. In a bed, adjustable head and foot frames, cross-shafts carried by the head and foot frames, longitudinal straps or bands stretched between said shafts, an adjustable cross-shaft carried by one of the frames and a piece of fabric secured at one end to the said adjustable cross-shaft and at its other end to the said straps or bands, substantially as set forth.

3. In a bed, adjustable head and foot frames, cross-shafts carried by the head and foot frames, longitudinal straps or bands of fabric stretched between said shafts, adjustable cross-shafts carried by said frames and pieces of fabric secured to the said straps or bands and to the said adjustable cross-shafts, substantially as set forth.

4. In a bed, four tubular posts, a carriage or piston mounted to slide vertically in each of said posts, a cross-shaft carried by each two adjacent carriages or pistons, a sheet

stretched between said cross-shafts and a single operating means for raising and lowering all of the carriages or pistons simultaneously, substantially as set forth.

5. In a bed, two head-posts and two foot-posts, and a spring-mattress supported thereby comprising two main tubes each having a bearing at its middle portion, an adjustable screw engaging the bearing and a wire engaging the said screw and the opposite ends of the tube and suitable cross-bars and springs, substantially as set forth.

6. In a bed, two tubular head-posts, two tubular foot-posts, a carriage or piston fitted to slide vertically in each post, two cross-shafts carried by said carriages or pistons, a sheet stretched between the cross-shafts, a common windlass and flexible connections leading from the several carriages to the windlass, substantially as set forth.

7. In a bed, two tubular head-posts, two tubular foot-posts, a carriage or piston fitted to slide vertically in each post, a sheet supported by the carriages, a common windlass, flexible connections leading from the carriages to the windlass, and separable tension devices in the flexible connections for permitting the bed to be taken apart, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JEAN WYSSA.

Witnesses:

E. IMER-SCHNEIDER,

L. H. MUNIER.