

Specification of Thomas Mann : artificial leg.

Contributors

Mann, Thomas.

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A.D. 1790 N° 1724.

S P E C I F I C A T I O N

OF

THOMAS MANN.

ARTIFICIAL LEG.

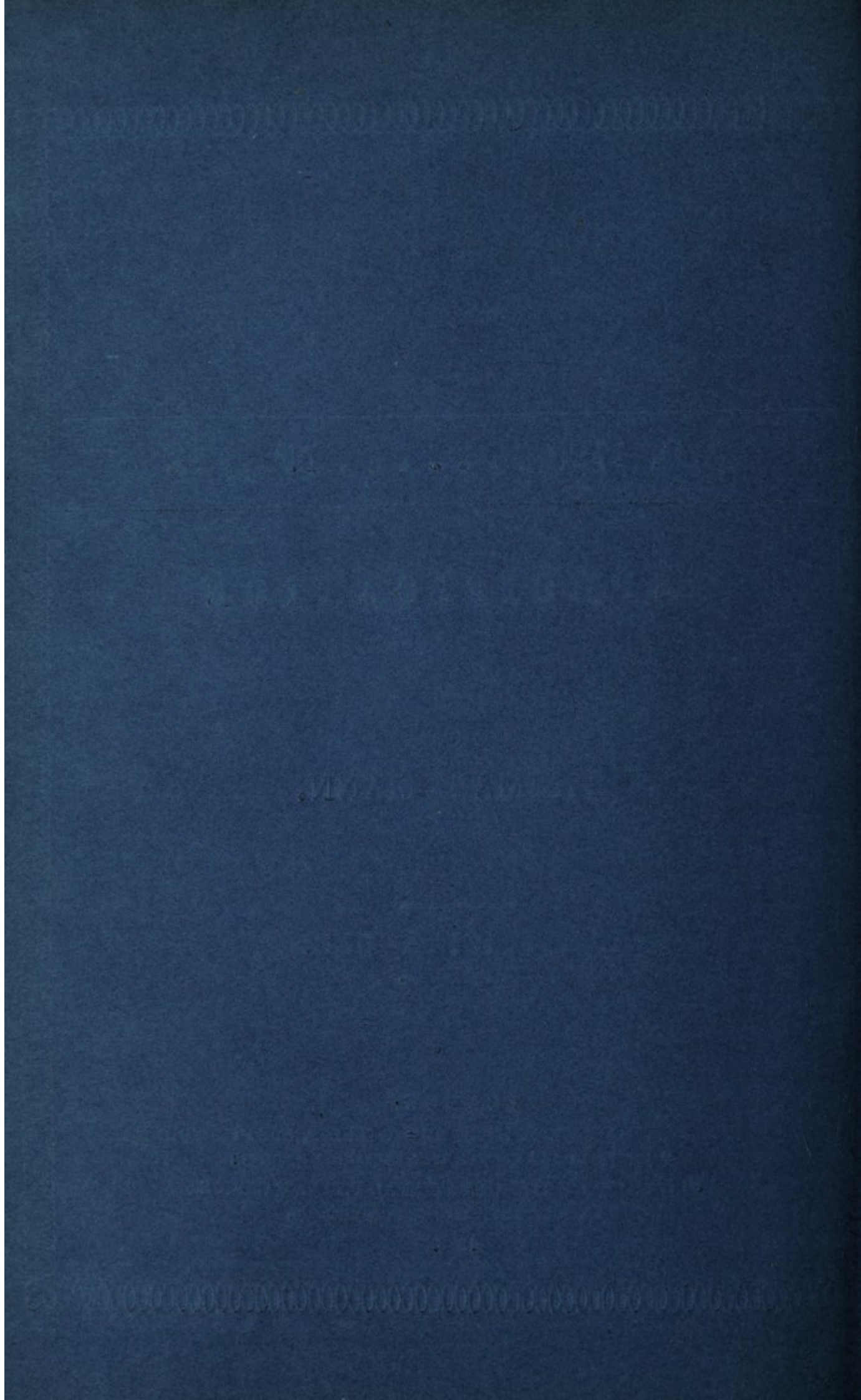
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A.D. 1790 N° 1724.

Artificial Leg.

MANN'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, THOMAS MANN, of Bradford, in the County of York, Linen Draper and Mercer, send greeting.

WHEREAS His most Gracious Majesty, by his Royal Letters Patent, 5 bearing date at Westminster, the Twentieth day of January, in the thirtieth year of the reign of His said Majesty, did give and grant unto me, the said Thomas Mann, my executors, administrators, and assigns, His especial licence, full power, sole privilege and authority, to make, use, exercise, and vend, within the Kingdom of England, the Dominion of Wales, and the Town 10 of Berwick-upon-Tweed, and also in all His said Majesty's Colonies and Plantations abroad, "A CERTAIN INSTRUMENT FOR THE PURPOSE OF ASSISTING THE HUMAN BODY IN WALKING (AND WHICH I CALL AN ARTIFICIAL LEG) AFTER THE LOSS OF THE NATURAL LEG BY AMPUTATION OR OTHERWISE, UPON PRINCIPLES FAR SUPERIOR TO ANY OTHER INSTRUMENT OF THE KIND, BOTH FOR USE AND ORNAMENT, 15 BEING CAPABLE OF PERFORMING ALL THE ACTIONS OF A NATURAL LIMB IN ALL ITS JOINTS, NAMELY, KNEE, ANGLE, AND TOES, AS WELL IN WALKING AS IN SITTING DOWN AND RISING UP, WITH GREATEST EASE AND SAFETY TO THE WEARER, AND OF BEING APPLIED BOTH TO ABOVE AND BELOW THE KNEE," for the term of fourteen years from the date thereof, and under and subject to the several provisions, 20 clauses, conditions, and restrictions therein contained, as by the same appears; and in which said Letters Patent is also contained a proviso, obliging me, the said Thomas Mann, under my hand and seal, to cause a particular description

Mann's Artificial Leg.

and specification of the nature of my said Invention, and in what manner it is to be executed, to be inrolled in the High Court of Chancery within one calendar month from the date of the said Letters Patent.

NOW KNOW YE, therefore, that I, the said Thomas Mann, in compliance with the said proviso, do, by this instrument in writing, under my hand and seal, particularly, accurately, and correctly describe, ascertain, and specify the nature of my said Invention, and the manner in which the same is to be executed and performed, and do declare the annexed plan to be a true representation and description of the several joints and component parts of the said instrument, and the references hereafter following to be true, correct, and according to the said annexed plan, that is to say:—

Figure 1 represents the complete limb as it appears when the covering of shammy leather is taken off. A, B, C, rings fixt to the socket, to which elastic straps are fastened, which go over the shoulders and fix the leg to the body; D, E, pieces of leather by which the thigh is slung to the socket, and prevent its rising off the lock too far; F, a brass or iron hoop, which goes round the thigh, and keeps the slides from working loose in the groove; G, one of the slides, which are fastened to the socket; these are either made of the same piece of wood as the socket or distinct, and firmly secured to it by a thin plate, as in No. 9; H, spiral springs, which give motion to the leg after exercion of the thigh, are made of twisted wire, fastened above to the socket (in which and the thigh part is a small groove to receive them), and below to a piece of leather joined to the patella; these are covered, as in No. 10, with a plate of tin or brass to defend them, and render the surface equal; K, the end of a steel pin, which goes through the slides, called the locking pin, see No. 2; L, a repelling spring, fixed in the end of each slide, which forces the socket upwards, and loosens the lock when the pressure is taken off; M, the center of the knee joint, through which runs an iron or steel pin *b*, about half an inch thick, which is hollow; by means of a square on one end, and a screw nutt on the other, it is made fast to the thigh part; the hole in the leg is lined with leather, and polished with black lead dust. N, the pattella, made in the natural shape of wood or stiff leather, rivetted to a piece of tough leather, the lower end of which is fastened to the leg, the upper to the spiral springs; it slides (when the leg moves) in a groove made in the thigh, and renders the knee shapely in all positions. P, a spring of twisted wire, which forces the steel down; it is kept in its place by means of a wooden or bone pin *d*, which slides through the middle of it into a hole bored in the hind part of the leg; at the other end of the pin is a small half ball, against which the end of the spring forces, and keeps it down in a small socket made in the

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heel of the foot, and by that means forces the foot up. Q, a spring fixt to the foot and leg, which helps the former to hold up the foot when taken from the ground; grooves are made in the hind and fore part of the wood to receive those springs. R, the centre of the ancle joint, formed like the knee, 5 with the same kind of pin; the toe is the same, but the pin is too small to be made hollow. S, three spiral springs, which act inside of the foot, and keep the toes up when there is no pressure on them, see No. 7, where they are fastened to three tough springs at one end, which go over the circular part, about half the breadth of the toes, in three nicks, like pullies, and are fixed to 10 the toes; the springs are fastened at their other end by hooks in a cavity of the foot, No. 6. The manner these springs are counteracted by pressure is best explained by two sides views of the toe part *f* and *g*; when pressure is taken off, a square end, the same breadth as the circular part, will appear below the sole of the foot, as is represented by *f*, by the 15 end under the line, and the toes will be kept up; this end, when the pressure comes upon it, will be forced into a cavity in the sole of the foot, as represented in *g*, when the end is even with the line, and then the toes will be down, No. 1, the thigh part, made of wood, in which the slides move; No. 2, the sockett part made of wood, which slides within the thigh; that part which is 20 black is made of boot leather to fit the stump exactly, and is fixed round the wooden part of the sockett and to the slides; No. 3, the leg part, made of wood, about an inch thick, shaped to a side profile Drawing of the natural leg; the wood is cut out as in No. 8, and cork or some light material hollowed out and cut to the shape of the leg is fixed to it; it is cut away at the lower part 25 behind and before to give the ancle room to move, and is received into a mortice cut in the foot; the foot and toes are made of wood hollowed out where strength is not required. Letter *a* is a piece of steel called the lock, in the form of a cog wheel, and rivitted to the wood; when the slider is forced down by pressure, the locking pin will fall into one of those nicks and prevent 30 the leg bending; for, below knee stumps, when the natural joint can be used, the foot and ancle only are wanted, to which must be rivitted a sockett of tin, copper, or leather, &c., as in No. 5. The form and mechanism of the joints are the same as described for the making the whole instrument or artificial leg. No. 4, the ancle taken out of the foot made of wood; No. 5, the sockett 35 rivitted to the ancle; *c, c, c, c*, four small straps, to which the retaining elastic belts are fixed; No. 6, the foot exclusive of the ancle and toes; No. 7, the toe part detached from the foot, and as above referred to and described in reference letter S. When the leg is taken off too near the knee to use the natural joint, the instrument, as in Figure 1, must be used, with some devia-

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tion as to materials and manner of making the knee joint, and occasioned by the natural knee occupying the place of the artificial one, which in these and other cases must be occasionally altered or changed, tho' what is mentioned are those used in general. The nick in the knee joint, which locks the leg, need not exceed three-sixteenth of an inch, consequently scarce perceptible. 5 The materials of leg may be varied according to fancy, but the materials above specified are the properest for the purpose.

In witness whereof, I, the said Thomas Mann, have hereunto set my hand and seal, the Fifteenth day of February, in the Thirtieth year of the reign of our Sovereign Lord George the Third, by the grace of 10 God, of Great Britain, France, and Ireland King, Defender of the Faith, and so forth, and in the year of our Lord One thousand seven hundred and ninety.

THOMAS (L.S.) MANN.

Sealed and delivered (being first duly stampd),
in the presence of us,

15

JO. BENTLEY, Attorney-at-Law,
Bradford, Yorkshire.
W^m MARSHALL, his Clerk.

AND BE IT REMEMBERED, that on the Fifteenth day of February, in 20 the year above written, the aforesaid Thomas Mann came before our Lord the King in His Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained, in form above written. And also the Specification aforesaid was stampd according to the tenor of the Statute in that case made and provided. 25

Inrolled the Eighteenth day of February, in the year above mentioned.

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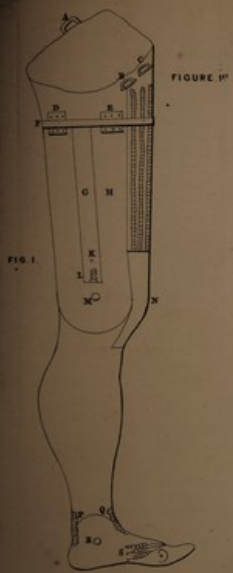
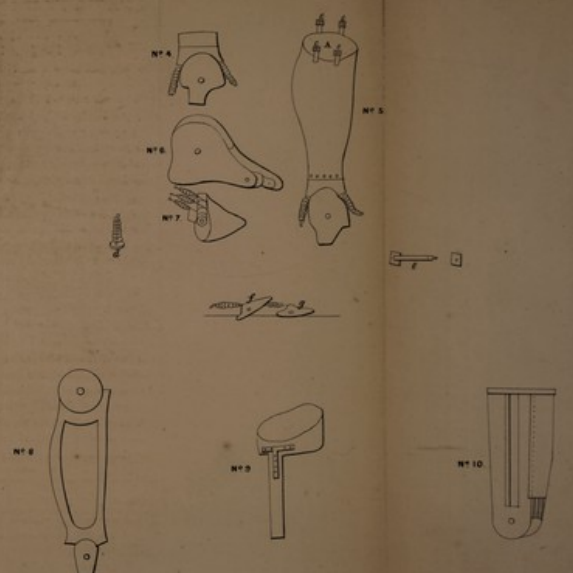
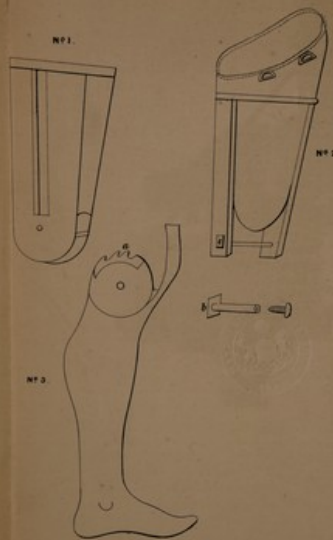


FIGURE 1st



The engrav'd drawings are colored.

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Drawn on Stone by M. G. & F. G.

