

(Model.)

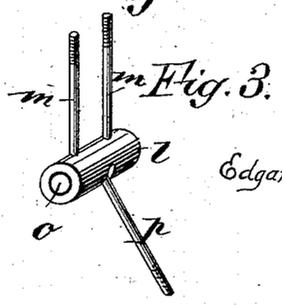
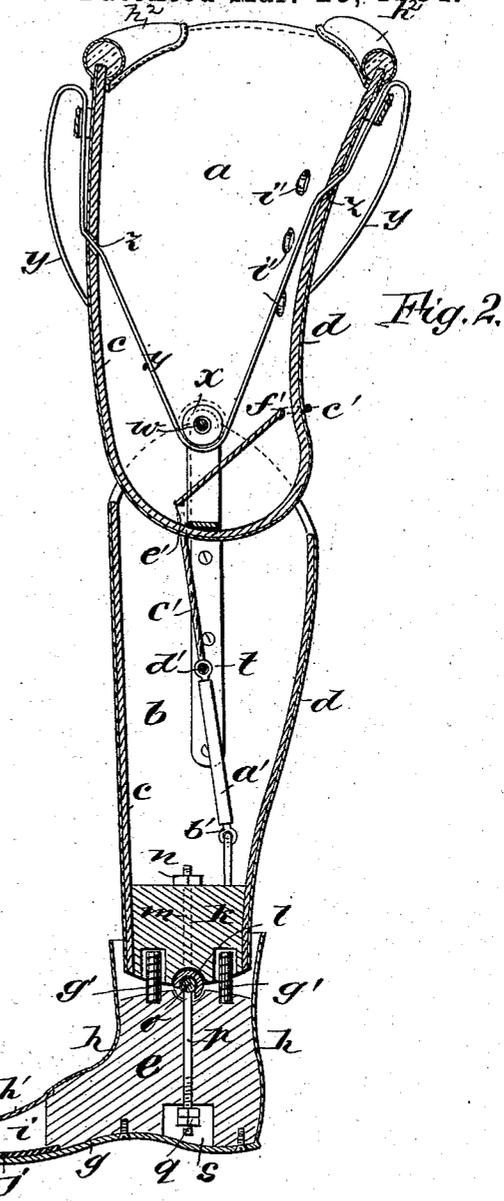
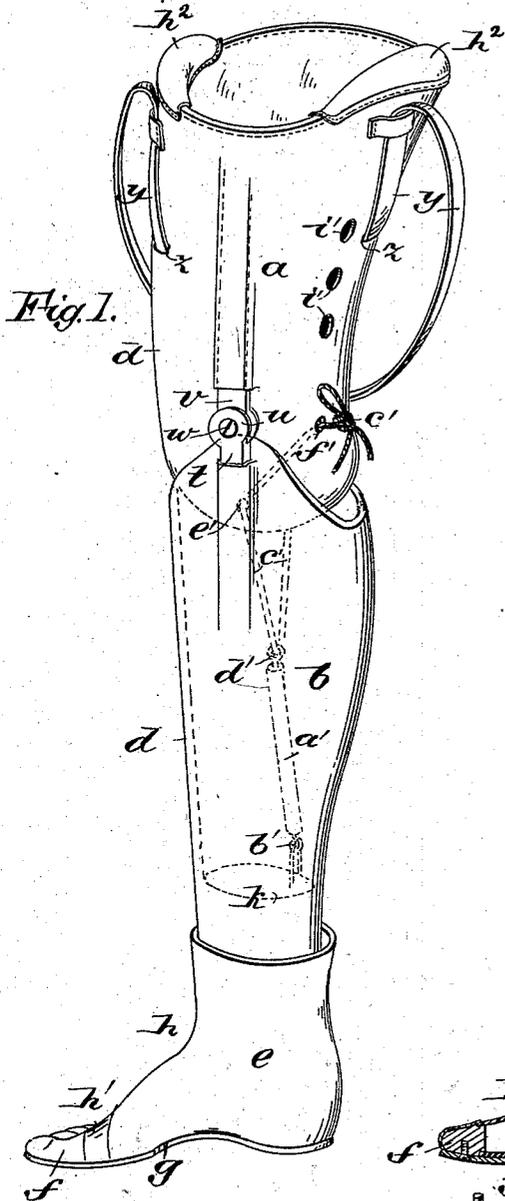
K. R. COLLINS, Dec'd.

E. D. RICHMOND, executor.

ARTIFICIAL LEG.

No. 295,675.

Patented Mar. 25, 1884.



WITNESSES:
Hobbes
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Edgar D. Richmond, Executor of
 K. R. Collins dec'd.
 BY *Munn & Co*
 ATTORNEYS.

UNITED STATES PATENT OFFICE.

EDGAR D. RICHMOND, OF HART, MICHIGAN, EXECUTOR OF KINS R. COLLINS, DECEASED.

ARTIFICIAL LEG.

SPECIFICATION forming part of Letters Patent No. 295,675, dated March 25, 1884.

Application filed November 9, 1883. (Model.)

To all whom it may concern:

Be it known that KINS R. COLLINS, of Hart, in the county of Oceana and State of Michigan, did invent a new and Improved Artificial Leg, of which the following is a full, clear, and exact description.

The invention consists of improvements in the construction of the knee, ankle, and toe joints, together with an improved arrangement for the suspension-strap and the extension-spring and construction of the thigh and lower sections of an artificial leg for thigh amputations, designed to provide a simple, efficient, and durable leg, as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improved artificial leg. Fig. 2 is a sectional elevation, and Fig. 3 is a detail of the ankle-joint device.

The thigh-socket *a* and the lower leg-section, *b*, are made of strong leather *c*, and covered with rawhide *d*, the latter being painted with water-proof paint, which makes a lighter, stronger, and more durable construction for these parts than rawhide alone or wood or metal or a combination of wood and metal, as heretofore made. The foot, consisting of the main section *e* and toe-section *f*, is of wood or any approved material, with a leather sole, *g*, and with a rawhide covering, *h*, which is also to be painted. Between the toe *f* and foot *e* space *i* is provided, with a flexible cover of leather, *k*, and rubber or coiled wire springs are arranged therein to bear against the toe for allowing the proper action of the toe-joints when walking, and to restore it to the normal position when the foot is lifted from the ground. A strong flat rubber spring, *j*, fitted on the inside of the sole *g*, may serve this purpose; but coiled springs may be used instead or in combination with it.

For connecting the foot to the leg at the ankle-joint, a wood block, *k*, is fitted in the lower end of the lower section, *b*, of the leg, in which the knuckle *l* of the ankle-joint is secured by two bolts, *m*, of said knuckle, which extend up through the block and have nuts *n* screwed on them. The pintle *o* of said joint is secured

to the foot *e* by the rod *p* thereof extending down through the foot and made fast by nuts *q* in the socket *s*. Each side of the ankle-joint—that is, before and behind—is fitted a spring, *g'*, to balance the foot on the joint and hold the foot level when raised off the ground.

For the knee-joint a metal bar, *t*, is attached to each side of the section *b*, within the same, and extending upward and through the sides to the exterior a little below the upper end of said section, said bars *t* being connected by knuckle-joints *u* with other bars, *v*, similarly attached to the thigh-section *a* at each side and extending upward through the shell to the interior, said bars *v*, and also bars *t*, being strongly riveted or screwed onto the sides of the respective sections of the leg for permanent attachment thereto. It will be seen that these joints are very substantial and will not have lateral play, which is to be avoided as much as possible in such legs. The pivot *w* of this joint extends through from one to the other, and a pulley, *x*, is arranged on it between the two joints, and the suspensory strap *y* is connected to the leg by passing it through slots of the socket *a* at *z* and under the pulley, thus making a simple and substantial connection, capable of a compensating action by the running of the strap forward and backward under the pulley as the body of the wearer moves, and preventing any uncomfortable strains as the body acts, and also the leg.

The extensor-spring *a'* is connected to the block *k* in the ankle by a joint, *b'*, back of the ankle-joint pivot, and a doubled cord, *c'*, is stretched from the eye *d'* of the upper end up through holes *e'*, through the lower end of the socket *a*, a little forward of the knee-joint pivot, and thence the cord is passed through two holes, *f'*, at the back of the socket *a*, where the two parts of the cord are to be tied to maintain the proper tension on the spring.

It is proposed to cushion the top of the thigh with pads *h²*, fitted to the top of the same, as shown, for upper amputations.

The thigh-socket is provided with vent-holes *i'*, for the circulation of air for ventilation.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The suspension-strap y , connected to the leg by passing through the sides of the thigh-socket at z and under the pulley x , mounted on the pivot-pin w of the knee-joint, substantially as described.

5 2. The extensor-spring a' , connected to the ankle behind the ankle-joint, and having a connection, c' , extended through the thigh-socket in front of the vertical line of the knee-joint,

and also extended through the side of the thigh-socket, to be tied for maintaining the tension of said spring, substantially as described.

EDGAR D. RICHMOND,

Executor of the estate of Kins R. Collins, deceased.

Witnesses:

E. B. GAYLORD,
JOHN R. BUTLER.