

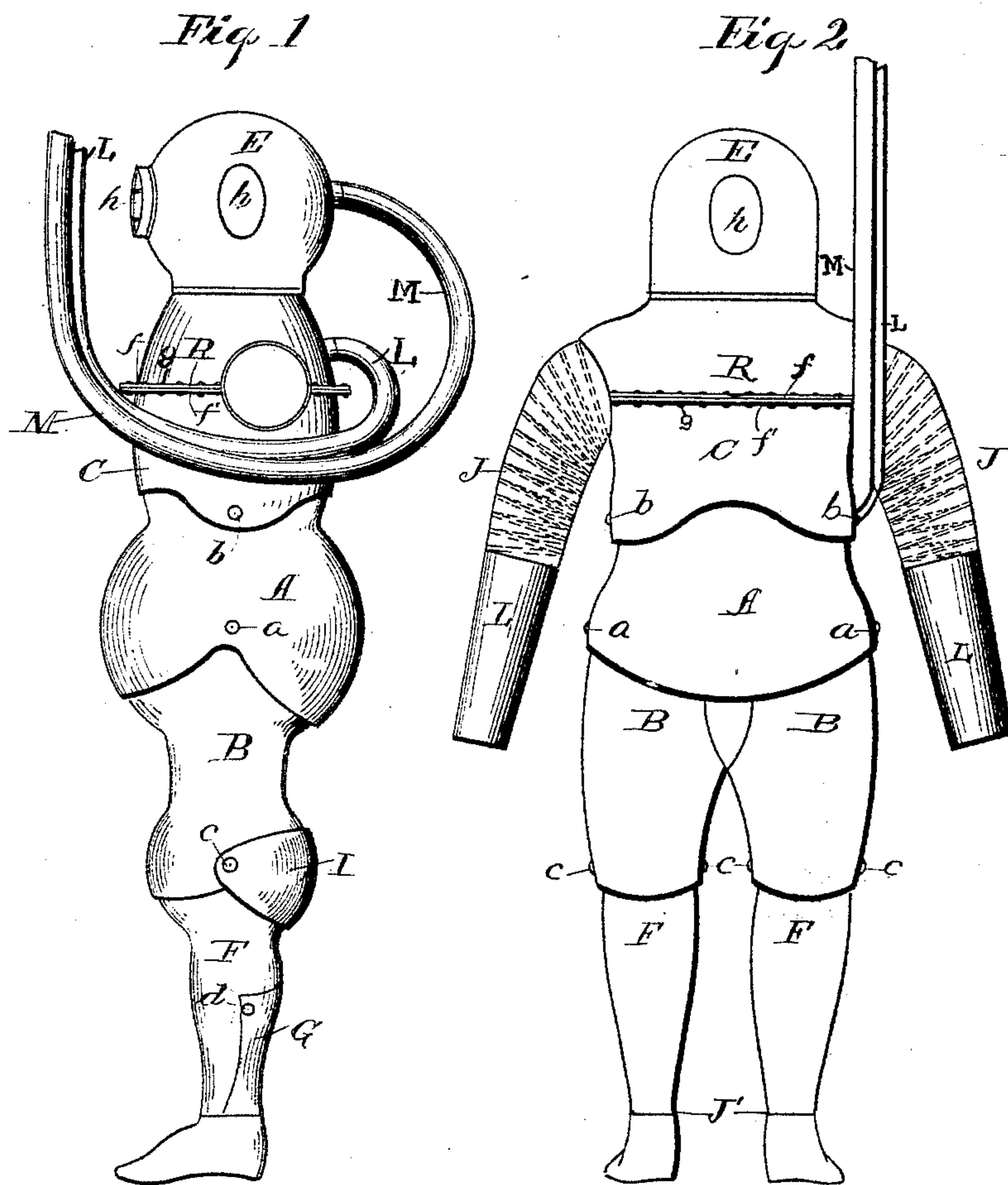
(No Model.)

2 Sheets—Sheet 1.

A. HEMENGER.
DIVING ARMOR.

No. 437,779.

Patented Oct. 7, 1890.



Witnesses
C. C. Burdine,
J. P. Davis.

Inventor
Arthur Hemenger
per R. D. Davis
his Attorney.

(No Model.)

2 Sheets—Sheet 2.

A. HEMENGER.
DIVING ARMOR.

No. 437,779.

Patented Oct. 7, 1890.

Fig 3

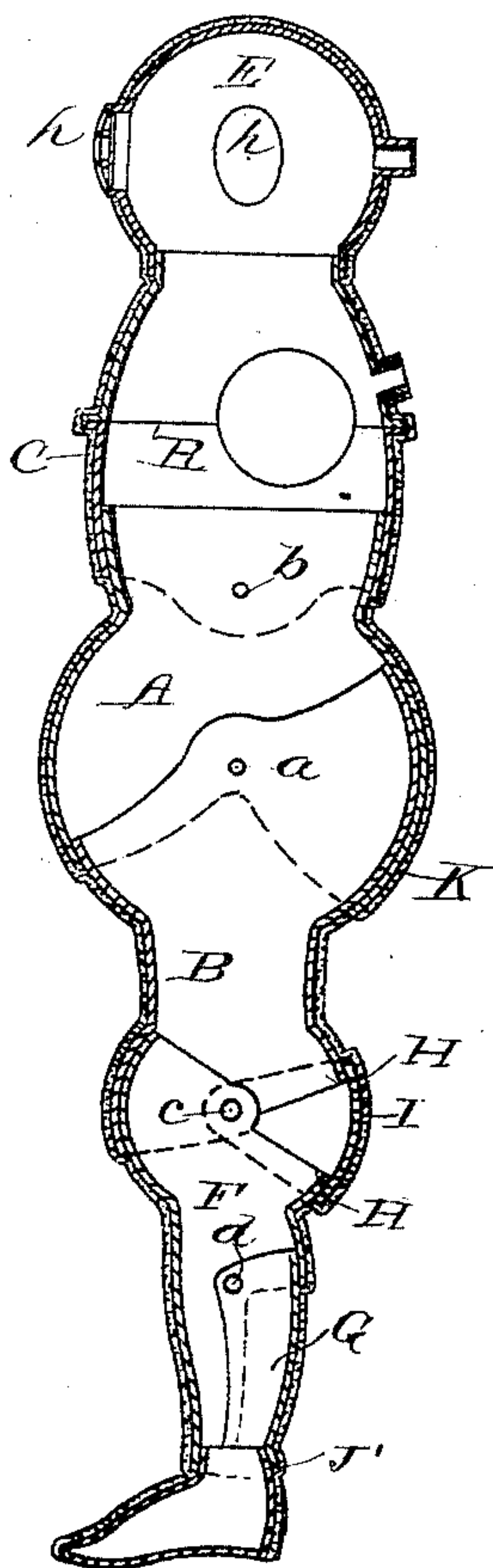
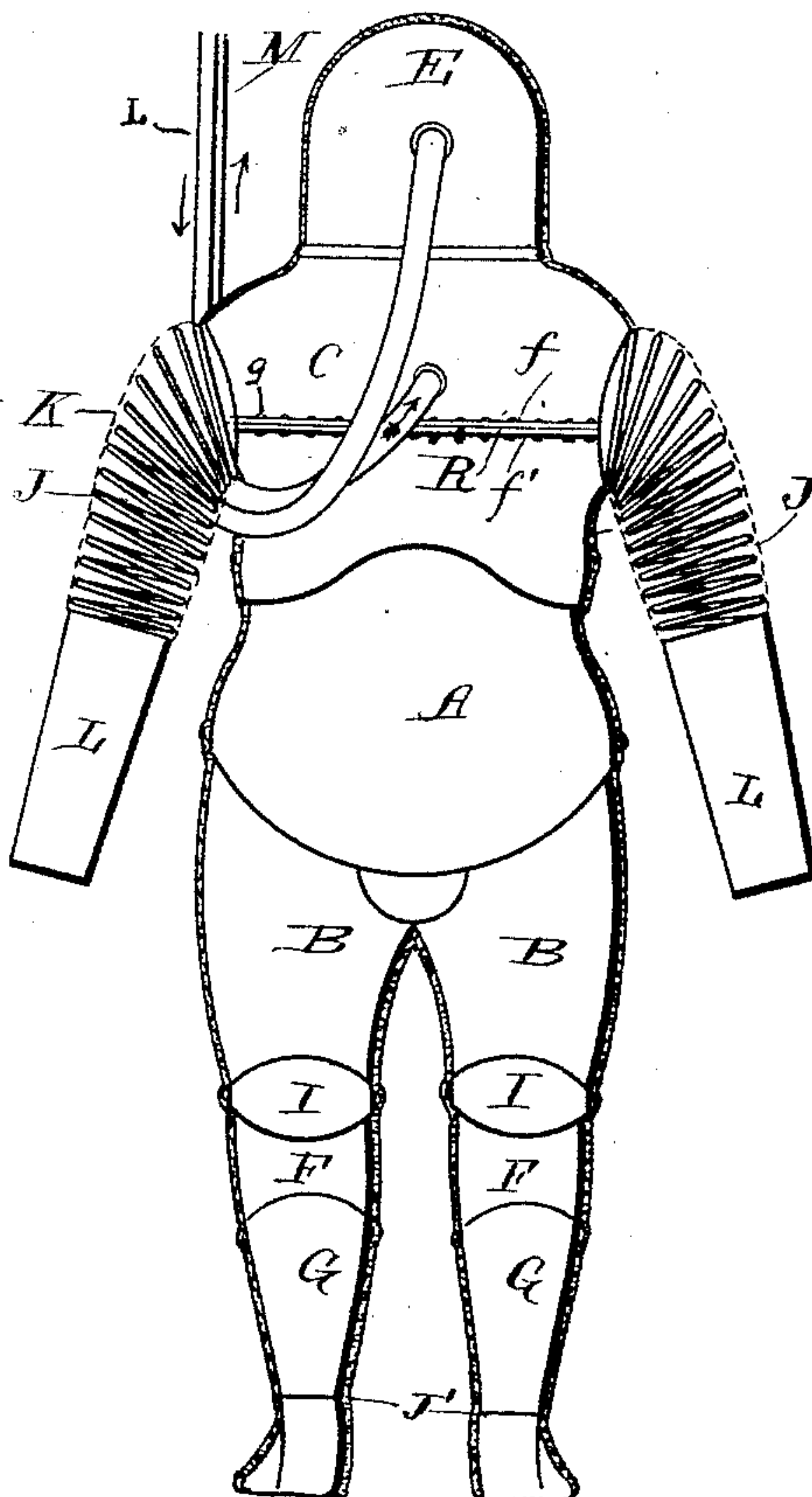


Fig 4



Witnesses

C. C. Burdine
J. P. Davis.

Inventor

Arthur Hemenger
per R. L. Davis
his Attorney

UNITED STATES PATENT OFFICE.

ARTHUR HEMENGER, OF ALGONAC, MICHIGAN.

DIVING-ARMOR.

SPECIFICATION forming part of Letters Patent No. 437,779, dated October 7, 1890.

Application filed March 5, 1890. Serial No. 342,812. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR HEMENGER, a citizen of the United States, residing at Algonac, in the county of St. Clair and State of Michigan, have invented certain new and useful Improvements in Diving-Armor; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to armor for divers. The object sought to be accomplished is to provide means whereby the pressure of the water will be taken off the body of the wearer, and which will also allow him to move freely about while performing his duties.

With these ends in view my invention consists in the peculiar features and combinations of parts more fully described hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents an exterior side view of my improved armor; Fig. 2, a front view of the same; Fig. 3, a sectional elevation through the center of the armor, and Fig. 4 a rear exterior view.

The armor proper is composed of several sections A, B, C, E, F, and G, approximately conforming to the body of the wearer. The central section A is pivoted to an upper and lower section B and C by the pivots *a b*. The lower section B, which forms the legs, extends into and fits snugly within the section A, like a ball-joint, and being pivoted by the joint *a* is allowed a limited amount of play to and fro within the section A to enable the wearer to stoop backward and forward. The central section A has an enlarged end and extends up into the upper section C, thereby forming a close lap-joint. This section is joined to the section A by the pivot *b*, and their overlapping ends are also allowed a limited movement back and forth to still further permit the diver to move the upper part of his body. The front and rear of the section A are made spherical to readily admit the body, and the upper end of the contiguous section B is also given a like conformity to form a neat fit. The boot-section F is secured at the knee by a pivot *c*, and both have a spherical enlarge-

ment at this point and overlapping ends, substantially the same as between the sections A B.

The upper and lower edges of the sections B and F respectively are cut away at H to permit the edges thereof to move toward and away from each other during the movements of the leg. A rigid cap I covers the rear of the knee-joint to protect the opening from the pressure of the water outside.

The foot-section G is secured to the boot-section F by means of the pivot *d*, which passes through the top of said section. A lap-joint J' is provided at the juncture of the boot-section with the foot-section.

The section C, which protects the chest, is divided into two parts by the joint R, which is provided with flanges *f f'*, through which small bolts *g* pass and bind them snugly together. The head-section E is lap-joined to the chest-section C and is provided with windows *h*.

The sleeves J are secured to the chest-section and given a universal movement by means of spiral wires over which a water-proof cloth K is stretched. (See Fig. 4.) Cuffs L are secured to the free ends of the sleeves, and by this arrangement the diver can freely move his arms in all directions. Fresh air is injected through the inlet-pipe L and vitiated air is drawn off through the outlet-pipe M. Both of these pipes are connected with the back of the armor at the head and chest sections.

All of the sections are made of sheet-brass and are covered with water-proof cloth or suitable covering—such as K—which will exclude water from the joints. (See Fig. 3.)

The diver can put the armor on by unbolting the upper part or chest-section C and removing it from the lower part, and then getting in and replacing the head portion.

It will be seen that the joints described permit the wearer of the armor to freely move his arms, legs, feet, and body while under the water.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a diving-armor, the combination, with head, chest, body, leg, boot and shoe sections

pivotally connected together and a water-proof covering for the whole, of an air-inlet pipe opening into the chest-section and a discharge-pipe leading from the head-section to the surface of the water, substantially as and for the purpose described.

2. In a diving-armor, the combination, with head, chest, body, leg, boot and shoe sections pivotally connected together and a water-proof covering for the whole, of a double pipe leading from the surface of the water and having diverging ends, one of which enters the head-section and the other the chest-section, the fresh air entering the armor through one pipe and the vitiated air escaping through the other, substantially as and for the purpose described.

3. In diving-armor, the combination of a metallic body-section having a spherical front

and rear, a chest-section pivoted to the body-section and provided with overlapping ends, a leg-section having an enlarged upper portion arranged to fit within the body-section and pivoted thereto, a boot-section having an enlarged spherical upper end fitting within the lower portion of the leg-section, said boot and leg sections having reduced portions to permit the two to move freely back and forth, a cap secured to cover said reduced portions, and a shoe-section hinged to the boot-section, in the manner and for the purpose substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ARTHUR HEMENGER.

Witnesses:

JOHN EAST,

CHRISTOPHER C. SMITH.