

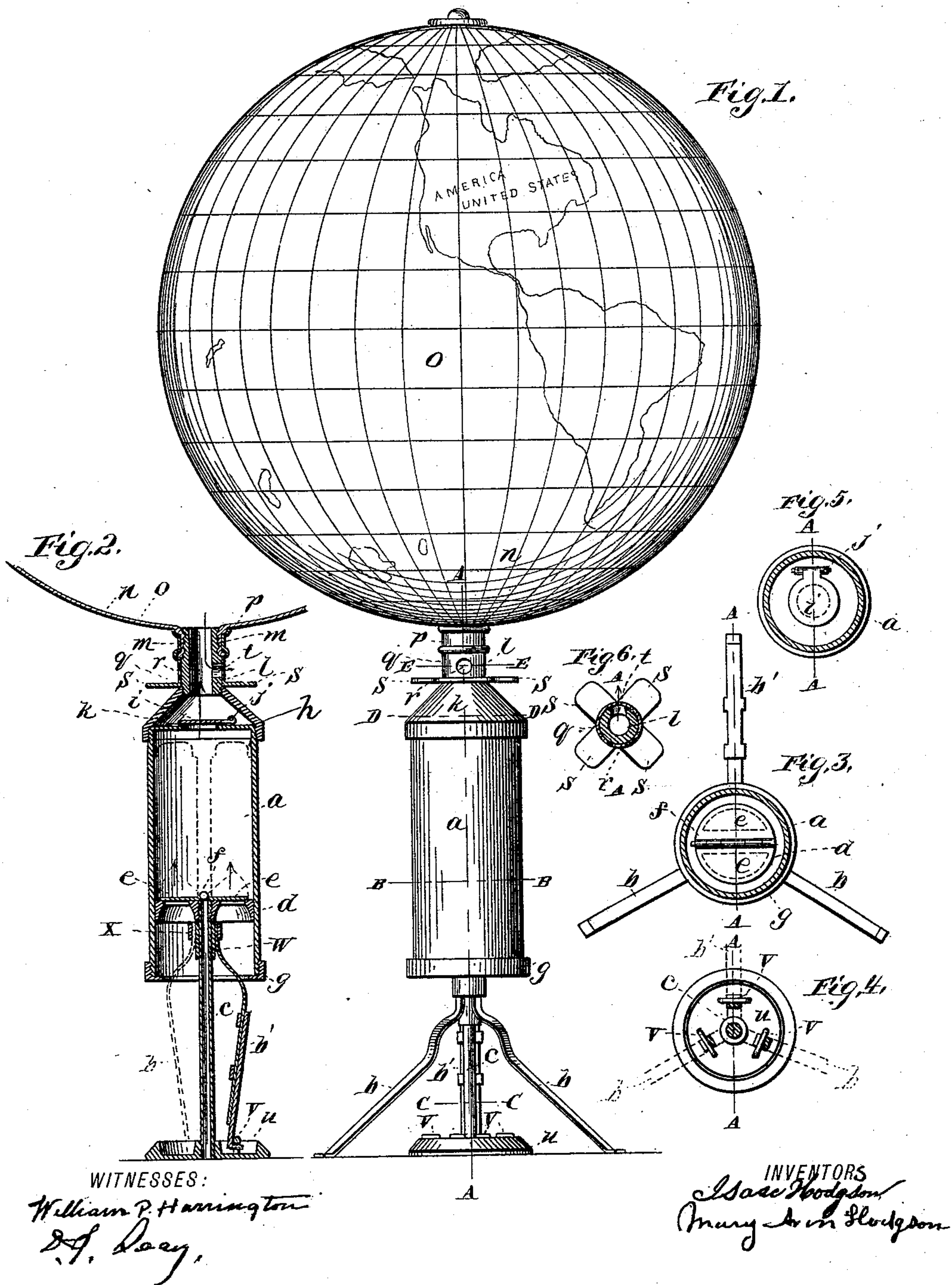
(No Model.)

2 Sheets—Sheet 1.

I. & M. A. HODGSON.
GEOGRAPHICAL GLOBE.

No. 488,071.

Patented Dec. 13, 1892.



(No Model.)

2 Sheets—Sheet 2.

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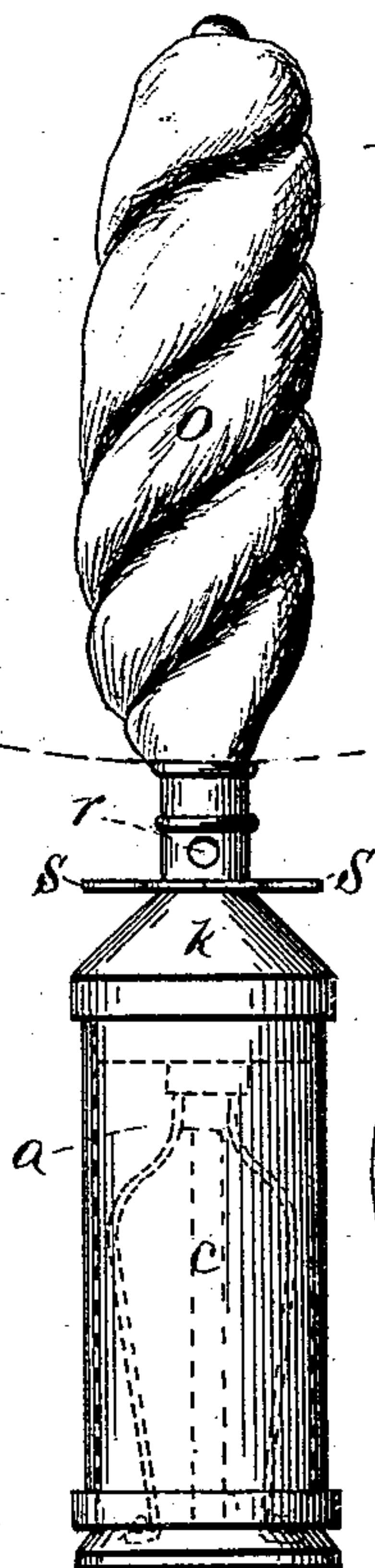


Fig. 7.

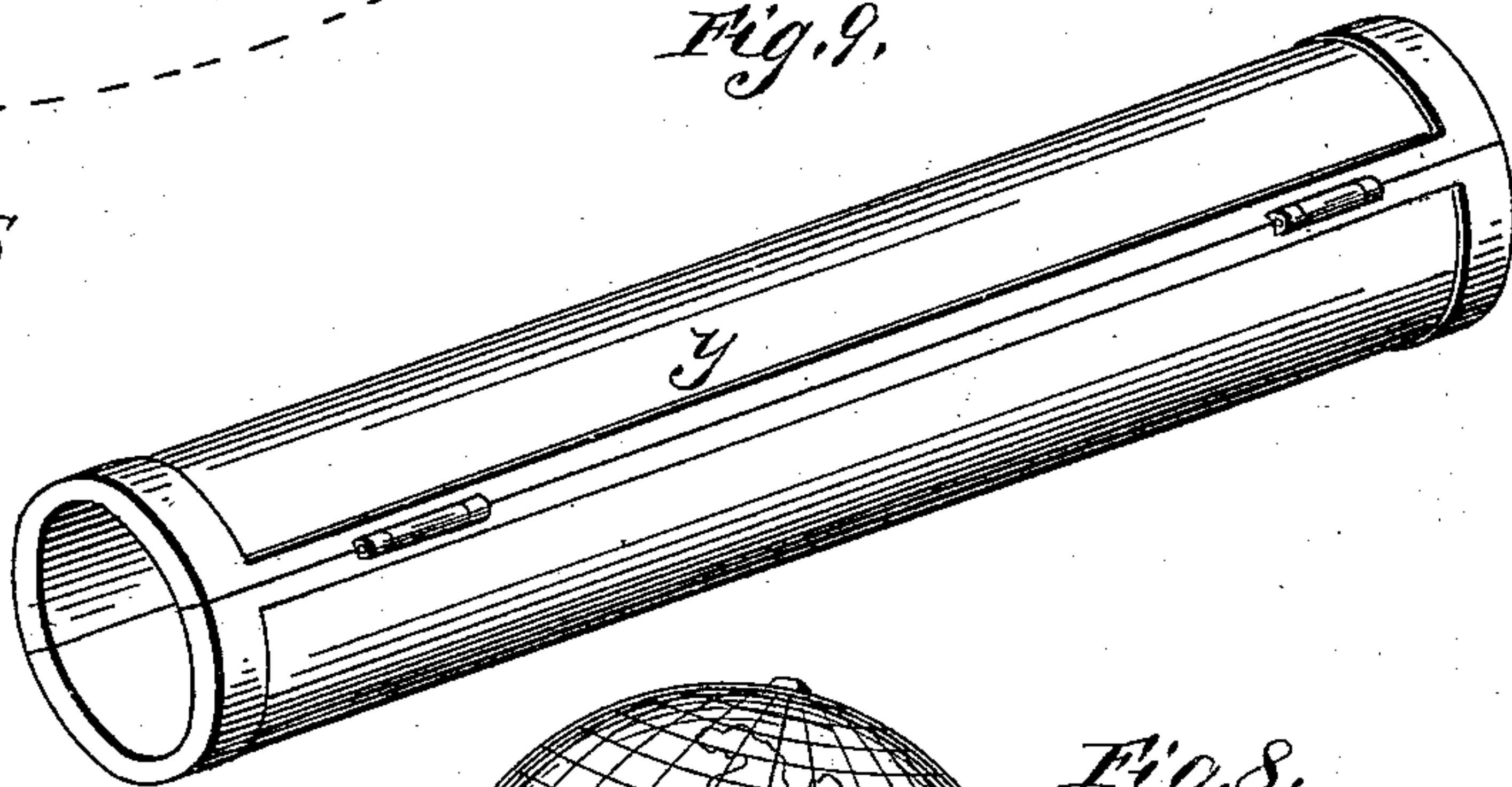


Fig. 9.

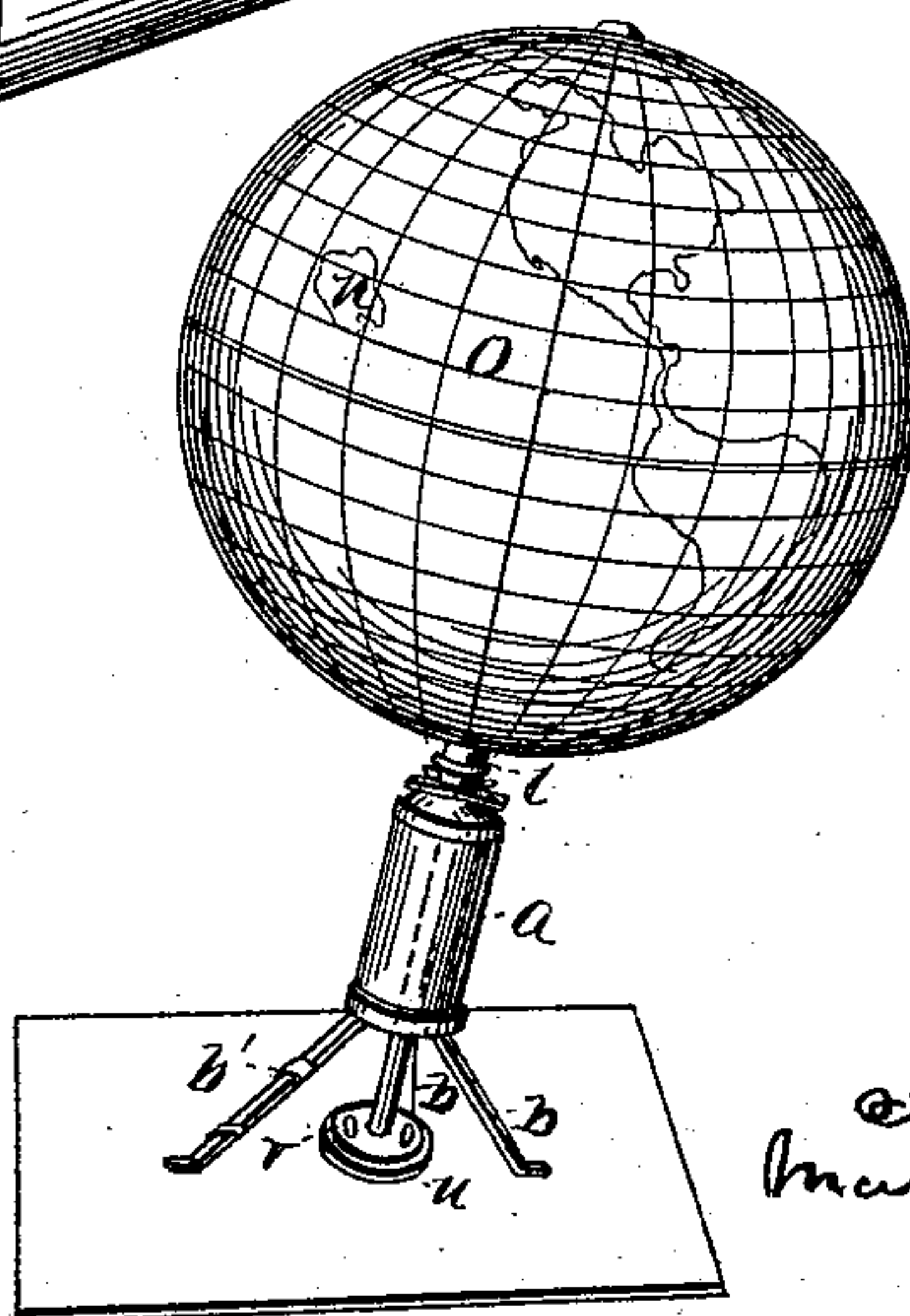


Fig. 8.

WITNESSES:

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UNITED STATES PATENT OFFICE.

ISAAC HODGSON AND MARY ANN HODGSON, OF SPRINGFIELD,
MASSACHUSETTS.

GEOGRAPHICAL GLOBE.

SPECIFICATION forming part of Letters Patent No. 488,071, dated December 13, 1892.

Application filed August 17, 1891. Serial No. 403,140. (No model.)

To all whom it may concern:

Be it known that we, ISAAC HODGSON and MARY ANN HODGSON, citizens of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Geographical Globe, of which the following is a specification.

Our invention relates to improvements in geographical globes in which the earth's surface is graphically illustrated on textile fabric having independent india-rubber lining forming a pneumatic bag in conjunction with an air-pump for inflating the bag and fabric to the contour of a sphere; and the object of our improvements is to provide a light geographical globe that can be readily inflated and collapsed and conveniently carried in any ordinary pocket. We obtain this object by the mode and mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an elevation; Fig. 2, a transverse vertical section on the line A A, Figs. 1, 3, 4, 5, and 6; Fig. 3, a horizontal section on the line B B, Fig. 1; Fig. 4, a horizontal section on the line C C, Figs. 1 and 2; Fig. 5, a horizontal section on the line D D, Fig. 1; Fig. 6, a horizontal section on the line E E, Fig. 1; Fig. 7, an elevation showing the globe when collapsed; Fig. 8, a perspective view to a reduced scale, and Fig. 9 a perspective view of the case in which the globe and appendages thereof are inclosed.

Similar letters refer to similar parts throughout the several views.

The cylinder *a* of the air-pump and the legs *b b* and *b'*, in conjunction with the piston-rod *c*, form a tripod, which constitutes the standard of the globe, *b'* being an extension-leg, by means of which the axis of the globe can be inclined at any desired angle.

c is the piston-rod of the air-pump, and *d* the piston accurately adjusted in the cylinder *a* and provided with valves *e e*, hinged at *f*.

To prevent the piston *d* from being accidentally withdrawn and to afford facilities for placing and replacing the same, the lower end of the cylinder *a* of the pump is provided with a screw-threaded flange *g*, the upper end *h* being furnished with an air-aperture having a valve *i*, hinged at *j*. This end is also provided with a screw-threaded truncated

cone *k*, thus connecting the neck *l* and the cylinder *a* of the pump. The upper end of the neck *l* is provided with annular corrugations *m*, over which a sufficient portion of the india-rubber lining or pneumatic bag *n* and textile-fabric globe-surface *o* are closely drawn and securely wrapped, the latter over the former, with strong thread. Over this thread-wrapping a sleeve *p* is firmly drawn, and below this sleeve *p* a revolving sleeve *q* is introduced and provided with an aperture *r* and arms *s*. By means of the latter the sleeve *p* is conveniently turned on the neck *l* and the aperture *t* closed for inflating the globe, which is quickly collapsed by turning the aperture *r* over the aperture *t*.

The base *u* of the piston-rod *c* is provided with keepers *v*, in which the legs *b b* and *b'* of the tripod are placed and securely held for convenience of pumping; also for housing in the cylinder *a* of the pump, as shown in dotted lines in Figs. 7 and 8. A sleeve *w* is slipped on the piston-rod *c*, and on the exterior of this sleeve the legs *b* and *b'* of the tripod are placed, and over these legs a flat ring *x* is slipped and securely brazed, thus securing the legs *b* and *b'* to the sleeve *w*, which freely slides on the piston-rod *c*, thus giving the legs *b* and *b'* of the tripod freedom of contraction and also of expansion to firmly sustain the globe, which, when set upright on any desired angle, freely revolves on the sleeve *w*, the piston-rod *c* being the axis.

To inflate the globe, the cylinder *a* of the pump is taken in the left hand and the base *u* of the piston-rod *c* in the right hand and pressed upward to the end *h* of the pump-cylinder *a*, thence drawn downward to the flange *g*, by which latter motion the valves *e e* are opened, thus filling the cylinder *a* with air and closing the valve *i*, and by the next upward motion of the piston-rod *c* the valves *e e* are closed, and at the same time the valve *i* is opened and the air forced into the rubber bag. Thus by repeated motions the globe is readily inflated, and to quickly collapse the same the aperture *r* in the sleeve *q* is set over the aperture *t* in the neck *l* in manner hereinbefore described.

To insure perfect inflation without injury to the material, the india-rubber lining or

pneumatic bag should be extra thick and large.

In the formation of the globe-surface fine closely-woven linen, cambric, satin, or silk should be used, preferably silk, upon which the printing, geographical illustrations, and descriptions are done and made and cut into twelve or more parts or sections, properly developed and machine-stitched on the radial lines with fine silk thread to match the lines.

Metal, celluloid, vulcanized rubber, or wood of any suitable kind or a combination of these materials may be used in the construction of the air-pump and accompanying parts. We prefer, however, the use of suitable metal. The case *y*, Fig. 9, may be composed of papier-maché covered with light leather. Any other suitable material, however, may be used for the purpose.

We are aware that prior to our invention balls have been made elastic by means of inflated bags of india-rubber. We therefore do not claim such a combination, broadly.

What we do claim as our invention, and desire to secure by Letters Patent, is—

1. The combination of an inflatable geo-

graphic globe having a suitable opening with an air-pump secured thereto and comprising a cylinder, a piston operating within the same, a valve opening inward within the cylinder and adjacent to the opening in the globe, valves opening inward on the piston, a piston-rod, and a tripod carried thereby, substantially as set forth.

2. The combination of an inflatable geographic globe having a suitable opening with the sleeve *p*, inserted therein and having a lateral vent *t*, the sleeve *q* revolving about the same, an air-pump attached to sleeve *p* and comprising a cylinder, a piston operating within the same, a valve *i* within the cylinder adjacent to the opening in the globe and the vent *t* and opening inward, valves *e* on said piston opening inward, a piston-rod, legs *b b*, and extensible leg *b'*, substantially as set forth.

ISAAC HODGSON.
MARY ANN HODGSON.

Witnesses:

F. E. CARPENTER,
F. H. STEBBINS.