

(No Model.)

2 Sheets—Sheet 1.

E. A. PEARSE.

Machine for Aerial Navigation.

No. 236,619.

Patented Jan. 11, 1881.

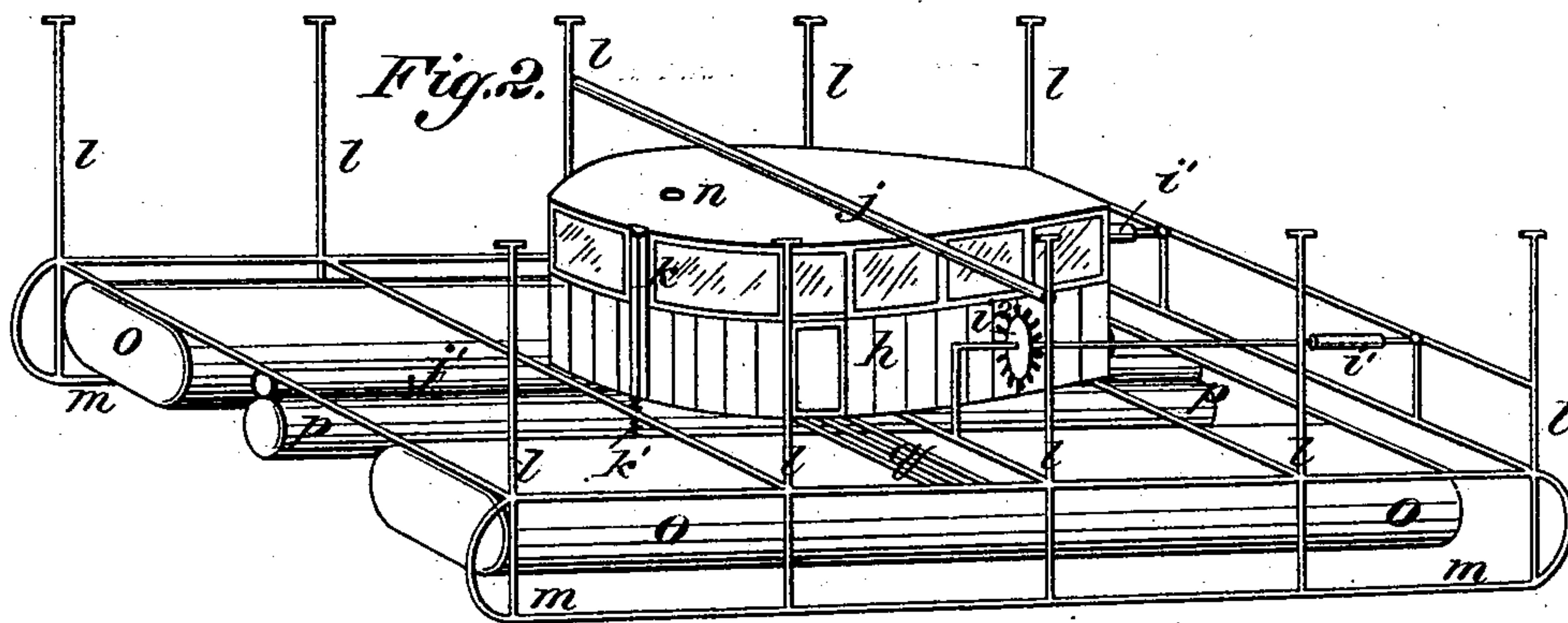
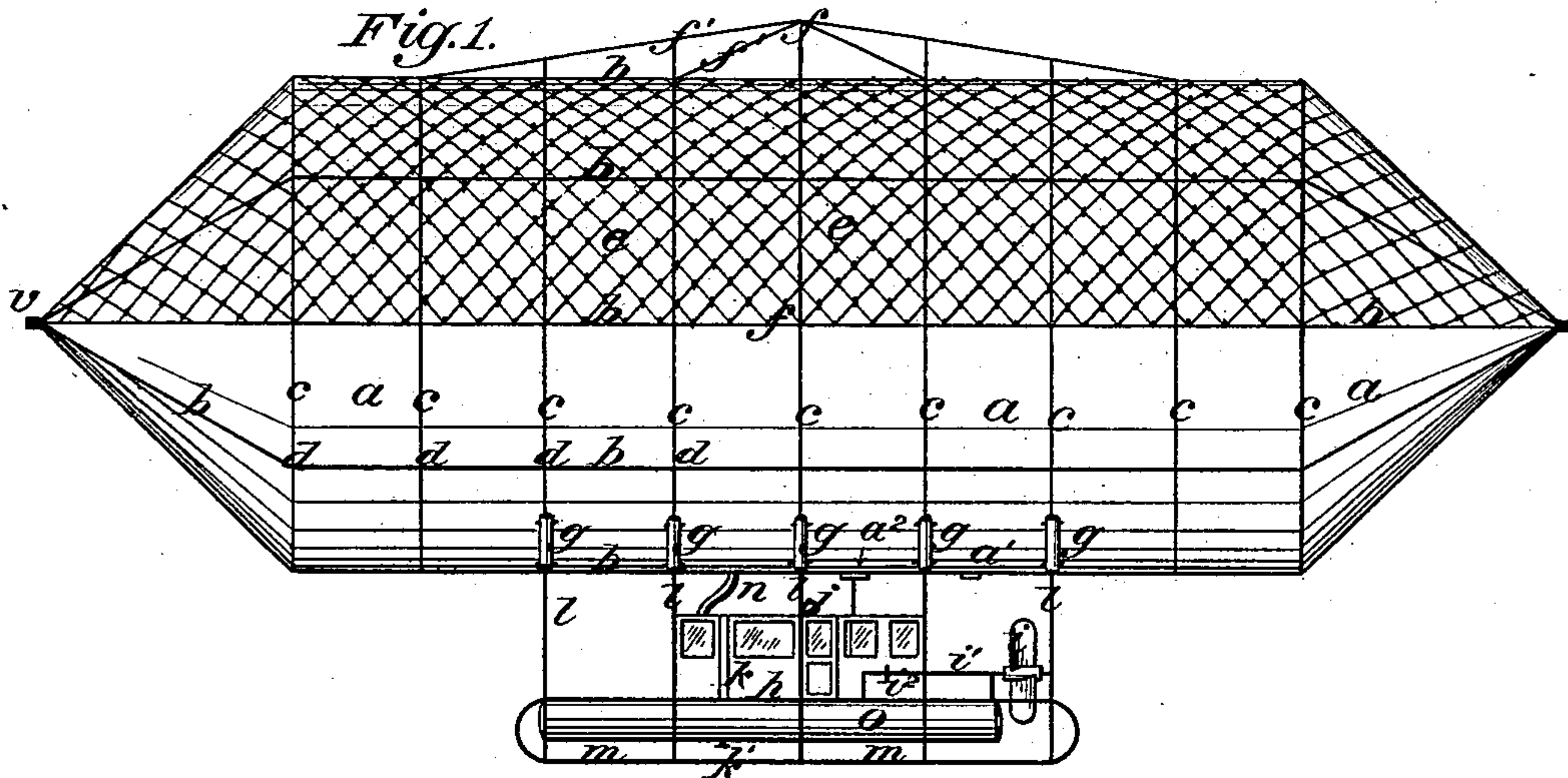
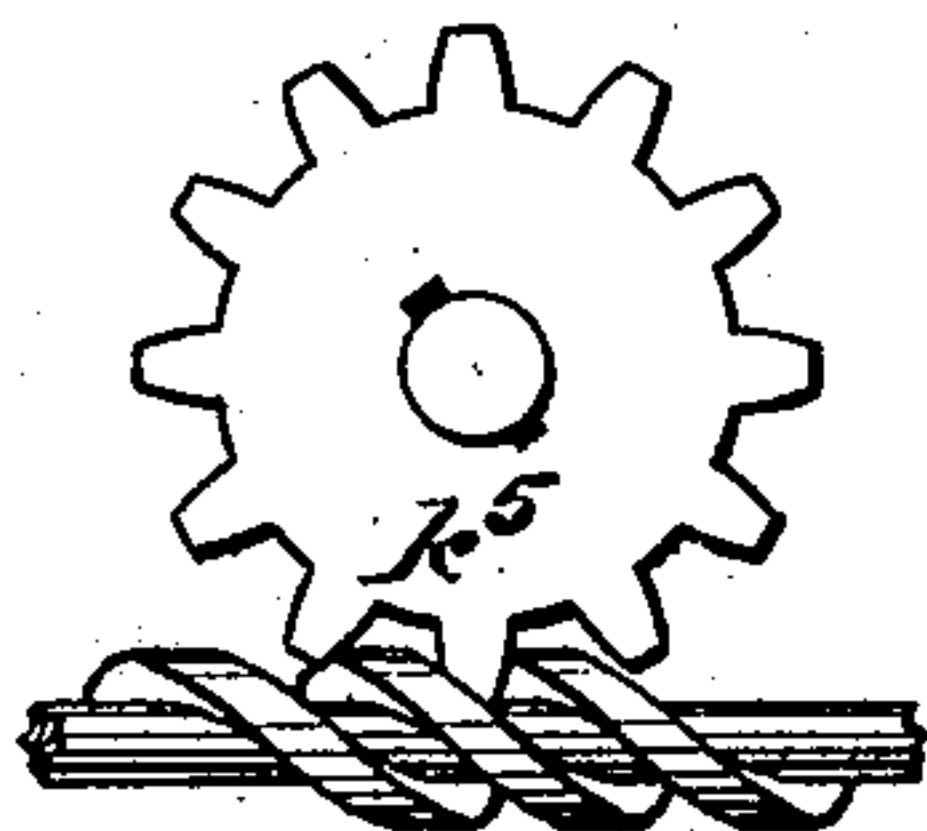


Fig. 3.

WITNESSES:

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C. Sedgwick



INVENTOR:

E. A. Pearse

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ATTORNEYS.

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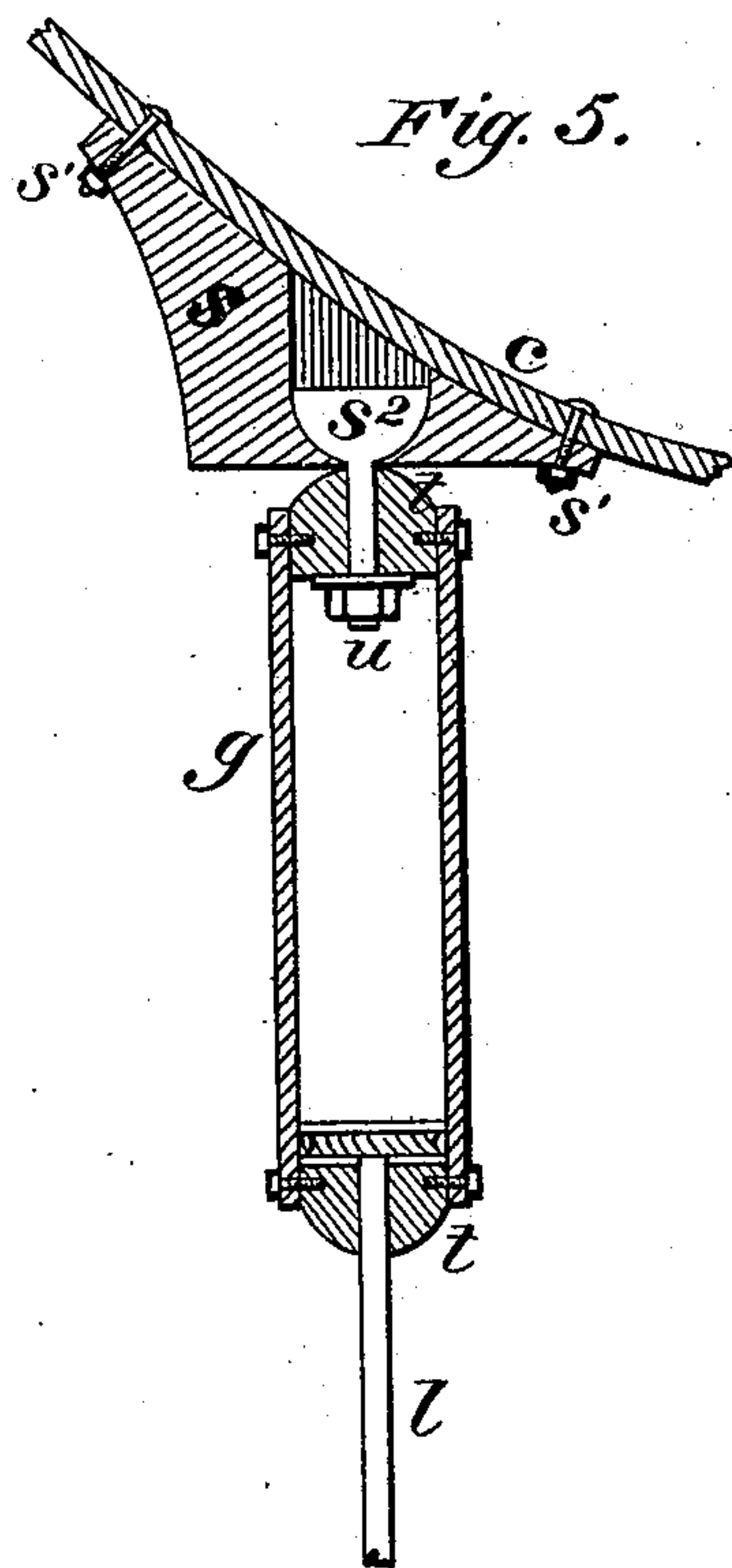
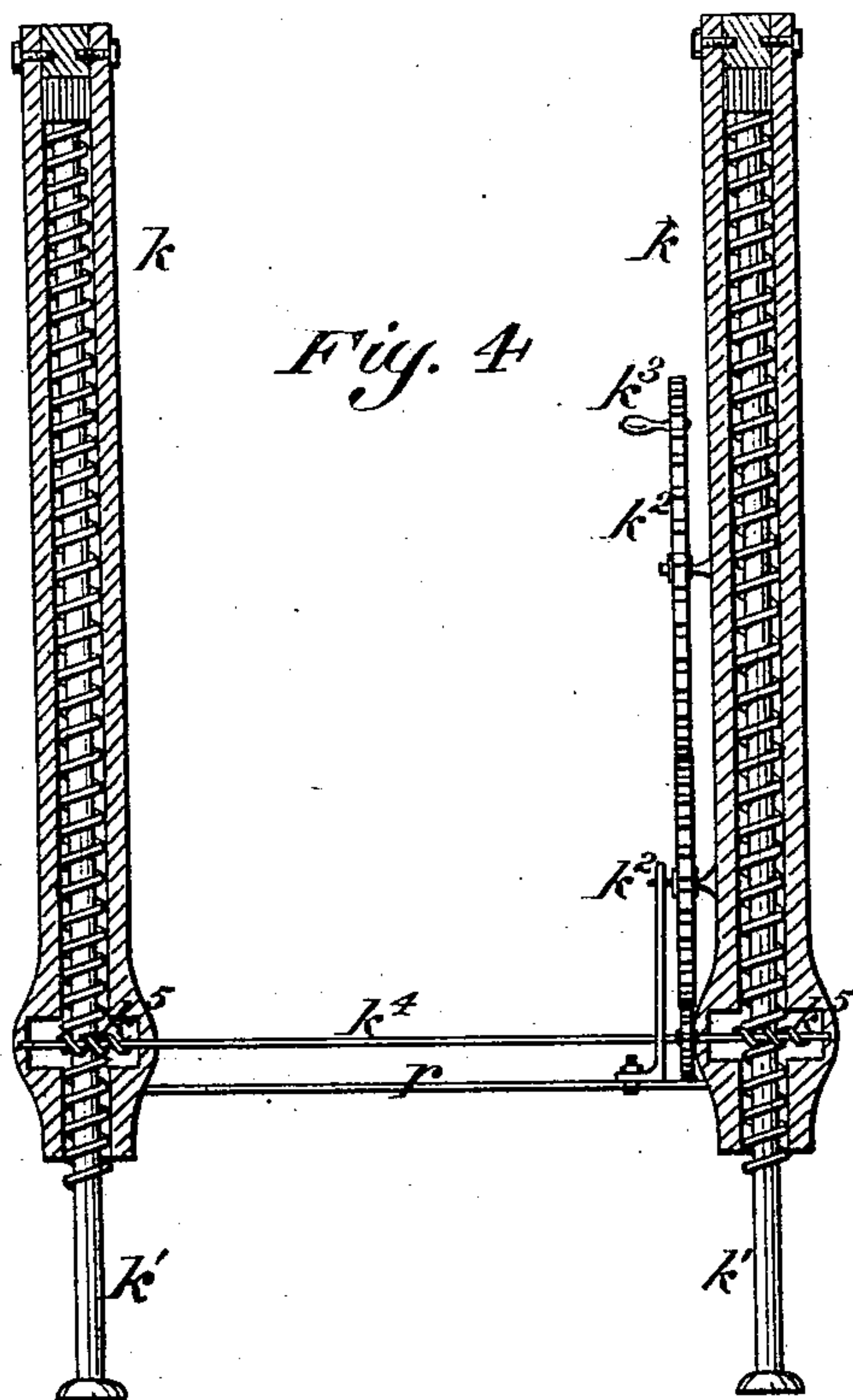
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UNITED STATES PATENT OFFICE.

EDWARD A. PEARSE, OF DOWNEND, NEAR BRISTOL, COUNTY OF GLOUCESTER, ENGLAND.

MACHINE FOR AERIAL NAVIGATION.

SPECIFICATION forming part of Letters Patent No. 236,619, dated January 11, 1881.

Application filed March 25, 1880. (No model.) Patented in England June 5, 1879.

To all whom it may concern:

Be it known that I, EDWARD ARTHUR PEARSE, of Downend, near Bristol, Gloucester county, England, have invented a new and Improved Machine for Aerial Navigation; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to certain improvements in machines for navigating the air; and it consists, first, in the means employed for connecting the suspended car to the gas-bag; secondly, in a set of adjustable legs for proping up one end of the car before rising, so that the propeller acts in the direction of an ascending plane, all as hereinafter more fully described.

In the drawings, Figure 1 represents a side elevation of the whole machine. Fig. 2 is an enlarged perspective view of the car; Fig. 3, a form of gear which may be used to project the rising legs; Fig. 4, a sectional view of the rising legs, showing another form of gear for actuating them; Fig. 5, a sectional view of the connection between the car and the gas-bag.

Referring to Fig. 1, *a* is the gas-bag, made of cylindrical form, with conical ends. This bag is braced by parallel ribs *b*, connected to circular bands *c*. The car is composed of frames *m* and inclosed apartment *h*, and this is attached to the gas-bag through the instrumentality of steel rods *l* and air-cushion cylinders *g*, as in Fig. 1. These cylinders (see Fig. 6) have their opposite ends closed air-tight by heads *t t*, and through the upper one passes a bolt, *u*, having a head, *S*², which is seated in a recess in a casting, *S*, bolted to the circular bands *c* of the gas-bag frame. Through the lower one of these heads *t* pass the steel rods *l*, attached to the car, which steel rods bear pistons on their upper ends. Now, when the machine descends and strikes the ground, the steel rods, with pistons, are driven up in the cylinders *g* and the concussion on the gas-bag broken by the compression of air above the pistons on the cylinders.

Beneath the frame of the car are arranged supplemental compressed-gas receivers *O*, and between them, centrally under the car, is a longitudinal cylinder, *p*, Fig. 2, containing an adjustable weight, which may be shifted to cause the center of gravity to be changed from front to rear, so as to cause the machine to cant upwardly for ascent or downwardly for descent, thus changing the plane of action of the propellers *i*, Fig. 1.

In starting the machine or putting it to flight the bag is supposed to hold the car on the ground in a state of equilibrium, so that a slight movement of the propellers shall cause it to rise. Now, to cause the propellers to act in an ascending plane the fore part of the machine must be elevated at the start. For this purpose I employ two legs, *k' k'*, at the front part of the car, which are projected downwardly to raise the front part of the car. These legs are contained in cylinders *k k*, (see Fig. 4,) and they are extended or projected by the action of a right-angular shaft, *k*⁴, turned by a train of gear-wheels, *k*² *k*³.

For transmitting motion from shaft *k*⁴ to the legs, the legs may have worms thereon, and a corresponding worm, *k*⁵, may be made to engage therewith to give a combined rotary and downward movement to the legs; or, in the place of this, the pinion-connection shown in Fig. 3 may be employed.

Having thus described my invention, what I claim as new is—

1. The combination, with the gas-bag frame of an air-ship and the car, of a set of air-cylinders and pistons effecting elastic connection between the car and buoyant bag, as described.
2. The combination, with an air-ship having actuating-propellers, of a set of extensible legs for elevating the forward end of said ship, as set forth.

EDWARD A. PEARSE. [L. S.]

Witnesses:

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WILLIAM S. CLEMENT.