

E. C. ROGERS.

Lightning Rod.

No. 21,905.

Patented Oct. 26, 1858.

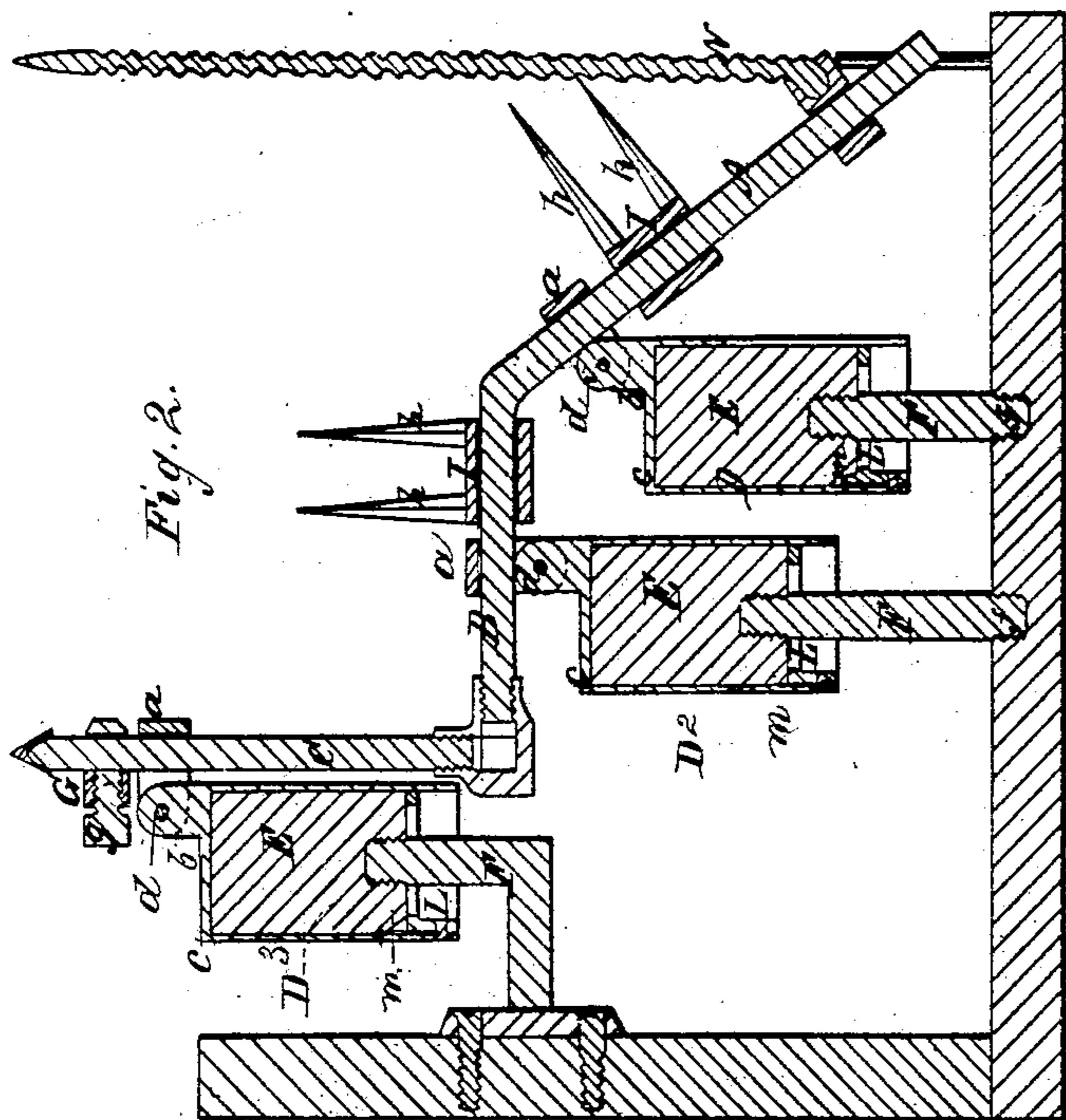


Fig. 2.

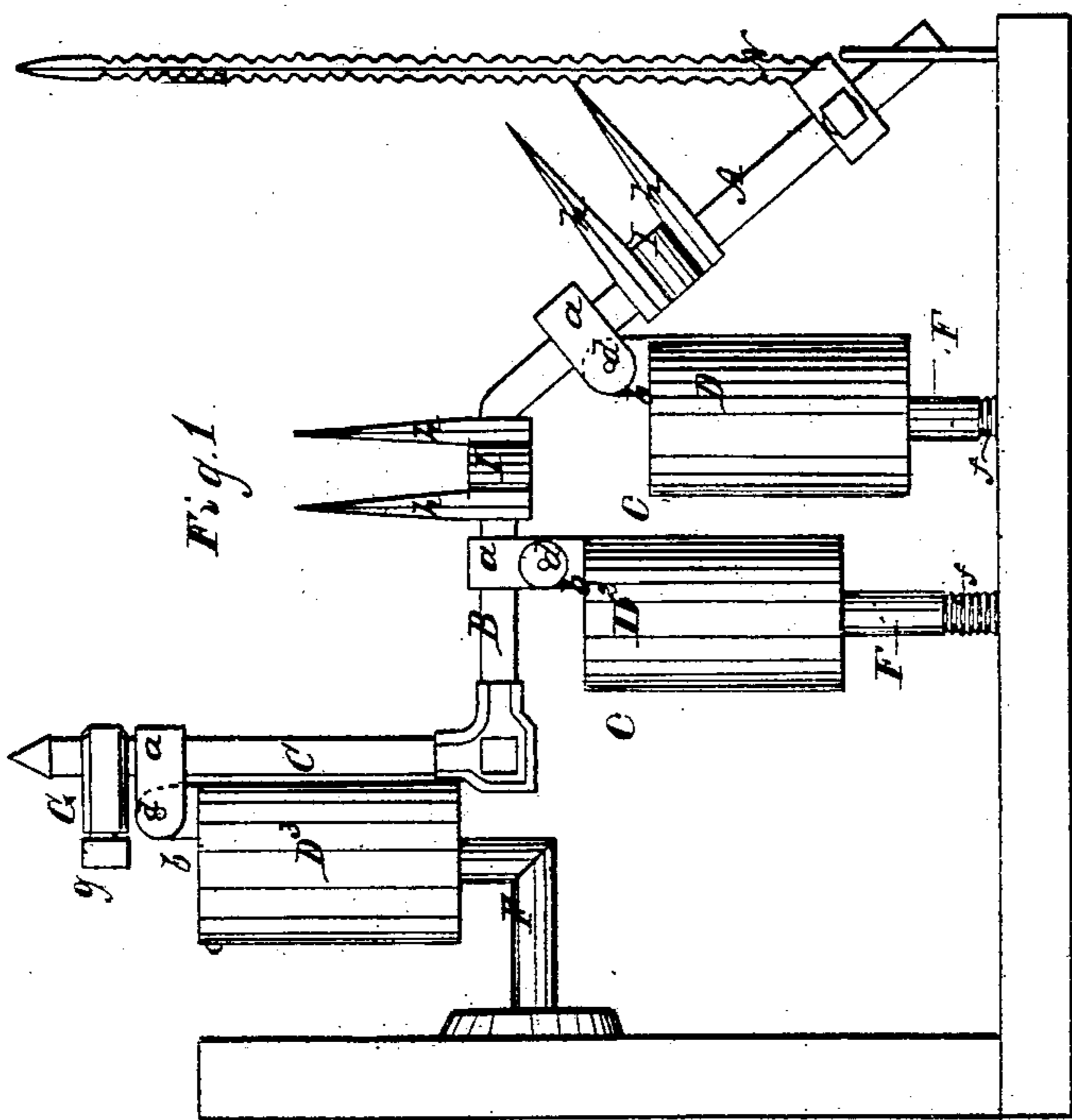


Fig. 1.

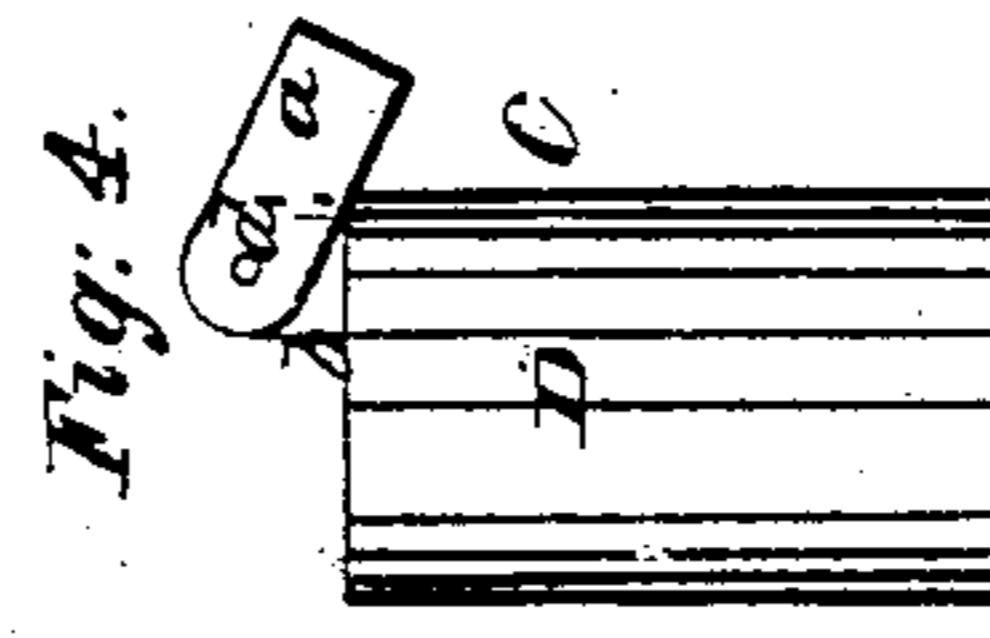


Fig. 4.



Fig. 5.

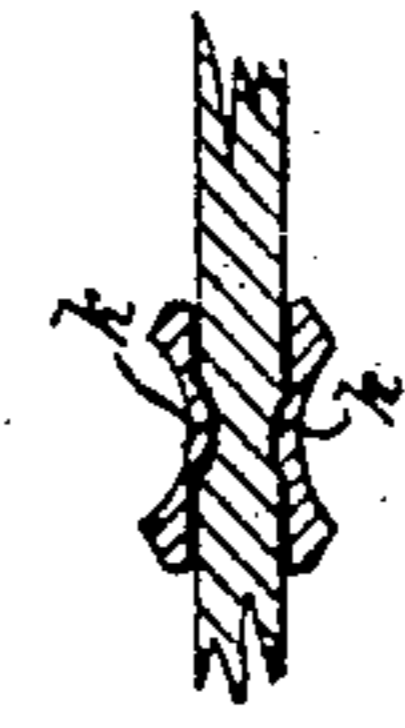
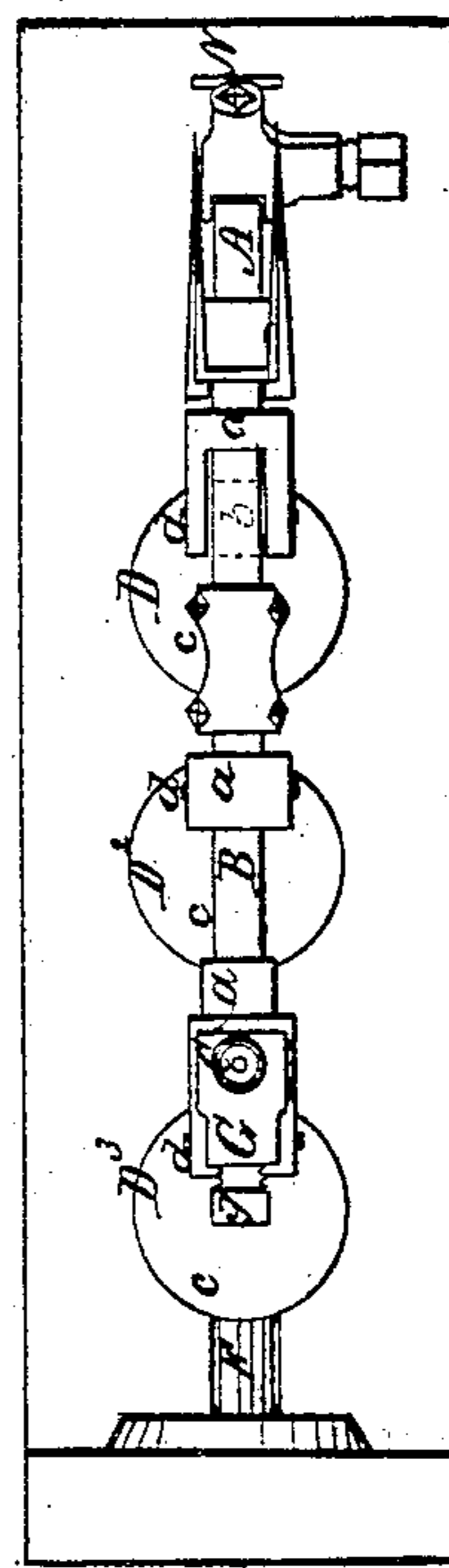


Fig. 6.

Fig. 3.



UNITED STATES PATENT OFFICE.

E. C. ROGERS, OF BOSTON, MASSACHUSETTS.

IMPROVED METHOD OF INSULATING AND SUPPORTING LIGHTNING-RODS.

Specification forming part of Letters Patent No. **21,905**, dated October 26, 1858.

To all whom it may concern:

Be it known that I, ELKANAH C. ROGERS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improvement in Lightning-Conductors to be Applied to Buildings; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1 is a side elevation of my invention as applied to a portion of a lightning conductor or rod. Fig. 2 is a vertical and longitudinal section of the same; Fig. 3, a top view of it; Fig. 4, a side view of one of the insulator caps or coverings and the adjustable or turning loop or eye thereof. Fig. 5 is a top view of the ring placed within the cap or covering.

In order to exhibit more completely my invention I have represented a rod or lightning-conductor in which one portion stands in a vertical position, another in a horizontal position, and a third as inclined to the horizon, each part having applied to it an insulator. By such means I am enabled to exhibit the position and applicability of the turning-loop with reference to each of such parts.

In the drawings, A B C denotes the lightning conductor or rod, the part A being inclined to the horizon, while the parts B and C respectively stand horizontally and vertically, such exhibiting the general directions in which a rod is usually applied to a building or carried against its roof and vertical sides or walls.

D D² D³ represent insulators for supporting the rod, each being constructed substantially alike—that is, each is provided with a turning-loop, *a*, hinged to a projection, *b*, extending upward from the top of a metallic cap or covering, *c*, of the insulator. This loop formed as shown in the drawings, is to be so hinged or applied to the projection from the cap of the insulator as to enable it (the said loop) to be turned from a vertical into an inclined position or from a vertical down into a horizontal position, as circumstances may require, and in order to enable it to support the rod to advantage. When such rod stands vertically the projection from the cap should be arranged against or near to one edge of the cap, as shown in the drawings, which also represent the loop as confined to the projection by a pin, *d*, extending through the two, the said pin, through which it passes, constituting a joint or

hinge by which the loop may be turned from a vertical position either into an inclined or horizontal one, as may be desirable. This manner of applying the loop to the insulator enables the latter to be used for supporting the rod, whether the said rod may pass upward against the vertical wall of a house or in a horizontal or inclined position over the building.

The insulator-cap, as shown in the drawings, is cylindrical in form and made hollow to receive an insulating-cylinder, E, made of glass, wood, gutta-percha, or other suitable material, by which the cap may be electrically insulated from the shank or part F, which serves to support it, such part F being extended and cemented or otherwise fixed into the insulating material, and screwed or otherwise fixed to the building.

The supports of the two insulators D D² are shown as sustained in position by screws *f*, such supports, as well as the insulators, being arranged in vertical positions in order to prevent the insulating substance from becoming wet by rains or during storms.

It will be evident that, whatever may be the direction in which the rod may run, the vertical position is best for the insulator, in order to protect its insulating material to the best advantage against rains or storms, and it is more particularly for this purpose that I so apply the loop of the insulated cap to the said cap as to enable the said loop to be adjusted thereon in manner as described.

In order to support the rod when standing vertically and allow it either to contract or expand without injury to the insulators, I apply to the said rod and over any one or more of the insulators an adjustable rest, G, which consists of a metallic stud or projection encompassing the rod and applied to it so as to slide upon it and be fixed in position by a clamp-screw, *g*; and in order to secure the rest more firmly on the rod, the point of the clamp-screw may enter a recess made in the rod. The supporting contrivance or support G rests upon the projection from the cap of the insulator, and in consequence thereof maintains the rod in a vertical position and allows it either to contract or expand under atmospheric changes of temperature without injury to the insulator. Furthermore, the mode of applying the insulator to the rod allows the supporter to be properly adjusted thereon or moved down and fixed

upon the insulator after the latter has been fastened in place.

In applying the shorter receiving-points *h h* to the rod I usually extend them in any suitable number from a metallic ferrule or slider, *I*, made to embrace the rod, and when I may wish to fix such slider in position I form a recess, *k*, (see Fig. 6, which is a longitudinal section of the rod and ferrule,) in either or both sides of the rod, and by means of pinchers or other suitable instruments I pinch or force the ferrule closely into the recess or recesses, whereby it may be held securely in place.

For the purpose of preventing the metallic cap or covering of the insulator from being lifted off the insulating material or raised thereon, I usually fasten within the cap and against it a ring, *L*, arranged directly under the insulating material, as shown in Fig. 2, and, if desirable, such ring may be constructed with a short stud or projection, *m*, to extend up into the insulating material, as shown in Fig. 2, in the insulator *D*². This small projection serves to prevent the cap from turning laterally on the insulator when the latter is attached to the vertical wall of a building.

In the drawings, *N* represents a longer point as applied to the inclined part of a lightning-conductor by a clamp-screw.

Having thus described my invention, what I claim is as follows:

1. Making the insulator-cap *c* with the adjustable or turning loop *a*, applied to it and arranged so as to operate substantially as described.

2. Combining with the rod or conductor an adjustable rest, *G*, applied to it and the insulator-cap substantially in manner and so as to operate as above specified.

3. Combining with or arranging in the cap *c* of the insulator, and with respect to the insulating material, an annulus or ring, *L*, applied substantially in manner and for the purpose set forth.

In testimony whereof I have hereunto set my signature this 4th day of August, A. D. 1857.

ELKANAH C. ROGERS.

Witnesses:

ARTHUR NEILL,
R. H. EDDY.