(No Model.)

D. DRAPER.

CONTACT MAKER.

No. 470,994. Patented Mar. 15, 1892.

Fig 1.

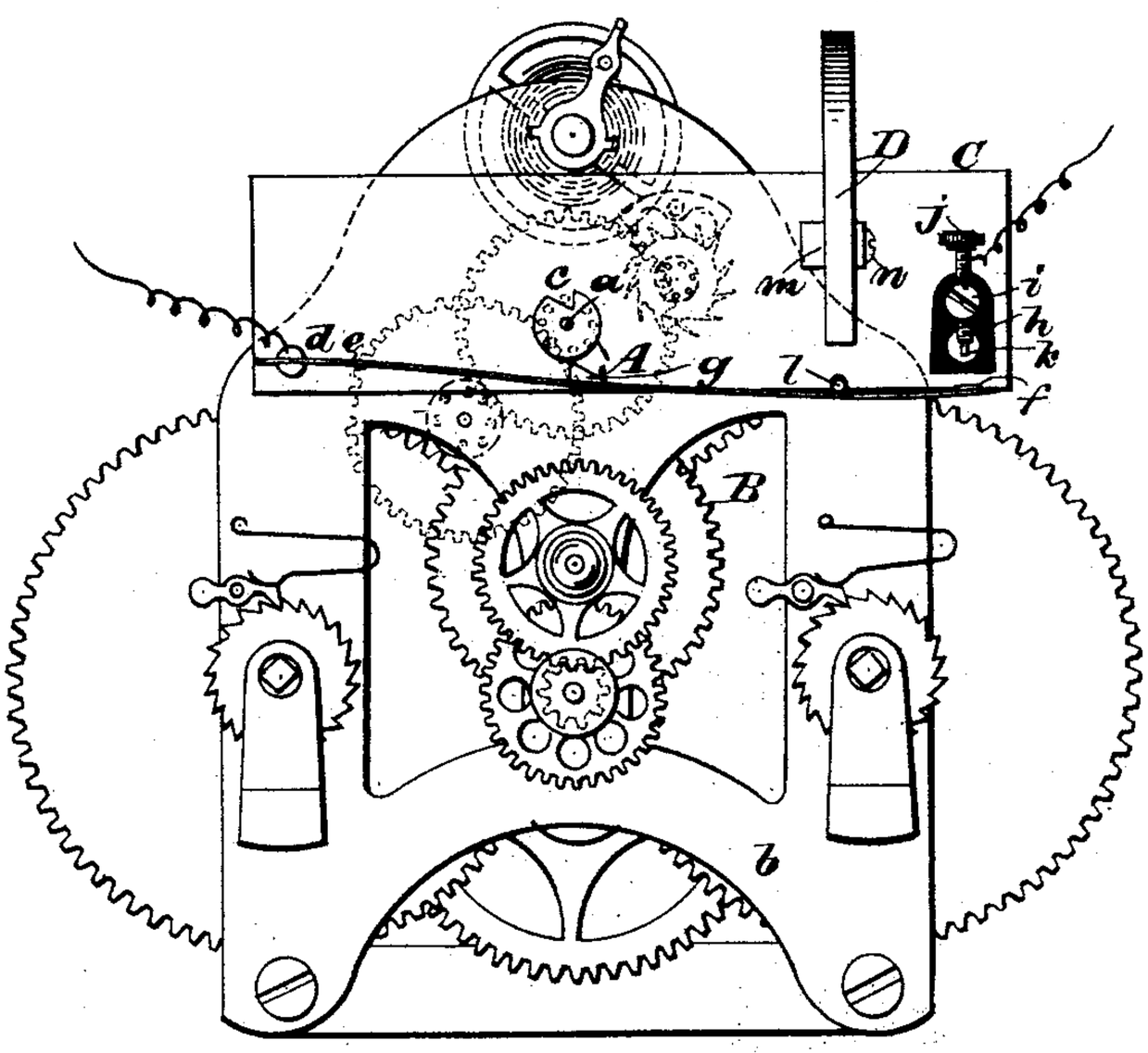
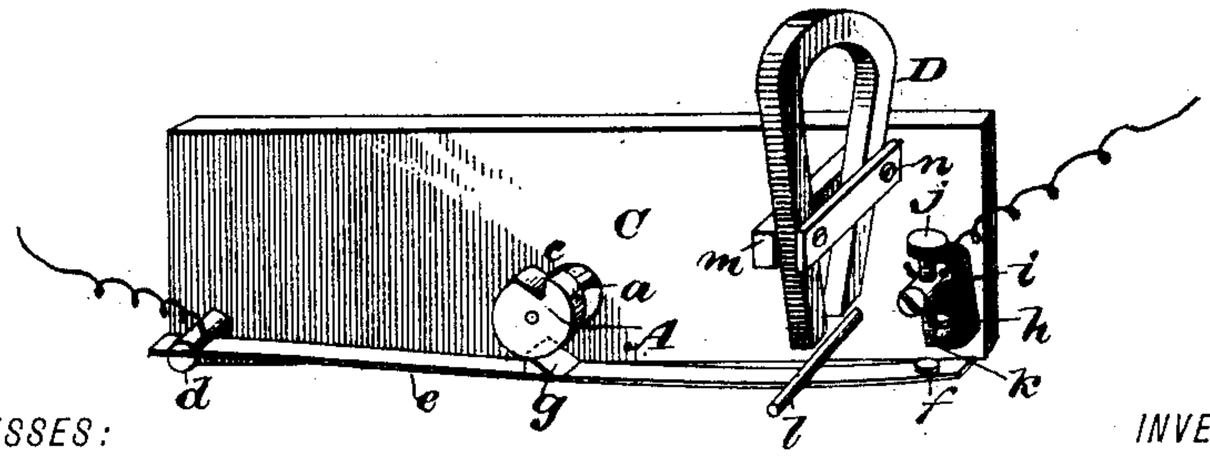


Fig. 2.



WITNESSES:

Paul Jahsky

C. Sedgwick

INVENTOR

D. Draper

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

DANIEL DRAPER, OF HASTINGS-ON-HUDSON, NEW YORK.

CONTACT-MAKER.

SPECIFICATION forming part of Letters Patent No. 470,994, dated March 15, 1892.

Application filed September 30, 1891. Serial No. 407,287. (No model.)

To all whom it may concern:

Be it known that I, DANIEL DRAPER, of Hastings-on-Hudson, in the county of Westchester and State of New York, have invented a new and Improved Positive Electrical Contact-Maker, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a front elevation of my improved electric contact-maker, and Fig. 2 is a perspective view.

Similar letters of reference indicate corresponding parts in both views.

The object of my invention is to provide a positive contact-maker for use in clocks, meteorological instruments, and for similar purposes in which positive electrical impulses are automatically sent at intervals.

My invention consists in the combination, with the contact-making arm, of an armature attached to the arm and a magnet arranged in such relation to the arm as to engage the armature and hold the contact-arm down against the contact-point with sufficient force to prevent it from vibrating, so as to produce more than one contact with the point, all as will be hereinafter more fully described.

In the present case I have shown my improvement applied to a motor, clock, or a meteorological instrument, and the actuating mechanism of the contact-arm is preferably a cam A, placed on the seconds-hand arbor *a* of the clock-movement B; but I do not limit myself to any particular propelling mechanism, as my improvement may be applied to any circuit-closer.

To the front plate *b* of the clock B in the present case is secured an auxiliary plate C, through which the seconds-hand arbor *a* projects. The cam A on the said arbor consists of a metal cylinder provided in one side with an angled notch *c*, having the advancing side of the notch cut away on a radial line. In a slotted stud *d*, projecting at right angles from the face of the plate C, is secured one end of a spring-arm *e*, the other end of which carries a platinum contact *f*. To the spring-arm *e*, opposite the cam A, is attached a triangular lug *g*, which rides upon the periphery of the cam and is capable of dropping into the notch *c* when the said notch is opposite the lug.

To the plate C is secured an insulating-block *h*, which supports a stud *i*, in which is inserted a contact-screw *j*, which is provided with a platinum contact-point *k*. The said contact-point *k* is in the path of the contact *f* of the spring-arm *e*, so that when the lug *g* enters the notch *c* the contact *f* strikes the point *k* and closes an electric circuit which leads through the stud *d*, the spring-arm *e*, the screw *j*, and the stud *i*. This insulated block *h* may be placed, if desired, on the opposite side of the spring-arm *e*, so that when the armature releases the magnet D the platinum of the spring-arm *e* will strike firmly the platinum contact-point *k*.

Where the spring alone is depended upon for making or breaking the contact, its vibration causes it to make and break the electric circuit several times before it finally comes to rest. To obviate this difficulty, an armature *l* is attached to the spring-arm *e*, and in the plate C is inserted a stud *m*, to which is clamped a magnet D by means of the screws *n*. The magnet D may be either a permanent or electro magnet. In the present case a permanent magnet is shown. The armature *l*, when the lug *g* drops into the notch *c* of the cam A, (being brought near the magnet D by the spring-arm *e*,) is drawn to the magnet, thereby holding the contact *f* against the contact-point *k* until the spring-arm *e* has bent enough to cause the armature of the magnet D to leave go abruptly, thereby securing a single positive contact.

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

1. The combination of a fixed electrical contact, a spring contact-making and contact-breaking arm provided with an armature, a magnet arranged to act on the armature, and a cam for detaching the armature from the magnet and removing the spring-arm from the electrical contact, substantially as specified.

2. In a positive electric contact-maker, the combination of the spring-arm *e*, provided with the contact-point *f*, lug *g*, and armature *l*, a suitable cam arranged to move the arm *e*, the contact-point *k*, supported in the path of the contact *f*, and the magnet D, adapted to attract and temporarily hold the armature *l*, substantially as specified.

DANIEL DRAPER.

Witnesses:
E. M. CLARK,
F. W. HANAFORD.