

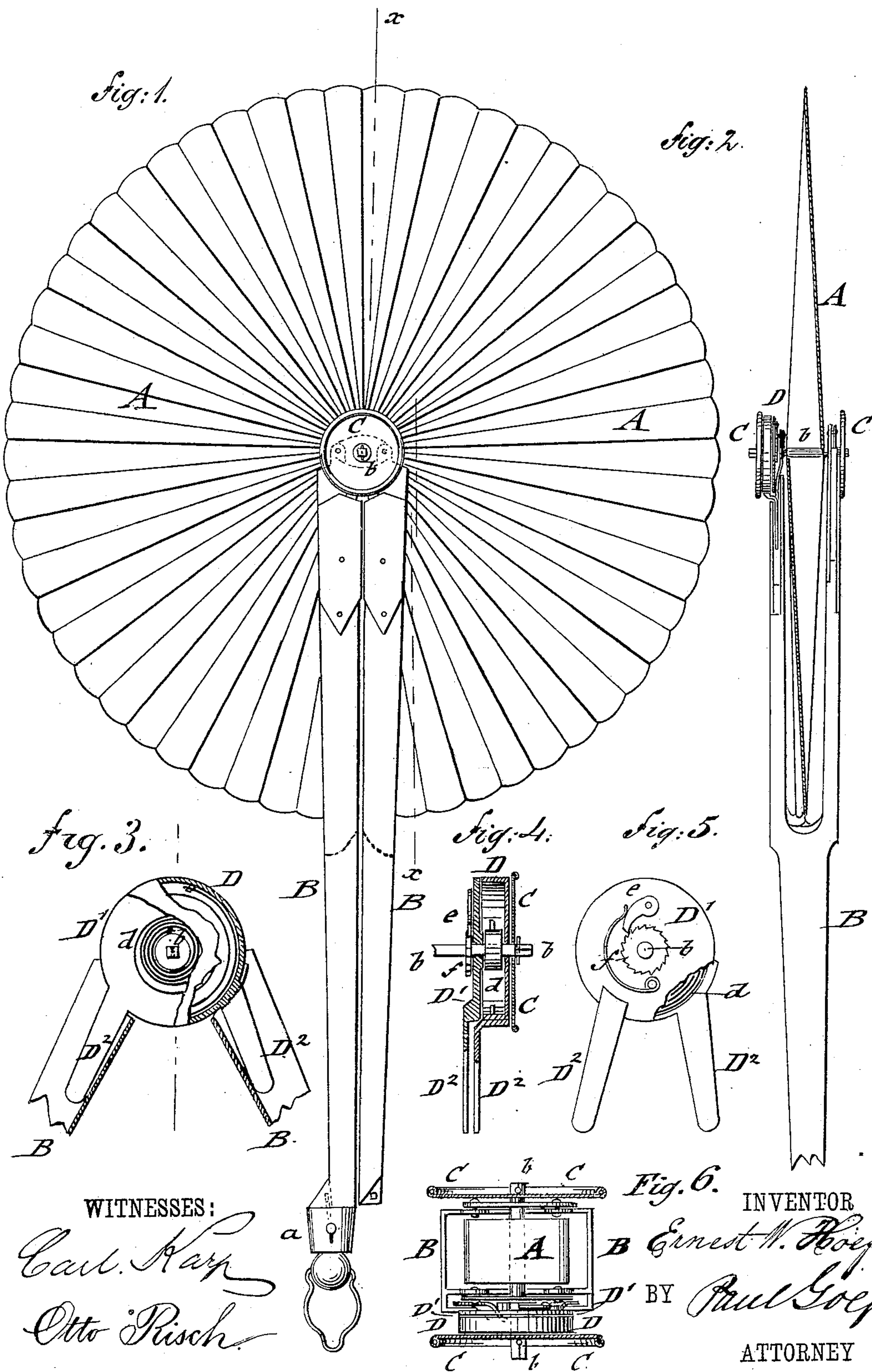
(No Model.)

E. W. HOEFLE.

FAN.

No. 246,951.

Patented Sept. 13, 1881.



WITNESSES:

Carl. Karp  
Otto Pisch

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# UNITED STATES PATENT OFFICE.

ERNEST W. HOEFLE, OF NEW YORK, N. Y., ASSIGNOR TO SCHEUER & BROTHER, OF SAME PLACE.

## FAN.

SPECIFICATION forming part of Letters Patent No. 246,951, dated September 13, 1881.

Application filed July 8, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, ERNEST W. HOEFLE, of the city, county, and State of New York, have invented certain new and useful Improvements in Fans, of which the following is a specification.

This invention has reference to improvements in that class of fans in which a spiral or other spring is applied to the central pivot of the web and by intermediate mechanism to the handles of the fan for the purpose of throwing the web into open position as soon as the connection of the handles is released; and the invention consists of a fan the web of which is connected to fan-handles which are pivoted to disks at their upper ends. The inner end of a spiral spring, in the nature of a watch-spring, is applied to the center pivot of the web and to a circular casing, which, like its closing back plate, is connected by lever-arms with the fan-handles. The actuating-spring is wound up by a key to the required tension, so as to be able to throw the web and one handle into open position whenever a catch device at the outer ends of the fan-handles is released. The tension of the fan-handles is retained by a pawl-and-ratchet mechanism of the back plate.

In the accompanying drawings, Figure 1 represents a side elevation of my improved fan in open position. Fig. 2 is a vertical transverse section of the same on line *x x*, Fig. 1. Figs. 3, 4, and 5 are details of the spiral spring and its casing, by which the web is thrown into open position when the connection of the handles is interrupted; and Fig. 6 is a top view of the fan in closed position.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the web, and B B the handles, of my improved fan. The handles B B are provided with recesses or cavities in their upper parts, into which the web is folded when the fan is closed. The upper ends of the fan-handles B are pivoted to connecting disks or plates C in the usual manner in this class of fans, while the opposite lower ends are connected by any approved spring-catch or other fastening device, *a*, which may be so constructed that the fan-handles are locked to each other when the fan is in closed

position. The disks C of the fan-handles B B are furthermore connected by a central pivot, *b*, which passes through the center of the web A.

Back of the front disk, C, is arranged a cylindrical casing, D, within which is arranged a spiral spring, *d*, of sufficient power so as to be able to throw one of the handles around the central pivot to the opposite side of the outer handle, and open thereby the web at the same time, as shown in Fig. 1.

The spiral spring *d* is attached at its inner end to the central pivot, *b*, and at its outer end to the casing D. The casing D is closed at its rear part by a disk-shaped plate, D', which is placed loosely upon the central pivot, *b*, and which carries a spring-pawl, *e*, that engages the teeth of a ratchet-wheel, *f*, keyed to the center pivot, *b*, back of the plate D'.

The casing D as well as the back plate D' are each provided with an extension-arm, D<sup>2</sup>, which is connected respectively to end mountings of the fan-handles, as shown clearly in Figs. 1, 3, and 5. The extension-arms D<sup>2</sup> bear upon end mountings of the fan-handles, so that by swinging them into closed position, so as to fold up the fan, the casing and back plate follow the motion of the same. When releasing one of the handles from the other by withdrawing the spring-catch or other fastening the spring throws the fan-handle around the center pivot to the opposite side of the second fan-handle, and opens thereby the web without any other manipulation or effort.

I am aware that it is well known to employ springs in connection with fans for opening the same automatically on the release of a locking device, and I therefore do not claim this construction, broadly; but in all spring-fans heretofore constructed the spring had to be set to the proper tension and attached to the fan before the parts were assembled, which was connected with considerable difficulty, as the spring was liable to escape and had to be reset. There were no means by which the tension could be readjusted when the spring became gradually weakened. In my construction, however, the parts are assembled and the actuating-springs applied without setting the same; but when the fans are ready for final shipment the tension is imparted to the springs

by winding them up with a key applied to the square ends of the center pivot, which has not only the advantage of facilitating the assembling of the parts, but also of resetting the spring from time to time whenever its tension should have been impaired by use.

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

1. As an improvement in fans, the combination of the web A, fan-handles B B, and center disks, C, with a centrally-pivoted spring-casing, D, having an axially-turning back plate, D', the casing and back plate being connected by extension-arms D<sup>2</sup> with the fan-handles, substantially as and for the purpose set forth.

2. As an improvement in fans, the combina-

tion of the web and fan-handles, connected by pivot-disks at their upper ends, with a spring-casing having a central pivot and a back plate connected thereto by a pawl-and-ratchet mechanism, the casing and back plate being connected to end mountings of the fan-handles by means of extension-arms, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 14th day of June, 1881.

ERNEST W. HOEFLE.

Witnesses:

PAUL GOEPEL,  
CARL KARP.