(No Model.)

P. WRIGHT.

RHEOSTAT.

No. 497,366. Patented May 16, 1893.

Fig. 1,

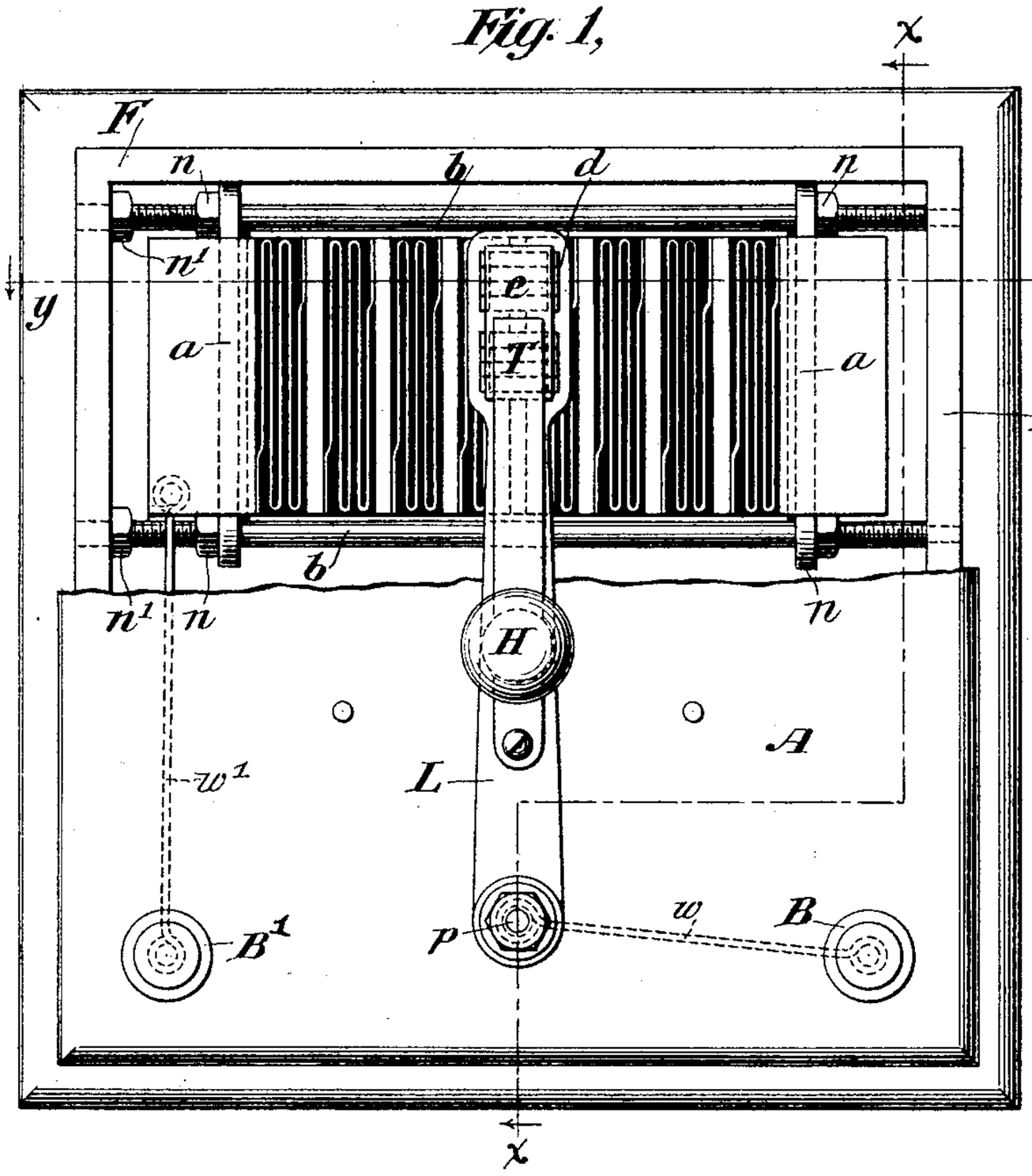


Fig. 2,

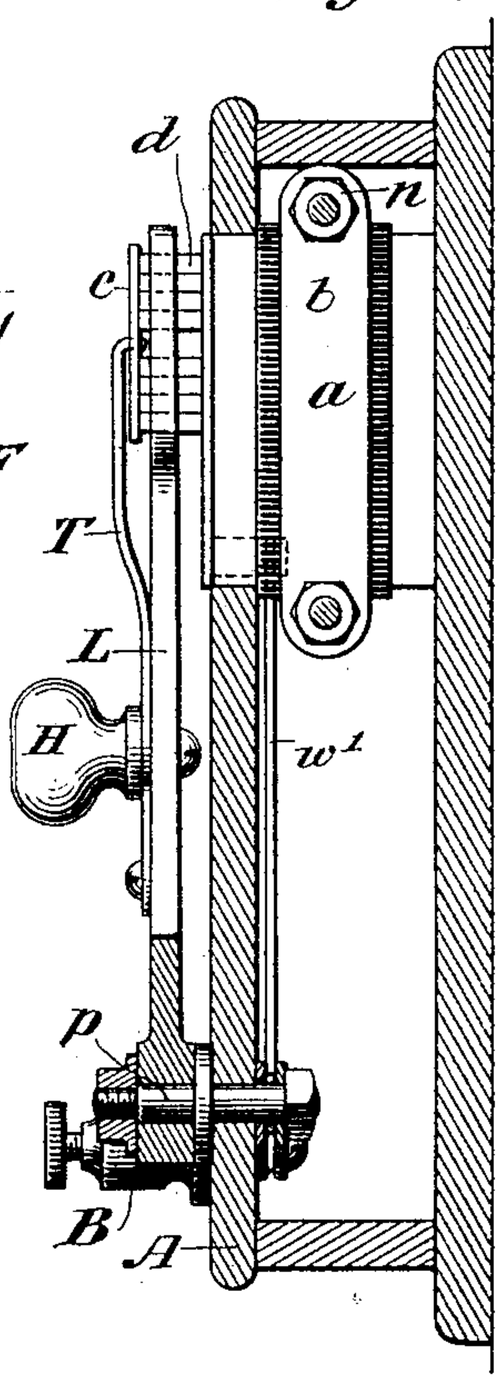


Fig. 3,

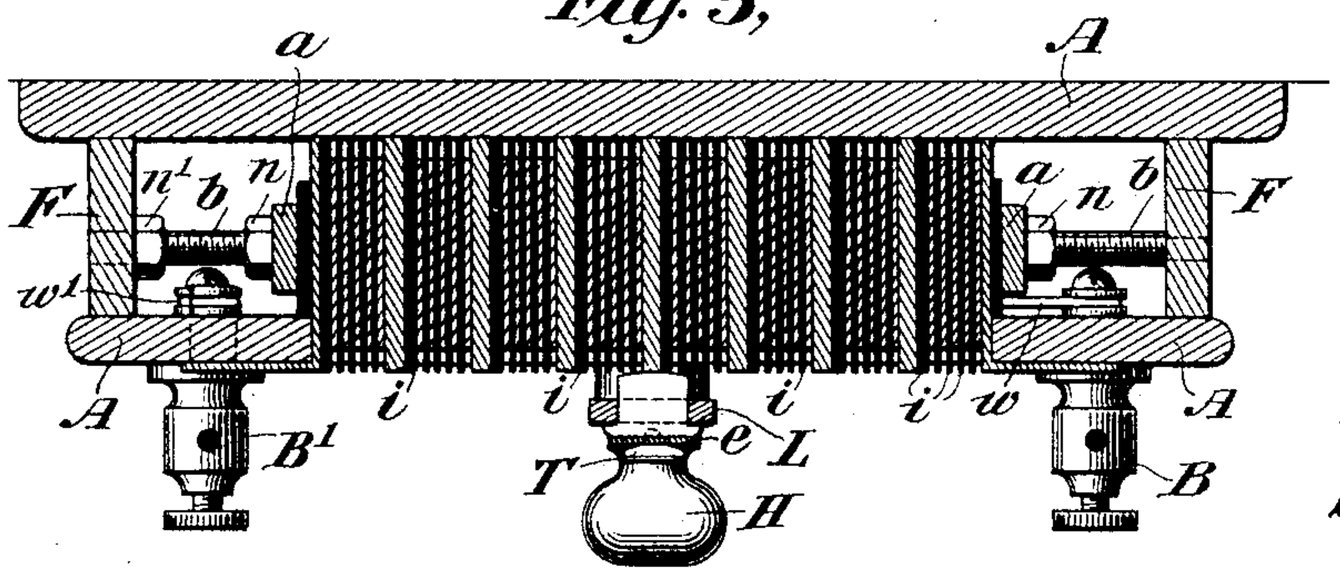


Fig. 4,

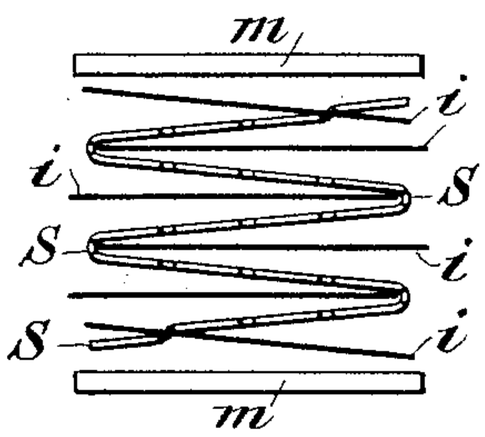
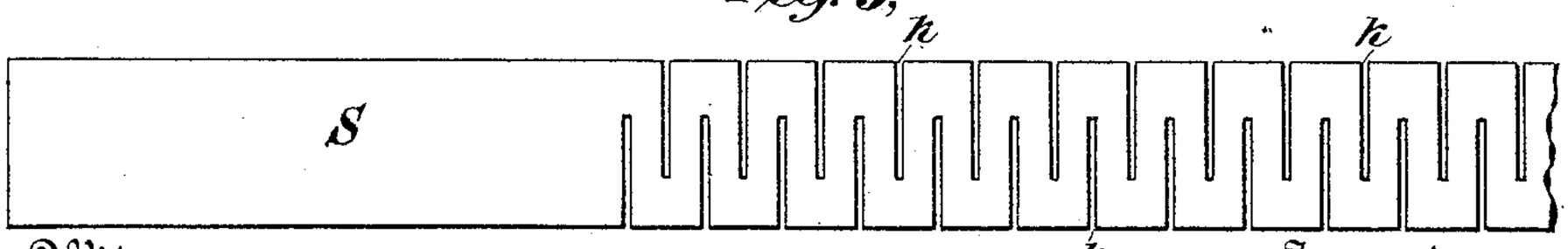


Fig. 5,



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RHEOSTAT.

SPECIFICATION forming part of Letters Patent No. 497,366, dated May 16, 1893.

Original application filed January 16, 1892, Serial No. 418,337. Divided and this application filed August 8, 1892. Serial No. 442,453. (No model.)

To all whom it may concern:

Be it known that I, PARVIN WRIGHT, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Rheostats, of which the following is a specification.

My invention has for its objects, first, the construction of a rheostat or resistance box for use in connection with electric translating devices in general which shall be simple, cheap and efficient; second, the construction of a rheostat or resistance box which may be quickly and easily taken apart for repairs; third, the construction of a rheostat or resistance box which may receive one or more additional sections of resistance medium or from which such sections may be removed at will, thereby giving to the user a box of varying capacity. These objects are accomplished in the use of the rheostat or resistance box hereinafter described.

In order that a full and clear understanding of my invention may be had, reference is had to the accompanying drawings in which—

Figure 1 is a plan view of my improved rheostat or resistance box showing the cover partly broken away in order to better illustrate the interior structure of the apparatus. Fig. 2 is a vertical sectional view taken on the broken line *x*—*x* Fig. 1, and as seen looking in the direction of the arrows from right to left. Fig. 3 is a transverse sectional view taken through Fig. 1 on the line *y*—*y* and as seen looking in the direction of the arrows from the top toward the bottom of the drawing. Fig. 4 is a detail view of a sectional part of my improved rheostat expanded for the purpose of illustrating the method of constructing the same. Fig. 5 is a developed view of one of the zigzag conducting strips from which the sections of my improved rheostat are made.

The present application is a division of a prior application filed by me in the United States Patent Office on the 16th day of January, 1892, bearing Serial No. 418,337, in which application I have described and claimed a novel form of switch box for use in connection with electric elevators and kindred translating devices and also my novel form of rheostat in combination therewith, which rheostat *per se* constitutes the subject matter of the present application.

Referring now to the drawings in detail in all of which like letters of reference represent like parts wherever used, A represents a containing box having a slate or other non-conducting back and cover, and F F are the sides thereof to which the body of the rheostat proper is secured by a pair of lateral bolts *b b* screw threaded at their opposite ends as shown, and extending on the one side into openings and on the other into notches, *n' n'* being jam nuts adapted to securely lock or hold the bolts in their fixed position as shown in Figs. 1 and 3.

The rheostat proper is made up of a series of sectional parts separated from each other by conducting strips *m m*, each sectional part being made up of a thin flat strip S of some high resistance conducting medium, as German silver, having its opposite edges indented or cut with notches *k k* so that the entire strip assumes a zigzag shape or conformation, as shown in Fig. 5. These zigzag strips are then folded back and forth after the manner shown in Fig. 4 and short flat strips *i* of insulating material such as mica are slipped into the notches *k* at the ends of the strips and between the folds thereof as clearly shown in the figure last referred to, the builder being careful to so form and adjust the mica strips *i* with relation to the folds that when they are all held together in compressed position as shown in Figs. 1 and 3, there will be no electrical contact between the folds of the strips S other than that at the ends of said sectional strips with the short thick metallic strips *m* which are preferably of slightly greater depth than are the zigzag strips S and the intermediate mica sheets or strips *i*. When the sections are all thus made up they are compressed and put in the position shown in Fig. 1 between the bolts *b b* with the flat end bars *a* resting against insulating strips at the outer ends of the extreme sections and the four nuts *n*, *n*, *n*, *n*, are then turned until the several parts of the rheostat are compressed into the compact form shown. The opposite

ends of the rheostat are provided with conducting plates which unite the outer ends of the extreme sections and one of these is connected by a conductor w' to a binding post B', the other binding post B being connected by a conductor w through an operating lever L pivoted at p and provided with an operating handle H and a yielding conducting spring T resting upon a conducting plate e which in turn bears upon a set of yielding contact plates d adapted to adjust themselves to the inequalities of the surface of the rheostat. This adjustable feature embracing the yielding conducting spring T, the head e and adjustable contact plates d is claimed in my pending application, Serial No. 418,337, is above referred to, and no claim is here made to the same.

It will be understood that by virtue of the sustaining rods $b\,b$, the cross heads $a\,a$ and nuts n, n, n, n, I may change the capacity of my improved rheostat by inserting additional sections. To illustrate, in order to increase the resistance capacity of the rheostat it would only be necessary to withdraw the nuts n and insert one or more additional sections as required. In like manner to decrease the capacity of the rheostat, sections could be taken out and the cross heads advance or in lieu of the sections thus taken out, solid conducting blocks might be inserted in order to give the desired compressibility to the entire structure.

The operation of the apparatus is obvious, it being understood that when the pivoted operating lever L and handle H are turned to the extreme right, the entire rheostat will be embraced in the circuit between the binding posts B and B' and as this operating lever is advanced from right to left the yielding conducting plates d come successively into contact with the short conducting bars m at the ends of the sections, thereby cutting out such sections in sequence as this motion continues until the lever reaches the extreme left hand position, when the entire rheostat will be removed from the circuit.

I am aware that a rheostat has heretofore been constructed in which the conducting portion was made up of a series of short strips of metal notched at their extreme ends and separated from each other by strips of non-conducting material such as mica, the conducting strips being interwoven or hooked together by said notches and the entire mass of conducting and non-conducting strips held together under pressure, while the circuit through the conducting portion was varied by swinging a conducting arm across the lateral faces of the interwoven or interlinked strips, and I make no claim herein broad enough to include such a structure. I believe however that it is broadly new with me to make a sectional rheostat of one or more strips of conducting material notched in zigzag form in their lateral edges and bent back and forth upon themselves with strips or sheets of non-conducting material between the folds thereof, and my claims are generic in this particular.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A rheostat made of a continuous thin piece of metal slitted or notched at stated intervals, and folded back and forth upon itself with insulating material between the folds thereof and held in place by the notches substantially as described.

2. A rheostat made of a continuous thin sheet of high resisting material notched at stated intervals and folded back and forth upon itself, the folds being separated by sheets of insulating material, such as mica, as described.

3. A rheostat made in sections each section consisting of a thin continuous notched ribbon of conducting material folded back and forth upon itself, the folds being separated by sheets of insulating material held in place by the notches and the sections joined by conducting bars, which project above the edge of the mass, substantially as described.

4. A rheostat made in sections consisting of continuous thin strips or ribbons of metal notched at intervals, the notches holding insulating strips between the folds thereof and the sections being separated by conducting bars and provided with means for pressing all of the parts together, substantially as described.

5. A rheostat made of a thin continuous notched strip of conducting material folded back and forth upon itself, the folds being separated by insulating sheets or strips, held in position by the notches and all bound together adjustably by side bolts, cross bars, and nuts, as described.

6. A rheostat consisting of two or more sectional conductors, each made of a thin continuous notched metal strip folded back and forth upon itself, the folds being separated by insulating sheets, held in place by the notches and the sections joined by intervening conducting bars and all held together by adjustable attachments, as described.

7. A rheostat made of a continuous thin strip of conducting material notched in its lateral edges and folded back and forth upon itself in combination with sheets or strips of insulating material held in place by the notches between the folds, substantially as described.

8. A rheostat made up of one or more sections consisting each of a thin continuous notched strip of conducting material folded back and forth upon itself, the folds being separated by insulating material held in place by the notches in combination with side sustaining bars and adjustable cross bars for compressing the parts together, substantially as described.

9. A rheostat consisting of a series of sections each made up of a continuous notched

strip of conducting material folded back and forth, at the notches the folds being separated by sheets of insulating material held in place by the notches and the sections being united together by strips or bars of conducting material in combination with means for sustaining the parts in a compressed position and a swinging conducting arm provided with contacts for varying the number of sections in circuit, substantially as described.

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