

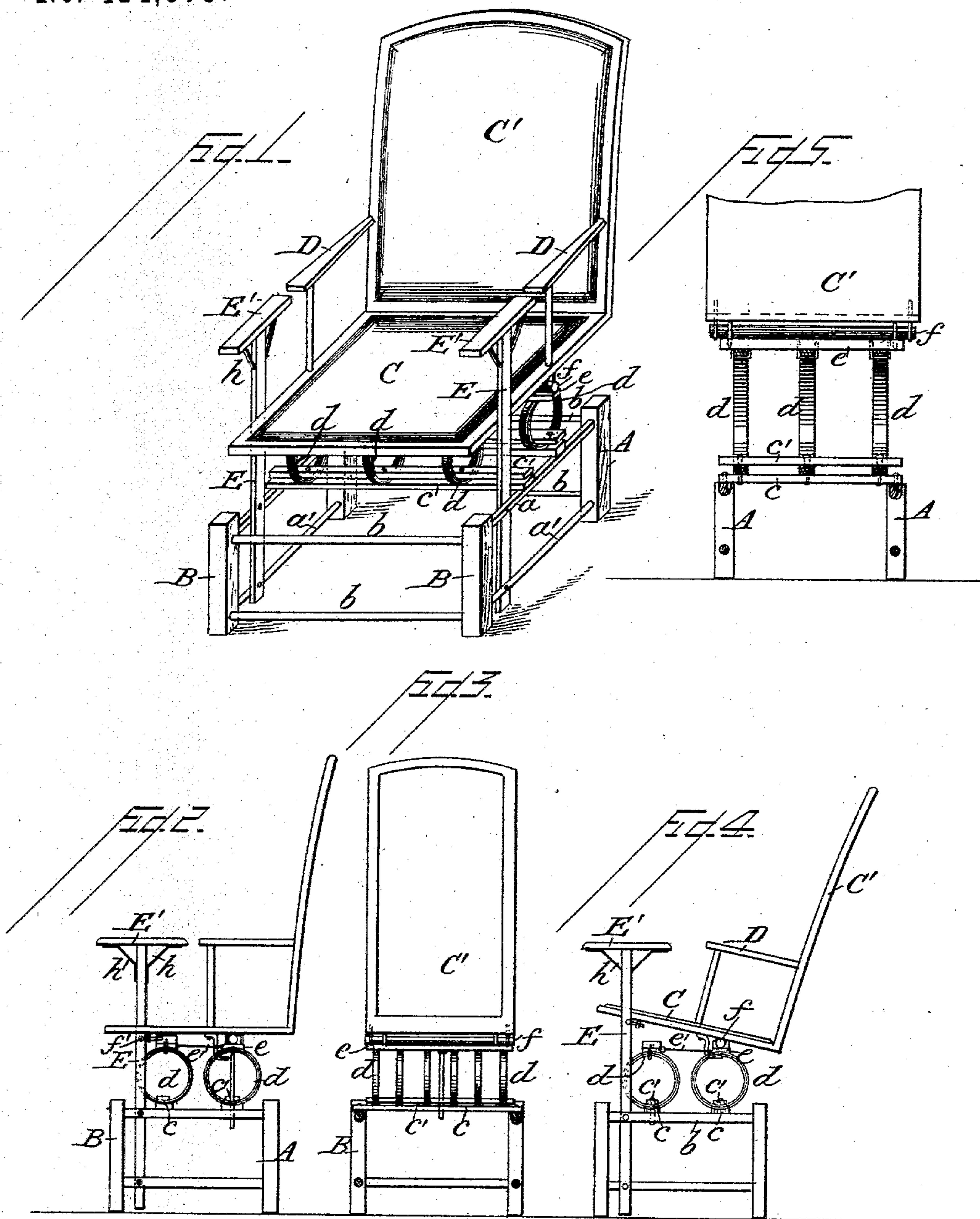
(No Model.)

2 Sheets—Sheet 1.

A. F. CALDWELL.
EXERCISING CHAIR.

No. 414,675.

Patented Nov. 12, 1889.



Attest:

H. H. Schott
W. Burroughs

Inventor
Alfred F. Caldwell
By W. H. Chandler

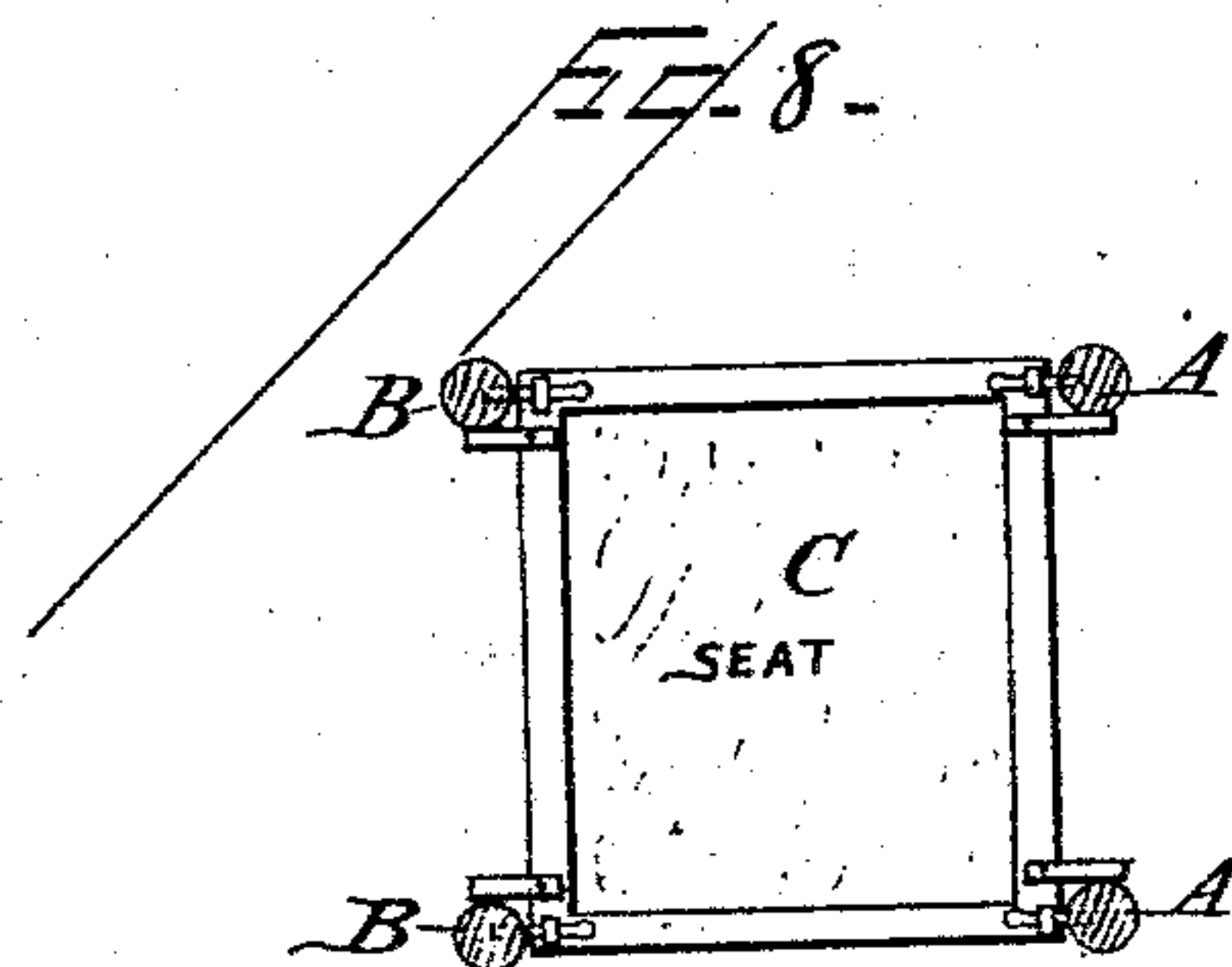
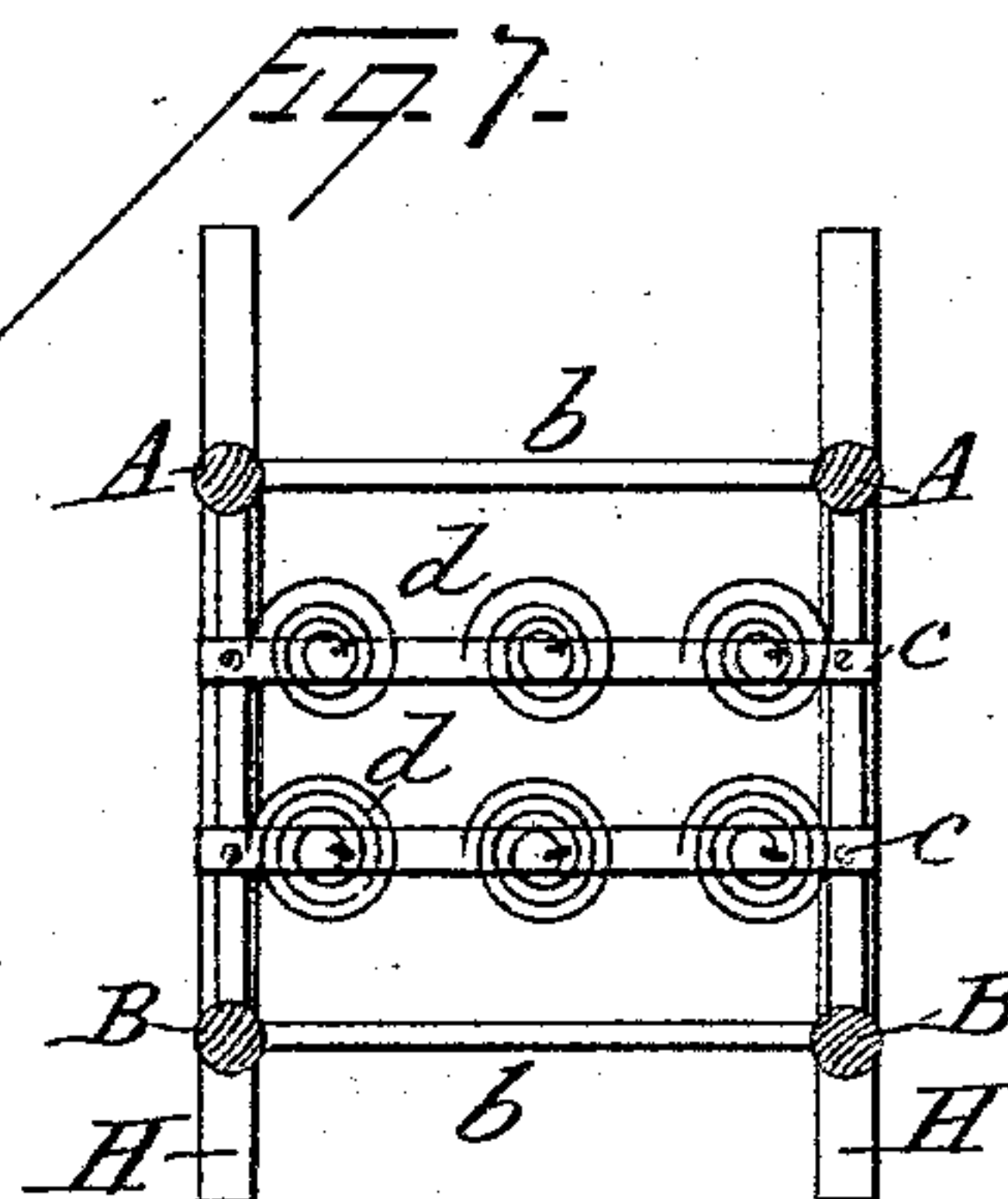
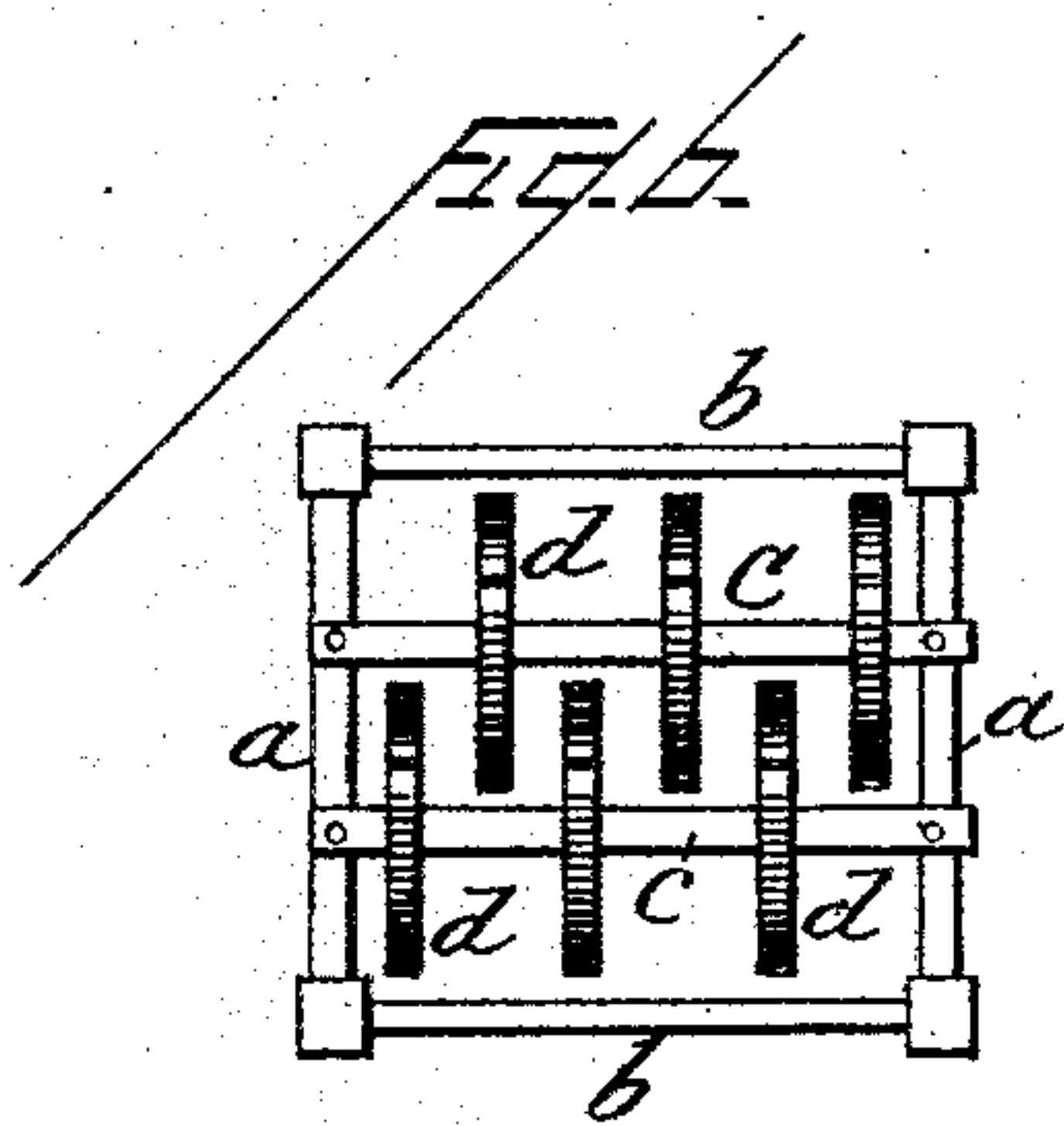
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UNITED STATES PATENT OFFICE.

ALFRED F. CALDWELL, OF NEW YORK, N. Y.

EXERCISING-CHAIR.

SPECIFICATION forming part of Letters Patent No. 414,675, dated November 12, 1889.

Application filed December 29, 1888. Serial No. 294,915. (No model.)

To all whom it may concern:

Be it known that I, ALFRED F. CALDWELL, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Chairs; and I do declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in chairs.

The especial objects of the invention are to produce a chair which, while having the characteristics of a spring-seated chair, shall also possess certain hygienic properties that are found very useful in the cure of dyspepsia and other diseases arising from an impaired digestion. So the construction is such as to allow its use as an exercising-machine; and, further, it forms an agreeable mode of recreation for children and others, the teetering vertical movement of the seat being pleasant and restful to its occupant.

In carrying out this invention the wood, perforated cane, leather, or upholstered chair-seat, including its frame, is supported upon a series of springs having a free vertical movement through a considerable distance, so that they give to the seat, including the seat-frame, a large amount of vertical motion, which has been found to be of great aid in assisting the peristaltic movements of the stomach, thus aiding digestion. It will be apparent that these features of construction may be embodied in many different forms, as well as in chairs of various styles of construction; but to give a sufficient knowledge of the principle of the invention to enable others to construct the same I have illustrated it as applied to chairs of the form shown in the accompanying drawings, in which—

Figure 1 represents an arm-chair with my improvements attached. Fig. 2 shows a side view of the above chair with improved arrangement of springs and seat. Fig. 3 is a front elevation, the lower part of the chair being in section, showing the arrangement of

the spring and guide-bar. Fig. 4 is a side elevation showing the chair tipped back, also the connections between the bars that support the seat and those between said bars and the seat. Fig. 5 is a vertical section illustrating the arrangement of the springs upon their supports and the means employed for securing them in place. Fig. 6 is a plan showing the arrangement of the springs. Fig. 7 is a plan illustrating the arrangement of the springs in said chair. Fig. 8 shows the method of securing the seat in place by means of bolts entering the legs when desired.

It will be understood that these figures represent what I now consider as the preferred methods of carrying out my invention, although the details of construction may be greatly varied without essentially departing from the same. For instance, in place of the band-springs shown, coiled-wire springs may be substituted to insure the movement of the seat in a vertical line.

In the several figures of the drawings, A A represent the rear legs of a chair, and B B the front legs of the same, said front and rear legs being connected by cross-bars *a* and *a'* at each side of the chair, and the pairs of legs by the bars *b* in the ordinary manner. The seat C has a back C' and arms that move with it. These arms, as D D, are attached to this back and connected at their front end to the seat, projecting forward sufficiently to form a rest for the arms of the occupant. The bars *a*, which connect the front and rear legs, are placed lower than the bars in an ordinary chair and form supports for the spring-supporting bars *c c*, which are firmly attached to each end of the bars *a a* and carry the springs *d d*. These springs, as shown in the drawings, are each composed of long pieces of band metal, as steel or brass, formed into a ring having several layers or thicknesses and secured to the bars *c* by the pieces of wood *e'*, passing through the springs and connected to the bars *c* by screws or rivets passing through the same, by which they are firmly attached to the said bars. Three or more of these springs may be secured to each supporting-bar *c*, the number and stiffness of the springs being regulated by the size and purpose for which the chair is to be used. Across the top of each series of springs and firmly secured thereto

by staples is a seat-carrying bar *e*. The seat-carrying-bars *e* are connected by a rod *e'*, attached to one of the bars by a staple and to the other by a hook upon the rod which engages with a similar staple in said bar. This rod *e'*, therefore, while connecting the two bars *e e*, allows them to have a free vertical movement independent of each other, but retains them in the same longitudinal relation.

The seat *C* is attached to the rear seat-carrying bar by a round bar *f* and staples surrounding said bar *f*, one set being secured to the seat-frame and the other to the bar *e*, thus forming a hinge upon which the seat may rock. The front part of the seat lies upon the front bar, having no attachment to the same except a bolt *f'*. It will be seen that this method of securing the seat upon the springs allows each series of them to move independently, and, further, the seat may be readily turned up for repairs or for the adjustment of the springs and allows the use of the seat for rocking as well as teetering.

Secured to the cross-bars *a* and *a'* at each side of the chair is a vertical post *E*, provided at the top with a cross-piece *E'*, forming a hand-rest. This cross-piece may be strengthened by braces *h h*, extending diagonally to the post. These posts and the cross-pieces at their upper ends form a firm hand-rest, the seat moving freely between them.

In the use of the chair the occupant by a slight intermittent effort applied to the hand-rests is able to give himself a vertical teetering movement of several inches or rock on the round bar-hinge, and in case the chair be a foot-rocker, as shown in Fig. 7, provided with the jolting devices, the vertical motion is sup-

plemented by the jolting motion, thus causing the muscles of the upper part of the body and the abdomen to be set in motion and exercised, producing, as heretofore stated, great relief to persons having imperfect digestion as well as those with sedentary habits—such as clerks and others who are compelled to remain seated for long periods of time—as a few minutes' exercise in this chair will relieve the overstrained muscles, and they will return to their work refreshed and relieved.

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

1. As an improvement in chairs, the combination, with the chair-frame, of the springs supported thereby, the seat and its frame carried by said springs, and the stationary hand-rests *E*, all arranged substantially as herein shown and described, whereby the chair is adapted to be used as an exercising-machine, as specified.

2. As an improvement in chairs, the combination of the frame provided with spring-supports, the springs secured to said supports, the bars on top of and secured to the springs, the rod disengageably connecting said bars, and the seat hinged to one of the bars, as set forth.

3. As an improvement in chairs, the seat-frame provided with short arms *D*, in combination with the spring-seat and the stationary hand-rests *E*, as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ALFRED F. CALDWELL.

Witnesses:

JNO. E. HOATS,
F. N. FRAZER.