C. DIEHL.

Improvement in Sash-Balances.

No. 132,146. Patented Oct. 15, 1872

Fig. 1.

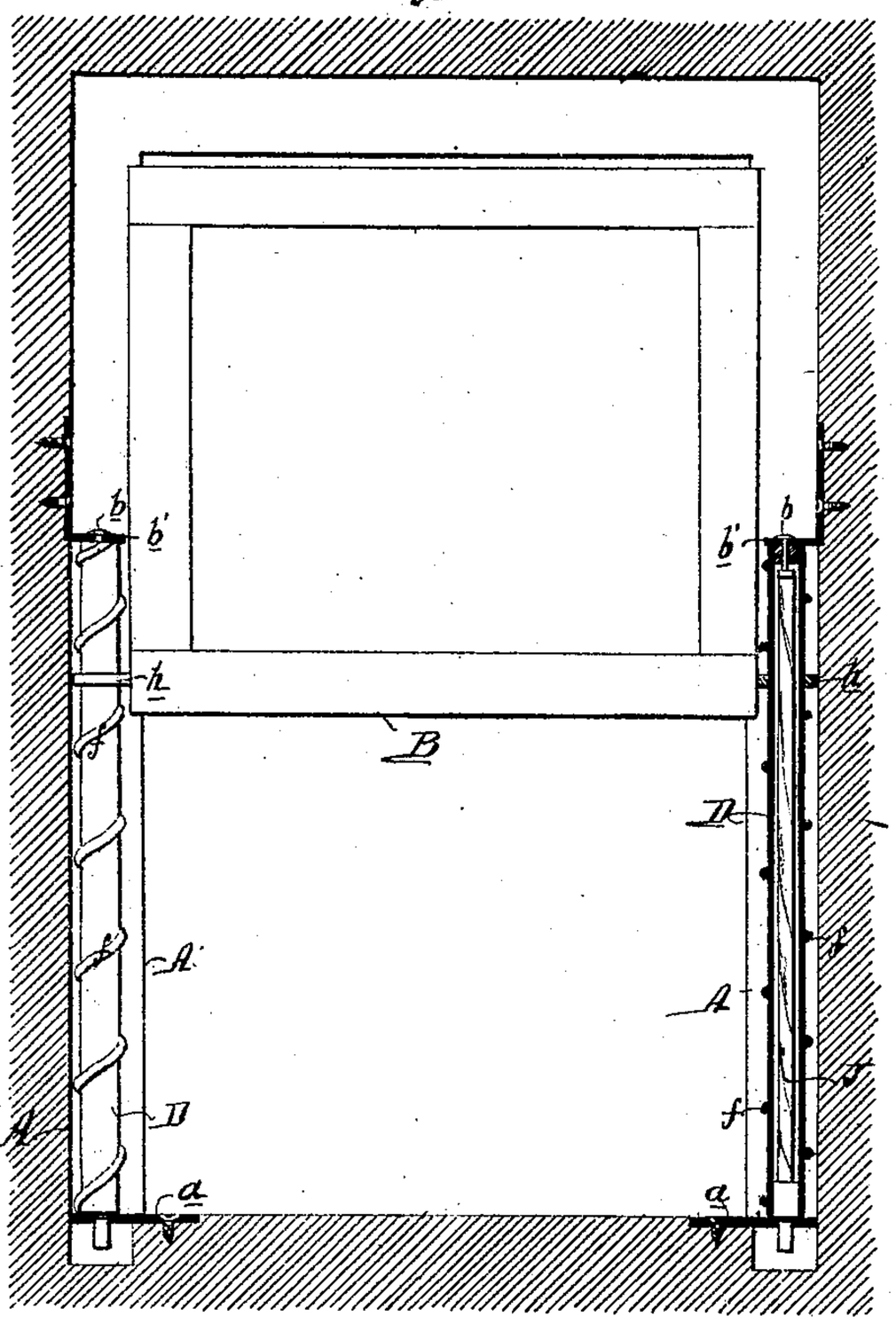


Fig. 2.

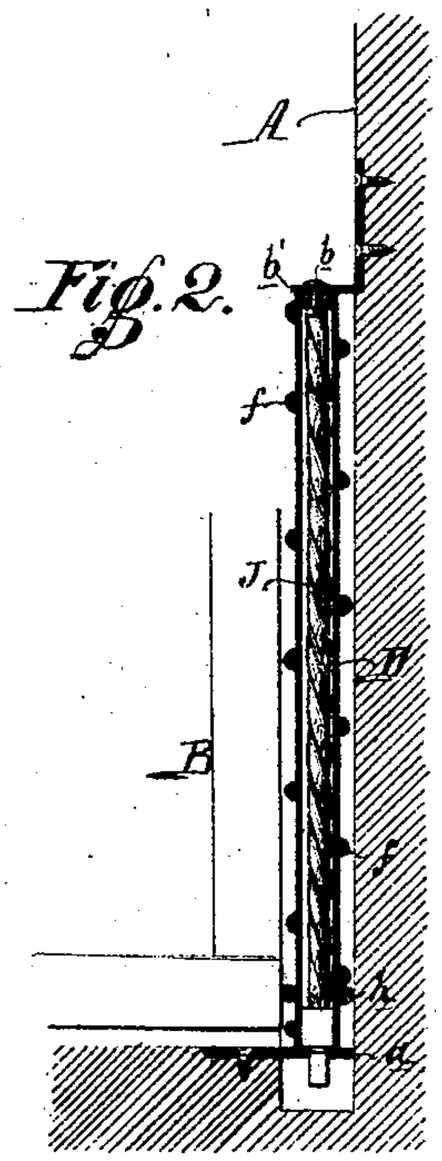
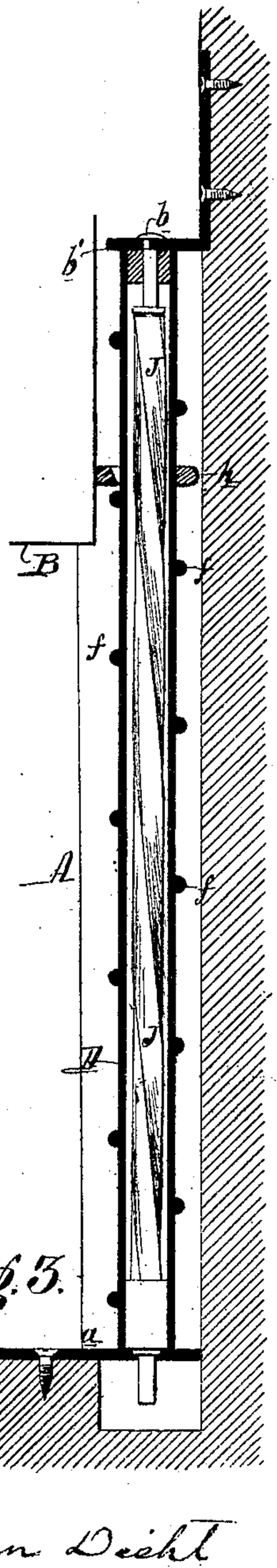


Fig. 3.



Witnesses { Wm. A. Steel. John Parker }

Christian Diehl
by his attys
Howson and Son

UNITED STATES PATENT OFFICE.

CHRISTIAN DIEHL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND GOTTLIEB MARTIN BARTH, OF SAME PLACE.

IMPROVEMENT IN SASH-BALANCES.

Specification forming part of Letters Patent No. **132,146,** dated October 15, 1872; antedated October 9, 1872.

To all whom it may concern:

Be it known that I, CHRISTIAN DIEHL, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improvement in Springs for Sash-Balances, &c., of which the following is a specification:

Nature and Objects of the Invention.

My invention relates to a sash-balance; and consists of two vertical tubes with external threads adapted to nuts on the sash, and internal strips of rubber, which are twisted on the rotation of the tubes by the descent of the sash, the torsion of the rubber strips preventing the tubes from turning by the weight of the sash merely, and thus retaining the latter in any position to which it is adjusted.

In the drawing, Figure 1 is a view of part of a window-frame and sash, showing my improved method of balancing the latter; Fig. 2, the same as Fig. 1, with the parts in a different position; and Fig. 3, an enlarged view of part of Fig. 1.

General Description.

A represents a window-frame, and B a sash arranged to slide in the same in the usual manner. At each side of the sash there is an upright cylinder or tube, D, which turns at its lower end in a plate, *a*, secured to the window-frame, and at its upper end upon a fixed pin, *b*, which projects downward from a bracket, *b'*, of the window-frame. Upon the outside of each of these tubes there is a spirally-coiled wire or coarse screw-thread, *f*, to which is adapted a nut, *h*, of the sash, so that as the latter is raised the said tubes will be turned in one direction, while when it is lowered they will be turned in a contrary direction. The tubes thus turned by the sash serve as mediums for operating the balancing springs J J, which consist of strips of solid gum-elastic secured at their lower ends to the rotating tubes and at their upper ends to the fixed pins *b* upon which the said tubes turn. When the sash is lowered the tubes will be turned in such a direction as to twist the gum springs, and the raising of the sash will turn the tubes in a contrary direction, and will therefore partially untwist the springs. The latter, however, when placed within the tubes, are sufficiently twisted to serve, owing to their tendency to recoil, to balance the sash in any position to which it may be raised or lowered. The springs will not, however, when fully twisted by the lowering of the sash, have sufficient power to raise the latter from the sill, they being merely intended as balances.

Claim.

A sash-balance, consisting of two vertical tubes, A A, having external screw-threads *f* adapted to nuts on the sash, and internal strips of rubber, each connected at one end to the tube and at the other to a stationary bracket, all as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHRISTIAN DIEHL.

Witnesses:

WM. A. STEEL,

FRANK B. RICHARDS.