(No Model.) 3 Sheets—Sheet 1.

J. W. DUNCAN.

DESK.

No. 402,909. Patented May 7, 1889.

Fig. 1.

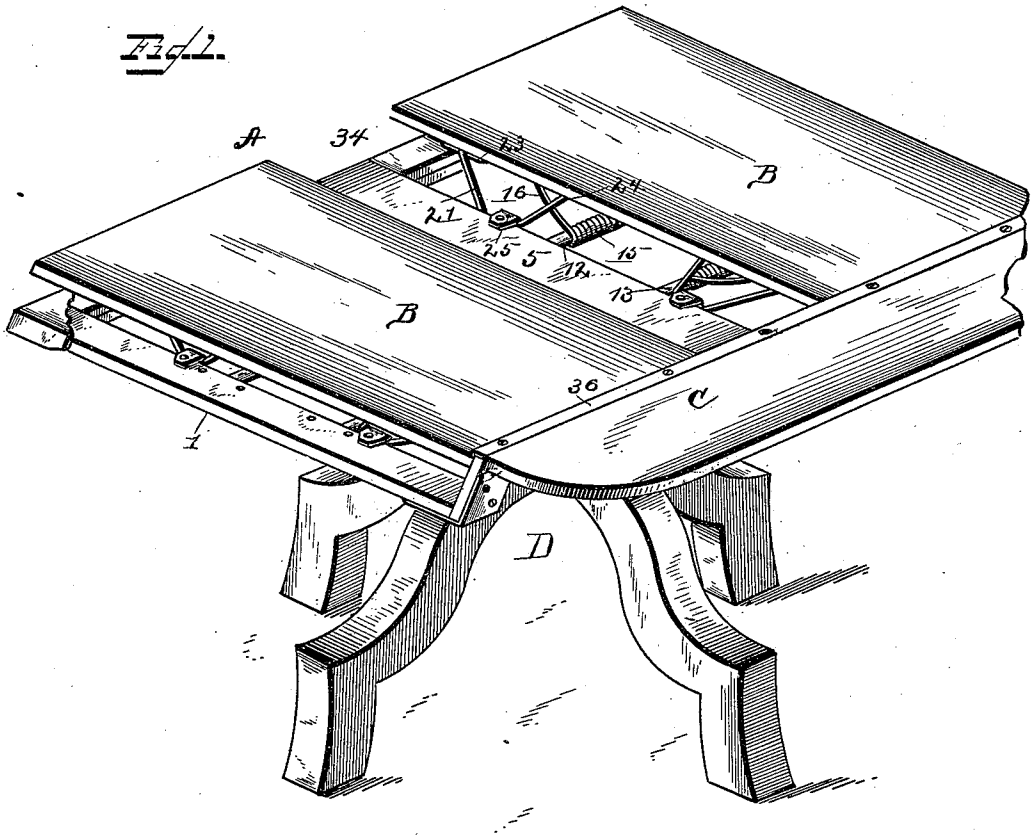
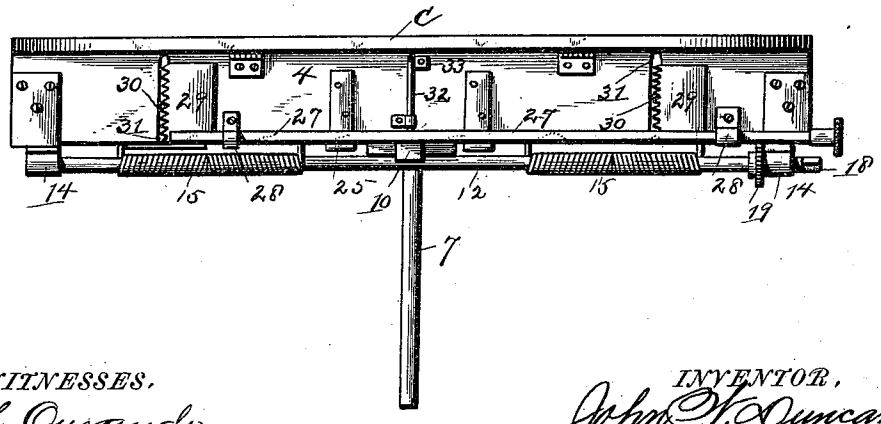


Fig. 5.



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Fig. 2.

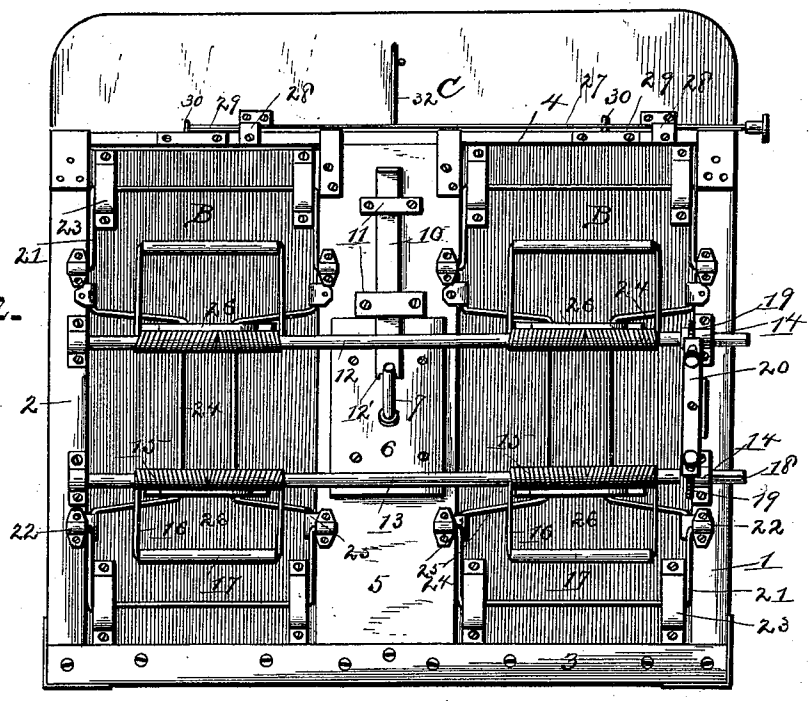
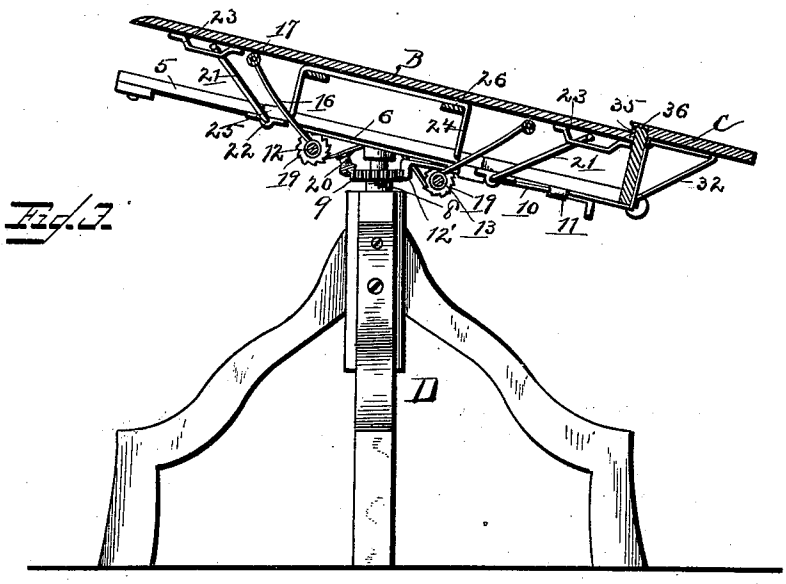


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Fig. 3.

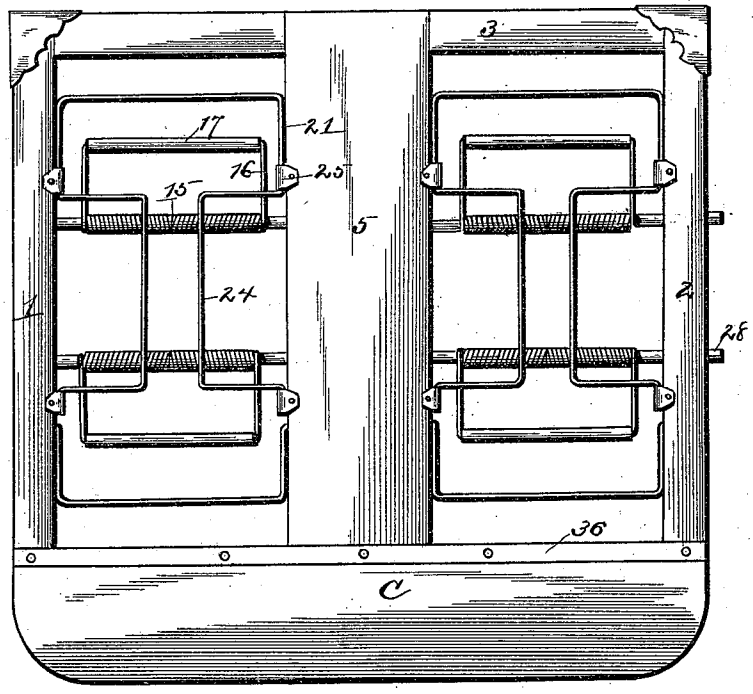
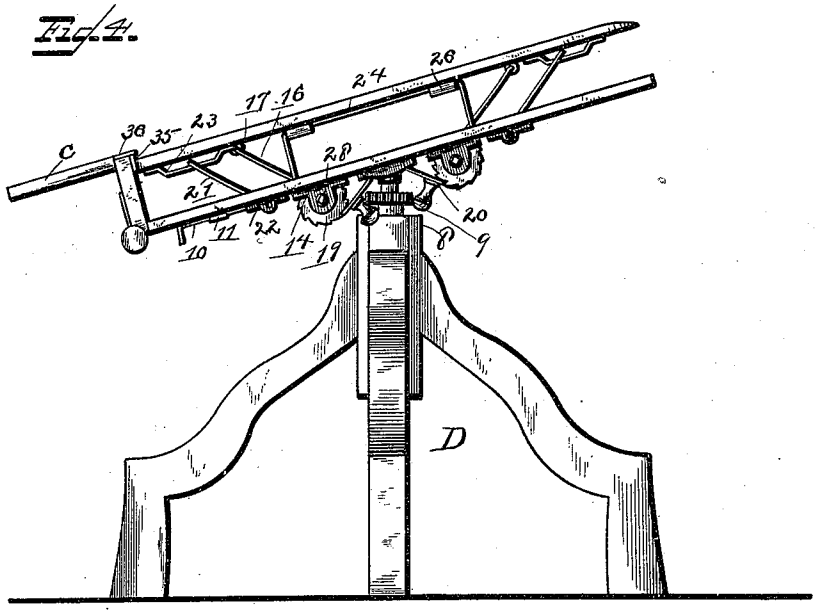


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN W. DUNCAN, OF BUTLER, MISSOURI, ASSIGNOR OF ONE-FOURTH TO ROBERT G. WEST, OF SAME PLACE.

DESK.

SPECIFICATION forming part of Letters Patent No. 402,909, dated May 7, 1889.

Application filed November 17, 1888. Serial No. 291,151. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. DUNCAN, a citizen of the United States, and a resident of Butler, in the county of Bates and State of Missouri, have invented certain new and useful Improvements in Desks; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to desks.

The object is to produce a desk which will enable a person to write with equal ease either the first or last page of a book; furthermore, to produce a desk which shall be comparatively simple of construction, efficient and durable in use, and inexpensive of production.

It is a well-known fact that all book-keepers experience more or less difficulty in opening a new book—as, for example, a ledger of large size—from the fact that as the binding is new and the paper of the leaves stiff the book has a tendency to close unless a weight or clamp is used to prevent this; also, when a book is first opened the bulk of the leaves, and consequently the greatest weight, are on the right-hand side, thereby causing the pages on the left to be drawn constantly to the right, thus making it necessary for the person writing to hold the pages back to prevent this.

It is the object of this invention to overcome these objections in a simple and effective manner; and to these ends the invention consists in the improved construction and combination of parts of a desk, as will be hereinafter fully described in the specification, illustrated in the drawings, and more particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, and in which like letters of reference indicate corresponding parts, Figure 1 is a perspective view of the desk. Fig. 2 is a bottom plan view with the standard removed. Fig. 3 is a transverse sectional view. Fig. 4 is a side view. Fig. 5 is a front view, and Fig. 6 is a detail view of the frame of the desk with the movable leaves removed.

Referring to the drawings, A designates the frame; B, the movable leaves upon which the book rests; C, the arm-rest, and D the standard on which the desk revolves.

The frame A is constructed of any suitable material, but preferably of wood, and consists of two side pieces, 1 and 2, the back piece, 3, and the front piece, 4, to which the movable arm C is hinged. Between the two side pieces is secured a center piece, 5, upon which is mounted a plate, 6, carrying a downward-extending arm, 7, which serves as a pivot upon which the desk revolves. Within the upper portion of the standard D, upon which the desk is mounted, is secured a tube, 8, carrying on its upper end a stationary pinion, 9, designed to be engaged by a slide, 10, mounted in guides 11 upon the under side of the center piece, 5, and carrying on its inner end a rack-plate, 12′, for engaging the said stationary pinion to lock the desk in place.

The movable leaves B are so constructed that they will be braced at all points, so as to prevent their tilting to one side should a greater amount of weight rest on one side than the other, and at the same time to allow their having sufficient resiliency to accomplish the object for which they are designed—that is, to keep the two sides of a book on a level. In order to accomplish this result, two shafts, 12 and 13, are journaled in bearings 14, secured to the side pieces, 1 and 2, and upon these shafts are rigidly secured coiled springs 15, the ends of which are bent out to form arms 16, carrying rollers 17, which bear against the under side of the desk. These arms bear with uniform pressure upon the back and front of the leaves, and may be regulated as to their tension by means of a key which engages the square ends 18 of the said shafts for turning them.

In order to hold the springs at the desired point of tension, ratchet-wheels 19 are mounted upon the shafts next to the bearings in which they move and are engaged by spring-pawls 20. Thus should a heavy book be used it is only necessary to tighten the springs so as to give them sufficient rigidity to prevent the leaves moving down too far or for a light book to loosen them, as before described. These spring-actuated arms just described are designed to force the leaves upward; but it is desirable to prevent the leaves having any

lateral play or turning in when weight is placed thereon. This is accomplished by mounting under the end of each of the leaves an arm, 21, the ends of which work in bearings 22 on the side pieces, and under guides 23, secured to the under side of the leaves. These guides 23 are of sufficient length to allow the arms to slide therein as the said leaves are forced down by the weight of the book, while at the same time preventing the leaves tilting to one side, and also cause the said arms to resume their normal position with the spring. These leaves are still further supported by means of arms 24, mounted in bearings 25 on the side pieces and moving under guides 26, also secured to the under side of the leaves.

It will thus be seen readily that the leaves are supported on all sides against tilting, thereby presenting an approximately solid support for the book. Should it be desired to lock the leaves in any given position, so that they will be prevented from sagging, a locking mechanism is used, consisting of a slide-rod, 27, moving in bearings 28, secured to the end of the desk and carrying vertical rack-plates 29, which engage pins 30, secured to the ends of the movable leaves. Thus by pressing the leaves down any desired distance and pushing the lever in the pin will be engaged by the teeth on the rack-plates, and thus hold the leaves in the desired position. This pin moves in a recess, 31, formed in the front end of the frame; but, if desired, it may be arranged in any other manner.

The arm-rest C before referred to is hinged to the front piece, 4, of the desk, as shown, and when not in use may be folded down and out of the way; but when desired to be used it is turned up, and a movable arm, 32, mounted in guides 33 on the said end piece, is turned out and bears against the under side of the arm-rest, thereby holding it in the desired position.

When the desk is used, the back of the book rests within the space 34 between the leaves, and thus keeps it out of contact with any part of the desk, so that as the leaves are raised or lowered by the sides of the book the back will remain stationary.

In order to prevent the book rubbing against the front piece, 4, there is a flange, 35, secured to the lower end of each of the leaves, which extend up a sufficient distance to allow the covers of the book to rest against them. These flanges are also designed to engage or rest against the under surface of the metallic strip 36, secured to the upper edge of the said front piece to prevent the springs under the leaves forcing the same above the upper edge of the front piece when weight is removed from the leaves.

It will thus be seen that by constructing a desk in this manner a highly efficient and durable article of furniture will be produced, and one that will fill a long-felt want with all book-keepers and business men.

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

1. In a desk, the combination of the frame, the vertically-movable leaves, shafts journaled beneath the leaves, coiled springs secured to the shafts having arms bearing against the under side of the leaves, ratchet-wheels on the shafts, a pawl engaging the ratchet-wheels, and means for turning the shafts to regulate the tension of the spring, substantially as described.

2. In a desk, the combination of the movable leaves, shafts journaled beneath the same, coiled springs secured to the shafts, having arms, and rollers on the arms bearing against the under side of the leaves, substantially as described.

3. In a desk, the combination of the movable leaves, shafts journaled beneath the same, coiled springs secured to the shafts, having arms, rollers on the arms bearing against the under side of the leaves, guides on the leaves, and arms journaled in the supporting-frame and moving in the guides, substantially as and for the purpose specified.

4. The combination, with the desk, of a slide-rod, vertical rack-plates secured thereto, movable leaves, and pins secured to the leaves and designed to engage the rack-plates, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

JOHN W. DUNCAN.

Witnesses:
S. W. PEACH,
AUGUSTUS DIXON.