(No Model.) 2 Sheets—Sheet 1.

L. G. BILLINGS.

CABINET FOR TYPE WRITERS.

No. 411,004. Patented Sept. 17, 1889.

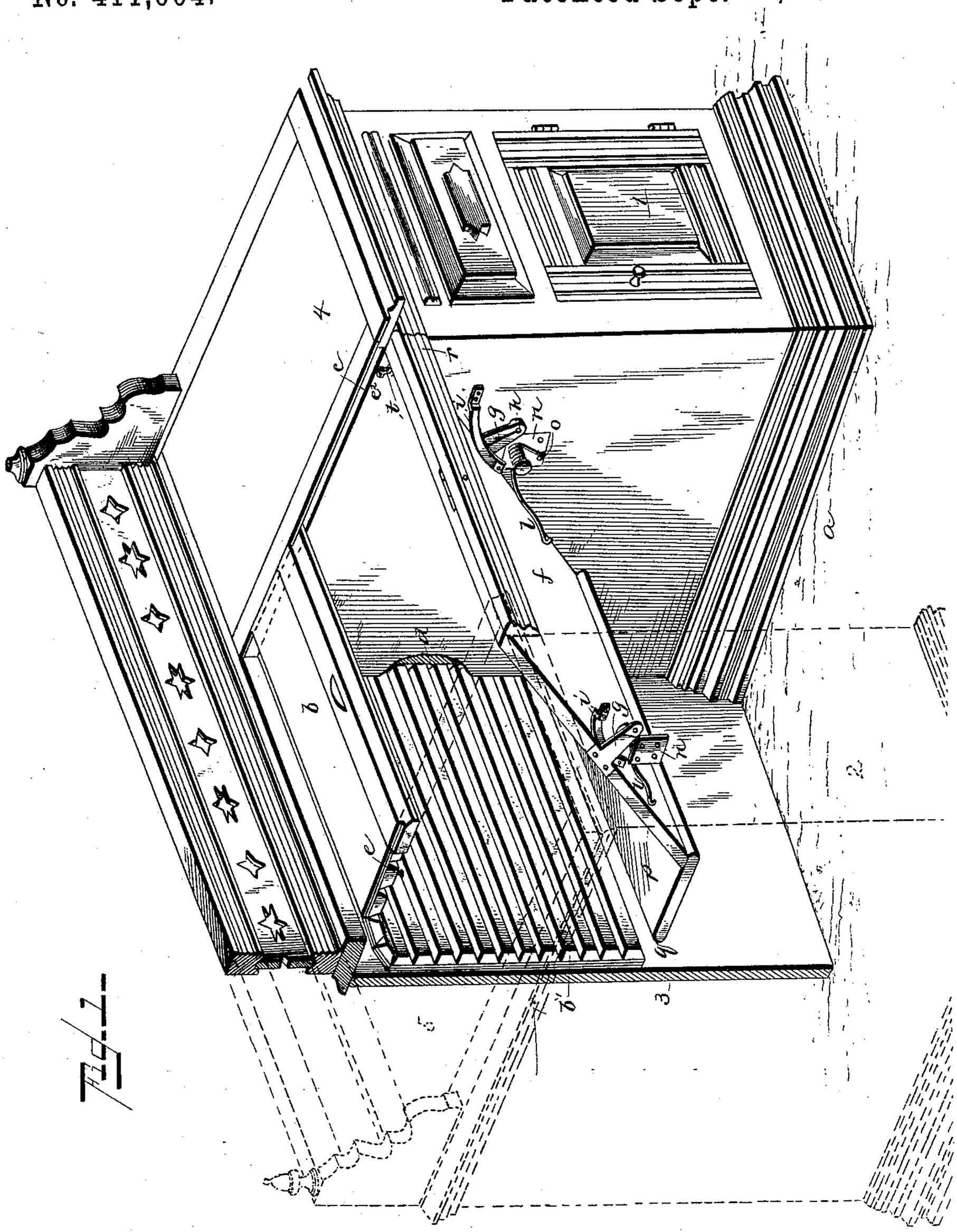

Fig. 1.

WITNESSES

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H. Y. Davis.

INVENTOR

Luther G. Billings

by Wm. H. Singleton

his Attorney.

(No Model.) 2 Sheets—Sheet 2.

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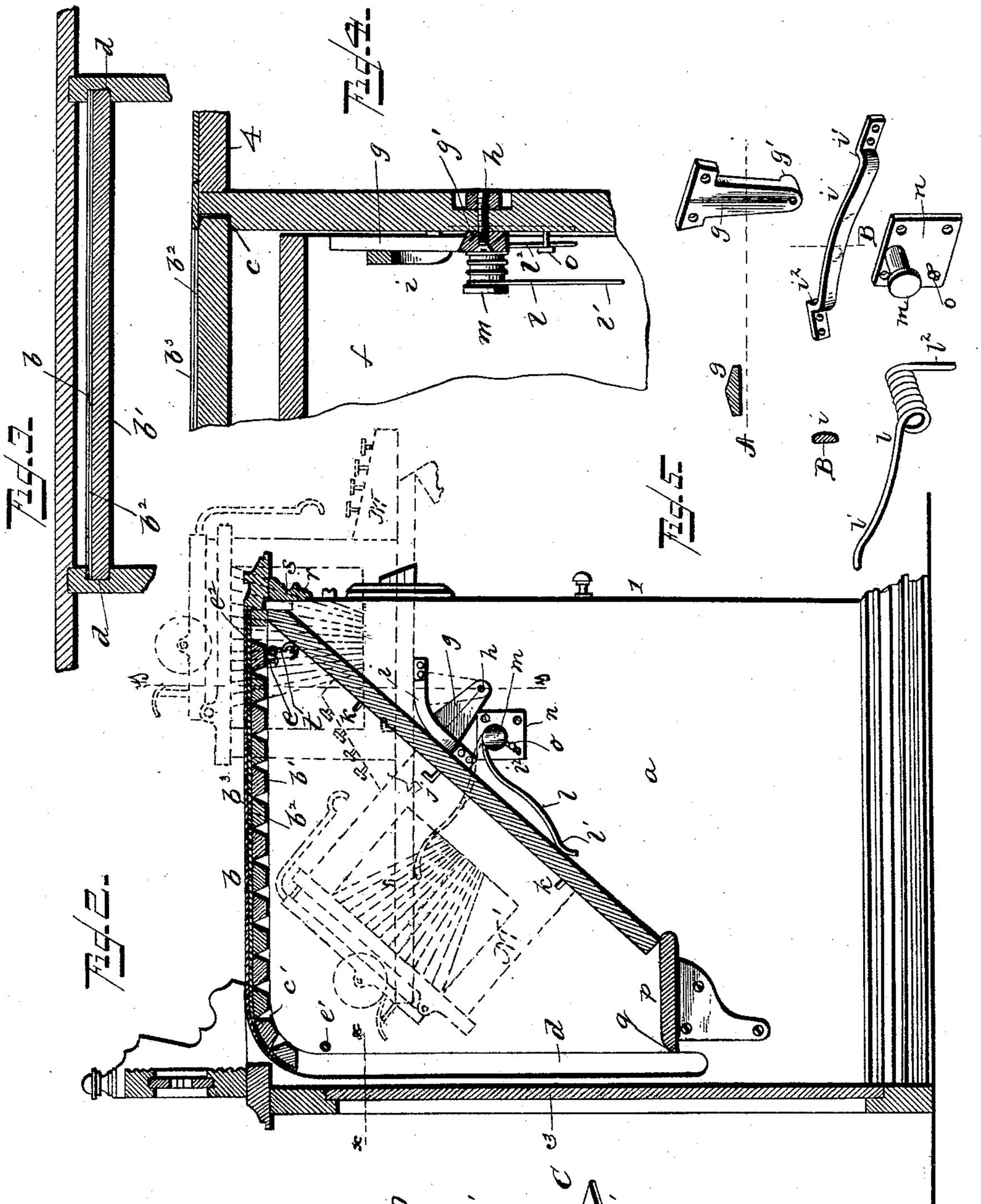

UNITED STATES PATENT OFFICE.

LUTHER G. BILLINGS, OF WASHINGTON, DISTRICT OF COLUMBIA.

CABINET FOR TYPE-WRITERS.

SPECIFICATION forming part of Letters Patent No. 411,004, dated September 17, 1889.

Original application filed March 22, 1888, Serial No. 268,134. Divided and this application filed July 30, 1889. Serial No. 319,184.

(No model.)

To all whom it may concern:

Be it known that I, LUTHER G. BILLINGS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented a certain new and useful Improvement in Cabinets for Type-Writers and other Machines, of which the following is a full, clear, and exact description.

The main object of this invention is to produce a cabinet for type-writers in which the center of gravity of the machine is in the rear of a line drawn crosswise and midway between its ends, though it is equally applicable to machines otherwise constructed.

Cabinets for the purpose indicated are usually made in desk form, and in the embodiment of my invention herein shown I have followed this conventional form, without, however, thereby restricting my invention to it.

Pivoted shelves or platforms for the reception of the machine have heretofore been used; but as a rule they have been operated manually, or the hands have been assisted by a system of levers, or levers and weights, more or less directly connected with and operated by the cover. Considerable force is required in nearly all of them to overcome the weight of the machine in lifting it into position for use, and to resist such weight and prevent shock and jar in returning it into position for disuse. Furthermore, the shelf is quite apt to be unstable in use, and thus produce a movement of the machine quite annoying to the operator; and, further, with the common constructions the machine sets so far back into the well that the operator has to occupy a very uncomfortable position, and, still further, the sides of the desk are constantly in the way of the operator.

Now my invention is designed to overcome these objections; and it consists in the construction and also in the combination and the arrangement of parts, as hereinafter more particularly set forth and claimed.

In the accompanying drawings, in the several figures of which like parts are similarly designated, Figure 1 is a sectional perspective view of my improvement. Fig. 2 is a vertical section through the center of the well. Fig. 3 is a horizontal section taken in the plane of line $x\ x$, Fig. 2. Fig. 4 is a cross-section (longitudinal) taken in the plane of line $y\ y$, Fig. 2. Fig. 5 shows in perspective and section the details of the shelf-supporting mechanism, and Fig. 6 shows in two views two forms of machine-retaining hcoks.

The cabinet, as already stated, may be made in conventional form—that is to say, with two sides or end sections 1 and 2, containing usual drawers, shelves, and closet in any desired arrangement, and a back or rear wall 3, with a well a between them. The tops 4 and 5 of the sides are flat and stationary, while the top b of the well is made as a flat rolling curtain. To receive this "roll-top" b, as I call it, the adjacent edges of the adjacent side walls of the sides or end sections are provided with ways c, into which are fitted the edges of the slats composing the roll-top, and these horizontal ways are connected by curved ways c', with vertical ways d made in the said adjacent walls of the sides at the rear of the desk, and preferably in front of the back 3 of the desk, no pocket or other receptacle thus being needed to receive or conceal the roll-top. The roll-top is operated in its ways $c\ d$ by hand, pushing it back to uncover and pulling it forward to cover the well. In its simplest form the roll-top is composed of a number of bevel-edge strips of wood b', laid together parallel and edge for edge, and secured by canvas b^2, to which they are glued or otherwise fixed, the top b^3 being finished off in the manner and with the same sort of material as that covering the tops of the sides.

Stops e—such as screws—may be applied to the under side of the roll-top to engage similar stops $e'\ e^2$ at the rear and front of the well to limit the backward and forward movements of the roll-top.

Any other known movable cover for the well may be substituted for the roll-top.

The roll-top forms the subject of my application, Serial No. 268,134, filed March 22, 1888, of which application this is a division.

The shelf f is pivoted within the recess or well a rather forward of a line drawn midway between its ends, so that it would tend, by gravity, to assume the inclined position shown in full lines, Figs. 1 and 2.

The shelf supporting and pivoting devices are constructed substantially as follows: A T-arm g is fastened to each side of the shelf at the pivoting-points just indicated by

countersinking its head into said sides and securing it by screws, the shanks of the T's projecting below the shelf and being secured to the side walls of the sides, preferably by pivot-bolts *h*. The fulcral ends of the arm *g* are provided with bosses *g'*, which take the place of washers. These arms play in curved ways *i*, attached to the side walls of the sides and having offsets or shoulders *i' i²*, forming front and back stops for the said arms. The said ways have their ends arranged in planes corresponding with the two positions it is desired the shelf to have, and the arms *g*, relatively, are so pivoted that when the shelf is given either position it will bear upon the said ways, which thereby relieve the bolts *h* of some of the strain.

The arms *g* are pivoted at such near points to the front of the cabinet that when the shelf is brought into horizontal position it will project quite far out from the cabinet, so as to come well within the operator's lap and so as to clear the corners of the sides of the cabinet. This is quite an important feature of my construction. As a matter of fact, the shelf has such a projection to the extent of from five to six inches, so that the corners of the desk are quite removed from interference with the operator's person and with traverse of the machine-carriage.

The face of the shelf has applied to it hooks *j*, of suitable construction, and guide-pins *k*, to serve, respectively, to retain and guide or direct the machine in its movements on the shelf. It will be understood from this that the machine—say a Remington type-writer, which has its center of gravity to the rearward of midway between its ends—is most easily used in my cabinet by simply placing it flat upon the shelf and having the hooks *j* grasp its inner walls, while the pins *k* are outside said walls. When the shelf is horizontal and the machine to be used, the machine will be pulled forward, (see dotted lines M, Fig. 2,) so that its rear will occupy a place in front of the center of gravity of the shelf, and so assist in holding the shelf horizontal; and when the machine is no longer required it is shoved back, (see dotted lines M', Fig. 2,) and tends to assist gravity in bringing the shelf into the inclined position shown in the drawings.

Instead of screw-hooks *j*, there may be used hooks (see Fig. 6) rising rigidly from a plate *j'*, screwed to the shelf. These plates and hooks may be cast together. The plate may have a pointed lug *j²*, to be driven into the shelf and then fastened by a single screw, as at C, or it may be fastened by two screws without the use of the lug, as at D.

In order to overcome the dead-weight to be handled in operating the shelf, I provide springs *l*, (here shown as composed of coils,) secured to headed studs *m* on plates *n*, one of the ends *l'* of the springs being lengthy and bearing with the full force of the springs against the under side of the shelf, and the other ends being short and serving as stop ends *l²*, abutting against posts *o* of said plates to hold the springs in place. The plates *n* are preferably sunk into the side walls of the well or recess and secured therein by screws or other fastenings. The studs *m* and their heads are smaller in diameter than the coils of the springs when the springs are not under tension, so that said coils may be easily placed upon and removed from said studs, and when they are so placed and the shelf is in position the shelf in all positions puts tension upon the springs, contracts their coils diametrically against the resistance of the ends *l'* and *l²*, bearing, respectively, upon the shelf and posts *o*, and hence the coils cannot escape from the heads on the studs *m*. This construction and mode of securing the springs is simple and inexpensive, and makes a very easily-handled article. The springs *l* tend to throw the shelf into horizontal position and hold it there; but in pushing back the machine on the shelf past the center of gravity the weight of the machine is just about sufficient to overcome the springs and let down it and the shelf into the inclined position without jar or shock, while but slight pressure is required on the shelf to bring it horizontal again.

The springs may be omitted, though I prefer to use them.

The adjacent faces of the arms *g* and ways *i* are curved, as shown in the sections A B, Fig. 5, so as to reduce friction.

The ways *i*, embracing the arms *g*, and these arms being rigidly secured to the shelf, serve to tie together and brace the sides of the cabinet, and thus prevent them from warping out of parallelism, as sometimes occurs.

A bracket *p* is secured to the sides of the rear of the well to meet and arrest the lower end of the shelf when inclined. This bracket may be beveled or provided with guides next the ways *d*, so as to insure the descent of the roll-top, or, in other words, prevent the descending roll-top from catching against it.

The sides of the well are made plain and flat and the shelf fitted closely therein, so as to make as dust-tight a receptacle for the machine as possible, the bracket *p* contributing in this direction. The front edge of the shelf may be provided with a molding *r* in continuation of the molding of the cabinet.

A lock *s* may be used to connect the shelf and roll-top and protect the machine.

Hooks *t*, pivoted to the stops *e²* and engaging eyes on the shelf, may, in connection with the lock *s*, be used to retain the shelf in inclined position against the action of the springs; but other locking or retaining devices may be employed.

By my construction of shelf and shelf-supporting devices the shelf is very rigidly and solidly held in horizontal position for use, all wabbling and unsteadiness being avoided, and

the shelf coming out, as noted, well into the operator's lap puts the machine in best position for easy control and manipulation.

What I claim is—

1. In a type-writer cabinet having a well, the shelf for the machine, and arms for supporting the shelf rigidly secured to the shelf at points forward of a line drawn midway between its ends and projecting below said shelf, and pivots for said arms arranged near the front of the cabinet, all constructed and arranged to throw the front of the shelf out of the well and beyond the front of the cabinet when the shelf is brought into a horizontal position, and guides for said arms, which also serve to limit their throw, substantially as shown.

2. The cabinet or desk having end sections, combined with a shelf arranged between such sections, arms secured rigidly to the sides of the shelf and projecting below the shelf and pivoted to the cabinet at their lower ends, and guides or ways embracing said arms, whereby the shelf is not only pivoted and guided in its movements, but it and the end sections are intimately and securely united, substantially as described.

3. The cabinet or desk having a well, a shelf arranged in said well, arms secured rigidly to the sides of the shelf and pivoted to the cabinet within the well, and guides or ways embracing said arms and controlling the extent of their movement, combined with the coiled springs arranged in conjunction with the shelf, so as to tend to throw the shelf into horizontal position, substantially as described.

4. In a cabinet, the combination, with the shelf and its pivoting-arms, of guides or ways about which the shelf moves, and on which it takes bearings in its positions of use and disuse, substantially as described.

5. In a cabinet, the combination, with the shelf and its pivoting-arms, of segmental curvilinear ways receiving and guiding such arms and forming bearings for the shelf, and stops in the ends of said ways to arrest the arms and shelf in their two positions, substantially as described.

6. In a type-writer cabinet, the combination, substantially as shown and described, of the two sides and a back connecting them and having a well or recess bounded on three sides by said sides and back, a flat top for the well, a platform pivoted in said well and adapted to be inclined rearward and inclosed in the well by the sides and top and provided with hooks to engage loosely the inner walls of the base of the type-writing machine and permit such machine to be slipped back upon the inclined platform so as to be inclosed within the well by the top, sides, platform, and back, and to be drawn forward beyond the front of the desk when the well is uncovered and the platform is brought into a horizontal position.

7. In a type-writer cabinet, the pivoted shelf provided with hooks to engage the machine, and guide-pins for keeping the machine in place on the shelf, and at the same time admitting of its being freely moved, substantially as described.

8. In a cabinet, the shelf pivoted out of its center of gravity within said cabinet, combined with coiled springs of slightly greater resistance than the combined weight of the shelf and the type-writing machine, and arranged beneath the shelf and in the rear of its pivots and attached to the side walls of the recess on opposite sides of the shelf, and having their free ends extended toward the rear of and engaging said shelf, whereby the springs are held in tension by said shelf, so that the said springs tend to force the shelf into a horizontal position and are overcome by the weight of the machine and shelf under the manipulation of the operator and permit the shelf to gain an inclined position without jar or shock, substantially as described.

9. In a cabinet, the combination, with the sides and the shelf pivoted in the well between said sides, of coiled springs and fastenings therefor, consisting of headed studs, upon which the coils of the springs are slipped when free from tension, and by the heads of which the coils are retained by their decrease in diameter when under tension, posts for locking one end of the springs, and plates from which the studs and posts rise, and by which they and the springs are secured to the cabinet, substantially as described.

In testimony whereof I have hereunto set my hand this 29th day of July, A. D. 1889.

LUTHER G. BILLINGS.

Witnesses:

E. A. COLE,

P. T. B. VAN DOREN.