Dec. 6, 1927. 1,651,784

C. B. ULRICH

FILING SAFE

Filed Nov. 22, 1924

Fig. 1

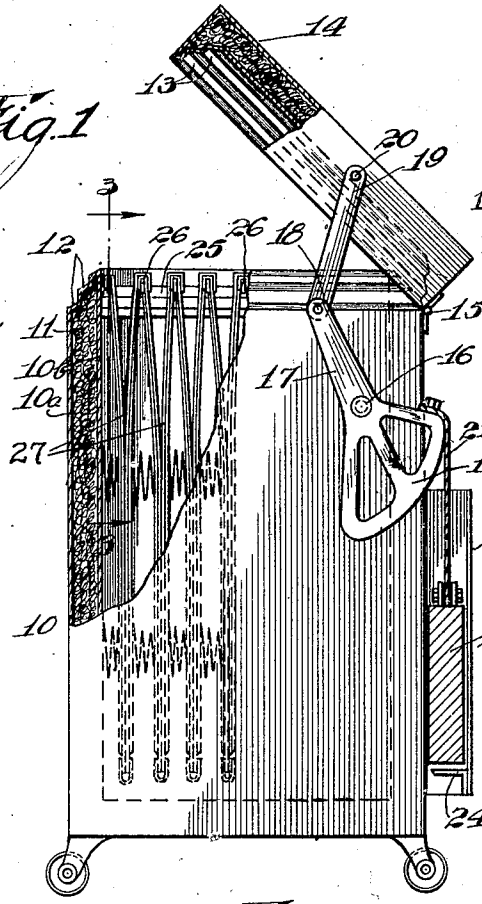


Fig. 3.

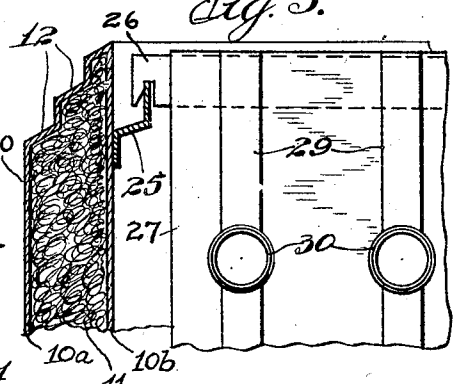


Fig. 2.

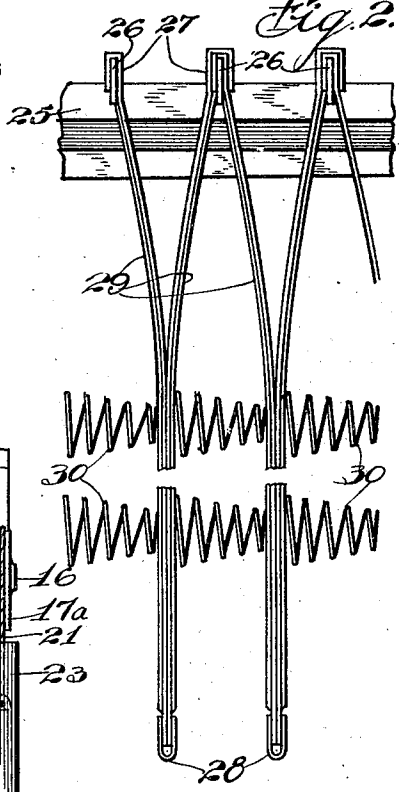
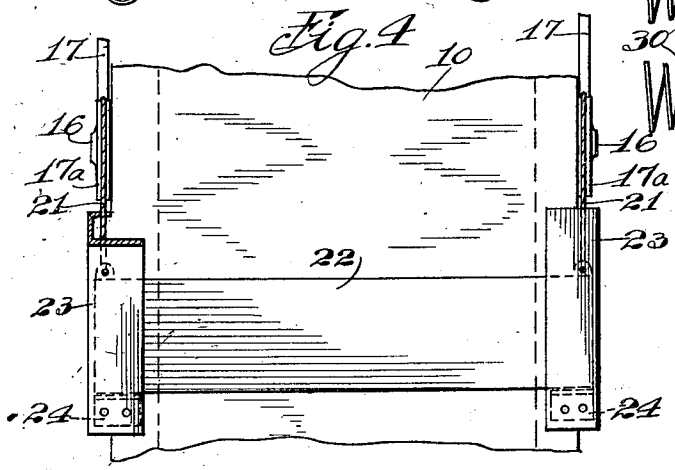


Fig. 4



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FILING SAFE.

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My invention relates to an improved construction of safe for filing papers, drawings, and other articles which are flat and susceptible of being filed in a vertical file, and which it is desired to positively protect from fire.

Heretofore, filing devices as far as I am aware, that have been proposed for the filing in vertical arrangement of papers, drawings, etc., have been limited in their application to constructions which at best have been but semifire-proof. That is to say, although the constructions may be made of sheet metal, and so somewhat fire resistant, they have not been fire-proof in the true sense of the word for the reason that safe constructions have heretofore involved limitations making them non-applicable to filing devices. To be fire-proof a safe must be relatively heavy, its walls must be of relatively thick metal for example sheet steel, and the walls must be spaced a substantial distance apart and filled with fire-proof material of one kind or another that will retard the passage of heat through the walls to a high degree. Safes constructed in this manner must have equally heavy doors which, in order to make them readily operable, have been mounted on hinges having vertical pivots or axes. A construction of this kind is not adapted to a vertical filing system in which it is necessary to open the top of the casing to get at the contents of the file and where it is necessary to economize room and have the container but little larger than the largest size of papers or other articles to be filed.

By my invention I provide a filing case or cabinet of standard safe construction with a hinged top and counter-balancing devices to counter-balance the weight of the top, so that the top may be of heavy safe construction and yet be readily raised from its closed position to its open position and as readily moved from its open position to its closed position. By my invention I preferably construct the counter-balancing devices so that the counter-balancing effect for the closed position of the cover of the casing, is somewhat less than the weight of the cover on the counter-balancing devices, as a result of which the cover will stay positively in its closed position and yet not require a great amount of effort to raise it; at the same time the construction of the counter-balancing devices is preferably such that for the fully raised position of the cover, the lifting effect of the counter-balancing devices is slightly greater than the tendency of the raised cover to move it to its closed position due to its weight, thus maintaining the cover in its open position, for which position however, but small effort is required to move the cover towards its closed position.

In the safe constructed as described, I provide filing pockets in vertical arrangement suspended on movable cross-bars to support the containers or pockets and preferably maintain the walls of each pocket in contact with each other or as nearly so as the contents will permit, by suitable spring mechanism between the pockets, the effect of which is to maintain the filed subject matter in vertical position and furthermore to maintain relatively small papers or filed articles in the top of the pockets where they are readily available.

My invention will best be understood by reference to the accompanying drawings, showing a preferred embodiment thereof in which

Fig. 1 shows my filing safe in side elevation and sufficiently in sectional view to illustrate the construction of the same,

Fig. 2 shows in side elevation two of the filing pockets removed from the casing,

Fig. 3 shows in front elevation a part of one of the filing pockets and the manner of supporting the pockets from the side wall of the casing, and

Fig. 4 is a partial rear elevation of the casing showing the manner of mounting the counter-weight employed.

Similar numerals refer to similar parts throughout the several views.

As shown in Fig. 1, the casing 10 consists of metal walls as indicated at 10^a and 10^b separated from each other a substantial distance, the space between them being filled with heat insulating material 11, for example asbestos or other mineral material. The sheet metal employed is preferably of considerable thickness as compared with the metal ordinarily employed in filing devices, for example it may be one quarter of an inch thick or thicker depending upon the degree of fire protection required. The construction described is employed on all sides of the casing as well as its bottom, and around its upper edge each wall is provided with a stepped construction as indicated at 12 to receive a similarly stepped construction 13 formed in the lower edge of the cover 14.

The cover 14 is hinged to the casing 10 at 15 and is built in the same manner as the casing and of the same material, so that when the cover is in its closed position, the stepped construction of the cover tightly fits the stepped construction of the casing and thus closes the casing practically air tight and results in a closed container equally impervious of the action of fire from any direction.

A filing device of the kind described is necessarily of considerable size to take care of large drawings, papers and other articles which are to be afforded positive protection from the action of fire on account of their value. In view of this, the cover of the casing is comparatively heavy and will weigh for the ordinary size casing, from two to three hundred pounds. To avoid the excessive labor of raising and handling the cover, which would be prohibitive under usual conditions of use of the filing safe without the aid of mechanical devices of some kind, I provide the cover with counter-balancing devices as follows: On each side of the casing I provide a substantial outwardly projecting stud 16, which is rigidly secured to the casing and on the stud I rotatably mount a lever 17 pivotally connected at 18 with the lower end of a link 19, the other end of which is pivotally connected with the cover at 20. The lever 17 is extended beyond its pivot stud 16 to form a sector 17ª having a curved periphery engaging a chain or other flexible connection 21 secured at its lower end to one end of a counter-balancing weight 22. The sector 17ª is of varying radius about the axis of the stud 16 for different points on the periphery of the sector, in such manner that taking into account the decreasing effort required to hold the cover in its raised position as it is moved towards its vertical position and also the greater advantage of the lever 17 in raising the cover as it approaches its vertical position, the turning moment exerted by the counterweight on the lever 17 for the open position of the cover indicated in Fig. 1, will be but slightly in excess of the force exerted by the weight of the cover in its open position, on the end of the lever 17 tending to raise the counterweight. Again the radius of the sector where it engages the chain 21 for the closed position of the cover 14 is such that the turning moment exerted by the counterweight 22 on the lever 17 is slightly less than the turning moment exerted on the lever 17 by the weight of the cover, as a result of which the cover remains positively in its closed position and will not open until a lifting effort is manually exerted on the cover. The effort required to be exerted on the cover to open it, will of course depend upon how securely it is desired to have the cover remain closed and it will at once be understood that the sector 17ª may be made so that a substantial amount of effort will be required to raise the cover 14 if desired, or that this lifting effort may be only a few pounds where there is no need for the cover to be held in its closed position with any greater amount of force.

The counter-balancing construction described is employed on each side of the casing and, as indicated in back view in Fig. 4, the chains 21 are secured to the ends of the counterweight 22, so that half of the weight of the counterweight is applied to each of said chains. Suitable guideways 23 are carried by the casing 10 to engage the ends of the counterweight and require it to move in a plane immediately back of the back wall of the casing and these guideways 23 are provided with stops 24 for supporting the counterweight in its lowermost position corresponding to the open position of the cover.

An important consideration in connection with filing cabinets generally is that they shall occupy no more floor space than necessary and that the floor space shall be but little greater than that actually required for the file itself. With a safe construction of the kind described, where the walls of the casing are necessarily comparatively thick, this consideration is of even greater importance and the use of a counterweight or counterweights that project beyond the outside of the casing is prohibitive on account of taking up necessarily more floor space than for the casing itself. With my improved counter-balancing devices, it will be noted that the floor space required for the device is not materially increased over what would be required for the casing itself, for the reason that the levers 17 may be made of small thickness and that the thickness of the counterweight and the projection of its guideways 23 is not greater than the overhang of the rear edge of the cover in its open position. The result is a construction of safe filing mechanism affording positive protection against fire, well adapted to filing purposes and economical of floor space.

To conveniently file papers and other flat articles in the casing, a supporting bar 25 is secured to the inner wall of each side of the casing in any suitable manner for example by riveting or welding, substantially parallel with the upper edge of the side wall to receive the notched ends of supporting bars 26 extending laterally across the top of the casing so that they may be freely moved from front to rear thereof on the supporting bars 25. Each of the bars 26 forms a support for one side of a pocket or container 27 of flexible material, for example fabric or press board as indicated in Figs. 1 and 2, the lower edges of the walls of each

pocket being connected by a looped strip of flexible material 28, preferably of fabric. Reinforcing strips 29 may be secured to the outer surfaces of the pockets to stiffen them if desired, and between the reinforcing strips of adjacent pockets, compression springs 30 are located to serve to maintain the pockets in compressed or collapsed condition to the extent that the contents of the pockets will permit. The springs are preferably of a kind that will compress into a minimum thickness, for example wire springs of helico-spiral formation so that in wholly compressed condition each spring will be no thicker than the wire of which it is made and thus that the space taken up by the springs may be a minimum when the pockets of the file are entirely filled.

The construction of filing pockets described serves to maintain the papers and other filed articles in flat condition and prevents the contents of any pocket from slipping to the bottom of the pocket, as a result of which any filed paper or article may be readily taken from the file or inserted therein at any time.

While I have shown my invention in the particular embodiment above described, it will be understood that I do not limit myself to this exact construction as I may employ equivalents known to the art at the time of the filing of this application without departing from the scope of the appended claims.

What I claim is:

1. As a means for counterbalancing a cover hinged to the top of the casing of a filing cabinet, the combination of levers pivotally supported on opposite sides outside of said casing, with links pivotally connecting said levers with said cover, said levers having sector extensions, flexible members secured to and depending from the peripheries of said sector extensions in a plane adjacent the back of said casing, a counterweight secured to the lower ends of said flexible members, guideways for said counterweight, and stops for said counterweight at the lower end of its travel, said counterweight exerting through said links upward pressures on said cover less than the pressures exerted on said links by said cover for nearly closed positions of said cover and a reversed relation of said pressures for open position of said cover.

2. As a means for counterbalancing a cover hinged to the top of the casing of a filing cabinet, the combination of levers pivotally supported on opposite sides outside of said casing, with links pivotally connecting said levers with said cover, said levers having sector extensions, flexible members secured to and depending from the peripheries of said sector extensions in a plane adjacent the back of said casing, a counterweight secured to the lower ends of said flexible members, guideways for said counterweight, and stops for said counterweight at the lower end of its travel.

3. As a means for counter-balancing a cover hinged to the top of the casing of a filing cabinet, the combination of levers pivotally supported on opposite sides of said casing, with links pivotally connecting said levers with said cover, said levers having sector extensions, flexible members secured to and depending from the peripheries of said sector extensions in a plane adjacent the back of said casing, a counterweight secured to the lower ends of said flexible members, guideways for said counterweight, and stops for said counterweight at the lower end of its travel, said sector extensions being of varying radius, the longer radii being acted upon by said counterweight for the closed position of said cover.

4. As a means for counter-balancing a deep cover hinged at its lower edge to the top of the casing of a filing cabinet, the combination of a counterweight back of the casing and movable vertically under the rear overhang of the cover in its open position, with devices connecting said counterweight and cover to exert upward pressure on the latter, said devices comprising pivotal supports carried by opposite sides of the cabinet near its upper end, levers rotatable on said supports, links pivotally connecting opposite sides of said cover with said levers, and members connecting opposite ends of said counterweight with said levers.

5. As a means for counter-balancing a deep cover hinged at its lower edge to the top of the casing of a filing cabinet, the combination of a counterweight back of the casing and movable vertically under the rear overhang of the cover in its open position, with devices connecting said counterweight and cover to exert upward pressure on the latter, said devices comprising pivotal supports carried by opposite sides of the cabinet near its upper end, levers rotatable on said supports, links pivotally connecting opposite sides of said cover with said levers, said levers having sector extensions on their ends remote from said links, and flexible members secured to said levers and passing around said sector surfaces and downwardly therefrom to said counterweight and secured to opposite ends thereof.

6. As a means for counter-balancing a deep cover hinged at its lower edge to the top of the casing of a filing cabinet, the combination of a counterweight back of the casing and movable vertically under the rear overhang of the cover in its open position, with devices connecting said counterweight and cover to exert upward pressure on the latter, said devices comprising pivotal supports carried by opposite sides of the cabinet

near its upper end, levers rotatable on said supports, links pivotally connecting opposite sides of said cover with said levers, said levers having sector extensions on their ends remote from said links, and flexible members secured to said levers and passing around said sector surfaces and downwardly therefrom to said counterweight and secured to opposite ends thereof, said sector extensions each being of varying radius angularly, thereby producing upward thrusts by said links for the closed position of said cover less than the downward thrusts produced by said cover on said links, and for the open position of said cover producing upward thrusts by said links greater than the downward thrusts produced by said cover on said links.

7. As a means for counter-balancing a deep cover hinged at its lower edge to the top of the casing of a filing cabinet, the combination of a counterweight back of the casing and movable vertically under the rear overhang of the cover in its open position, with devices connecting said counterweight and cover to exert upward pressure on the latter, said devices comprising levers on the outside of the cabinet on its opposite sides to make the overall width of the cabinet a minimum, and connections between the ends of said counterweight and said levers, said counterweight being of a thickness from front to rear containing it within the rear overhang of the cover in its open position, thereby reducing the weight of the cabinet and the floor space required by it to a minimum.

In witness whereof, I hereunto subscribe my name this 13th day of November, A. D. 1924.

CHARLES B. ULRICH.