L. V. METZGAR.

FLEXIBLE ROLL TOP OR SHUTTER FOR FIREPROOF CABINETS, &c.

APPLICATION FILED APR. 16, 1914.

1,110,219. Patented Sept. 8, 1914.

3 SHEETS—SHEET 1.

Fig. 1.

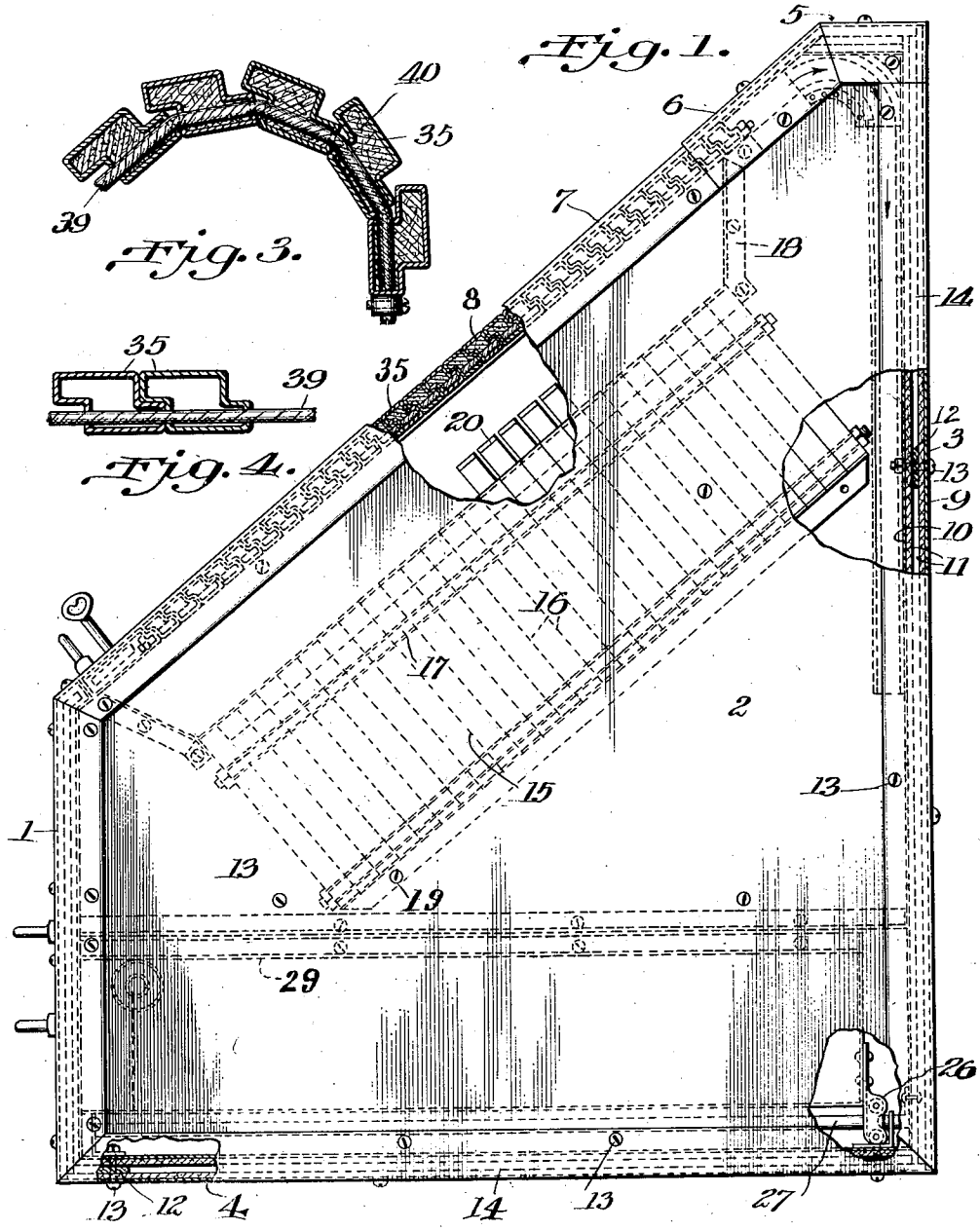



Fig. 3.




Fig. 4.




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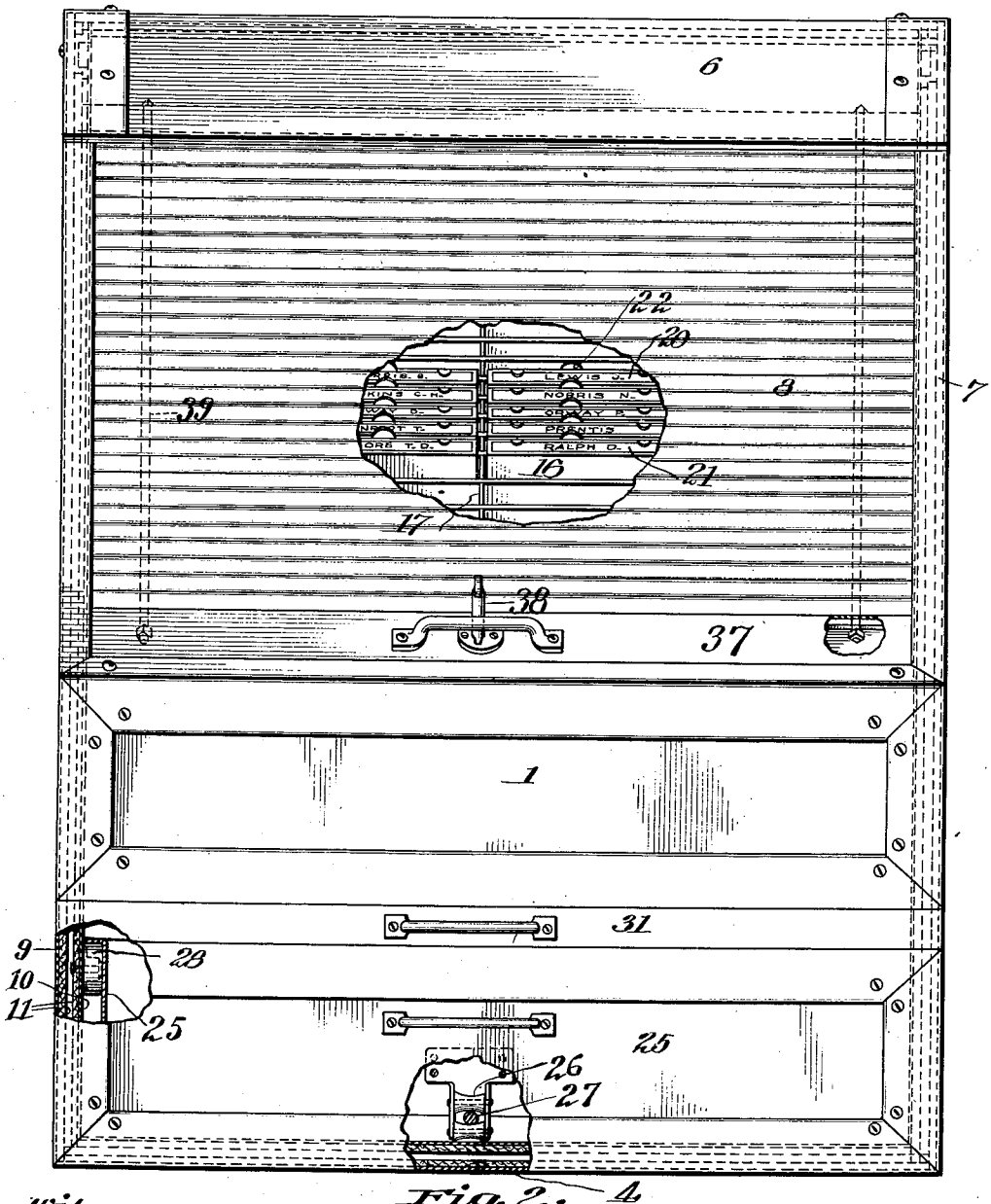



Fig. 2.

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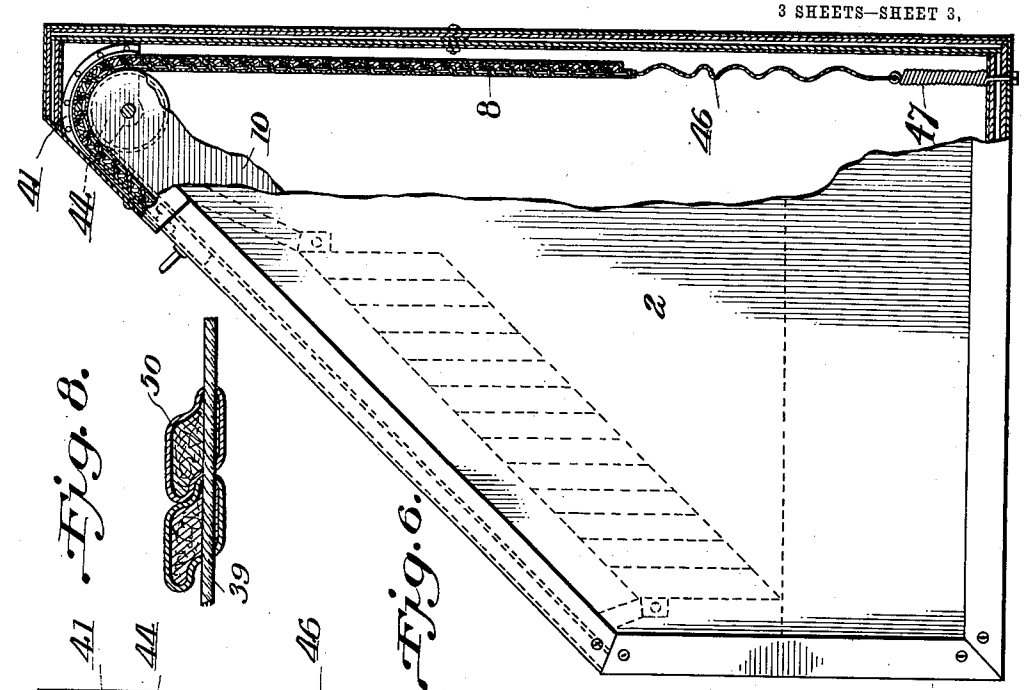



Fig. 6.




Fig. 8.

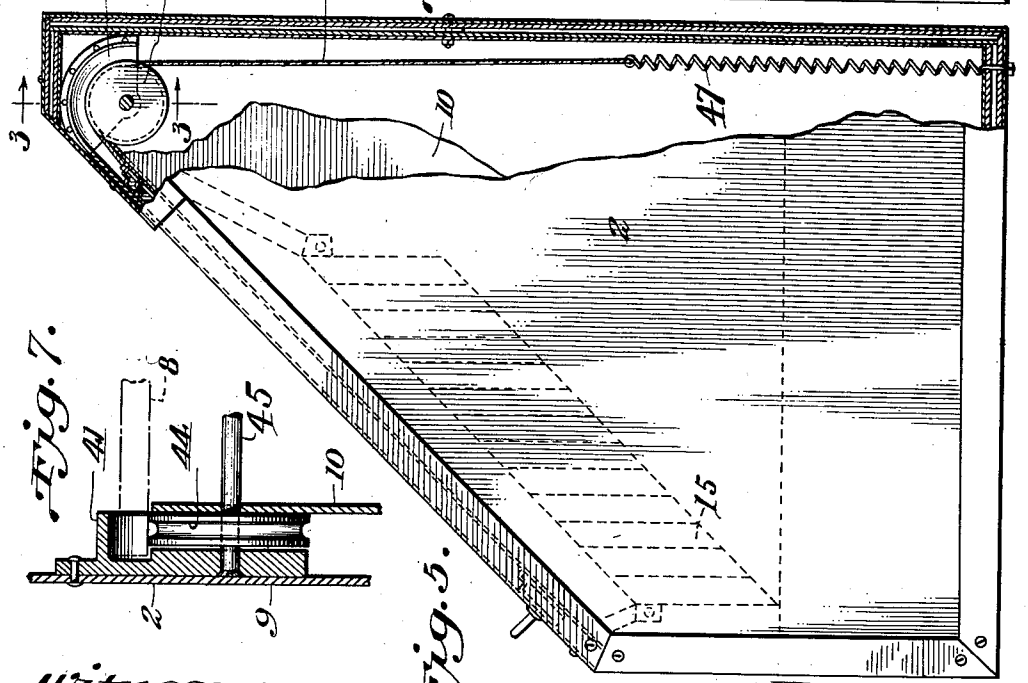



Fig. 5.




Fig. 7.

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# UNITED STATES PATENT OFFICE.

LEROY V. METZGAR, OF ELKHART, INDIANA.

## FLEXIBLE ROLL-TOP OR SHUTTER FOR FIREPROOF CABINETS, &c.

1,110,219. Specification of Letters Patent. Patented Sept. 8, 1914.

Application filed April 16, 1914. Serial No. 832,272.

*To all whom it may concern:*

Be it known that I, LEROY V. METZGAR, a citizen of the United States, residing at Elkhart, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in Flexible Roll-Top or Shutter for Fireproof Cabinets, &c., of which the following is a specification.

This invention relates to a roll-top or shutter for fireproof file cabinets and other structures, and particularly for cabinets intended for account books, loose-leaf slips, record books, and similar purposes; and it comprises such a flexible roll-top or shutter of fireproof construction, said flexible roll top or shutter being made up of hollow overlapping sections suitably secured together by metallic fastening means such as a continuous wire cable or cord extending through the inner portions of said sections, each of said sections being made of seamless drawn metal tubing suitably shaped so that the adjacent sections overlap each other; it further comprises such a roll-top or shutter having its sections filled with a heat insulating or fire resistant composition such as asbestos, etc.; it also comprises certain novel features of construction and arrangement of parts; all as more fully hereinafter set forth and as claimed.

The flexible roll top or shutter of the present invention is intended primarily for file cabinets, but can be used for other purposes where a fireproof flexible roll-top or shutter is desired.

Where the records of business transactions, and particularly of accounts such as those of retail stores, are kept in separate record books or in loose-leaf pads or slip holders, it is important that these records shall be protected from loss or destruction by fire. Where a large but cumbersome safe is available, such records are usually put away at night in such safe. This however involves frequent handling of the records with danger of loss during such handling. It is one of the objects of the present invention to provide a fire-proof cabinet which shall be of fire-proof but nevertheless portable construction, which will effectively protect the records within it from fire, which is easy of access, and in which the record books or loose-leaf slip holders or pads, etc., can be continually kept except when actually in use. and easily removed and replaced when desired. It is a further object of the present invention to provide such a cabinet which shall have a flexible top or shutter which can be readily opened and closed, but which will effectively protect the contents of the cabinet from fire when in a closed position. Other objects of the invention will more fully and clearly hereinafter appear.

I will now proceed to describe my invention more particularly in connection with the embodiments thereof illustrated on the accompanying drawings. It will be understood that the invention is illustrated by, but is not limited to, the embodiments so illustrated and described.

In the accompanying drawings: Figure 1 shows a cabinet embodying the invention, this view being a side elevation with parts broken away; Fig. 2 is a front elevation, with parts similarly broken away; Fig. 3 shows the preferred embodiment of the flexible shutter or roll-top structure in section, this section being taken along the flexible cable uniting the elements of this top; Fig. 4 shows a modification of the flexible top in section; Fig. 5 shows, somewhat diagrammatically, a modified construction of the invention; Fig. 6 shows the modification of Fig. 5 with the flexible top open; Fig. 7 is a detail view taken on the line 3—3 Fig. 5; and Fig. 8 shows a further modified construction of the flexible roll-top or shutter.

The cabinet illustrated on the accompanying drawings is made up of a front wall 1, side walls 2, rear wall 3, bottom 4, and top 5 having a forwardly and downwardly extending projection 6, these walls being of suitable fire-proof construction to be more fully hereinafter described. The sides of the cabinet are inclined at their upper ends as at 7 and the roll-top or flexible shutter 8 is mounted to close the inclined top or front portion of the cabinet. Certain parts of Figs. 1 and 2 show the outer walls of the cabinet broken away in order to disclose the fire-proof construction. In the embodiment of the invention illustrated these walls are made up of an outer wall 9 of sheet steel, an inner wall 10 also of metal, and between these two walls two heavy thicknesses of asbestos or other suitable insulating material 11 between which is a suitable air space. The walls are suitably fastened together by bolts 13, these bolts being surrounded with suitable washers or packing 12 also of asbestos or similar insulating material. The side

and bottom walls of the cabinet are shown as provided with suitable corner plates 14 for uniting the fire-proof walls by means of suitable bolts or other fastening means.

Inside the cabinet is arranged a cellular structure or other suitable structure 15 for holding the account books or slip holders or other desired records, this cellular structure being shown as made up of cross plates or bars 16 spaced by suitable spacing bars or bolts 17, these cross plates and spacing plates or bolts dividing the structure into a plurality of compartments which in the preferred embodiment of the invention are arranged in a plane substantially at right angles to the inclined top of the cabinet. This cellular structure is suitably supported by brackets 18 and by screws 19 extending through the walls of the casing, or by other suitable means. Suitable pads such as manifolding or duplicating pads, or suitable loose-leaf slip holders, or other record books are shown at 20 inserted in the sections of the cellular compartments, these pads or holders being provided with suitable index or name cards 21 and with suitable projections 22 by means of which they are readily removed when desired. In the lower portion of the cabinet is arranged a suitable drawer 25 of suitable metallic fire-proof construction, this drawer being guided and mounted on the rollers 28 and the guides 29 at the top of the drawer and the rod 27 at the bottom of the drawer, rollers 26 being fastened at the rear end of the drawer and arranged to engage with this rod to facilitate the movement of the drawer and to prevent it from being completely removed except when desired.

In the preferred embodiment of the flexible roll-top or shutter structure this structure is made up of hollow sections or elements 35 of seamless drawn metal tubing. These hollow sections can be made by bending drawn tubing, or by drawing such tubing, into the desired form. For portable cabinets for general office use the round tubes may for example be of about seven-eighths inch diameter before being drawn through special dies into the particular shape desired. It will be seen that these sections are made so that they inter-engage with or overlap each other and form when united together a continuous shutter. In the embodiment of the invention illustrated in Fig. 3 these hollow sections are filled with a suitable insulating and fire resistant material such as asbestos. In joining the sections of this flexible top together suitable fire-proof means is used so that the shutter as a whole is of fire-proof construction. As shown in Figs. 3, 4 and 8 a suitable flexible wire cable 39 passes through the lower portion of each section, holes being drilled through the walls of the hollow sections for this purpose. These flexible straps or cables which unite the sections are of such size and construction that they give the desired flexibility and elasticity without permitting the sections to separate to too great an extent from each other. The ends of this cable may be secured in any suitable manner, clamps being shown in Fig. 3 for this purpose. The flexible shutter as a whole is made up of these hollow sections and of the bottom hollow section 37 which may similarly be filled with asbestos and which may be provided with a suitable handle and lock, as will be understood, a key for this lock being indicated at 38. The top of the cabinet is provided with suitable guides 41 for guiding the flexible top as it passes over the top of the cabinet. It will be seen that the arrangement of the flexible metallic cable 39 at the lower portion of the hollow sections permits these sections to be flexed in the manner indicated in Fig. 3 but prevents them from being flexed in the opposite direction, the arrangement of this cable in the center of the lower extensions enabling the downward bending of these sections with respect to each other but preventing the upward bending. This is particularly desirable because of the weight which is frequently placed upon such shutters, and which weight is supported not only by the hollow sections themselves but also by the cable which has but slight extensibility, but which has a very considerable tensile strength. In Fig. 4 the hollow sections 35 of the flexible top are shown as hollow and without any filling of asbestos. When the cabinet is constructed with a flexible top without such filling it is still a fire-proof cabinet, and I consider such a cabinet included in the present invention, although as I have already pointed out I consider the embodiment of Figs. 3 and 8, containing asbestos or other suitable insulating material, the preferred embodiment. In Fig. 8 the hollow sections are shown as having their interengaging or overlapping flanges rounded so that these sections have a more nearly rolling contact with each other, the sections tending to roll on each other with the flexible cables acting as the means for holding these sections in the desired relative position.

In Figs. 5, 6 and 7 has been shown, somewhat diagrammatically, a cabinet provided with a similar flexible top and in addition with means to counterbalance this top when in its lowered position. In cabinets of considerable size it is sometimes desirable that the entire weight of the flexible top shall be restrained from free downward movement when the top is being closed. Since such tops are of considerable weight, particularly in the larger size cabinets, these tops if permitted to slide without restraint would tend to close with too great force. In order to

prevent this action a counterbalancing means has been shown in this embodiment of the invention which will act to retard and prevent such operation. While different counterbalancing means can be used without departing from the intended scope of the invention, that which is illustrated is made up of the spring 47 connected by means of the cord 46 to the upper end of the flexible top, so that when this top is closed the extension of the spring tends to counterbalance and retard the free movement of the flexible top, so that the force of its movement is thus broken. Moreover this spring acts also as a counterbalance in the opening of this flexible top making the force necessary to be applied correspondingly less. In order further to facilitate the operation of this flexible top there is shown in Figs. 5 to 7 a roller 44 at each side of the cabinet, this guide roller being arranged so as to support the flexible top as it passes through the guides 41 at the top of the cabinet. These rollers may be connected together by a rod 45 which equalizes their movement and may also be provided with suitable grooves for the cords by means of which the counterbalancing springs are attached. It will be understood that the invention is illustrated by, but is not limited to, the specific structure of such rollers and guides or of the particular counterbalancing means illustrated and described. The spring 47 is shown as suitably attached at the bottom of the casing, and it will be seen also that this spring operates in the back part of the casing where its operation does not interfere with the use of the cabinet as a whole for its intended purposes.

The walls of the cabinet are advantageously constructed of high grade sheet steel capable of withstanding severe fire tests, and the flexible shutter is similarly advantageously constructed of such material. In the preferred embodiment of the invention the walls are lined with double layers of asbestos or similar fire-proof and fire resistant material between which is a dead air space, and the flexible top is similarly provided with an asbestos or other filling so that as a result it is possible to construct the cabinet so that it can be brought to a white heat without injury to the contents. The spacing away of the cellular structure from the side walls makes it impossible for heat to be conducted from the side walls or the flexible cover to the cellular structure.

It will be understood that when the flexible top is open the account books or pads or loose-leaf slip holders can be readily inserted and removed. These can be conveniently arranged in alphabetical order with a separate book or holder for each customer. It is thus possible to use the cabinet continually and to replace each book or holder when it is no longer desired for use. Loss of the individual holders is thus minimized, it being possible, because of the light and portable construction of the cabinet to carry the same from place to place and to keep it in the most convenient location; while the contents are nevertheless protected because of the fire-proof construction, it being necessary only to close the flexible top in order to secure such protection. It is thus possible, as has previously been pointed out, to secure much the same protection that is secured in the much larger and much more cumbersome office safes with which it is necessary to remove the records each morning and replace them each night, or to remove and replace them when needed, the records when removed being no longer protected and being liable to be misplaced and lost. Moreover with such a safe which is incapable of being readily moved, it is necessary to carry the records often to a considerable distance, while with the cabinet of the present invention, which is of a readily portable construction, it is possible to move the cabinet to the place it is desired to be used, and thus to use the cabinet for storing the records in their regular place except at such times as they are in actual use.

The arrangement of the cellular structure shown in Fig. 1 is particularly advantageous since the account books or trays are arranged at right angles to the flexible inclined cover so that when the cover is open the tops of these books or trays are readily visible. These books and trays can however be arranged in a vertical cellular structure as indicated in dotted lines in Fig. 5 where a larger number is desired in a cabinet of the same size, but the arrangement of Fig. 1 is in many cases more advantageous because of the facility which it offers for ready inspection of the label cards on the ends of these books or trays. A suitable shelf 31 may be arranged below this cellular structure for use in connection with the record books or for other purposes, suitable guides 30 being provided for this shelf. In the drawer 25 may be kept other records such as card indexes, etc., which may be used in connection with the record books or trays of the upper cellular structure. It will be understood that the size and arrangement of this shelf and drawer as well as of the cellular structure can be changed without departing from the intended scope of the invention. It will also be understood that the cabinet can be made in larger or smaller sizes as may be desired, and that the walls can be made of thinner or thicker material, the size and construction being capable of being varied to suit widely different demands and conditions of use. While the flexible top or shutter has been shown as arranged on a particular incline, yet it will be understood that this inclination can

be varied, the so-called top of the cabinet forming as well a part of the front of the cabinet, and the construction and operation of the flexible top or shutter being the same whether it be considered as arranged at the top or at the front of the cabinet.

Variations and modifications can be made in the specific embodiments illustrated and described without departing from the intended spirit and scope of the invention, it being intended and understood that the invention is illustrated by but is not limited to the specific embodiments thereof shown and described.

While the invention has been described more particularly in connection with a file cabinet, yet it will be understood that the flexible roll-top or shutter of the present invention can be used for other similar purposes where a flexible fireproof shutter or roll-top is desired.

I claim:

1. A flexible roll-top or shutter comprising rigid overlapping metallic sections made of seamless drawn metal tubing, the sections of said shutter each being provided with hollow extensions overlapping similar extensions on the adjoining sections, and metallic means for uniting said sections to form a flexible shutter.

2. A flexible roll-top or shutter comprising rigid overlapping metallic sections made of seamless drawn metal tubing filled with a heat-insulating material, the sections of said shutter each being provided with hollow extensions overlapping similar extensions on the adjoining sections, and metallic means for uniting said sections to form a flexible shutter.

3. A flexible roll-top or shutter for fireproof cabinets and similar structures comprising rigid overlapping metallic sections made of seamless drawn metal tubing, the sections of said shutter each being provided with hollow extensions overlapping similar extensions on the adjoining sections, said sections being provided with openings near their inner sides in alinement with each other, and a flexible metallic cable extending through said openings and uniting said sections.

4. A flexible roll-top or shutter for fireproof cabinets comprising rigid overlapping metallic sections, each of said sections being made up of a seamless drawn metal tube having a central portion of uniform thickness and having at the top of one side and the bottom of the other extensions arranged to overlap corresponding extensions on the adjacent sections, said sections being filled with heat-insulating material and having openings near their inner sides in alinement with each other, and a flexible metallic cable extending through said opening and surrounded by said heat-insulating material.

5. A fireproof shutter or roll-top section made of rigid seamless drawn metal tubing having a central portion of substantially uniform thickness and having at the top of one side and the bottom of the other side thereof extensions adapted to overlap the corresponding extensions of other sections when used in such shutter or roll-top construction, substantially as described.

6. A fireproof shutter or roll-top section made of seamless drawn metal tubing having a central portion of substantially uniform thickness and having at the top of one side and the bottom of the other side thereof extensions adapted to overlap the corresponding extensions of other sections when used in such shutter or roll-top construction, said section being filled with a heat-insulating material and having near its lower portion holes for the passage therethrough of a suitable fastening means, substantially as described.

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

LEROY V. METZGAR.

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M. L. COCHRAN,
F. M. SWINEHART.