

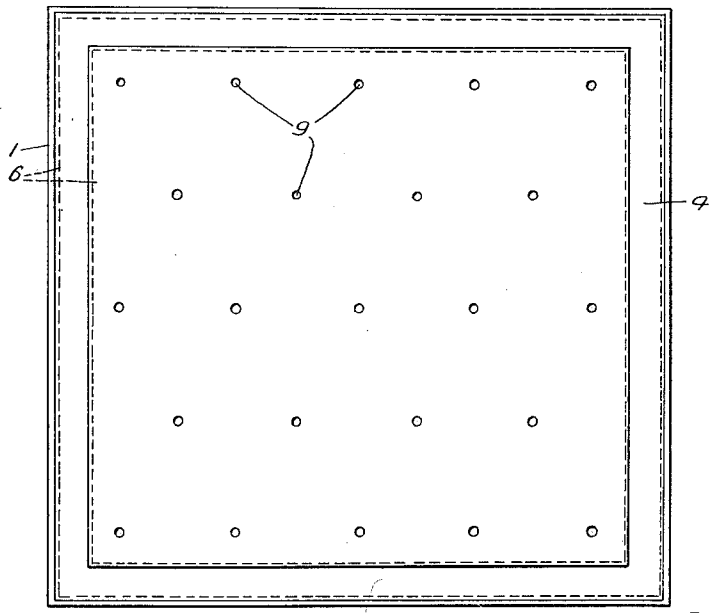
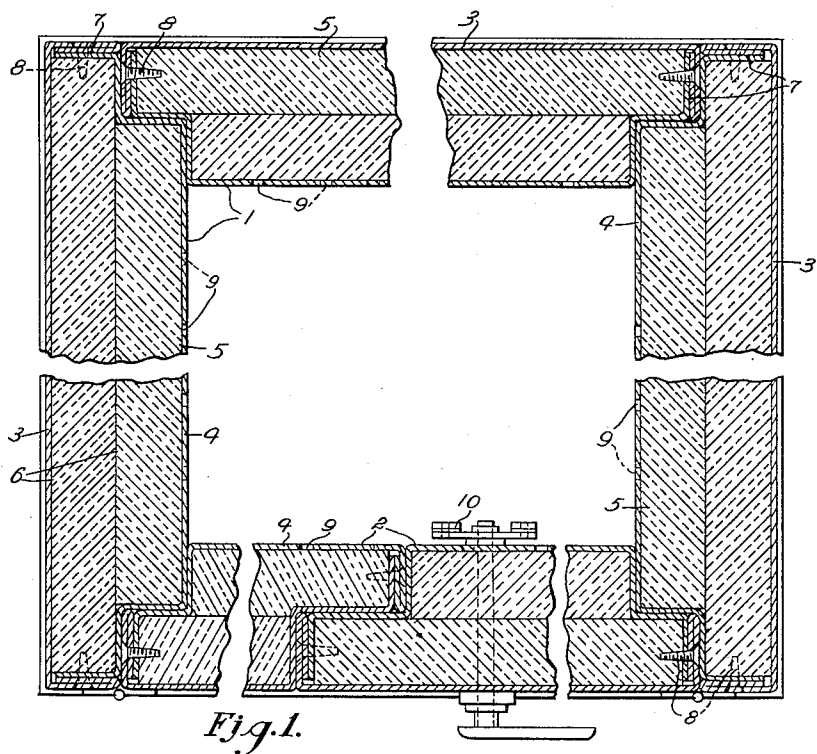
Dec. 27, 1949

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2,492,422

FIRE RESISTANT RECEPTACLE

Filed March 21, 1945



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Patented Dec. 27, 1949

2,492,422

UNITED STATES PATENT OFFICE

2,492,422

FIRE RESISTANT RECEPTACLE

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Application March 21, 1945, Serial No. 583,972
In Canada March 7, 1945

1 Claim. (Cl. 109—84)

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This invention relates to filing or storage receptacles or cabinets and more particularly to a substantially fireproof construction therefor.

It is an object of this invention to provide a fire resistant structure for receptacles adapted to contain papers and the like whereby such contents, although normally subject to charring, are maintained free from injury despite subjection of the outer walls of the cabinet to high temperatures such as might occur during fires. Another object is to provide a cabinet of this nature having a simple and inexpensive structure which lends itself readily to repair following injury from fire or the like.

The use of gypsum as a heat insulating and fire protective material is well recognized and it is also well known that, if gypsum is subjected continuously over a long period to a temperature of 160° F., or at higher temperatures for shorter periods, it will calcine, i. e. give up its water of crystallization.

The invention contemplates the provision of a receptacle including fire resistant material such as gypsum, adapted to evolve water vapour on heating thereof and of means for permitting such vapour to enter the interior of the cabinet and to provide a protective body of vapour surrounding the contents of the cabinet, such vapour body maintaining its normal temperature of 212° F. regardless of the temperature outside the cabinet.

In accordance with the invention, it is proposed to employ a filling of gypsum or like material in the walls of a cabinet, such filling being of sufficient thickness that, on exposure of the exterior of the cabinet to high temperatures (1000° F. to 2600° F.) such as might be experienced during fires, it will prevent the interior of the cabinet from attaining a destructive temperature of, say, 350° F., for a sufficient period of time to permit the calcination of the gypsum and the formation of the protective vapour body referred to above. Tests have shown that a thickness of gypsum of about one inch is satisfactory for the purpose described.

Other objects, advantages and details of the invention will be apparent from the following description, with particular reference to the accompanying drawing, in which,

Figure 1 is a sectional plan view of a cabinet constructed in accordance with the invention, and

Figure 2 is an elevation of one of the wall sections of such a cabinet.

In the drawing, the cabinet shown comprises

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various wall sections 1 and doors 2. Each wall section and door comprises an outer casing 3, an inner casing 4, and a filling 5 between the casings of a material containing water of crystallization, such as gypsum. The casings 3 and 4 may be of any satisfactory material, such as metal, plastic composition and the like. As shown, the filling may conveniently comprise two superimposed sheets 6 of gypsum. Use of such two sheets renders convenient the formation of the lap joints at the corners of the panels, as illustrated. Each sheet may be of approximately ½ inch thickness. The inner and outer casings have overlapping joints 7 and the panel may be secured in assembled relation by means of screws 8 extending through the overlapped joints.

The interiorly exposed face of each inner casing is provided with a plurality of holes or openings 9. These holes may be approximately two inches apart in staggered rows, as clearly shown in Figure 2. The openings or perforations may be about ⅜" in diameter.

Any suitable locking means, such as indicated at 10, may be provided for the doors.

When the cabinet is exposed to substantial heat of, for instance, 1000° F. or higher, such as might be experienced in a fire, the gypsum filling will prevent the interior of the cabinet from attaining destructive temperatures of say, 300° F. or higher, for a reasonable space of time, during which time calcination of the gypsum takes place. As the water of crystallization vaporizes, the water vapour so produced passes into the interior of the cabinet through the holes 9. Thus, when the temperature of the interior of the cabinet would normally tend to rise to a destructive degree, a protective body of water vapour has been formed about the contents of the cabinet. This protective vapour body surrounding the contents of the cabinet will not rise in temperature above its normal temperature of 212° F. and thus maintain the contents free from injury by charring.

Following exposure to fire, the cabinet and panels may be readily dismantled and new sheets of gypsum inserted in the panels.

It will be apparent that various changes may be made in the described details without departing from the spirit of the invention.

I claim:

In a fire resistant storage receptacle a fire resistant wall panel comprising a pair of superimposed gypsum boards, each of said boards being not substantially less than one-half inch

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in thickness, one of said boards being smaller than the other board and having its edges inset with respect to the edges of the other board, a pair of sheets completely enclosing said boards, said sheets having overlapping edges removably secured together, one of said sheets having a plurality of perforations therein.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
3,117	Fitzgerald	June 1, 1843

4

Number	Name	Date
28,756	Jenkins	June 19, 1860
195,577	Collins	Sept. 26, 1877
268,819	Nolan	Dec. 12, 1882
1,004,612	Wilder	Oct. 3, 1911
1,015,984	Wilson	Jan. 30, 1912
1,054,325	Wege	Feb. 25, 1913
1,336,347	Dick et al.	Apr. 6, 1920
1,688,849	Bellamore et al.	Oct. 23, 1928
1,701,323	Fredenhagen	Feb. 5, 1929
1,907,414	Antrim	May 2, 1933
1,937,931	Wolters	Dec. 5, 1933
1,961,022	Teller et al.	May 29, 1934
2,094,740	Green	Oct. 5, 1937
2,194,301	Fourness et al.	Mar. 19, 1940
2,390,732	Page	Dec. 11, 1945