Dec. 30, 1941. F. E. BAKER 2,267,891

PORTABLE DESK

Filed Oct. 20, 1939 3 Sheets-Sheet 1

FIG. 2

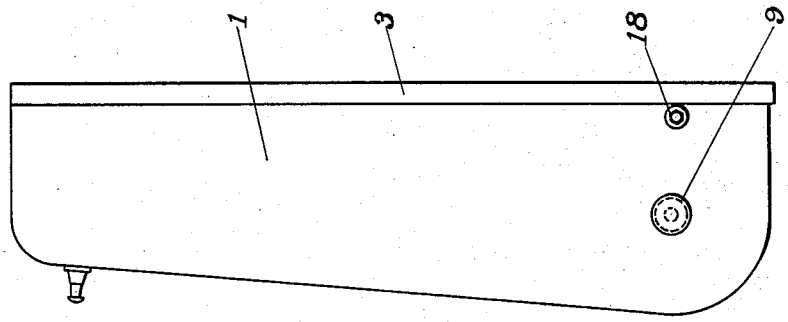
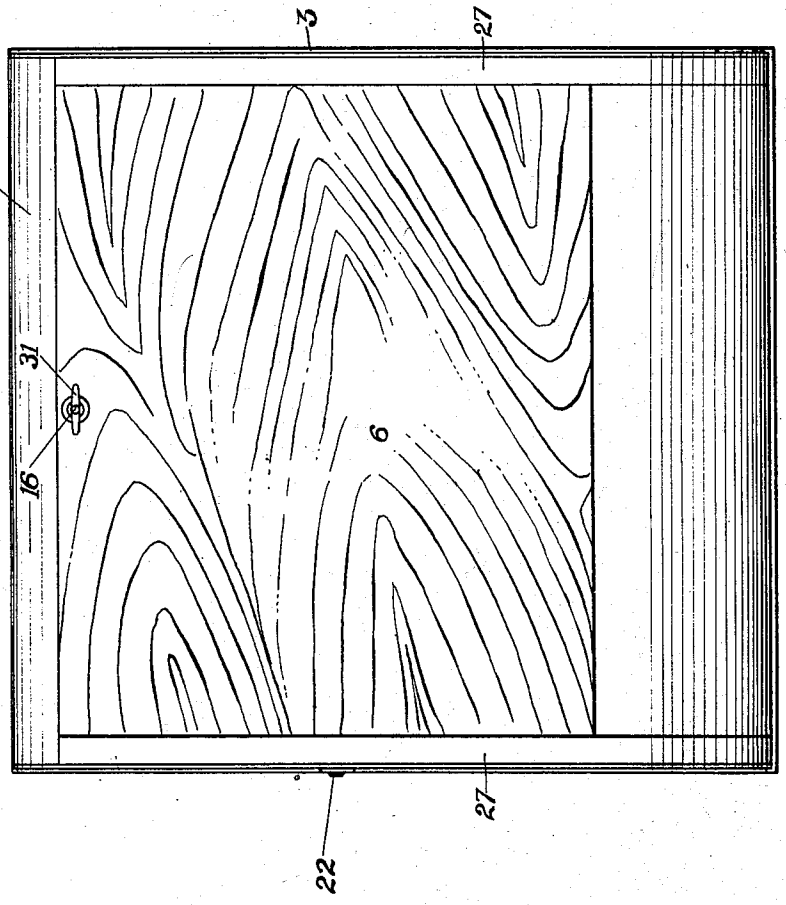


FIG. 1



INVENTOR
FRANK E. BAKER
BY
Stoddard.
ATTORNEY

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Filed Oct. 20, 1939 3 Sheets-Sheet 2

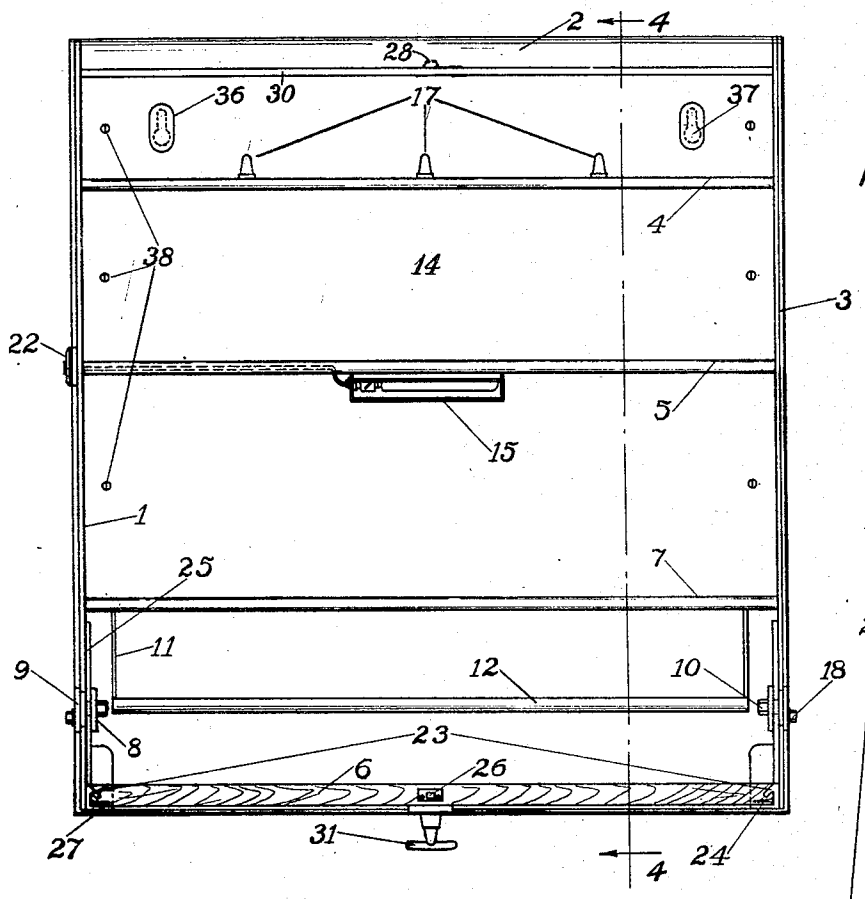


FIG. 3

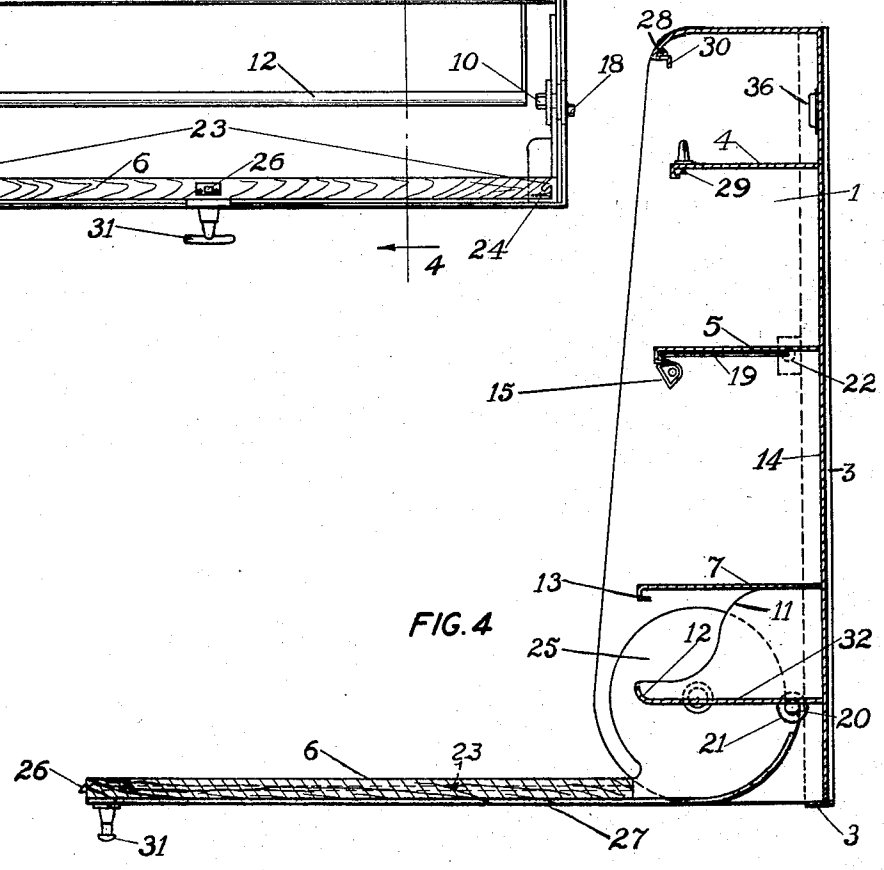


FIG. 4

INVENTOR
FRANK E. BAKER
BY
B. F. Stoddard.
ATTORNEY

Dec. 30, 1941. F. E. BAKER 2,267,891

PORTABLE DESK

Filed Oct. 20, 1939 3 Sheets-Sheet 3

FIG. 7

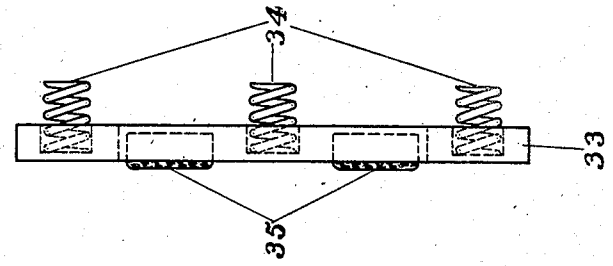


FIG. 6

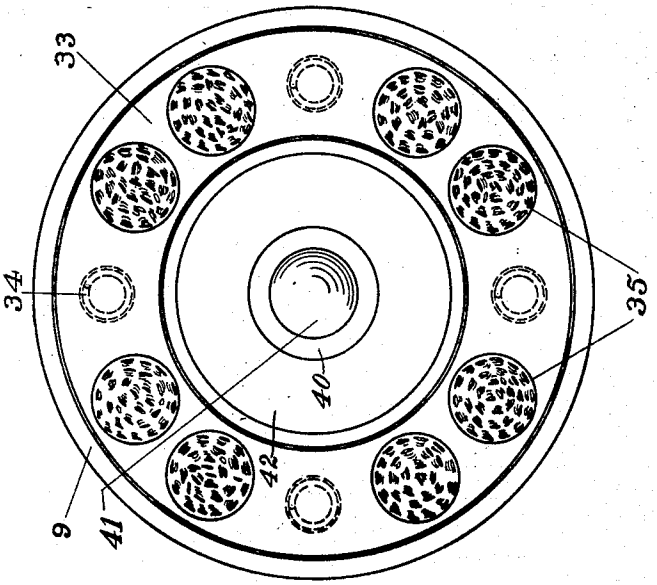
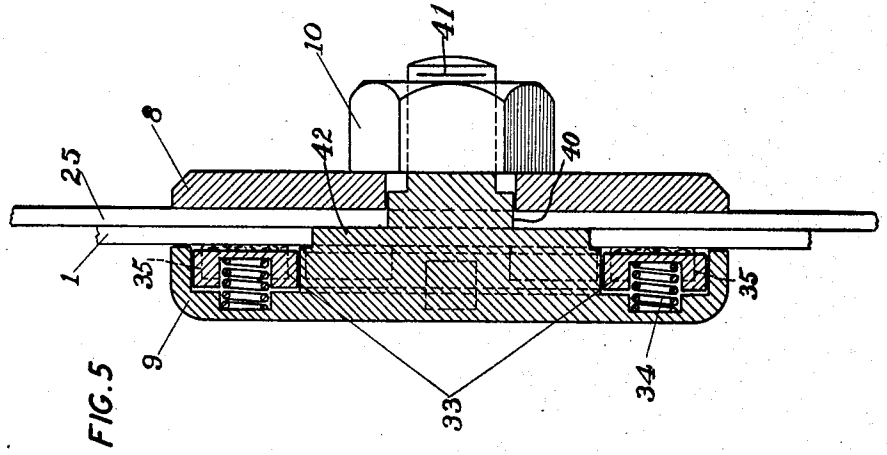


FIG. 5



INVENTOR
FRANK E. BAKER
BY
Stoddard.
ATTORNEY

Patented Dec. 30, 1941 2,267,891

UNITED STATES PATENT OFFICE

2,267,891

PORTABLE DESK

Frank E. Baker, Oakfield, Maine

Application October 20, 1939, Serial No. 300,349

2 Claims. (Cl. 45—69)

This invention relates to a useful article of furniture for performing the combined functions of a bookcase, desk, and drawing board.

An object of this invention is to provide an engineer, especially a construction engineer in a temporary construction camp, with a readily portable article of furniture for serving as a combined bookcase, desk, and drawing board which can be easily and quickly secured to trees or to the walls of a rough shack without taking up much space.

Another object of the invention is to provide a novel design for this combined bookcase, desk, and drawing board which will be both dust-proof and water-tight and of compact and sturdy construction for enabling it to be transported from camp to camp without incurring damage due to rough treatment.

Still another object of the invention is to provide the lid of the device with sturdy trunnion hinges of novel design and of practically indestructible construction.

A further object of the invention is to provide the trunnion hinges with friction rings carrying friction members, preferably of cork, for producing, when the lid is raised or lowered, a retarding friction which prevents the lid from either slamming shut or violently falling open and thereby avoids damage to the drawing board that might otherwise be caused by careless manipulation.

These and other objects of the invention are attained by molding the fireproof body of the desk from a large sheet of steel, the side edges being reenforced with an angle iron. Welded to the inside of this body are metal shelves for supporting books and rolls of drawings. The lid of the desk comprises a wooden drawing board enclosed in a metal frame of angle irons. Since the desk is designed to be adapted for outdoor use, the angle irons forming the border of the lid have flanges along their outside edges for effecting a dust-proof and water-tight seal of the shelf compartment. Each of the angle irons along the two sides of the lid has a large disk formed at the lower end of its flange for enabling the lid to be mounted on two hinges of novel construction.

Each hinge comprises a trunnion having a relatively large head with a peripheral flange retaining a friction ring. The outer face of this friction ring has a plurality of sockets with friction members, preferably composed of cork, mounted therein and protruding beyond the surface of the ring. The inner face of the friction ring has a plurality of sockets with coil springs mounted therein and extending beyond the surface of the ring. The portions of the coil springs that extend beyond the friction ring fit into sockets in the head of the trunnion. The shaft of the trunnion is journaled in one of the sides of the body of the desk and one of the disks formed at the end of a side flange of the lid is also mounted on the shaft and is held in place by a washer and a nut. By means of this construction, the coil springs press the cork friction members against the outer side of the body of the desk for producing a retarding friction when the lid is moved thereby preventing the lid from slamming shut or violently falling open.

These and other features of the invention will be described in detail in connection with the following detailed description of the drawings in which:

Fig. 1 represents a front view of the desk with the lid in its closed position;

Fig. 2 is a side view of the desk with the lid closed;

Fig. 3 is a front view of the desk with the lid in its open position and illustrates the construction of the shelf compartment with its shelves, instrument tray, and lamp;

Fig. 4 is a cross-sectional side view of the desk with its lid open and shows the shelves, instrument tray, and the flange on the lid with its disk;

Fig. 5 is a cross-sectional end view of the hinge construction;

Fig. 6 is a front view of one of the trunnion hinges showing one of the friction rings with its cork friction member; and

Fig. 7 is a cross-sectional view of the friction ring with its cork friction members and coil springs.

Considering now Figs. 1 to 4, inclusive, the fireproof body of the desk is shown to comprise two side members 1—1 with a top member 2 extending therebetween. Both side members 1—1 and top member 2 are preferably formed from a sheet of steel which also serves as the back member 14 of the shelf compartment. The abutting edges of side members 1—1 and top member 2 are welded together. As a reenforcing means, an angle iron 3 is secured, preferably by electrical welding, to the two outside rear vertical edges and also to the rear bottom edge of the back member 14, as is shown in Fig. 3. The front of the shelf compartment is provided with a movable lid comprising a wooden drawing board 6, pivotally secured to the side members

1—1 by novel hinge means including a washer 8, a trunnion 9, and a nut 10 for joining them together. This novel hinge will be described in detail hereinafter. If desired, the desk may be made completely fireproof by impregnating the wooden drawing board 6 with a suitable chemical solution for rendering it non-inflammable.

Attached to the inside of the shelf compartment by any suitable means, such as welding, are three shelves 4, 5, and 7, preferably of steel plate. Molded along the front edge of each shelf is an angle 13 which serves as strengthening means. Secured beneath the bottom shelf 7 by any suitable means is an instrument tray comprising two end members 11—11 and a bottom member 32 which is curved upward along its front edge, as is indicated at 12. This curved edge 12 prevents pens and pencils from rolling out of the tray and also enables them to be easily removed therefrom.

Shelves 4, 5, and 7 constitute a bookcase for supporting books and rolls of blue prints and drawing paper. If desired, the top shelf 4 may be reserved for the storage of such rolls of paper in which case it is provided with round conical guard members 17, preferably of rubber, to prevent the rolls of paper from rolling off shelf 4. Each of the guard members 17 has vulcanized therein the upper portion of a stud. The lower portion of the stud projects beyond the rubber and is threaded. Shelf 4 has a series of perforations along its front edge for receiving the threaded portions of these studs which are secured in place by nuts 29. Shelves 5 and 7 are also perforated along their front edges for adapting them to receive similar guard members in the event that it is desired to store rolls of paper on these shelves. However, if shelves 5 and 7 are used to support books, the use of such guard members on these shelves would not be necessary.

Attached to the underneath surface of shelf 5 is a lighting fixture 15 which is supplied with a tubular shade having a rectangular opening. This shade is adjustable and is so designed that by manually turning the shade it will reflect a beam of light on either a portion or all of the drawing board 6. Lamp 15 is also so designed that it furnishes sufficient illumination to enable one to read the titles of the books on shelves 5 and 7 but does not allow the light to shine into the eyes of the person using the desk. The electrical conductors extending from the lighting fixture 15 are preferably enclosed in a metal conduit 19 leading to an outlet 22 to which a standard leader plug may be attached to conduct current thereto.

The drawing board 6 is provided with a groove along each of its side edges for receiving and retaining flanges 23—23 of angle irons 27—27. This drawing board 6 is securely positioned in respect to angle irons 27—27 by two screws 24—24 each of which passes through the front end of an angle iron 27 and into a front corner of the drawing board 6 thereby holding it in proper relation to the front of the desk. As these screws 24—24 only pass through its front corners, expansion and contraction of the wood of the drawing board 6 occurs without causing any damage or throwing drawing board 6 out of line or out of square.

The angle irons 27—27, to which drawing board 6 is attached, extend into the inside of the shelf compartment where each flange of angle irons 27—27 is enlarged to form large disks 25—25. These disks 25—25 serve to support irons 27—27 and drawing board 6 in the hinges which will now be described with particular reference to Figs. 5, 6, and 7. Since each hinge is similarly constructed, the description, for the sake of simplicity, is directed to the left disk 25 and its hinge.

As is shown in Fig. 5, the left disk 25 is mounted along with a washer 8 upon the shaft 40 of a trunnion 9. Shaft 40 has a slightly narrower extension 41 which is threaded and has a nut 10 mounted thereon. Nut 10 is turned on shaft 40 as far as possible to cause washer 8 to force disk 25 against the shoulder 42 of shaft 40 so tightly that disk 25 cannot be moved without also moving trunnion 9. This shoulder 42 is journaled in side member 1 and is free to rotate therein.

To prevent trunnion 9 from rotating too freely in this journal bearing, a friction ring 33 is mounted within the peripheral flange formed by the rim of trunnion 9. This friction ring 33 is provided with sockets, indicated in dotted lines in Figs. 5 and 7, in its outer face. Mounted in these sockets are a plurality, preferably eight as shown in Fig. 6, of friction members 35—35 which are composed preferably of cork. As can be best seen in Fig. 7, friction members 35—35 protrude slightly beyond the outer face of friction ring 33 for rubbing against side member 1 by means of a plurality, preferably four as shown in Fig. 6, of coil springs 34—34, having their right ends individually mounted in a plurality of sockets in the inner face of friction ring 33 and their left ends individually mounted in sockets in the head of trunnion 9 as is shown in Fig. 5. Thus, springs 34—34 press against the head of trunnion 9 and force the friction ring 33 toward the right. This causes the friction members 35—35 to press against the side member 1 so that, when trunnion 9 is rotated in its journal bearing, the cork friction members 35—35 will produce a retarding friction. Due to this retarding friction, the lid 6 of the desk cannot either slam shut or violently fall open thereby preventing accidental damage to the drawing board that might otherwise be caused by careless manipulation.

Two backstops 21—21 are provided to hold the lid 6 of the desk in its open, or horizontal, position. Each backstop 21 comprises a short stud having an enlarged flat head and is so located that a disk 25 passes between the head of the stud and the inner surface of a side member 1 as is shown in Fig. 4. Each stud passes through a side member 1 and is held securely in place by a nut 18 on the outside of the desk as is shown in Fig. 3. Each disk 25 is provided with a recess, indicated at 20 in Fig. 4, for engaging with the shank of a backstop 21 to hold the lid 6 in its horizontal position.

Located at the middle of the front edge of drawing board 6 is a spring latch 26. Molded along the front edge of the top member 2 is an angle 30 which serves as additional strengthening means and also as a stop to limit the extent of closure of lid 6. The middle portion of the top of angle 30 is provided with a recess 28 for accommodating the spring latch 26 to enable the lid 6 to be retained in an upright or closed position. The lid 6 can be opened by turning the handle 31 which releases the latch 26. Latch 26 is provided with a lock having a keyhole 16 in the center of handle 31 for enabling the lid 6 to be securely locked in its closed position.

This combination desk, bookcase, and drawing board is portable and may be readily installed in any suitable location. It can be temporarily secured to trees or to a wall of some building, such as a shack in a construction camp, by driving two spikes and then hanging the desk on the spikes by means of the inverted key-slots 37—37. These key-slots 37—37 are provided with covers 36—36 in the inside of the shelf compartment as is shown in Figs. 3 and 4. If it is desired to more permanently position the device, this can be accomplished by means of screws 38 which pass through holes in the back plate 14 of the shelf compartment and then into the supporting wall or the like. Due to its sturdy construction and the reenforcement obtained from the use of the angle irons 3 and 27—27 and angles 13 and 30, the desk may be shipped from place to place without damage, the lid 6 being closed while in transit.

It is to be understood that the invention has been described with reference to its preferred embodiment and that various changes and modifications may be made therein without departing from the scope of the invention which is to be limited only by the claims appended hereto.

What is claimed is:

1. A portable desk adapted to be hung from a support and comprising a back member, a top member, and two side members, all of said members being formed of metal and shaped to form a compartment, a lid for said compartment comprising a flanged metal framework and a wooden drawing board detachably fitted in said framework and forming the body of said lid, said drawing board having a groove along each of its side edges in engagement with said flanged metal framework, and means pivotally securing said metal framework to the side members of said compartment at the bottom thereof for enabling the drawing board lid to be opened and closed.

2. A portable desk adapted to be hung from a support and comprising a back member, a top member, and two side members, all of said members being formed of metal and shaped to form a compartment, a lid for said compartment comprising a flanged metal framework and a wooden drawing board detachably fitted in said framework and forming the body of said lid, said drawing board having a groove along each of its side edges in engagement with said flanged metal framework, and means pivotally securing said metal framework to the side members of said compartment at the bottom thereof for enabling the drawing board lid to be opened and closed, said drawing board being securely fastened to said metal framework only at the front corners thereof to permit expansion and contraction of the wood without throwing the drawing board out of line.

FRANK E. BAKER.