

Feb. 21, 1967

S. I. SAPHIRSTEIN

3,305,102

FORMED WIRE SUPPORT

Filed Dec. 17, 1964

FIG. 1

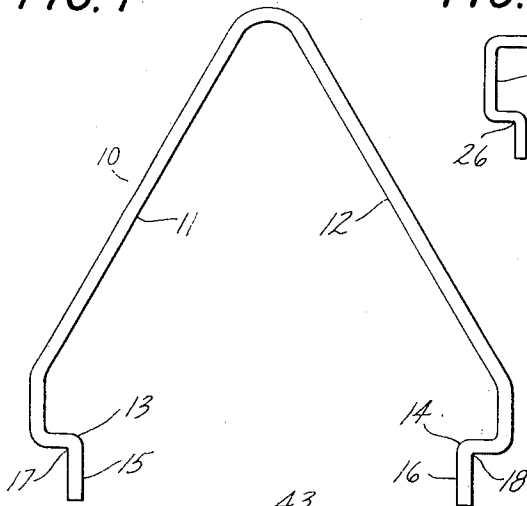


FIG. 2

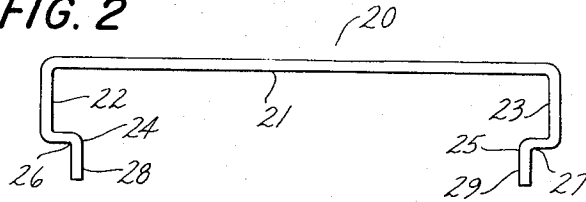


FIG. 3

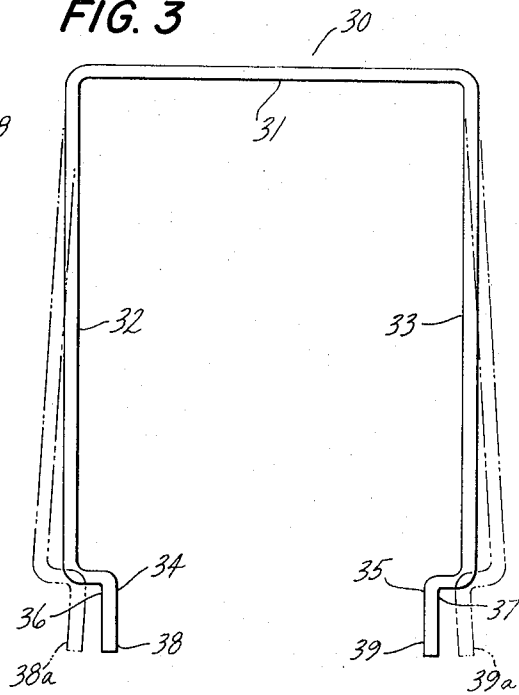


FIG. 4

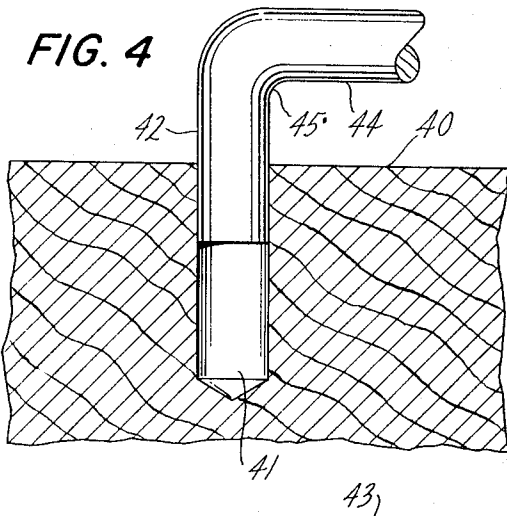
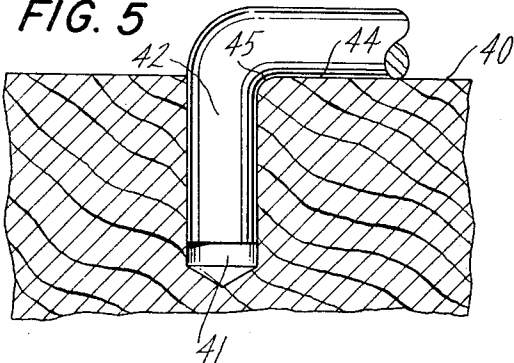


FIG. 5



INVENTOR.

SUMNER I. SAPHIRSTEIN

BY

Peter J. Costas
ATTORNEY

1

3,305,102

FORMED WIRE SUPPORT

Sumner I. Sashirstein, 16 E. Maxwell Drive,
West Hartford, Conn. 06107
Filed Dec. 17, 1964, Ser. No. 419,032
4 Claims. (Cl. 211-184)

This invention relates to an improved support for holding and supporting books, files, phonograph records and similar articles. More particularly, the present invention is a unitary support formed of metal wire and especially adapted and designed for insertion into a wooden or similar base such as a shelf, for instance.

A principal object of the present invention is to provide an improved metal wire support which is very inexpensive, occupies a minimum of space and is highly efficient in supporting, separating and holding a broad variety of articles having many different shapes and sizes.

Another object of the present invention is to provide such a unitary formed wire support formed in a common planar axis and having improved means for bearing laterally upon a wooden base or similar cooperative means into which it is inserted.

Still another object of the present invention is to provide an improved unitary formed wire support for attachment to spaced holes in a wooden base which is configured to effect a wedging action upon insertion into such wooden base.

A further object of the present invention is to provide improved wedging action and rigid support in a formed wire support employing the resiliency of the material when sprung into alignment for engagement in a suitable base.

These and other objects and features of the present invention will be more fully understood from the following detailed description of several embodiments together with the accompanying drawings and its scope will be pointed out in the appended claims.

In the drawings:

FIGURE 1 is a side elevational view of one form of the present invention having a substantially inverted V configuration;

FIGURE 2 is a side elevational view of another form of the present invention having an upper arm portion and two parallel lower arm portions joined in a right angular configuration;

FIGURE 3 is a side elevational view of another embodiment of the present invention having three right angularly disposed arms as in FIGURE 2 but of different proportionality;

FIGURE 4 is an enlarged, partially cross-sectional view of a support section of the formed wire support of the present invention illustrating its initial insertion into one of the spaced holes provided in a wooden base;

FIGURE 5 is an enlarged partially cross-sectional view of the support section of FIGURE 4 upon its full insertion into a wooden base illustrating the wedging action achieved by the present invention.

The present invention in its most basic form comprises a unitary wire support configured for attachment to spaced holes in a base of wood or material having similar characteristics of strength and deformability such as the synthetically formed material sold commercially under the trademark Novoply. The metal wire is preferably of a resilient type and is formed into a body section having at least two arm portions. Two opposed support sections are appended to the arm portions, the entirety having a common planar axis. The support sections are terminated in substantially parallel ends which are adapted to be received in the spaced holes in the aforementioned base. Additionally, each support section is formed into a right angular shoulder adjacent its end, which shoulder

2

bears laterally upon the wooden base when the end is inserted into the base. In its preferred and most effective embodiment, the present invention has the previously described right angular shoulder adjacent its end configured so that the right angular bend has an inside radius which, upon the full and complete insertion of the end into the hole of the base, wedges against the top portion of the hole in the base thereby more efficiently securing the formed wire support in its desired position. Moreover, it has been found that the inside radius of such right angular bend is preferably less than the diameter of the metal wire of which the support is fabricated in using metal wire of the order of one-eighth inch width thickness, for example. In most cases it has been found that the desirable wedging action of the formed wire support of the present invention which is afforded by the inside radius of the right angularly bent shoulder of the support section, preferably has an inside radius bend of not more than the diameter of the metal wire but not less than the radius of such metal wire.

Referring now to the drawings, there is shown in FIGURE 1 a unitary formed wire support 10 of the present invention which comprises a body section of two separated arm portions 11 and 12 joined at the top in an inverted V configuration. Two opposed support sections are appended from the arm sections 11 and 12, each of the support sections 13 and 14 having a substantially parallel disposed end as shown at 15 and 16 and a right angular shoulder adjacent its end as shown at 17 and 18. The invention may of course take a number of different configurations and forms and FIGURES 2 and 3 illustrate two alternative configurations of the body section. FIGURE 2 shows a unitary formed wire support indicated generally at 20 having an upper arm portion 21 and two parallel lower arm portions 22 and 23 joined in right angular configuration with the upper arm portion 21. Appended to each lower arm portion is a support section such as those shown generally at 24 and 25. As in the case of the embodiment of the present invention illustrated in FIGURE 1, the opposed support sections of the embodiment of FIGURE 2 as illustrated at 24, 25 are formed into right angular shoulders 26 and 27 and each support section is terminated in an end such as those shown at 28 and 29, which ends are disposed in substantially parallel relationship so as to be insertable in parallel holes in a wooden base.

FIGURE 3 similarly is an embodiment of the present invention having the body section comprised of three arm portions 31, 32 and 33 joined in right angular configuration with two opposed support sections depending from the parallel arm portions 32 and 33, respectively. As in FIGURES 1 and 2, the embodiment illustrated in FIGURE 3 includes a right angular shoulder adjacent each parallel end of the two support sections for bearing laterally upon a wooden base upon insertion of the parallel end sections 38 and 39 into spaced parallel holes in a wooden or similar base.

All three of the embodiments illustrated in FIGURES 1, 2 and 3 include right angular shoulders which are configured in a particular way so as to provide a small inside radius bend which, upon insertion of the end of the support section into the hole in a wooden base, provides a wedging action resulting in improved rigidity of the formed wire support in its desired position. This particular feature of the present invention may be more clearly seen in the enlarged views of FIGURES 4 and 5. In FIGURE 4 there is shown a wooden base 40 having a hole drilled therein 41 to receive the end 42 of the support section 43 (partly shown) of a formed wire support embodying the present invention. It should be noted that the end 42 is disposed at right angles to the shoulder 44 so as to form a bend having an inside radius

as illustrated at 45. As seen in FIGURE 4, the hole 41 is of such diameter to receive the end 42 snugly, and in practice may be a force fit. However, the hole 41 is of greater depth than the length of the end 42. The reason and desirability of this relationship will be seen more clearly in FIGURE 5 wherein like numbers bear the same numerical designation. FIGURE 5 illustrates the feature of the present invention by reason of which the right angularly disposed shoulder adjacent the end of the support section of the present invention is wedged against and into the spaced holes of a wooden base into which it is received. As will be noted in FIGURE 5, the end section 42 is inserted its full length into the hole 41 in the wood base 40, the hole 41 being of greater depth than the length of the end 42. The right angularly disposed shoulder 44 of the formed support section is resting against the top surface of the wooden base 40 providing a substantial bearing surface between the two thereby providing improved rigidity as is desired in the placement and fitting of the formed wire support of the present invention. Such bearing is principally in a lateral direction and in addition to providing improved rigidity also predetermines the depth to which the parallel ends of the formed wire support of the present invention may be inserted into an appropriate wooden base. Thus, once having been so inserted, the formed wire support of the present invention remains in that established position until removed as may be desired. Referring again to FIGURE 5, it will be seen further that the rounded inner radius 43 formed between the two right angularly disposed portions comprising the end 42 and the shoulder 44, has been fitted rightly against the top edge of the hole 41 deforming the adjoining portion of the wood base so that it is forcibly wedged against the end 42 retaining the support section of the formed wire support of the present invention firmly and rightly in place in the spaced holes provided in an appropriate base.

In addition to the wedging action afforded by the particular configuration of the right angularly disposed shoulder of the support sections of the present invention, the arms from which the support sections depend are preferably so spaced and configured that the ends such as illustrated at 38 and 39 of FIGURE 3, for instance, are not exactly parallel but rather substantially parallel before insertion into the spaced holes of a wooden base. In other words, the substantially parallel ends 38 and 39 are preferably spread in a position such as that defined by the dotted outline shown in FIGURE 3 and indicated at 38a and 39a. When the formed wire support of the present invention is configured and shaped in this preferred manner the two arms 32 and 33 of the formed wire support as illustrated in FIGURE 3 must be sprung together before the ends 38 and 39 will be in position to be inserted into parallel spaced holes in a wooden base. Consequently, when such resiliently sprung ends are inserted into the holes of the wooden base, there is an increased firm pressure created against the wedged portion of the edge of the parallel holes in the wooden base as illustrated and explained in connection with FIGURES 4 and 5. This arrangement as will be apparent to those skilled in the art improves the holding qualities, rigidity and capability of support afforded by the present invention.

Thus the present invention in addition to being inex-

pensive, easy to fabricate, and highly effective in its supporting function has the additional features afforded by the laterally bearing portion of its support sections, the wedging of its ends in spaced holes in a suitable base and the resiliently sprung arm portions which add to its desirability and effectiveness.

Since many changes could be made in the above construction and many apparently different embodiments of the invention could be made without departing from the scope or spirit thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having thus described the invention, I claim:

1. A support assembly for books, records and the like comprising a unitary formed wire support and a base member of wood and the like having spaced substantially parallel extending holes therein, said wire support comprising a resilient metal wire body section having at least two arm portions, two opposed support sections appended to said arm portions and having a common planar axis therewith, said support sections having parallel end portions received in said spaced holes in said base member and each support section having a right angular shoulder adjacent its end portion having a bend with an inside radius less than the diameter of said metal wire, said right-angular shoulder bearing laterally upon the upper surface of said base member adjacent said holes, said end portions being of lesser length than the thickness of said base member and the depth of said holes therein, said wire support being resiliently deflectable to spring said end portions into spaced substantially parallel extending relationship for insertion into said holes of said base member.

2. The support assembly of claim 1 wherein said wire support has only two arm portions which are substantially straight and joined in an inverted V-shaped configuration.

3. The support assembly of claim 1 wherein said wire support has an upper arm portion and two parallel arm portions at the ends thereof extending in substantially right angular configuration.

4. A unitary formed wire support for attachment to spaced holes in a wooden base, comprising a resilient metal wire body section having at least two arm portions, two opposed support sections appended to said arm portions and having a common planar axis therewith, said support sections having parallel end portions adapted to be received in said wooden base and each support section being formed in a right angular shoulder adjacent its end portion for bearing laterally upon the upper surface of the wooden base, said formed right angular shoulder having an inside radius bend of not more than the diameter of said metal wire and not less than the radius of said metal wire.

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CLAUDE A. LE ROY, *Primary Examiner*.

R. P. SEITTER, *Assistant Examiner*.