June 15, 1937. W. GRUMBACHER 2,083,703

SPIRALLY BOUND SHEAF AND SHEAF DEVICE

Filed April 7, 1933

Fig. 1

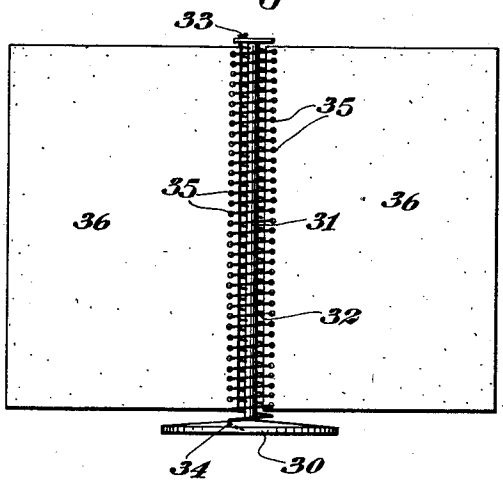


Fig. 2

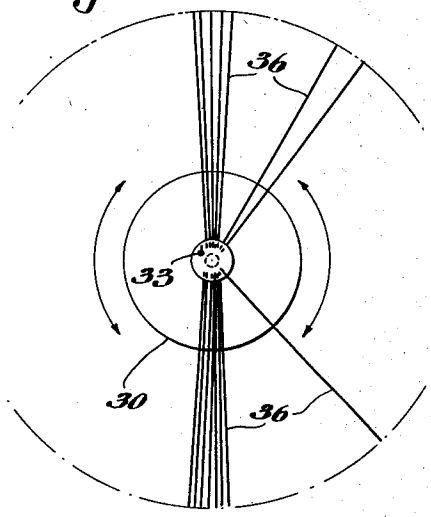


Fig. 3

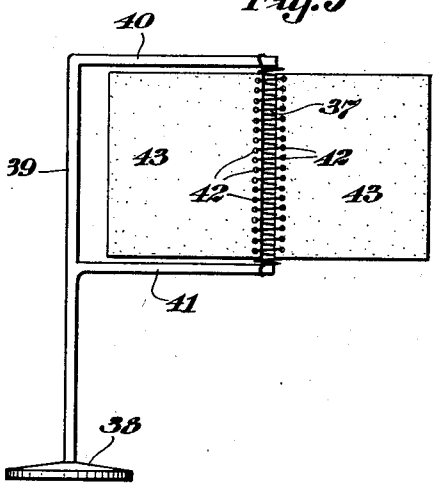
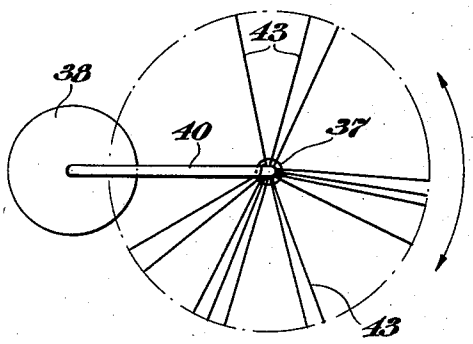


Fig. 4



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SPIRALLY BOUND SHEAF AND SHEAF DEVICE

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4 Claims. (Cl. 281—25)

My present invention relates generally to the binding of sheets, having particular reference to the employment of a spiral binding element.

While I have herein illustrated, and shall hereinafter describe, my invention as the same applies to the binding of a stack or stacks of paper sheets, nevertheless it will be understood that my invention is by no means restricted to this type of sheet material but may have far wider applicability, as, for example, in the binding of sheets of cardboard, sheets of fabric, or the like.

The invention relates broadly to a variety of improvements in the general type of binding described and claimed in United States Letters Patent No. 1,516,932, issued November 25, 1924.

It is a general object to provide an improved bound sheaf or sheaf device in which a plurality of sheet elements are held together in a permanent manner. The term "permanent" is not to be construed too literally, because the present type of binding is inherently removable and replaceable, as distinguished from the conventional binding of a book or the like whose removal would mutilate the entire assembly. Furthermore, although the present type of device is not primarily designed to be of the true "looseleaf" variety, wherein separate sheets are supposed to be inserted and removed continually and rapidly, it lends itself readily to the replacement of certain sheets or groups of sheets; and in this sense the present type of device cannot be said to be bound in a strictly "permanent" manner.

The type of binding to which my invention relates has come to be known in the trade as "spiral binding", and consists essentially in the association with a stack of sheet elements of a spiral or helical binding element, usually wire, which is threaded, turn by turn, into engagement with a row of equally spaced perforations provided adjacent to one edge of the stack. This general type of binding has a number of far-reaching advantages which will be referred to hereinafter.

One of the main objects of my present invention is to provide an improved type of device which embodies a plurality of stacks of sheets bound together in a variety of ways by spiral binding elements or "spiral binders".

Another general object of my invention is to provide a series of devices in which the sheets are supported in a novel and efficient manner upon a stand or similar support, to render them more readily available for inspection or examination, and to provide an efficient and unique means for displaying relatively large sheets or stacks.

One of the features of my invention lies in the provision of a stand which is provided with means for supporting a spiral binder in an elevated condition, sometimes vertical and sometimes horizontal, which permits a series of sheets to be efficiently supported and displayed.

Further and more detailed objects and features will become apparent and will be pointed out more fully hereinafter.

I achieve the foregoing objects, and such other objects as may hereinafter appear or be pointed out, in the manner illustratively exemplified in the accompanying drawing, wherein—

Figure 1 is an elevational view of a sheaf device embodying the features of my present invention;

Figure 2 is a plan view of Figure 1;

Figure 3 is an elevational view of a device similar to that of Figure 1; and

Figure 4 is a plan view of Figure 3.

Referring now to the drawing in detail, it will be observed that I have shown therein devices in which a spiral binder is supported upon a suitable stud or the like, in vertical position, thereby displaying certain sheets in an efficient vertical plane or planes.

In Figures 1 and 2, for example, I have shown a pedestal **30** upon which a rigid vertical post **31** is mounted. Encircling the post **31** is a spiral binder **32**, and this binder is held in position by any suitable means, e. g., by engaging its upper end **33** in a suitable aperture in the upper portion of the post **31**, and by engaging its lower end **34** in the pedestal **30**. This binder engages with the perforations **35** of a stack of sheets **36**, it being understood that the arrangement of sheets illustratively shown in Figures 1 and 2 is merely one possible disposition of these sheets, and that collectively they constitute a single stack.

The device of Figures 1 and 2 may be used, for example, for efficiently displaying certain tabulations or charts; or the individual sheets may be used as supports for swatches of material or similar samples of goods. The uses of the device are, of course, manifold, and my invention is not restricted to any specific utility.

In Figures 3 and 4, I have shown a construction in which the spiral binder **37** is supported in vertical position by means engaging only the opposite ends of the binder. The stand, in this case, consists of the pedestal **38**, the vertical supporting member **39**, and the two substantially horizontal arms **40** and **41**. At the free end of the arm **40** I provide a means for engaging the upper end of the binder **37**; and at the free end of the arm **41** I provide a means for engaging the

lower end of the binder **37**. Under certain circumstances, it may be desirable to support the binder in a manner which places it under tension, thereby keeping it from buckling.

The binder **37** engages, as before, with the perforations **42** of a stack of sheets **43**, it being again understood that the arrangement of sheets illustrated in Figures 3 and 4 is merely one of a variety of possible relationships.

Since the ramifications of my invention are manifold, it will be understood that the constructions herein illustrated and described by way of example are merely illustrative.

For instance, while I have shown the spiral elements as supported in a vertical position, it will be obvious that they might be supported in a horizontal position, and the support need not, for example, rest upon a base, but might conceivably project from a wall or from a ceiling.

Similarly, although I have shown no rigid backing strips in connection with the devices herein disclosed, the use of such backings may, under certain circumstances, be desirable, and it is within the purview of the invention to modify the constructions of these figures by the employment of perforated backing strips or the like.

In general, it will be obvious that changes in the details herein described and illustrated, for the purpose of explaining the nature of my invention, may be made by those skilled in the art without departing from the spirit and scope of the invention as expressed in the appended claims. It is, therefore, intended that these details be interpreted as illustrative, and not in a limiting sense.

Having thus described my invention, and illustrated its use, what I claim as new and desire to secure by Letters Patent is—

1. A device of the character described, comprising a stack of sheets having a series of equally spaced perforations adjacent to one edge, a spiral binder engaging through said perforations, and means for supporting said binder, said means comprising a rigid post extending longitudinally through said binder, and means at the opposite ends of the post for engaging the opposite ends of said binder.

2. In a binding construction, a supporting member, spiral binding means supported by and surrounding said supporting member on all sides thereof, and perforated sheets, supported by said spiral binding means by having the coils thereof threaded through the perforations of the sheets, whereby a uniformly distributed support and connection are provided between said member and said sheets.

3. A device of the character described, comprising a stack of sheets having a series of equally spaced perforations adjacent to one edge, a spiral binder engaging through said perforations, and means for supporting said binder, said means comprising a rigid post extending longitudinally through said binder, and means at the opposite ends of the post for engaging the opposite ends of said binder, said last-named means being adapted to prevent rotation of the ends of said spiral binder in relation to the post.

4. In a binding construction, in combination, an elongated supporting member, spiral binding means surrounding said members and having portions thereof in engagement with said member so as to support it therefrom and so as to prevent rotation and endwise movement of said engaged portions in relation to said member, and perforated sheets having the spiral binding means threaded through the perforations thereof.

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