This invention relates to loose leaf binders and more particularly to means for converting a single post type of binder into a double-post type.

An important object of the invention is to provide an extension member, which I term an adapter, capable of being slipped or sprung over the end of a bottom cover of the single post type of binder and designed to cooperate with the conventional structure thereof to allow its reconstruction into a binder of the double-post or inverted-U type. The adapter is advantageously formed of sheet metal bent to shape and is of relatively simple construction so as to lend itself to economical manufacture.

Another object of my invention is to provide an adapter carrying a double-post binding unit of improved construction having one of the legs of the unit designed to pass through the openings provided in the back cover of a conventional single post type of binder and through openings in the adapter so as to retain these parts in rigid association.

The invention has for further objects to provide a double-post type of unit in which the arcuate connector joining the two complementary posts of a unit is hinged to one of the posts so as to have its end raised from and lowered onto the other post, and carrying a spring detent engageable within a socket in the latter post to impotissively retain the connector against accidental retraction.

Other objects and advantages will be apparent from the following detailed description of a preferred form of the invention, reference being had to the annexed drawing in which:

Figure 1 shows a binder including an adapter constructed in accordance with the principles of the invention.

Figure 2 is a cross-section on the line 2—2 of Fig. 1.

Figure 3 is a perspective view of the adapter detached from the bottom cover of a binder; and

Figure 4 is a fragmentary view of the upper end of one of the posts showing the complementary end of the connector coupled therewith.

The binder shown in Fig. 1 comprises a bottom cover 1 having one end associated with an adapter 2 upon which is mounted two double-post units 3. The bottom cover 1 is of the type which is supplied with conventional single post binders, that is binders in which a plurality of single post retainers are located crosswise of the cover in lieu of a plurality of correspondingly located double-post or inverted-U retainers, this cover being formed with a transverse ledge 4 reinforcing one end of the margin thereof and provided with a plurality of holes 5 for receiving the posts or rings of the binder. These holes are provided at different distances apart corresponding to the spacing intervals between perforations of preperforated sheets which have become fairly well standardized in the trade, at least in the case of binders marketed by the more prominent manufacturers of stationery supplies.

The adapter 2 comprises a sheet metal casing composed of a top face 7 and a bottom face 8 bent upon an arc 9 so that the bottom face extends under the top face. The top face is provided with downwardly flanged flanges 10 which close the sides of the casing, and the bottom face 8 terminates in an upstanding lip 11. Mounted upon the top face 7 are two transversely spaced apart posts 12 each constituting one element of a double-post binding unit and these posts may be built up of a series of individual post sections 12a. As shown in Fig. 2 each post section comprises a round cylindrical element having a screw threaded stud projecting from one end and an internally threaded socket formed in its other end whereby the stud of one post section may be screwed into the socket of the subjacent section. The base post section has its stud projected through an opening in the upper face 7 of the adapter and is secured in place by a nut 13.

Similarly the other post 14 of each double-post unit is composed of a series of post sections 14a identical with the post sections 12a, except that the base post section is provided with an elongated stud 15 passing through the post openings 5 in the cover 1 and through registering openings in the top and bottom faces of the adapter and being screw threaded upon its projecting lower end to receive a clamping nut 16.

By the construction just described, the adapter 2 carrying the post 12 may be telescoped over the enlarged end of the cover 1 until the lip 11 snaps over the inner edge of ledge 4. The elongated stud 15 of the base post section of each double-post unit is then passed downwardly through the hole in the cover and the nut 16 engaged therewith to firmly clamp the adapter to the cover.

Surmounting the top of post 12 is a post section 17 threadedly engaged at its lower end within the socket of the next lower post section, and being bifurcated at its upper end. One leg of the arcuate shaped connector 18 is terminally fastened and hinged upon a pin 19 extending between the arms of the bifurcated end of this post section. This permits the connector 18 to be
swung about the pin, 19 as a fulcrum to raise the opposite leg of the connector from the top of post 14 which it normally contacts. The latter post is provided at its upper end with a post section 20 threadedly united with the next lower post section 14a and having formed in its top a socket 21 designed to slidably receive a pilot 22 carried on the end of the connector.

The pilot is provided with a spring detent 23 comprising a steel wire passed through a transverse opening 24 in the pilot and having flexible laterally projecting portions 23a designed to bear against the sides of the socket and retain the connector against retraction. The inside of socket 21 may be elongated or formed with screw threads to offer additional frictional resistance to the withdrawal of the pilot therefrom.

It will be obvious that the adapter may be constructed in a different manner from that described above, an important characteristic of the invention being that an end of the adapter extends beyond the corresponding end of the cover to which it is affixed whereby the post holes originally provided in the covers of conventional single post binders may be utilized as a means for attaching a post of a double-post type in a manner such that the sheets associated therewith do not project beyond the lower end of the cover.

If desired a top cover of any suitable type may be associated with the double-post units so as to protect the uppermost sheets of the stack.

While the adapter is designed as an article of manufacture apart from the cover with which it is adapted to be assembled, manifestly the cover and adapter may be marketed as a complete binder. Other changes in mechanical details may also be made without departing from the spirit of my invention.

I claim:
1. An adapter designed to convert binders of the single post type into binders of the double-post type, comprising a casing adapted to telescope over the binding edge of a cover so as to extend substantially the length of said edge, said casing having a plurality of transversely aligned holes formed therein adapted to register with pre-formed holes in the cover, a plurality of posts rigidly supported upon said casing and complementary posts having portions adapted to pass through the aligned holes in the cover and casing and to serve to fasten said adapter to the cover.

2. An adapter designed to convert binders of the single post type into binders of the double-post type, comprising a casing adapted to telescope over the binding edge of a cover so as to extend substantially the length of said edge, said casing having a plurality of transversely aligned holes adapted to register with pre-formed holes in the cover, a plurality of posts rigidly supported upon said casing, and complementary posts having portions adapted to be projected through the holes in the cover and casing and providing sockets upon their upper ends for the reception of the ends of the connectors.

3. A loose-leaf binder comprising a cover having a plurality of holes formed therethrough adjacent one end and an adapter mounted upon said end of the cover, said adapter comprising a sheet metal casing composed of an upper face and a lower face connected thereto, said faces engaging opposite sides of the cover and projecting a substantial distance beyond the cover, a plurality of upright posts supported upon the casing and located beyond the end of the cover, complementary posts arranged in alignment with the first-mentioned posts lengthwise of the cover, said complementary posts extending through the casing and the holes in the cover and fastening the adapter to the cover, arcuate-shaped connectors hinged to the first-mentioned posts and having ends adapted to be received in sockets formed in the complementary posts, and spring detents carried upon the ends of the connectors receivable in the sockets and positively retaining the connectors against withdrawal therefrom.

4. A loose-leaf binder comprising a cover having a ledge at one end extending between the side margins of the cover and a plurality of holes passing through the ledge between its upper and lower surfaces, an adapter completely enclosing the end of the cover including the ledge, said adapter comprising a sheet metal casing having upper and lower faces embracing the upper surface of the cover and the lower surface of the ledge respectively and projecting a substantial distance beyond the cover, flanges united with a plurality of upright posts rigidly supported upon the casing and springs carried on the ends of the casing, a lip formed upon the terminal of the lower face engaging the inner wall of the ledge, a plurality of upright posts mounted upon the upper face of the casing and located beyond the end of the cover, complementary posts arranged in alignment with the first-mentioned posts lengthwise of the cover, said complementary posts extending through the casing and the holes in the cover and rigidly fastening the casing to the cover, arcuate-shaped connectors hinged to the first-mentioned posts and having ends adapted to be received in sockets formed in the complementary posts, and spring detents carried upon the ends of the connectors receivable in the sockets and positively retaining the connectors against withdrawal therefrom, said sockets being interiorly roughened.

5. An adapter designed to convert binders of the single post type into binders of the double-post type, comprising a casing adapted to telescope over the binding edge of a cover so as to extend substantially the length of said edge, said casing having a plurality of transversely aligned holes adapted to register with pre-formed holes in the cover, a plurality of posts rigidly supported upon said casing and complementary posts having portions adapted to pass through the aligned holes in the cover and casing and to serve to fasten said adapter to the cover.

5. An adapter designed to convert binders of the single post type into binders of the double-post type, comprising a casing adapted to telescope over the binding edge of a cover so as to extend substantially the length of said edge, said casing having a plurality of transversely aligned holes adapted to register with pre-formed holes in the cover, and complementary posts having portions adapted to be projected through the holes in the cover and casing and providing sockets upon their upper ends for the reception of the ends of the connectors.

5. A loose-leaf binder comprising a cover having a plurality of holes formed therethrough adjacent one end and an adapter mounted upon said end of the cover, said adapter comprising a sheet metal casing composed of an upper face and a lower face connected thereto, said faces engaging opposite sides of the cover and projecting a substantial distance beyond the cover, a plurality of upright posts supported upon the casing and located beyond the end of the cover, complementary posts arranged in alignment with the first-mentioned posts lengthwise of the cover, said complementary posts extending through the casing and the holes in the cover and fastening the adapter to the cover, arcuate-shaped connectors hinged to the first-mentioned posts and having ends adapted to be received in sockets formed in the complementary posts, and spring detents carried upon the ends of the connectors receivable in the sockets and positively retaining the connectors against withdrawal therefrom, said sockets being interiorly roughened.

5. In a binding device designed to convert a binder of the single-post type in which a flat cover member is provided adjacent one of its transverse edges with a pair of upright posts mounted within openings in the cover member into a binder of the double-post type in which the cover member is provided adjacent one of its
transverse edges with a plurality of double-post units each comprising a pair of upright posts connected at their tops by an arcuate bridging member, the combination with said cover of an adapter designed to be fitted over one end of the cover and form an extension thereof, said adapter having a top plate and a bottom plate connected along a marginal edge so as to retain the plates in spaced relation and said top and bottom plates being designed to engage corresponding faces of the cover member, a pair of laterally-spaced vertical posts supported upon the top plate adjacent one transverse edge of the adapter and providing unobstructed columns to permit perforated sheets to be associated in stacked relation thereon, said top and bottom plates both having aligned holes therein adjacent the opposite transverse edge of the adapter and said holes being transversely spaced apart corresponding to the spacing of the posts and designed to coincide with the openings in the cover member, a complementary pair of posts extending upwardly through the aligned holes within the plates and parallel to the first-mentioned pair of vertical posts, and arcuate connectors carried by the first-mentioned pair of vertical posts capable of being moved into and out of bridging engagement with the upper ends of the pair of complementary posts to permit the shifting of the perforated sheets carried thereby from one pair of posts to the other.

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