Dec. 13, 1960 H. VALIS 2,964,195

SELF SUPPORTING COLLATOR

Filed May 18, 1959 2 Sheets-Sheet 1

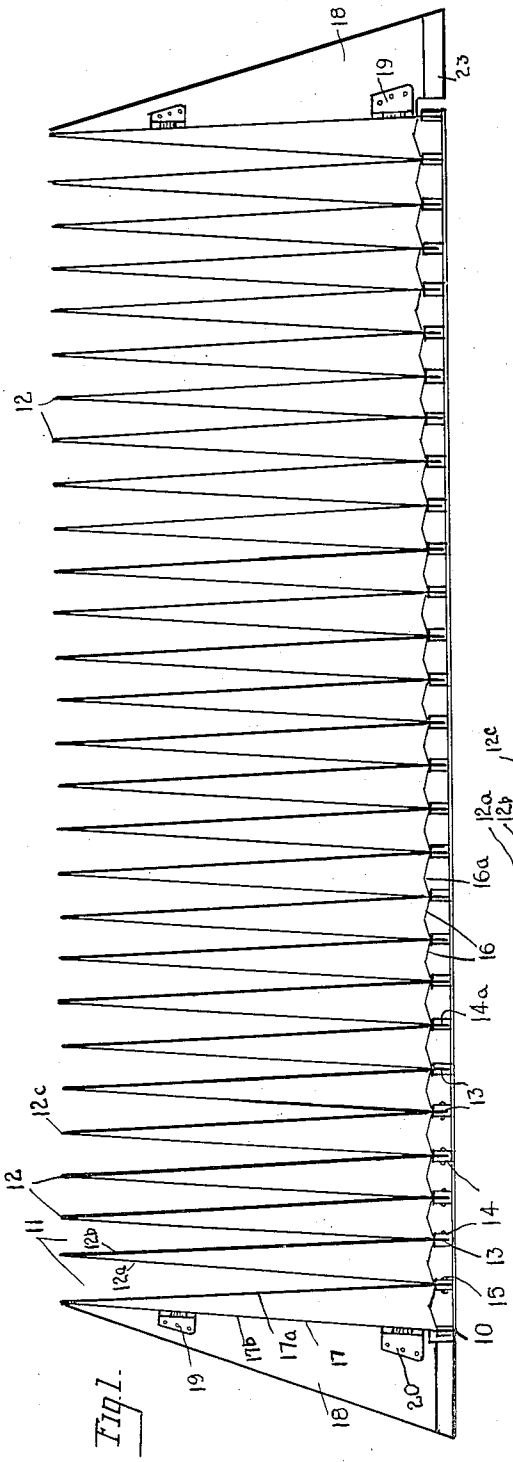


Fig. 1.

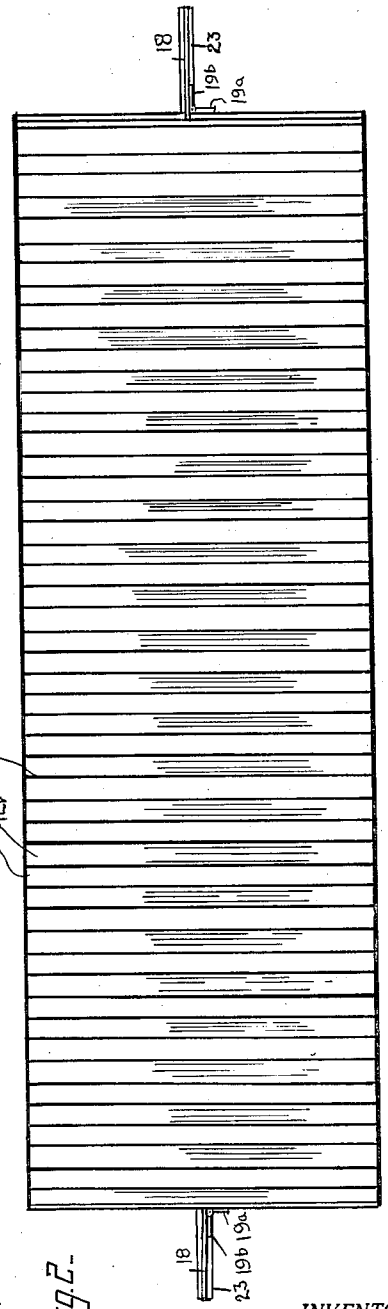


Fig. 2.

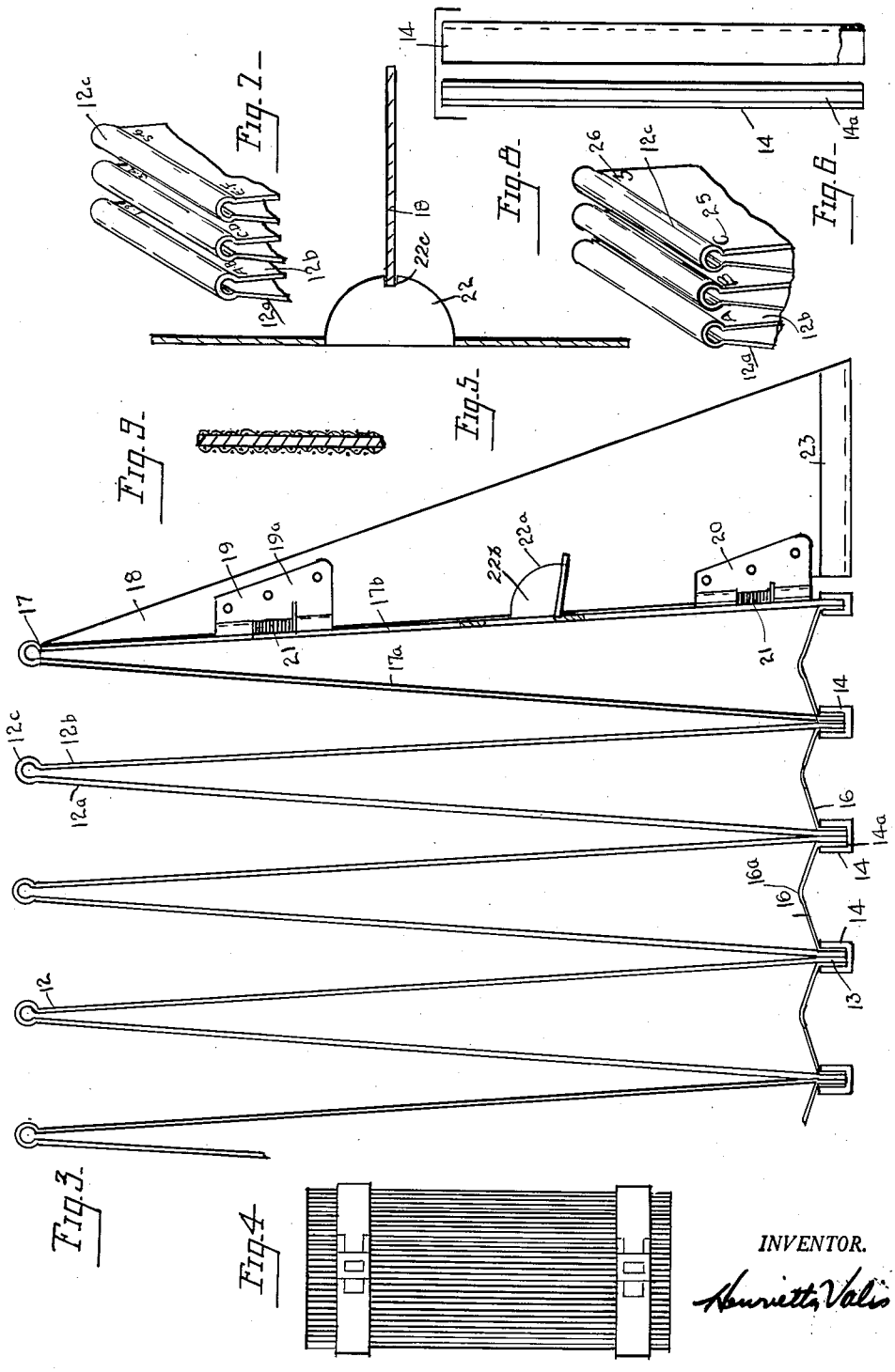
INVENTOR.

Henriette Valis

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SELF SUPPORTING COLLATOR

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2,964,195

SELF SUPPORTING COLLATOR

Henrietta Valis, 3212 Surf Ave., Brooklyn, N.Y.

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9 Claims. (Cl. 211—11)

This invention relates to an improved device for collating or classification of records, letters and correspondence matters, and one of its objects is to provide a unit which includes a series of pockets or holding places, which are connected to each other by flexible hinge joints, and which are designed to permit the rapid filing of papers in the various holding spaces or pockets, either in alphabetic order or in numerical order, and which is constructed with base friction members adapted to maintain the device expanded upon a table or desk, so that all holding spaces or pockets will be normally open, but may be expanded or contracted at will, and may be collapsed to compactly retain the papers in their compartments or spaces.

Various devices have been offered to the public for sorting letters and papers in alphabetic or numerical order, which have limited sorting and holding capacity, which have limited expansion and which, when contracted, take up excessive space. These devices, now available for the public are constructed of heavy metal parts and provide an inferior means for classifying office and other papers, and have been accepted for use only to a very limited extent.

My invention is preferably constructed of low cost but durable paper and cardboard, plastic finished, to provide a series of V-shaped folds, which are connected to each other by U-shaped rubber runners or slides, which offer moderate friction resistance to sliding, and thus provide simple means for maintaining the folds either open or collapsed without material change in the space occupied by the device in use or when collapsed; these rubber runners or slides also providing couplings between adjacent inverted V-shaped folds which effectively reinforces these folds.

Another object of the invention is to provide an expansible and collapsible collator, largely constructed of paper or similar flexible material, and effectively reinforced by cloth or plastic bonded to the parts of the device, and provided with self opening brace members hinged to the end members of the device, so that the end folds or paper holding compartments or pockets will not sag in use, but so arranged that the entire device may be quickly collapsed to minimum dimensions for storage or transportation.

A still further object of the invention is to provide an office collator, which can be used on an office desk or table without marring the same, which can be made to sell at a price level greatly below inferior devices now sold, and which will have a total capacity greatly in excess of any device now available for office collating, and for temporary filing.

With the above and other objects in view, the invention comprises certain new and useful combination, constructions and arrangements of parts, clearly described in the following specification of the accompanying drawings, in which:

Fig. 1 is a side elevation showing the improved collator extended to permit of rapid sorting or collating of letters and office records.

Fig. 2 is a top plan view thereof.

Fig. 3 is an enlarged side elevation, showing a group of inverted V-shaped folded members and the means for limiting the opening action of the members on each other.

Fig. 4 is a detail plan view showing the device collapsed, taken on a reduced scale.

Fig. 5 is a detail sectional view, showing a locking element for the self opening brace member.

Fig. 6 is a detail showing in one view the top of the friction coupling slide, and in another view the side thereof, partly in section.

Fig. 7 is a detail perspective view, showing a system of double indexing for the holding compartments.

Fig. 8 is a similar view, showing a method of indexing by letters in succession and by numbers in succession, so that either system of indexing may be used.

Fig. 9 is a detail sectional view showing the fabric reinforcement of the flexible stock used for the inverted V-shaped folds.

Referring to the accompanying drawings, which illustrate the practical embodiment of my invention, **10** designates the body of the collator, which comprises a series of accordion pleats or folds, of sufficient number to provide for a separate holding compartment or pocket **11** between the adjacent inverted V-shaped folds **12**.

Each inverted fold comprises upright wings **12***a* and **12***b*, connected to each other by the pressure formed integral hinge joint **12***c*, located at the apex or top of the fold. The lower transverse edge **13** of each wing is connected to a transverse U-shaped runner or slide **14**, and each runner or slide is designed to tightly receive the adjacent lower transverse edges of two confronting inverted V-shaped folds, each folded member **12** being a duplicate of each other folded member. It is thus seen that in the longitudinal groove **14***a* of each slide **14**, two adjacent wings of the upright folds **12** are inserted, and permanently secured thereto by staples **15**, or by bonding or cementing of any favored practice.

To limit the opening action of the inverted V-shaped folds a flexible band **16** is connected at its ends to each confronting pair of wings, so that when the wings are opened to the fullest extent desired, each of these bands will be stretched to its limit. When the sections or wings are collapsed on each other these bands will fold upwardly between the wings. To assist in this folding during the collapsing movement of the device, each band is formed with a center transverse integral hinge **16***a*, shown in Fig. 3, which is never flattened out when the device is fully extended. The length of each band may be greater than is indicated in Fig. 3, or shorter, so that less opening movement or greater opening movement may be obtained for the device.

Each end fold **17**, includes an inner wing **17***a* and an outer wing **17***b*. The outer wing **17***b* is equipped with a brace member **18**, constructed of metal, stiff plastic, cardboard or wood, or other suitable rigid material. This brace, as shown is of general triangular shape, and is connected to the outer wing **17***b* by means of an upper spring hinge **19** and a lower and similar spring hinge **20**, of similar construction. The inner leaf **19***a* of the upper spring hinge is permanently secured to the wing **17***b*, and the inner leaf **20***a* of the hinge **20** is permanently secured to the wing **17***b*. The outer leaf **19***b* of the upper spring hinge is secured to the brace member **18**, and the outer leaf **20***b* of the hinge **20** is secured to the brace member **18**. Each spring hinge includes a coil spring **21**, which is designed and assembled so that it swings the brace member to open position, when the brace member is relieved of all restraint.

To lock the brace member in open position a lock member **22** is formed on the outer wing **17***b*, or attached thereto, this lock member is designed to swing downwardly against the arcuate edge **22***a* of the recess **22***b* formed in the middle section of the brace member, and for this purpose is formed with a notch **22***c* which receives the edge of the recess, as shown in Fig. 5. By swinging the lock downwardly the brace will be locked in open position, as shown in Figs. 3 and 5. The lower end of the brace member is equipped with a U-shaped rubber slide or friction strip **23**.

One side of the collator is provided with index letters **25**, one letter of the alphabet being printed or attached by label or otherwise to the inverted fold, and on the opposite side of the collator is provided with a series of numbers **26**, arranged in consecutive order.

As shown the collator is made large enough to provide for 26 or more holding spaces or filing compartments, so that a compartment may be devoted to each letter of the alphabet, and one compartment may be assigned to each number of the series of numbers used for controlling the filing.

When the collator is set up on a table or desk, and expended the frictional resistance offered by the U-shaped rubber coupling slides will be sufficient to maintain the collator in open extended position, against the natural tendency of the inverted folds to contract, so that open filing or holding compartments may be provided, in which papers, records and other documents may be filed in rapid operations.

Due to the lightness and manageability of the collator it may, when loaded with papers to be filed in filing cabinets, then be transferred to the filing cabinet or cabinets in which permanent storage of the papers is to be made.

Should the clerk or other person in charge of filing not have time to file the papers arranged in classified order in the collator compartments, the collator may be used as an emergency or temporary filing unit and any paper or papers sought may be quickly located and used.

To hold the collator in a collapsed condition, whether partly or wholly filled, or unfilled, two elastic bands **27** and **28** are employed. Each band is provided with a buckle **29**, for adjusting the effective girth capacity of the band, and each band may be secured to one end wall of the collator, by means of a rivet or fastener **30**, so that it will remain in fixed relation to the collator and may be slipped over the collapsed unit, or removed so that the unit can be extended and used for collating or temporary filing.

It is understood that various changes in the details and combinations of construction may be carried out, and that various materials which are usable in the construction may be selected, without departing from the spirit and scope of the invention, as defined by the claims hereof.

Having described my invention I claim as new and patentable:

1. A collator comprising a plurality of inverted V-shaped folded members having hinge connections at their upper ends, coupling members connecting the lower edge portions of adjacent members to each other to permit the members to expand relative to each other and to provide filing compartments between adjacent members open at the upper end of the collator, the collator being completely collapsible to bring the folded members into contacting engagement with each other.

2. A collator constructed with a series of compartments open at their upper ends and provided with side walls connected to each other by hinge joints at their upper ends and connected to each other by couplings at their lower ends, said coupling having frictional resistance with a supporting surface to maintain the side walls of the collator when disposed in upright position against accidental sliding on a supporting surface.

3. A collator comprising a plurality of flexible walls connected at their adjacent upper ends to each other, U-shaped friction members coupling the adjacent lower ends of the walls to each other, the whole being so arranged that holding compartments are provided between adjacent walls which are expandable and contractible, the U-shaped friction members forming supporting feet for the collator to maintain the walls upright in any expanded or contracted condition.

4. A collator comprising a plurality of inverted V-shaped members providing confronting walls of flexible material and a hinge joint connecting the walls to each other, the inverted V-shaped members being arranged in line formation to provide a series of filing compartments between the hinge joints opening on the upper side of the collator, the lower ends of the side walls being coupled to each other by U-shaped friction reinforcing friction slides forming supporting feet for the inverted members and adapted to resist sliding of the members on a supporting surface, all of said U-shaped members being arranged in a common plane, each inverted member having a distinguishing index for the adjacent compartment therefor and all of the indexes being arranged in succession, and a self opening brace member hinged to the outer end of each outermost inverted member.

5. A collator comprising a plurality of inverted V-shaped members providing a filing compartment between each pair of adjacent members, the inverted V-shaped members being coupled together by supporting friction feet disposed in a common plane, the outermost ends of the collator being provided with a self opening brace member adapted to support the outermost members in upright position against sagging.

6. The construction set forth in claim 5, each brace member having a spring hinge connecting the same to the end of the collator and a lock formed on the member for holding the brace member in open position.

7. The construction set forth in claim 4, all compartments between the inverted V-shaped members being open at the upper side of the collator and at the opposite sides of the collator to permit papers to be filed in said compartments to extend outwardly of both sides of the collator.

8. A collator, comprising a series of individual sections, each section consisting of an inverted V-shaped member having side walls connected by a hinge to each other at the upper end of the member, the members being arranged in line formation, with the lower edges of the walls disposed in a common plane and the adjacent lower wall edges being disposed in contacting engagement with each other, a U-shaped rubber member straddling the lower contacting edges of the walls and secured thereto, and a strip of flexible material connecting the adjacent rubber members to each other and having its end edge portions secured by said rubber members to the engaged walls, said individual sections being expandable to provide sorting compartments between the same.

9. The combination set forth in claim 8, including a self opening brace spring hinged to the end member of the collator at each end thereof and provided with a lock to maintain itself in open position against the pressure of its spring hinge.

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