(No Model.) 2 Sheets—Sheet 1.

A. J. RUDOLPH.

CONTINUOUS REVOLVING FILE AND INDEX.

No. 473,348. Patented Apr. 19, 1892.

Fig. 1.

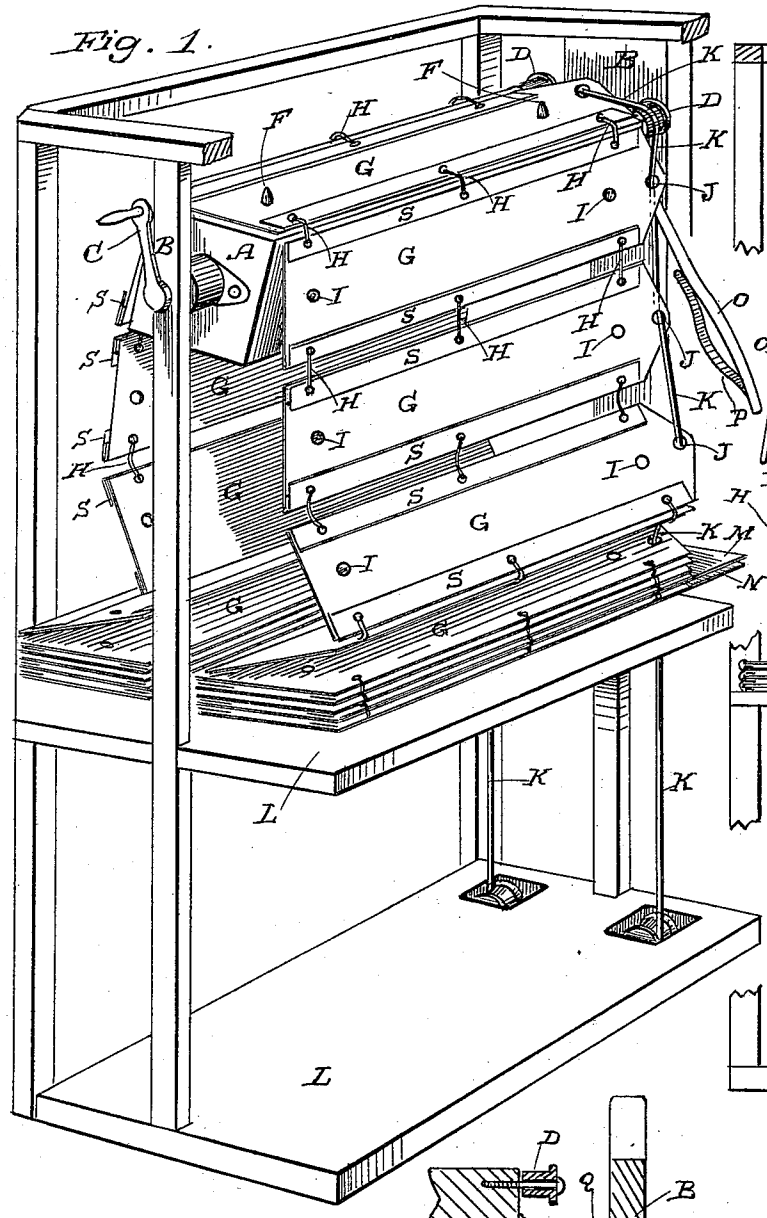


Fig. 2.

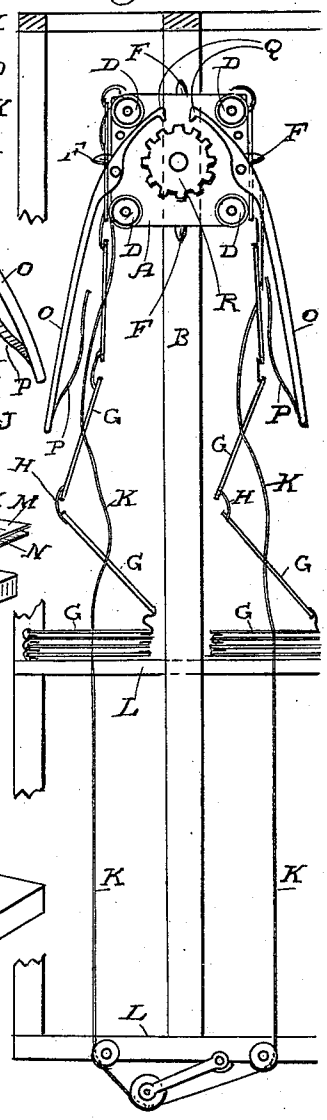
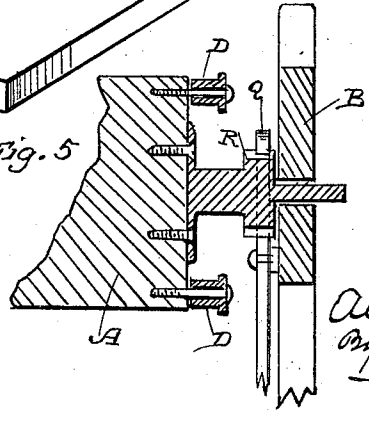


Fig. 5



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(No Model.) 2 Sheets—Sheet 2.

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CONTINUOUS REVOLVING FILE AND INDEX.

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Fig. 4

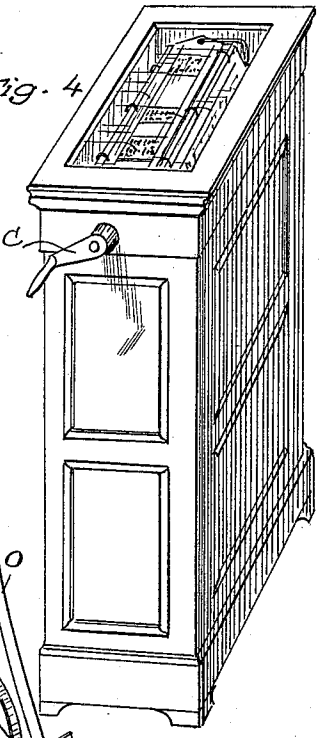
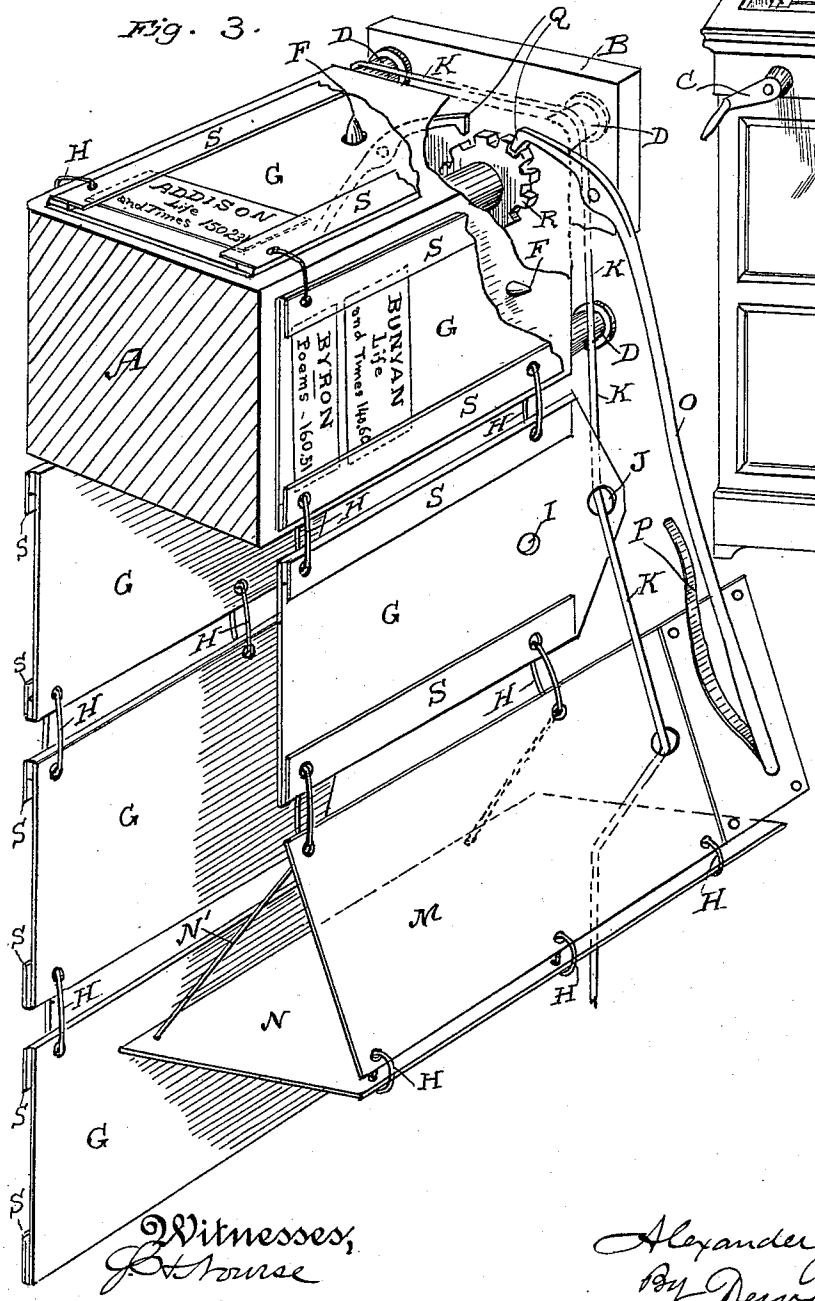


Fig. 3.



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UNITED STATES PATENT OFFICE.

ALEXANDER J. RUDOLPH, OF SAN FRANCISCO, CALIFORNIA.

CONTINUOUS REVOLVING FILE AND INDEX.

SPECIFICATION forming part of Letters Patent No. 473,348, dated April 19, 1892.

Application filed September 18, 1891. Serial No. 406,148. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER J. RUDOLPH, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Continuous Revolving Files and Indexes; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements in indexes and files.

It consists of a revolving drum and a chain consisting of inflexible cards or surfaces adapted to be moved over said drum, each card being provided with a means for attaching slips or other matter suitable to be arranged thereon.

It also consists in certain details of construction, all of which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of my invention with a part of the supporting-frame. Fig. 2 is an end view of the same. Fig. 3 is an enlarged detail view in perspective of the working parts. Fig. 4 is a perspective view of the inclosing case. Fig. 5, Sheet 1, is a vertical section of the revolving drum and ratchet-pawl and frame.

This invention is of special advantage for library and publishers' catalogues, registers, dictionaries, gazetteers, accounts, tables of contents, bills of lading, inventories, files, tallies, records, muster-rolls, schedules for exhibiting samples and patterns in dry goods, hardware, stationary, &c., and in fact for anything that needs alphabetical, chronological, numerical, classified, topical, or other systematic arrangement.

A is a revolving drum of any suitable or desirable shape, the ends being journaled in a supporting frame-work B. This drum may be of any suitable polygonal shape. In the present case I have shown it in the form of a square in cross-section, and it has a handle C or other suitable mechanism by which it may be revolved. This drum is provided at one end with four flanged wheels or rollers D, turning upon shafts which are fixed to project from the end of the drum. These rollers are so journaled with reference to the two meeting sides at each angle that these sides form tangents with their peripheries. Upon each of the faces of the drum are the fixed conical projecting points F.

G are the leaves or cards, which are made of any suitable material approximately inflexible, and they are of a size to fit upon the surfaces of the drum. They are connected together by links or by rings H, of rounded or elliptic form, which will pass through holes made in the opposite edges of the cards, or by any suitable flexible connecting devices, thus forming a chain of these cards as long as may be needed for the purpose. Through each end of these cards holes I are made, which will just fit over the projecting pins F, previously described. These pins and the holes in the cards insure the cards registering in an exact position upon the sides of the drum as the latter is revolved. The ends of the cards adjacent to the end of the drum which carries the rollers D, previously described, are made convex or projecting in the center, and through this projecting portion of each card a hole J is made. An endless cord or band K passes through these holes and over the pulleys or rollers upon the end of the drum, thence passing down around rollers at the bottom of the case or frame-work, which serve as guides to keep them in a straight line. These lower rollers, which are sufficiently grooved to keep the tapes or bands in place, are also made heavy or have weights connected with them, or an independent weighted wheel may rest upon the tapes, so as to maintain a proper tension upon the bands. These guiding-tapes may in some cases have their lower ends fixed with elastic connections or intermediate elastic strips, and remain stationary, while the drum revolves; but the construction above described gives less friction and appears more desirable. If found necessary for long cards, guide-tapes may be employed at each end. By this construction the cards are guided in their movements and are caused to fold successively upon each other in the proper manner when they reach the supporting-tables below the drum upon either side where they rest. These tables are shown at L, and as the drum is rotated and the cards are carried over from one side of the drum to the other they are deposited upon this table, the lowermost one folding down upon the table, the next following

folding upon this one being guided by the tapes or cords, as previously described, and so on until all the cards are in position.

The lowermost edge of the lowermost card is connected with a triangle, which is formed with two cards M N, longer at one end than the index-cards and hinged or linked together in the same manner as the index-cards and having cords N′, connecting their inner edges in such a manner that when they are raised up from the supporting-table they will maintain their angular relation with each other, as shown. These cards or stop-plates are sufficiently longer than the index-cards to allow their projecting ends to engage the pawl-levers and throw them into engagement with the ratchet-pinions to stop the drum. By this construction the lower edge of the lower card N moves upwardly against the inner guide-post of the frame, while the upper of the two cards M, standing at an angle outwardly, is in position to engage the pawl-lever O or a spring P, which in the present case is shown attached to it. These levers are fulcrumed to the stationary frame at each side of the drum-shaft at one end, and the pawl ends Q are adapted to engage with the teeth of a ratchet-wheel R. These teeth are preferably made rectangular, so that the pawls may engage and hold them from either side. It will be manifest that when the last card has been raised from a table upon either side if the drum continues to turn it will draw up the triangular frame-work M and allow the proper point to strike the pawl-lever, and by causing the pawl to engage the teeth of the ratchet-wheel on the drum-shaft will prevent any further rotation of the drum in this direction. The triangular arrangement upon the opposite end in like manner serves as a stop when all the cards have been carried around the drum from that direction. This prevents the cards being entirely run off the drum or carried too far in either direction. Each of these cards has fastened upon its opposite edges small reinforcing-strips extending from end to end, and on the top of these strips are fastened other strips S, which project inwardly a little way over the first-named strips, thus forming grooves or channels, as plainly shown, for the introduction of any cards, samples, or other device which it is intended that the cards should carry. It will be manifest that these holders may be made of sheet metal, with the edges turned over to contain the index-cards or samples, and they may also be made with two or more independent columns or otherwise arranged to suit the necessities of the case. By this construction it will be seen that whatever is carried by the cards may be easily introduced or removed and will be held firmly in place as long as needed.

The whole device is preferably inclosed in a case having a glazed top, through which the drum and the contents of the card-strips may be readily examined.

The slips which are put into the holders may be of any desired length, but must be cut uniform in width to fit exactly under the overlapping side strips. This allows the arrangement of the inserted slips according to any system. Errors can be corrected and changes made at any place in the holders without defacing anything, and the chain may be made of any suitable or desired length.

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

1. A file and index consisting of a series of cards or holders linked together at their edges to form a flexible chain, a polygonal drum having sides corresponding in shape with the cards, guides upon the faces of the drum, with which the cards engage, and a means for rotating the drum, substantially as herein described.

2. A file and index consisting of a series of cards or holders having their edges flexibly connected together to form a series or chain, a polygonal drum having guides upon its faces adapted to engage the cards as they pass over the drum, tables situated below the drum upon each side and adapted to receive the cards and fold them successively one upon the other as they descend from the drum, substantially as herein described.

3. An index and file consisting of a series of cards having their edges flexibly connected together, a polygonal rotary drum, the sides of which approximate the shape of the cards, guides upon the faces of the drum, with which the cards engage as they pass over it, perforated extensions at one end of each of the cards and a cord or tape passing through these extensions, rollers projecting from each of the angles of the drum over which the tape passes at the upper end, and weighted guiding-rollers over which the tape passes at the lower end, whereby the tension is maintained and the cards are caused to fold symmetrically upon each other as they descend from the drum to the table, substantially as herein described.

4. A continuous file and index consisting of cards having their edges flexibly connected together, a polygonal drum, the sides of which correspond approximately in shape with the cards, a guiding cord or tape passing through holes in extensions at the end of the cards, rollers projecting from each of the angles of the drum over which the tape passes and a tension device over which the lower end of the tape passes, a ratchet-wheel fixed upon the drum-shaft, pawls engaging said ratchet from opposite sides, with extensions or lever-arms projecting downward and outward therefrom, and a stop mechanism attached to the lowermost of the index-cards at each end and adapted to engage with the pawl-levers when drawn upward to throw the pawls into engagement with the ratchet and stop the rotation of the drum, substantially as herein described.

5. The rotating polygonal drum having a

ratchet-wheel upon one end of its shaft, pawls fulcrumed to the frame to engage the ratchet-wheel from opposite sides, with arms or levers projecting outward and downward therefrom, said levers having springs secured to their inner sides, a series of cards adapted to fit the polygonal faces of the drum, having their edges flexibly connected together, a table situated below the drum, guiding cords or tapes passing through holes in one end of each of the cards, whereby they are caused to fold symmetrically one above the other upon the tables upon either side of the drum, and an angular device attached to the lowermost of the index-cards at each end, adapted to engage the spring-armed levers, so as to throw the pawls into engagement with the ratchet-wheel upon one side or the other and stop the rotation of the drum when the lowest of the index-cards has been brought to the top, substantially as herein described.

6. An index and file consisting of a rotary polygonal drum, cards approximating in size or shape to the sides of the drum, said cards having channels or guides formed upon each side for the reception of independent removable strips, flexible links or connections by which the edges of the cards are connected together, a table situated below the drum, upon which the cards are alternately folded from either side by the rotation of the drum in one direction or the other, a guiding-cord passing through holes in extensions at the end of the cards, whereby they are caused to fold symmetrically upon each other as they reach the tables and their position upon the drum is maintained, a ratchet-wheel fixed upon one end of the drum-shaft, pawls fulcrumed to the frame-work and engaging said ratchet-wheel upon opposite sides, extensions of said pawls projecting outwardly and downwardly, and a stop mechanism attached to the lowermost card at each end, adapted to engage said levers and throw the pawls into engagement with the ratchet when the final card from either end has reached the top of the drum, whereby the rotation of the drum is stopped, substantially as herein described.

In witness whereof I have hereunto set my hand.

ALEXANDER J. RUDOLPH.

Witnesses:
S. H. NOURSE,
J. A. BAYLESS.