





# UNITED STATES PATENT OFFICE.

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## STAMP-SEPARATOR.

No. 803,574.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed May 3, 1904. Serial No. 206,191.

*To all whom it may concern:*

Be it known that I, CHARLES J. FANCHER, a citizen of the United States of America, residing at West Granby, in the county of Hartford and State of Connecticut, have invented a new and useful Stamp-Separator, of which the following is a specification.

My invention relates to improvements in devices or machines for separating stamps from each other, in which certain peculiarly constructed and arranged rotary members are employed, as hereinafter set forth; and the object of my invention is to provide a simple and comparatively inexpensive machine for quickly pulling apart sheets and strips of postage or other stamps to separate the stamps so that they can be conveniently used, such machine being practicable and efficient in a marked degree.

A further object is to provide such a machine with suitable adjusting appliances for the rotary members.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of the working end of the separator; Fig. 2, a top view of said separator; Fig. 3, a vertical section of the same on lines *xx* looking in the direction of the arrow, Fig. 1; Fig. 4, a full-size interior view of one of the bearing-heads, and Fig. 5 a similar view of the other bearing-head.

Similar letters refer to similar parts throughout the several views.

Generally speaking, my separator comprises a suitable stand or support, a set of four rollers, two of which are conical, and means to revolve one pair of rollers faster than the other pair. By preference I also provide means for adjusting certain of the rollers in relation to certain others.

It may be here stated that this machine is designed to separate stamps which come in sheets or strips with perforations, cuts, or indentations bordering each stamp, and is particularly well adapted to handle postage-stamps.

Referring to the drawings, a stand is shown consisting of legs *aa*, supports *bb* on said legs, bearing disks or heads *cc* on two of the adjacent ends of said supports, and a plate *d*, which forms a table for the sheets and strips of

stamps, firmly attached at its lateral edges to the under sides of the supports. The plate or table *d*, together with rods *ee*, having their ends secured by nuts *f* to the legs *a*, hold the parts firmly in place.

A cylindrical roller *g* has its trunnions journaled at *g'* in the bearing-heads *c* and is covered with some suitable yielding material, as rubber. A gear *h* is fast on one of the trunnions of the roller *g*. Below the roller *g*, but in frictional contact therewith, an uncovered cylindrical roller *i* is located, the trunnions of this last roller being journaled at *i'* in bearing-blocks *j*. These rollers are adjacent one edge of the table *d*. Somewhat remote from the roller *g* is a conical roller *k*, which has its trunnions journaled at *k'* in the bearing-heads *c*. The roller *k* is covered like the roller *g* and has a gear *l* fast at one end, such gear being smaller than the gear *h*. An uncovered conical roller *m*, having its trunnions journaled at *m'* in the blocks *j*, is in frictional contact with the under side of the roller *k*.

A plate *n* extends between the bearing-blocks *j*, to which the ends of said plate may be fastened, and the upper surface of this plate and that of the table *d* are on substantially the same plane with each other, and the bite between the rollers *g* and *i* and that between the rollers *k* and *m* are also on this plane, or substantially so.

Each bearing-block *j* is slidingly mounted on the inside face of the corresponding bearing-head *c* between guides *oo*, being supported on a screw *p* in threaded engagement with a lug *q*. The guides *o* and lug *q* extend inward from the inside face of each head *c*. A rubber or leather cushion *r* and a metallic contact-piece *r'* may be interposed between the upper end of each screw *p* and the associated bearing-block *j*, as shown, to permit the rollers journaled in the blocks to yield slightly upon the passage of stamps between these rollers and those with which they normally contact, although springs might be used for this purpose or dependence placed alone on the coverings of the upper rollers. The screws *p* are employed not only to support the blocks *j*, but to positively force the lower rollers carried by said blocks into contact with the upper ones with just the right amount of pressure, although springs might be used here



again to perform this function, only in a less positive manner.

From the preceding paragraph it will be readily seen how the pressure between the upper and under rollers can be increased or decreased by turning the screws *p* either up or down.

A stud *s*, having a crank *t* on its outer end and a gear *u* on its inner end, the gear in mesh with the gears *h* and *l*, is loosely mounted in the bearing-head *c*, to which the last-mentioned gears are adjacent. Now when the crank *t* is turned to revolve the gears in the directions indicated by the arrows in Fig. 4 a thin sheet of anything placed on the table and moved into the bite between the rollers *g* and *i* will be drawn into and through the machine, being discharged beyond the rollers *k* and *m*, since the rollers *g* and *k* are rotated in one direction and by frictional contact cause the rollers *i* and *m* to rotate in the opposite direction.

The sizes and arrangement of the gears are such that by turning the crank and revolving the rollers the conical rollers have a greater surface speed, even at their small ends, than have the cylindrical rollers, hence the tendency to tear apart anything above the plate *n* while in the bites of both pairs of upper and under rollers, and the aforesaid tendency is increased by the shape of the rollers *k* and *m*, which necessarily have a greater surface speed at one end than at the other, so that they begin at once to open a V in the sheet being fed between them.

It is to be understood that the distance apart of the bites between the upper and under rollers must be such as to permit the conical rollers to operate on one stamp or strip while another stamp or strip is being retarded by the cylindrical rollers.

If a sheet of postage-stamps, for example, be placed on the table and pushed between the rollers while the latter are being rotated in the right directions, one strip of stamps after another will be torn off and discharged until all are in front of the machine. Then the strips may be gathered up and fed through the machine to detach each from the others. As before intimated, the tearing-apart operation is facilitated by the formation of the conical rollers, because said rollers begin to tear the stamps apart at one end or side before they do at the other, owing to their shape.

The operation of the machine is very rapid, in consequence of which much saving in time results from the use of the machine, and it is a labor-saver as well.

It will readily be seen that very many modifications in the construction of the device may be made without departing from my invention, and I do not limit myself to the construction illustrated.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a stamp-separator, with two pairs of rollers suitably journaled, of means to drive one pair of rollers at a greater speed than the other pair.

2. The combination, in a stamp-separator, with a pair of cylindrical rollers suitably journaled, of a coacting pair of conical rollers also suitably journaled.

3. The combination, in a stamp-separator, of a pair of cylindrical rollers, a pair of conical rollers, all of said rollers being suitably journaled, and means to drive one pair of rollers faster than the other pair.

4. The combination, in a stamp-separator, with a pair of cylindrical rollers and a coacting pair of conical rollers all suitably mounted, of means to adjust one roller of each pair in relation to the other roller of the same pair.

5. The combination, in a stamp-separator, with fixed and movable bearings, of a pair of cylindrical rollers and a coacting pair of conical rollers, one roller of each pair being journaled in the fixed bearings and the other roller of each pair being journaled in the movable bearings.

6. The combination, in a stamp-separator, with fixed and movable bearings, of a pair of cylindrical rollers and a coacting pair of conical rollers, one roller of each pair being journaled in the fixed bearings and the other roller of each pair being journaled in the movable bearings, and means to adjust said movable bearings.

7. The combination, in a stamp-separator, with a suitable support and table, of a pair of cylindrical rollers mounted adjacent one edge of said table, a pair of conical rollers remotely mounted relative to the first, and means to actuate the conical rollers faster than the cylindrical rollers.

8. The combination, in a stamp-separator, with a suitably-supported plate, of a pair of cylindrical rollers mounted adjacent one edge of such plate, and a coacting pair of conical rollers mounted adjacent the opposite edge of said plate.

9. The combination, in a stamp-separator, of a suitable support and table, a pair of normally contacting cylindrical rollers mounted adjacent one edge of said table, a coacting pair of normally contacting conical rollers remotely mounted relative to the first, and a plate between the bites of the said pairs of rollers.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES J. FANCHER.

Witnesses:

F. A. CUTTER,

A. L. STEVENS.