(No Model.) 2 Sheets—Sheet 1.

E. STRAKER.

MACHINE FOR REMOVING SUPERFLUOUS GOLD LEAF FROM BOOK COVERS.

No. 329,863. Patented Nov. 3, 1885.

Fig. 5.

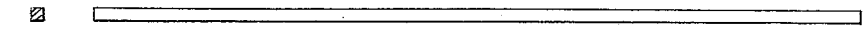


Fig. 1

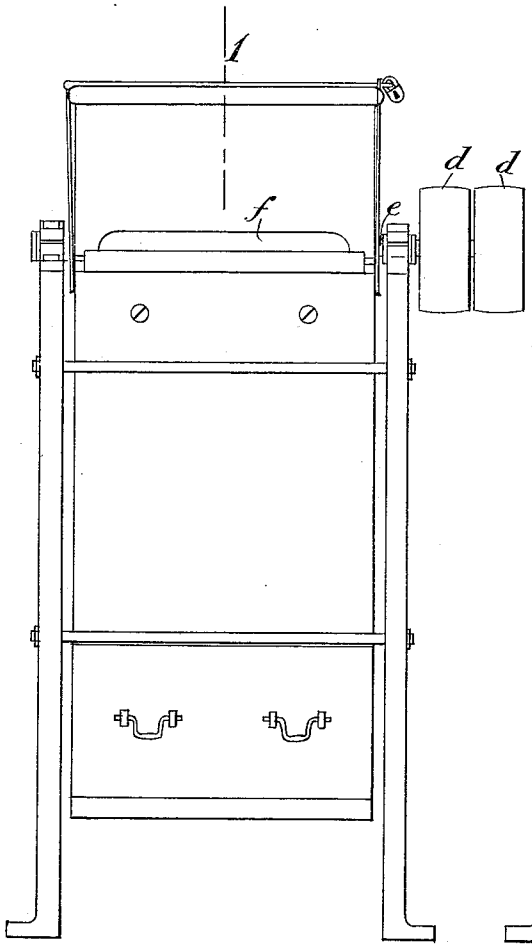


Fig. 2.

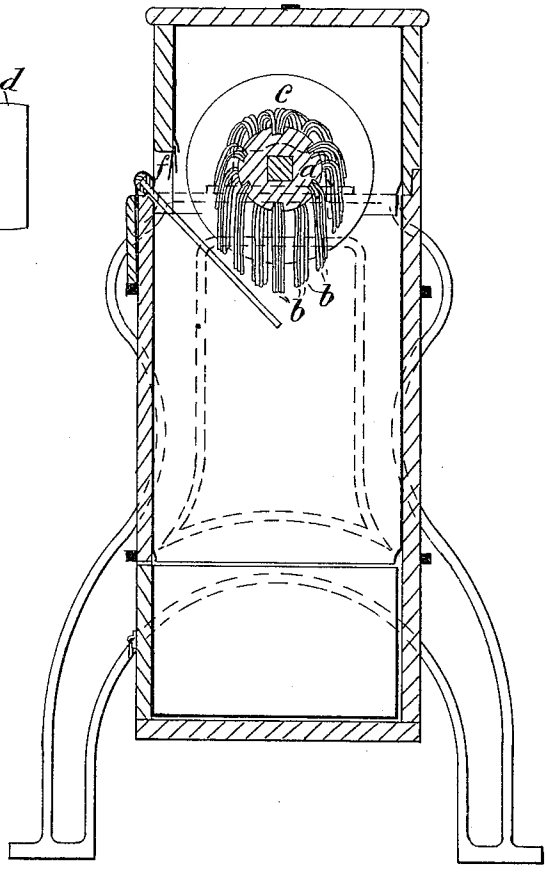


Fig. 6.



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(No Model.) 2 Sheets—Sheet 2.

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MACHINE FOR REMOVING SUPERFLUOUS GOLD LEAF FROM BOOK COVERS.

No. 329,863. Patented Nov. 3, 1885.

Fig. 3.

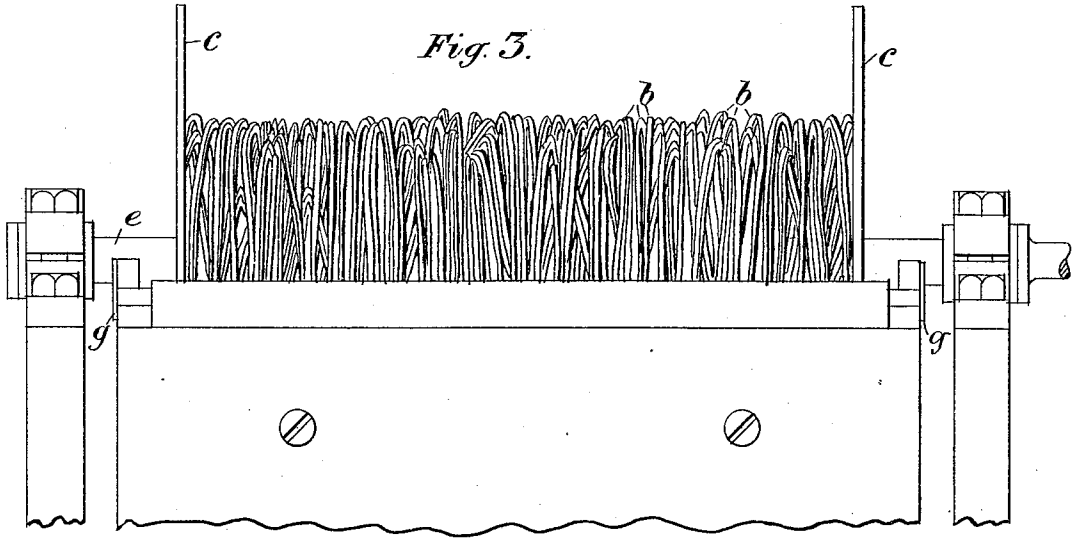
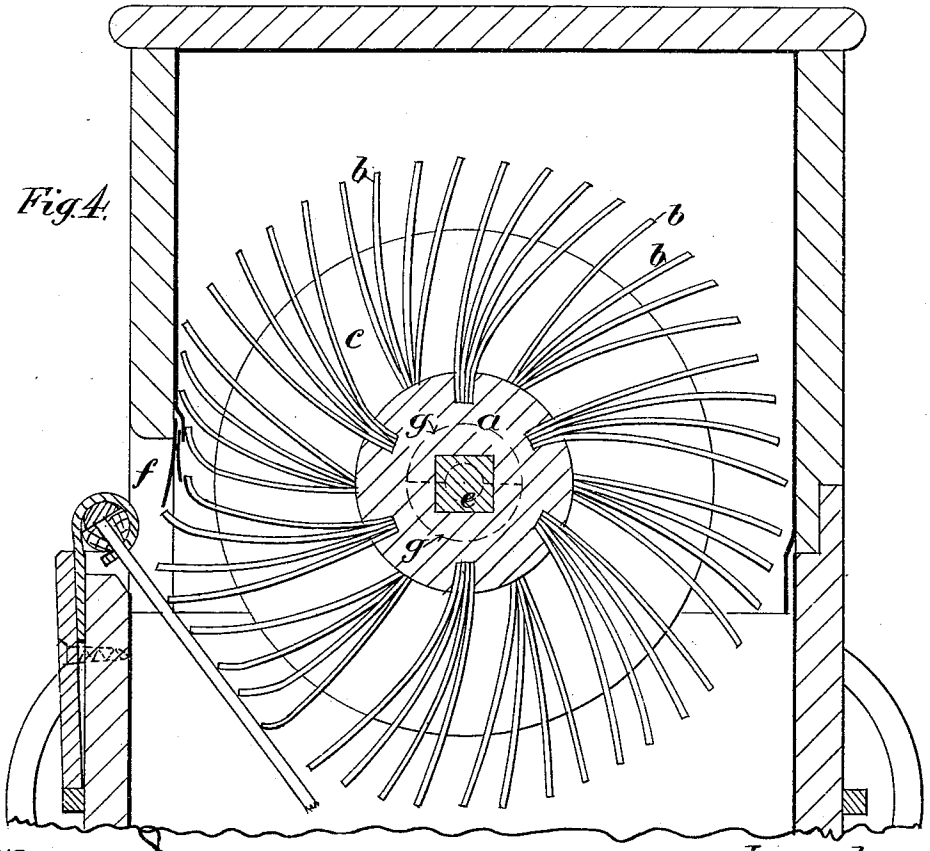


Fig. 4.



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UNITED STATES PATENT OFFICE.

ERNEST STRAKER, OF LONDON, ENGLAND.

MACHINE FOR REMOVING SUPERFLUOUS GOLD-LEAF FROM BOOK-COVERS.

SPECIFICATION forming part of Letters Patent No. 329,863, dated November 3, 1885.

Application filed July 22, 1884. Serial No. 138,508. (No model.) Patented in England January 7, 1884, No. 882.

To all whom it may concern:

Be it known that I, ERNEST STRAKER, of Wheatsheaf Works, Farringdon Street, in the city of London, England, book-binder, a subject of the Queen of Great Britain, have invented Improvements in Machines for Removing Superfluous Gold-Leaf from Book-Covers Decorated Therewith, (for which I have secured Letters Patent in Great Britain, No. 882, dated January 7, 1884,) of which the following is a specification.

In producing gilt designs and inscriptions on the surfaces of book-covers, a piece of gold-leaf is placed on the cover and a heated stamp is pressed thereon. The gold-leaf is thus caused to adhere to the cover at the required parts, and the superfluous gold-leaf, or that part which is not caused to adhere to the surface of the cover, is removed by rubbing or brushing the said surface.

In order to prevent waste and theft of the superfluous gold-leaf by the workmen employed in removing it, machines are sometimes used consisting of a brush secured to a rotary shaft, the said brush being formed of bristles or of flaps of sheet india-rubber secured to a cylinder working within a closed case, into which the book-covers are passed, one at a time, through a slit formed in one of its sides. The covers, when inserted in the said case, rest on a support secured in such a position relatively to the said brush that when it is caused to revolve the free ends of the bristles or the outer ends of the india-rubber flaps pass in contact with the said covers and remove the superfluous gold-leaf, which falls into a drawer in the lower part of the case. The use of these machines is attended by the following disadvantages: When bristles are used for the acting parts of the brush, the said bristles injure the surfaces of the covers, and when india-rubber flaps are used they are liable to destroy the book-covers; also the rapid rotation of the brush causes air to be drawn into the case and to be discharged through the slit provided for the insertion of the book-covers, the action being similar to that of a rotatory fan. Part of the gold removed by the brush is thus driven out of the machine.

My invention relates to machines of the kind hereinbefore described; and my said improvements consist in forming the acting parts of the brush of filaments of india-rubber, each secured at one end to the cylinder, which filaments, when the brush is revolving, are extended by centrifugal force, and their free ends strike the covers inserted in the machine and remove the loose gold-leaf without injuring them. In order to diminish the fan-like action of the machine, I secure disks of india-rubber to the ends of the cylinder of the brush within the case of the machine; and in order to prevent the escape of particles of gold at the apertures in the case through which the shaft passes, I surround the said shaft, near the parts which pass through the case, with shields of sheet metal secured to the said case.

The accompanying drawings represent a machine of the kind to which my invention relates and having my improvements applied thereto.

Figure 1 of the said drawings is an elevation of the said machine. Fig. 2 is a vertical section thereof, taken on the line 1, Fig. 1. Fig. 3 is a front view of the upper part of the machine without the cover, and drawn to a larger scale than Figs. 1 and 2; and Fig. 4 is a vertical section of the upper part of the machine, drawn to the same scale as Fig. 3. Figs. 5 and 6 are details hereinafter referred to.

In the following description the different parts of the drawings are referred to by means of the letters marked thereon.

The same letters of reference indicate the same parts in the several figures of the said drawings.

The construction of the said machine is the same as that of ordinary machines used for the purpose of removing superfluous gold-leaf from the covers of books, with the exception of the brush, which, as hereinbefore stated, is formed of filaments of india-rubber secured to a cylinder, and has disks of india-rubber secured to its ends.

Referring to the said drawings, *a* is the cylinder of the brush. *b b* are the india-rubber filaments, tufts of which are secured by means of any suitable cement, or in any suitable manner, in holes in the said cylinder, and *c c* are the india-rubber disks secured to the ends of the said cylinder *a*. One of the said filaments is shown separately drawn

of the full size in elevation and transverse section in Fig. 5. I have found that filaments of the size and form and dimensions illustrated in the said Fig. 5 answer well in practice; but these may be somewhat varied without impairing the action of the brush. I prefer to use pure unvulcanized india-rubber for the filaments of the brush. The india-rubber used in the manufacture of "elastic web," and known in commerce in England as "Warne & Co.'s patent magnetic cut (brown skein) india-rubber thread," may be used, both the form and quality of the said india-rubber being well suited for the purpose. The said filaments may, however, be cut from sheet india-rubber of suitable thickness.

g g are the metal shields for preventing the escape of particles of gold at the apertures in the case through which the shaft *e* passes, one of which shields is shown separately in Fig. 6. The said shields are secured in pairs to the sides of the case, one of each of the pairs of shields being secured to the upper part of the case on each side thereof, and the other to the lower part on each side thereof, so that when the two parts of the case are put together, as in Figs. 1 and 2, the pair of shields on each side of the case meet and completely surround the said shaft, as shown in dotted lines in Fig. 4.

The said machine is used in the same manner as ordinary machines—that is, the brush is caused to revolve by means of a driving-belt, connected to any suitable motor and passed over one of the drums or pulleys *d d* on the shaft *e*, on which the cylinder *a* of the brush is secured, and the book-cover from which the superfluous gold-leaf is to be removed is inserted into the case at the aperture *f*, and the said superfluous leaf is brushed off by the action of the said filaments, which, when the brush is revolving, are extended by centrifugal action, as shown in Fig. 4. The disks of india-rubber *c c* prevent currents of air from being drawn in between the filaments of the brush near the cylinder thereof, and the fan-like action, hereinbefore referred to, is thus prevented, and the gold-leaf removed from the covers is consequently not driven out of the case.

Instead of forming the disks *c c* of india-rubber, they may be formed of stout cloth, soft leather, or other flexible or yielding material which will not injure the book-covers should they come in contact therewith.

Having now particularly described and ascertained the nature of my said invention of improvements in machines for removing superfluous gold-leaf from book-covers decorated therewith, and in what manner the same is to be performed, I wish it to be understood that I do not claim, broadly, the use of india-rubber in the construction of the brushes used in such machines, as I am aware that brushes consisting of flaps of sheet india-rubber, each secured at one of its edges to a cylinder and parallel to the axis thereof, have been used in machines of the kind hereinbefore described, the use of which brushes is attended with disadvantages which are avoided by the use of brushes constructed according to my invention. Neither do I limit myself to the precise form or size illustrated in the accompanying drawings of the filaments of india-rubber hereinbefore described, nor to the method or manner hereinbefore described of securing them to the cylinder of the brush; but

I declare that what I claim is—

1. In a machine for removing superfluous gold-leaf from book-covers, a revolving brush for removing the superfluous leaf, composed of a shaft provided with a series of rubber filaments, substantially as described.

2. In a machine for removing superfluous gold-leaf from book-covers, the combination, with a support for the book, of a revolving shaft carrying a series of rubber filaments, the said support and shaft being so relatively arranged to each other that in the revolution of the shaft the free ends of the extended filaments will strike the book-cover, substantially as described.

3. In a machine for removing superfluous gold-leaf from book-covers, the combination, with a support for holding the book-cover in an inclined position, of a revolving shaft carrying a series of rubber filaments adapted, when extended by the revolution of the shaft, to strike against the said cover, substantially as described.

4. In a machine for removing superfluous gold-leaf from book-covers, the combination, with a revolving brush for removing the leaf, of flexible or yielding disks at the ends of said brush, substantially as described.

5. In a machine for removing superfluous gold-leaf from book-covers, the combination, with an inclosing-case and a shaft passing therethrough and carrying a series of rubber filaments constituting a brush, of flexible or yielding disks at the ends of said brush, and shields around the shaft where it passes through the casing, to close the opening through which it passes, substantially as described.

ERNEST STRAKER. [L. S.]

Witnesses:
CUPER DONNISON,
JOHN ALFRED DONNISON.