

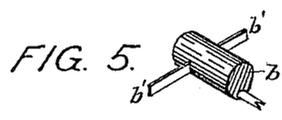
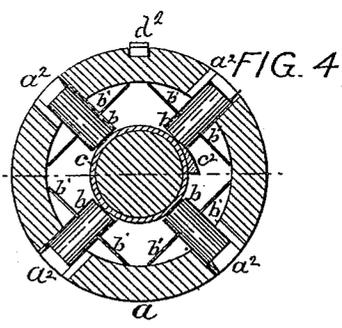
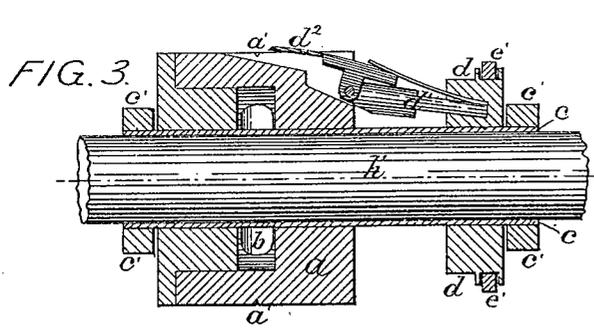
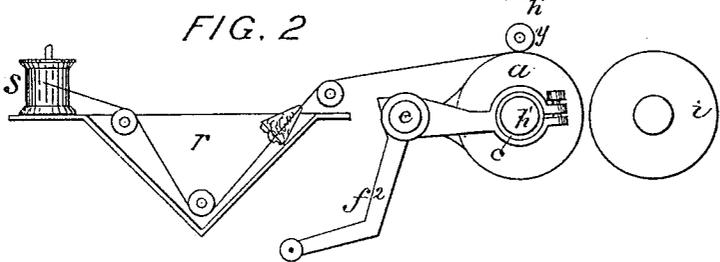
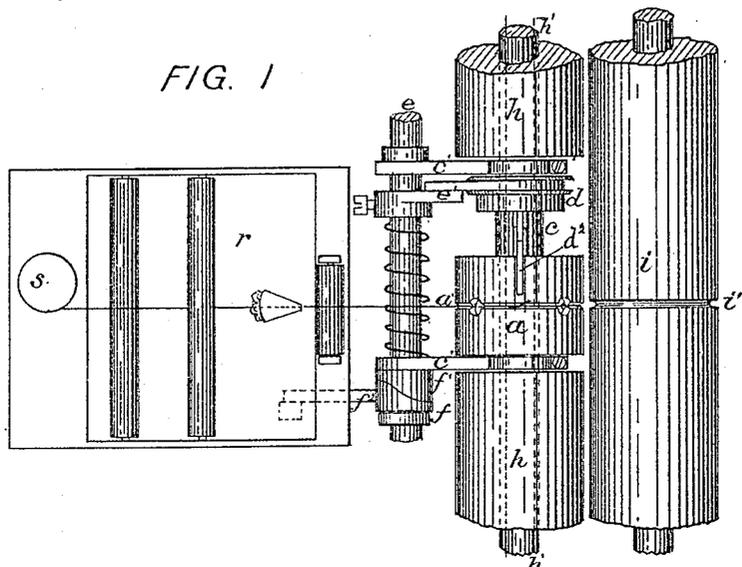
(No Model.)

M. J. BAKER.

DEVICE FOR SEWING BOOKS, PAMPHLETS, &c.

No. 329,254.

Patented Oct. 27, 1885.



WITNESSES.

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UNITED STATES PATENT OFFICE.

MIFFLIN J. BAKER, OF PHILADELPHIA, PENNSYLVANIA.

DEVICE FOR SEWING BOOKS, PAMPHLETS, &c.

SPECIFICATION forming part of Letters Patent No. 329,254, dated October 27, 1885.

Application filed March 12, 1884. Serial No. 133,862. (No model.)

To all whom it may concern:

Be it known that I, MIFFLIN J. BAKER, of the city and county of Philadelphia, State of Pennsylvania, have invented certain new and useful Devices for Sewing Books, Pamphlets, &c., adapted to be used with paper-folding machines, of which the following is a specification.

My invention relates to a new and improved apparatus for sewing papers, pamphlets, or books, which can be readily affixed to any folding-machine, the object being to readily, cheaply, and perfectly unite the sheets or leaves together, and is susceptible of being attached to and worked with a folding-machine, thus folding and sewing the sheets or leaves together while passing through the folder. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a top plan; Fig. 2, a side elevation; Fig. 3, a longitudinal section through the center of the needle-carrier; Fig. 4, needle-carrier with its end removed, showing the interior devices; Fig. 5, enlarged view of the needle.

Similar letters refer to like parts in all the figures.

The carrier *a* is a short hollow cylinder, milled around its periphery for a purpose hereinafter explained. Around its center a shallow groove, *a'*, is turned, through which the cylinder *a* is pierced radially with holes *a''* at intervals into the interior. Pins *b* are fitted into each of these holes, so as to slide in and out. From the outer ends of pins *b* forked carriers or loopers project, as shown in the enlarged view Fig. 5. When the pins are retracted, these forks stand within the line of the groove *a'*, so that a thread drawn into the groove rests in the fork *b*, and when the fork is thrust out it carries a loop of the thread lying in the fork with it. The carrier *a* fits over and turns on a stationary sleeve, *c*, from which arms *c'* project backward, where they are held stationary by the rod *e*, and prevent sleeve *c* from turning. This sleeve has a cam, *c''*, upon its exterior surface, within the carrier *a*, over which the inner ends of pins *b* pass as carrier *a* revolves, by which they are thrust out sufficiently to pierce the folded paper and

carry the loop of thread through it. The pins *b* are retracted, after passing the cam *c''*, by a straight spring, *b'*, fitted on a chord of the circle, as seen in Fig. 2. On the sleeve *c* there is a loose grooved collar, beyond the end of the carrier *a*, which revolves with it, having a sliding movement on the sleeve toward and from the carrier *a* by means of a fork, *e'*, projecting from a sliding rod, *e*, that passes through the stationary arms *c'*. This rod *e* is drawn toward the carrier *a* by a face-cam, *f*, loose on the rod *e*, and held from sliding on said rod by a collar set thereon, and when turned acts against a stationary face-cam, *f'*, on arm *c'*, by which the sliding motion is given to the rod *e* and collar *d*. This rod *e* is thrown back by a coiled spring at arm *c*. The cam *f* is turned by an arm, *f''*, projecting therefrom, actuated by a cam or other device well known to mechanics, actuated by the moving parts of a paper-folder of any pattern. This is not shown in the drawings, as my device can be adapted to any style or pattern of folder on which it is placed to stitch the folded paper just before it receives its last fold. There is a straight arm, *d'*, jointed to the grooved collar *d* above named, that slides in a recess formed in the carrier *a* parallel with its axis, and extending from its end beyond the center and beyond the thread-groove. This recess is deepest at the end of the carrier, inclining outward toward its other end, so that when arm *d'* is made to slide inward by the movement of collar *d*, as above described, it runs up the inclined plane of the bottom of the recess, by which it is brought nearer the surface of carrier *a* at the center, as shown in the section Fig. 3. A knife, *d''*, is pivoted to the upper side of the sliding arm *d'*, and when the arm *d'* is drawn back it sinks below the surface of the recess. A spring on *d'* bears down upon the outer end of knife *d''*, and elevates its inner or cutting end, and when the knife is thrust inward and upward it passes over the thread in the thread-groove *a'* of the carrier, its edge being on the under side, ready to cut off the thread when depressed, which is effected by the revolution of the carrier, that brings it around opposite the roller *i*, hereinafter described, that forces it down against the thread. The roller *i* is located opposite and

parallel with the carrier, but not in close contact therewith, and it is revolved by the folding-machine, the carrier remaining stationary when not stitching the folded paper that passes down between it and roller *i*, that by its pressure causes it to revolve while the paper is running through between them. The paper passes this point just before it receives its last fold, and is there stitched, the loops of thread thrust through it by the forked pins entering a groove in roller *i* opposite to any depth desired and to which the groove in *i* is made. The thread is on a spool, *s*, from which it passes down into a reservoir, *r*, containing a cement of any proper kind, but preferably a compound for which I am about to apply for patent, into which it is submerged and passes into groove *a'*, in which it is held by a small roller, *y*, resting on carrier *a* over the groove, and is carried forward to the paper to be sewed. The forks of the loopers as they come around opposite roller *i* are thrust out, carrying a loop of the thread through the paper into a groove, *i'*, in said roller *i* opposite. In this way the desired number of loops or stitches are made in each fold of paper as it is carried through. When the stitching is finished, the knife before described cuts off thread, and the folded paper having passed, the carrier *a* ceases to revolve until another is introduced between the carrier *a* and roller *i*.

Having thus described my invention, I claim—

1. In a book-stitcher, the carrier *a*, constructed as above described, having forked looping-pins *b*, constructed and operating as and for the purposes specified.

2. In a book-stitching machine, the forked looping-pins *b*, in combination with the grooved carrier-cylinder *a*, in which they are moved radially out and in for inserting loops of thread through the sheets of paper, constructed and arranged substantially as and for the purposes specified.

3. The combination of the forked looping-pins *b* within the grooved carrier *a*, for guiding the thread and forming the loop, as specified.

4. In a book-stitcher, the combination of the carrier *a*, sleeve *c*, cam *c'*, and looping-pins *b*, constructed and arranged as specified.

5. The combination of the driving-roller *i* and carrier *a*, as described, by which intermittent motion is imparted to the carrier *a* by the passage of the folded paper to be sewed between them, as herein specified.

6. The roller *i*, having a groove, *i'*, therein for receiving the loops of thread, as described, in combination with looping-pins *b* and carrier *a*, substantially as specified.

7. The carrier *a*, having the guiding-groove *a'* around it for holding and guiding the cemented thread, in combination with the forked looping-pins *b*.

8. The thread-cutter *d'*, in combination with the carrier *a*, substantially as and for the purposes specified.

9. The combination of the thread-cutter *d'* with the carrier *a* and roller *i*, by which the cutter is brought into action, as specified.

10. The combination of the sliding grooved collar on sleeve *c* with the knife-slide *d*, for bringing the knife into position to cut the thread and retracting it, substantially as specified.

11. The combination of the cement-reservoir with the revolving grooved carrier *a*, by which the cemented thread is laid straight and guided to the forked pins *b*, as specified.

12. The combination of the roller *y* with the revolving grooved carrier *a*, as and for the purposes specified.

In witness whereof I have hereto subscribed my name.

MIFFLIN J. BAKER.

Witnesses:

T. E. HANCOCK,
JAMES DEVINE.