(No Model.)

E. M. LAMB & E. BALES.

FEEDING MECHANISM.

No. 588,450. Patented Aug. 17, 1897.

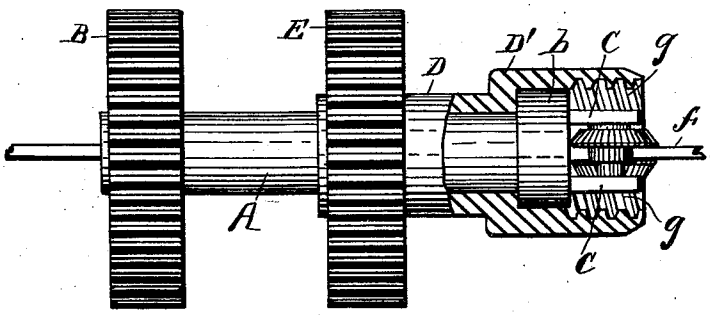


Fig. 1.

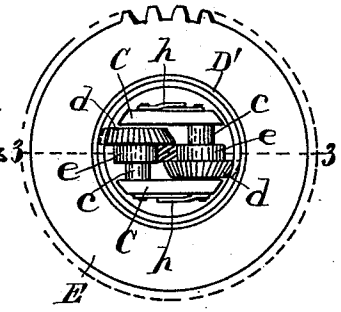


Fig. 2.

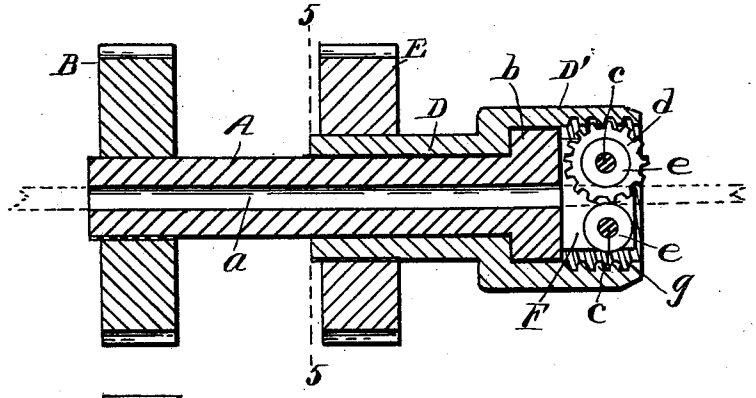


Fig. 3.

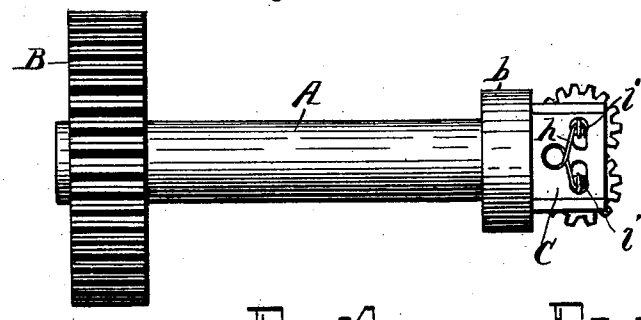


Fig. 4.

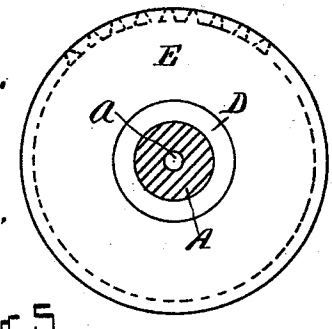


Fig. 5.

WITNESSES

O. B. Barrigar

A. Thurtell

INVENTORS.

Edward M. Lamb.

By their Attorney Emmor Bales,

Wheeler & Co.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD M. LAMB AND EMMOR BALES, OF CLAYTON, MICHIGAN.

FEEDING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 588,450, dated August 17, 1897.

Application filed August 10, 1896. Serial No. 602,245. (No model.)

To all whom it may concern:

Be it known that we, EDWARD M. LAMB and EMMOR BALES, citizens of the United States, residing at Clayton, in the county of Lenawee, State of Michigan, have invented certain new and useful Improvements in Feeding Mechanism; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to mechanism for feeding strands or strips of material, especially strands of wood, in the manufacture of toothpicks; and it consists in the construction and arrangement of parts hereinafter fully set forth, and pointed out particularly in the claim.

The object of the invention is to provide simple and effective means for feeding long strands or strips of material, of whatever character, in such manner that such strand of material may be fed at a uniform rate of speed and rotated while being fed, the arrangement being such as to also enable the strand to be fed without rotating or to enable the rotating of the strand without being fed through the machine, which object is attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of our improved feeding mechanism, portions of which are broken away to more clearly show the arrangement of parts. Fig. 2 is an end elevation of the device. Fig. 3 is a central longitudinal section as on line 3 3 of Fig. 2. Fig. 4 is an elevation of the hollow rotary shaft carrying the feeding-gears at its outer end. Fig. 5 is a transverse section as on line 5 5 of Fig. 3.

Referring to the letters of reference, A designates a rotatable shaft which may be mounted in any suitable boxing and which is provided with a central longitudinal aperture *a*, passing therethrough. Secured upon the end of said shaft is a gear-wheel B, and upon the other end thereof is an integral annular shoulder or flange *b*. Formed integral with and projecting from the end of said shaft in a plane therewith are two opposed brackets C. Mounted loosely upon transverse spindles *c*, which stand approximately parallel and are supported at opposite ends in slotted ways *i* in the opposed brackets C, are the gear-wheels *d* and the integral feed-rollers *e*, which latter stand in the same plane and between which the strand of material *f* is engaged and carried longitudinally by the rotation of said gears.

D designates a hollow sleeve carrying a gear-wheel E and journaled upon the end of the shaft A, having an enlarged outer end portion D′, which receives the annular shoulder *b* of said shaft and forms within the outer end of said sleeve an enlarged circular chamber F, the wall of which is provided with an internal thread *g*. (Clearly shown in Figs. 1 and 3.) The inner diameter of the chamber F is such as to receive the greatest diameter through the opposed gear-wheels *d*, carried on the end of the shaft A, so that when said parts are in position said wheels lie within the opening of said chamber and mesh with the internal thread *g* therein, the arrangement of parts being such that a space between the adjacent faces of the feed-rollers *e* shall register with the aperture *a* through the shaft A, as clearly shown in Fig. 3.

It will be seen that the outer face of the gears *d* is beveled so as to coincide with the curve of the interiorly-threaded chamber F. It will now be evident that by rotation of the shaft A within the sleeve D the gear-wheels *d*, meshing with the thread *g* within said sleeve, will be rotated so as to cause the opposed feed-rollers C to travel in opposite directions and carry longitudinally the strand *f*, which passes between them, at the same time said strand is revolved with the rotation of said shaft. By rotating the sleeve D in the same direction and in unison with said shaft the strand may be rotated, but held from longitudinal movement, and by rotating said sleeve with the shaft remaining stationary the strand will be fed therethrough, but will not be rotated.

It is designed that the shaft A shall be mounted in a suitable box M (not shown) and that it shall be rotated through the gear B or other suitable means. The sleeve D is designed to be rotated through the gear E thereon or other suitable driving means.

By the construction herein shown the strand of material may be fed through the machine as desired and at the same time rotated at a high rate of speed, enabling the strand to be shaped and formed by turning or shaping, as required. This mechanism also enables the rotation of the strand without feeding it through the machine when in such work it becomes necessary to stop the feeding of the strand and at the same time maintain the rotation thereof, or, as above described, the strand may be fed through without rotating by holding the shaft A and revolving the sleeve D thereon.

The enlarged shoulder *b* of the shaft filling the enlarged recess in the end of the sleeve D′ retains the sleeve in place and steadies said parts in their operation.

To provide for exerting the proper tension upon the feed-rollers *e*, so as to cause them to engage the material between their adjacent faces with sufficient force to carry said material through said rollers by their rotation, there is employed a suitable spring *h*, the ends of which engage the ends of the spindle *c*, which extend through slotted ways *i* in the opposed brackets C, whereby the tension of said springs is exerted to force the feed-rollers *e* together upon the strand of material passing between them, and said rollers are permitted to move laterally in unison owing to the slotted ways in which their spindles travel, thereby enabling said rollers to readily accommodate themselves to any deviation in said strand.

Having thus fully set forth our invention, what we claim as new, and desire to secure by Letters Patent, is—

In a feeding mechanism, the combination with the rotary hollow shaft, the sleeve embracing said shaft having an internal thread at one end, the opposed brackets mounted on the end of said shaft having the opposed slotted ways therein, the spindles supported at opposite ends in the slotted ways in said brackets, the gear-wheels having the feed-rollers formed integral therewith mounted loosely upon said spindles so that said rollers stand opposed to each other, said gears meshing with the internal thread of said sleeve, the ends of said spindles passing through the slotted ways in said brackets, and the looped springs engaging at their free ends the opposed ends of said spindles.

In testimony whereof we affix our signatures in presence of two witnesses.

EDWARD M. LAMB.
EMMOR BALES.

Witnesses:
J. B. KESSLER,
C. E. SMITH.