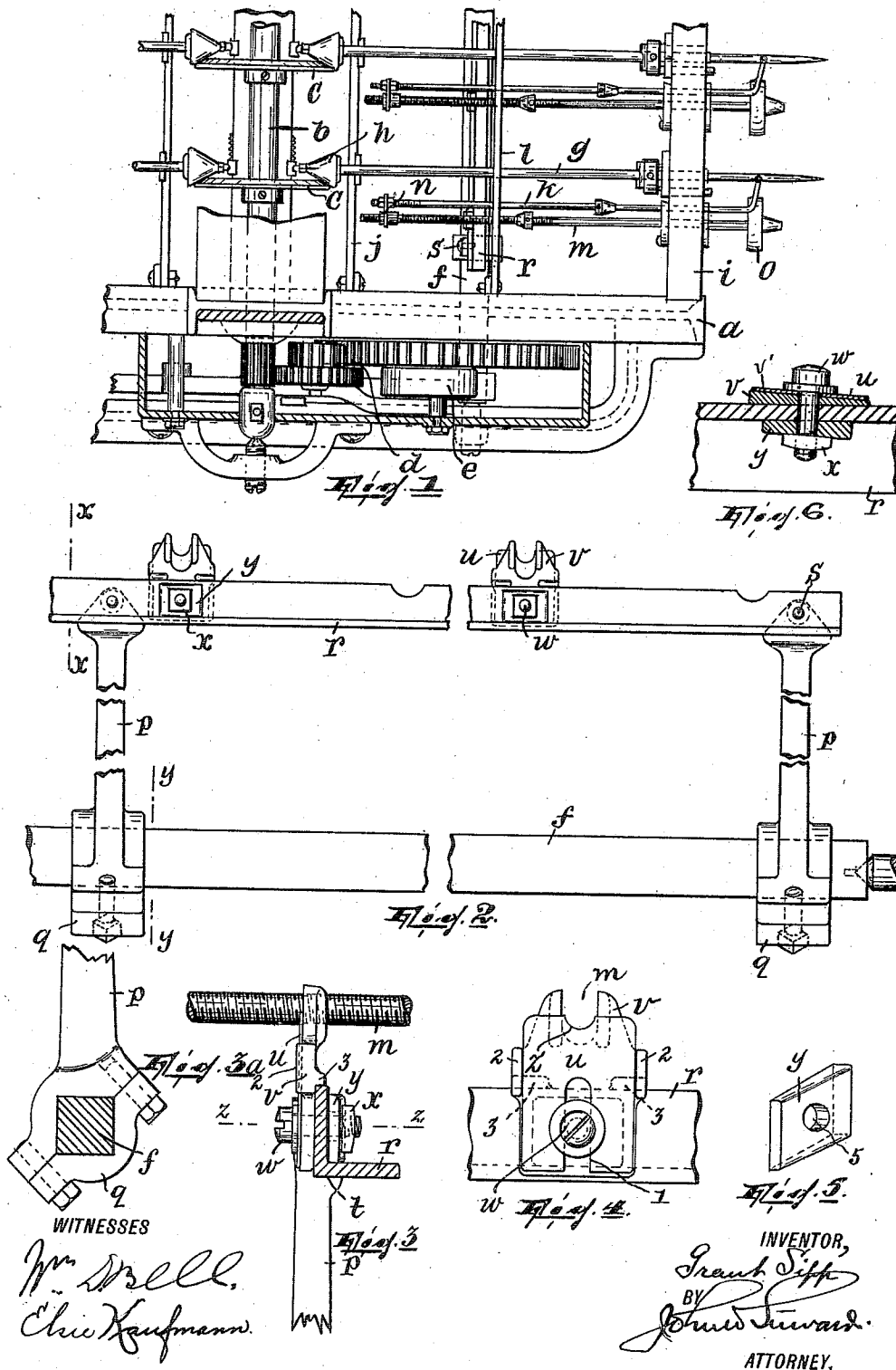


G. SIPP.
QUILLING MACHINE.
APPLICATION FILED FEB. 20, 1909.

985,947.

Patented Mar. 7, 1911.



UNITED STATES PATENT OFFICE.

GRANT SIPP, OF PATERSON, NEW JERSEY.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GRANT SIPP, a citizen of the United States, residing in Paterson, Passaic county, New Jersey, have invented a certain new and useful Improvement in Quilling-Machines; and I do hereby 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 letters of reference marked thereon, which form a part of this specification. This invention relates to quilling machines and it has reference particularly to the means whereby the threaded rods which control the longitudinal advance of the thread-guide rods are actuated. This means has heretofore comprised a series of forks, one for each threaded rod, having threaded portions thereof passed through and clamped to a rock-shaft by means of nuts. It is found in practice that this arrangement is difficult to adjust and maintain in adjustment so that the threaded rods will work smoothly and transmit such action to the thread-guide-rods as is necessary in the regular winding of the quills; it is a very tedious matter to set the several forks in their proper positions, and once they have been set the nuts require to be frequently tightened up in order to keep the forks in proper working condition.

My object is to provide a rocking structure for actuating the threaded rods which may be more readily and conveniently assembled and adjusted with respect to the threaded rods than that at present in use and when once adjusted will not be subject to influences tending to disturb the adjustment; a further object is to provide a lighter rocking structure than that now in use, whereby the inertia of the same will be reduced and the machine may thereby be geared up to run at a higher rate of speed than machines having the present type of rocking structure.

In the accompanying drawings, Figure 1 is a plan view, partly in section of the end portion of a quilling machine provided with my improved rocking structure for actuating the threaded-rods; Fig. 2 is a view in front elevation of a fragment of the improved rocking structure; Fig. 3 is a sectional view on the line $x-x$ of Fig. 2, looking toward the right; Fig. 3^a is a sectional

view on the line $y-y$ of Fig. 2, looking toward the left; Figs. 4 and 5 illustrate details; and, Fig. 6 is a sectional view on line $z-z$ of Fig. 3, the bolt and nut appearing in elevation.

The frame a , main rotating shaft b , friction-wheels c on said shaft, gearing d connecting the shaft b with a cam e whereby the rock-shafts f (only one of which is shown) are rocked, spindles g carrying cones h adapted to bear against the friction wheels c , the rails i and j in which said spindles are journaled, the thread-guide-rods k , adapted to reciprocate in the rail i and a rail l , and the threaded rods m connected with the thread-guide-rods k by the couplings n and having the friction wheels o adapted to intermittently engage the quills as the winding proceeds are or may be all substantially constructed and arranged to operate the same as in my U. S. Letters Patent No. 759640.

The shaft f is preferably square in cross-section and it carries two or more arms p secured to the shaft by means of clamping plates q bolted to the arms. The arms p are connected by a suitable support in the form of the angle iron bar r attached thereto by screws or the like s , the outer side of the free end of each arm being cut away to form an angular seat t for such support, thereby increasing the rigidity and stability of the entire rocking structure.

At suitable intervals along bar r , corresponding with the intervals between the threaded-rods m , are secured devices, now to be described, in which rest the threaded rods and which engage in the threading of such rods. These devices are illustrated best in Figs. 3 and 4 and each comprises an obliquely disposed knife or blade u , a bracket v , a bolt and nut w and x for clamping the knife and bracket to the support r and a beveled part y to afford the proper angle of contact for the nut which, with the bolt, is caused to stand obliquely by virtue of the head of the bolt lying against the obliquely disposed knife. The knife or blade u may be a substantially rectangular piece of steel having a recess z cut in its top edge and formed arc-shaped so as to fit the threaded rod m and an elongated slit 1 extending upwardly from its lower edge. The bracket v is formed forked in its upper portion to coincide with the recess z in the knife u , so as to admit the rod m into and maintain it

in engagement with the knife when the parts *u* and *v* are assembled. The bracket *v* has the vertical shoulders 2 on one face thereof spaced sufficiently far apart to admit the blade or knife *u*, and on the other face thereof it has the horizontal abutments or shoulders 3 affording means whereby to square the bracket on the support. Said bracket further has its outer face obliquely formed or beveled. (See Fig. 6.) The beveled part *y* is a substantially rectangular piece of metal beveled on its outer face at the same angle as the bevel *v'* of bracket *v*, but reversely.

The parts are assembled as follows: The bracket, with the knife laid against it and fitting between the shoulders 2, is placed against one face of the support *r* so that its shoulders 3 engage the top edge of the latter and so that its beveled face is outward. The beveled part *y* being then placed against the opposite face of the support, the bolt is passed through the knife and bracket and the beveled part *y*, whereupon, having adjusted the knife to the proper elevation, the nut is placed on the bolt and turned fast against the beveled part *y*. The angle of the bevel of the bracket and part *y* being that of the pitch of the threading on rod *m*, no adjustment of the knife to bring it to the angle for proper engagement with the rod *m* is necessary.

By my construction a lighter rocking structure than that heretofore used is produced, so that the machine may be geared up to run at a materially increased speed and its output correspondingly augmented. The knives being absolutely fixed not only at definite intervals relatively to each other but against assuming positions where they would stand out of true with respect to the thread-pitch of the rods, the several parts can be assembled with great expedition and facility and when assembled will permanently retain their primary adjustment. It should be further noted that each bracket *v* assumes in its forked portion any lateral pressure of the threaded rod, either as the result of the cone of the cop bearing against the friction wheel *o* intermittently or when the attendant thrusts the rod back in resetting it, so that the threads of the rod at

that time bear against a broad surface at the inside of the fork of the bracket, instead, as formerly, against the sharp or narrow edge of the knife.

I do not wish to be limited to the various details of construction shown and described herein, what I claim being:

1. In a quilling machine or the like, the combination of the frame, the rotary reciprocatory threaded rods, and means for reciprocating said rods comprising a unitary rocking structure having in its free or outer portion a support extending substantially parallel with its axis of rocking movement, and devices, adjustably arranged on said support, engaging the threading of said rods, substantially as described.

2. The combination, in a rocking structure for actuating the threaded rods in a quilling machine or the like, of a rock-shaft, arms projecting therefrom and having aligned angular seats, and a cross-sectionally angular rail connecting said arms and bearing in its angular portion against said seats, substantially as described.

3. The combination of the frame, a threaded rod, a support arranged in the frame, a knife engaging the threading of the rod, means for securing the knife to the support, and members having oblique outer faces and engaging opposite faces of said support and having their outer faces substantially parallel with each other, said knife being in contact with the outer face of one member and the securing means bearing against the outer face of the other member, substantially as described.

4. The combination of the frame, a threaded rod, a support arranged in the frame, a knife engaging the threading of the rod, a knife confining device having lateral shoulders engaging the knife and confining the latter against lateral movement, and means for securing said knife and said device to the support, substantially as described.

In testimony, that I claim the foregoing, I have hereunto set my hand this 13th day of February 1909.

GRANT SIPP.

Witnesses:

JOHN W. STEWARD.

WM. D. BELL.