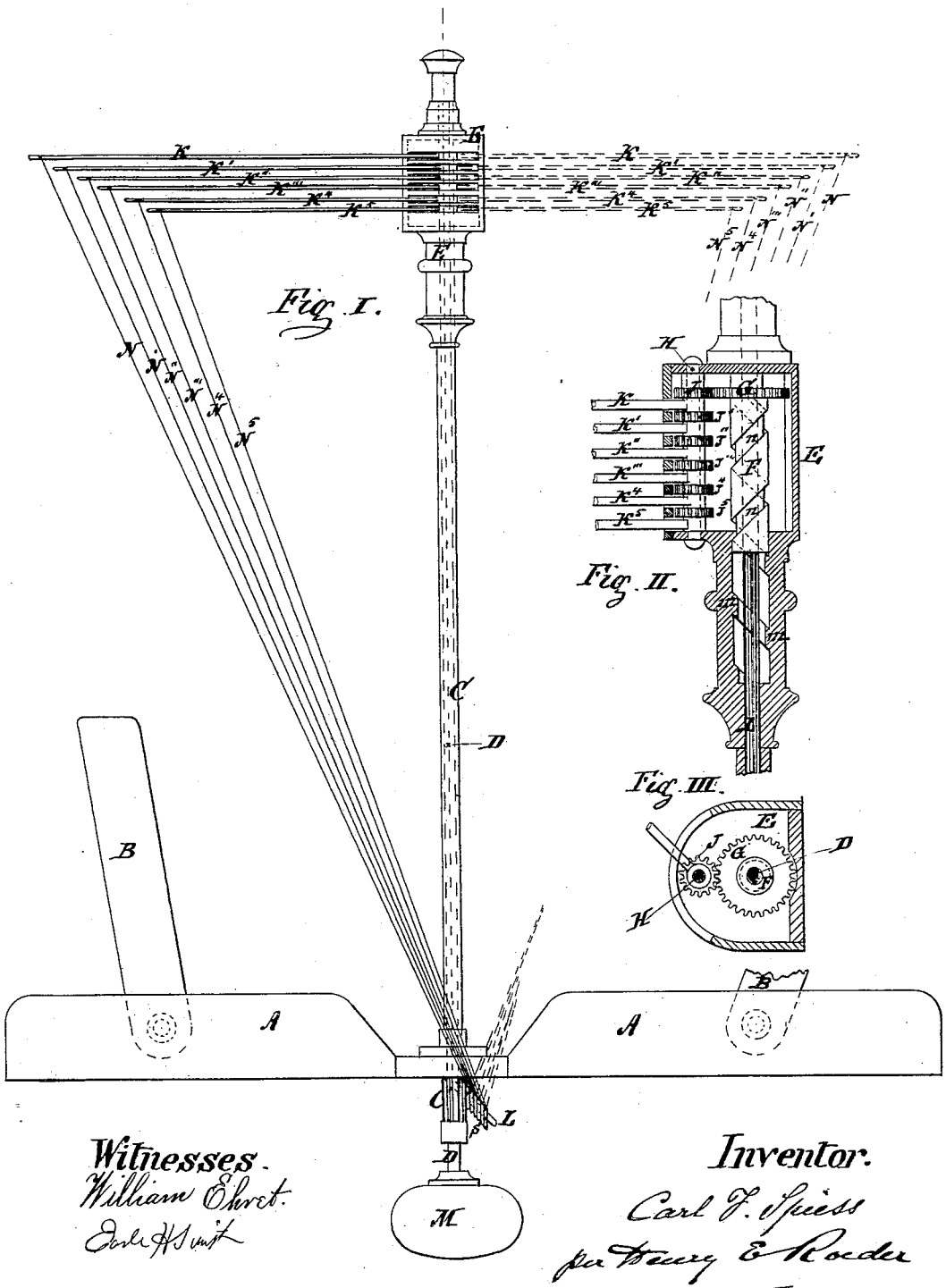
C. F. SPIESS.
Leaf Turner.

No. 202,290. Patented April 9, 1878.



Witnesses.
William Ehret.
Earle H. Smith

Inventor.
Carl F. Spiess
per Henry E. Roeder
Attorney.

UNITED STATES PATENT OFFICE.

CARL F. SPIESS, OF NEW YORK, N. Y.

IMPROVEMENT IN LEAF-TURNERS.

Specification forming part of Letters Patent No. **202,290**, dated April 9, 1878; application filed February 12, 1878.

To all whom it may concern:

Be it known that I, CARL F. SPIESS, of New York, in the State of New York, have invented a new and Improved Music-Leaf Turner, of which the following is a specification:

The nature of my invention consists in the arrangement of a gear-wheel attached to a hub, provided with a quick-threaded screw, which, by means of a suitable spindle, is screwed into a corresponding nut, so as to move upward or downward, during which operation said wheel engages alternately with a number of smaller wheels to turn the same about one-half around. The smaller wheels are attached to suitable arms, from the end of which cords or strings pass to a central point below the music-book support, and are thereby turned from right to left, or from left to right. The strings or cords being placed between the music-leaves, will, by the above operation, turn the same from right to left, or from left to right, as may be desired, as soon as the spindle is turned.

In the accompanying drawing, Figure I represents a front view of my leaf-turner. Fig. II is a vertical section of upper part, containing the gearing. Fig. III is a horizontal section of the same.

Similar letters represent similar parts.

A represents the frame or stand for the music-book, provided with turning-bars B, against which the book rests, constructed in the usual manner. In the center of the stand A a column or support, C, is attached, through which the shaft or spindle D passes. On the top of the column a suitable box, E, is attached. To the top of the spindle D is a gear-wheel, G, provided with a hub, F, having a very quick-threaded groove, *n*, which is attached to the box E by screwing into a corresponding nut, *m*, formed in the lower part of the said box or case E. Parallel to the main spindle D is a small spindle, H, arranged in the box E, upon which a number of small wheels or pinions, J, J′, J″, J‴, J⁴, and J⁵, are placed, to the hubs of which arms K, K′, K″, K‴, K⁴, and K⁵ are firmly fastened. The pinions J, J′, J″, J‴, J⁴, and J⁵ are so arranged that the wheel G will mesh into the same, and the relative proportion between the wheel G and the pinions J, J′, J″, J‴, J⁴, and J⁵, and of the thread *n* on the hub F, must be such that the passing of the gear-wheel G the width of the pinions J, J′, J″, J‴, J⁴, and J⁵ will turn said pinions about one-half around. To the outer ends of the arms K, K′, K″, K‴, K⁴, and K⁵ cords or suitable strings N, N′, N″, N‴, N⁴, and N⁵ are attached, provided at their lower ends with suitable rings *s* to fasten to a hook, L, attached to the lower part of the column C below the book-stand A.

On the lower end of the spindle D a knob, M, is fixed, for the purpose of turning said spindle, as may be desired. The end of the spindle D may be connected with suitable gearing, capable of being operated by the foot or knee.

The operation is as follows: The book is placed upon the stand A, when the rings *s* are unfastened from the hook L, and the cords or strings N, N′, N″, N‴, N⁴, and N⁵ passed under the music-leaves.

Instead of one string from each arm double strings may be attached, in which case each leaf is passed between these double strings, and is held there on both sides. This arrangement is of advantage, as in case any part of the music is to be repeated the leaves may be turned readily back again.

When the strings are placed in proper order under the leaves the rings *s* are attached to the hook L. When the leaf requires to be turned the turning of the spindle D will cause the wheel G to mesh into the pinion J, and turn the same one-half around, moving its arm K from one side to the other side, and consequently turning the leaf which lies upon its string N, or is attached between a double string in that direction.

By the next operation of the spindle D the wheel G will have moved to mesh into the pinion J′, and operate the same and its arm K′, and consequently the second leaf, in the same manner.

Instead of using gear-wheels, as above described, friction-wheels may be employed.

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

The combination of spindle D, wheel G, with hub F, having a thread-groove, *n*, working in a suitable nut, *m*, pinions J, J′, J″, J‴, J⁴, and J⁵, arms K, K′, K″, K‴, K⁴, and K⁵, strings or cords N, N′, N″, N‴, N⁴, and N⁵, with rings *s* at their lower ends, and the hook L, the whole being constructed and arranged to operate in the manner and for the purpose substantially as herein described.

CARL F. SPIESS.

Witnesses:
HENRY E. ROEDER,
J. B. NONES.