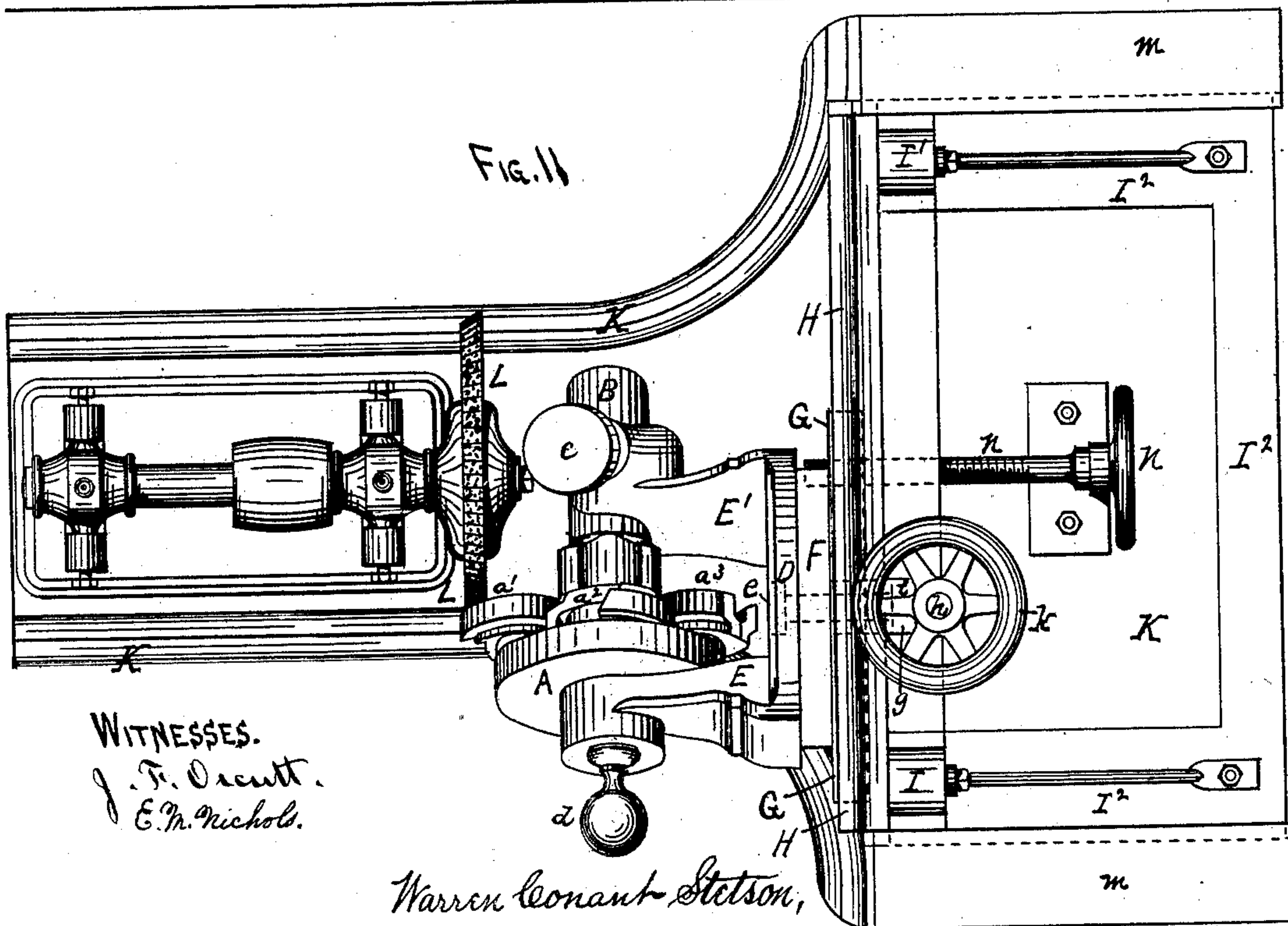
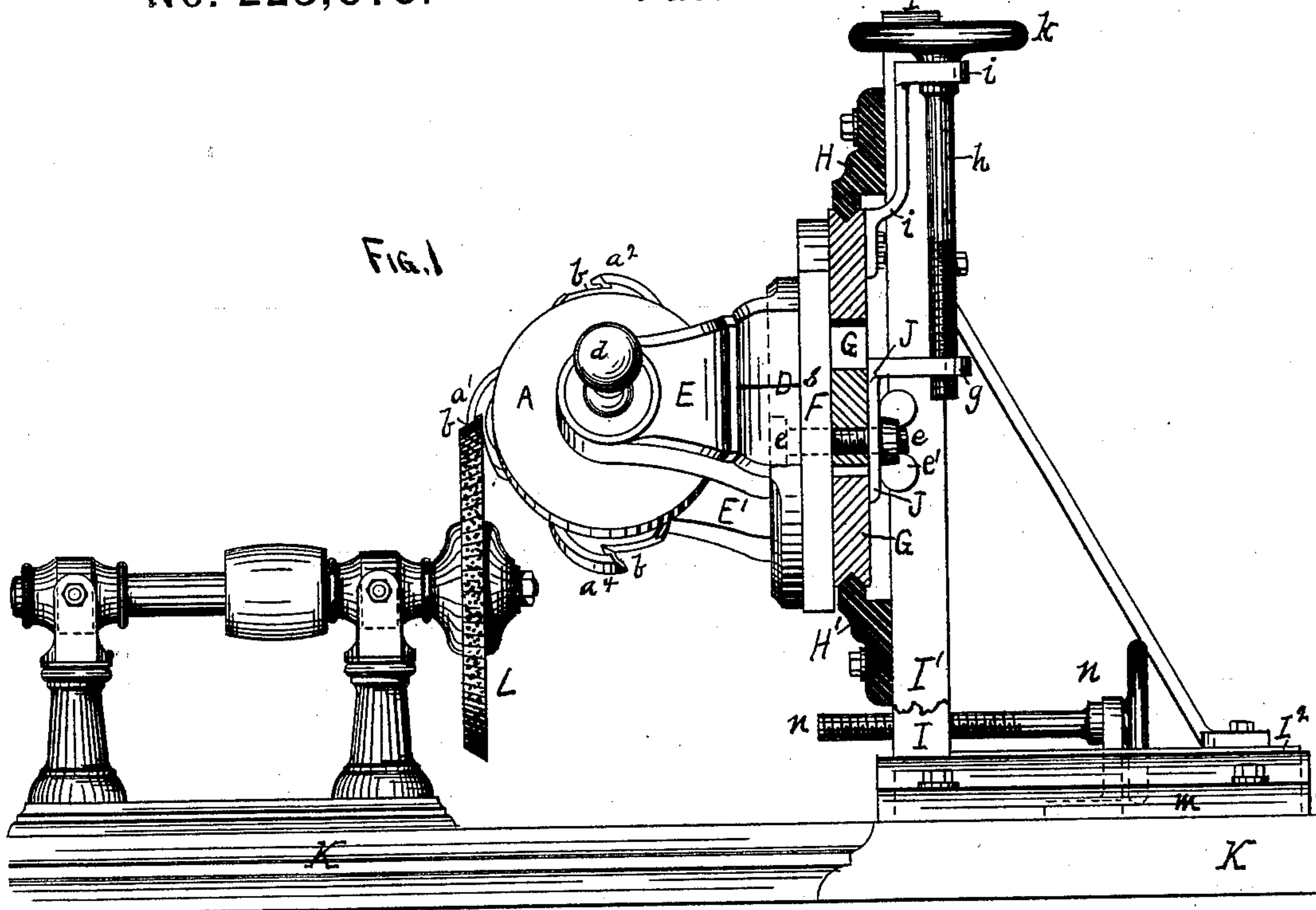


W. C. STETSON.
Machine for Grinding the Bits of Planing-Machine
Cutter-Heads, &c.

No. 223,076.

Patented Dec. 30, 1879.

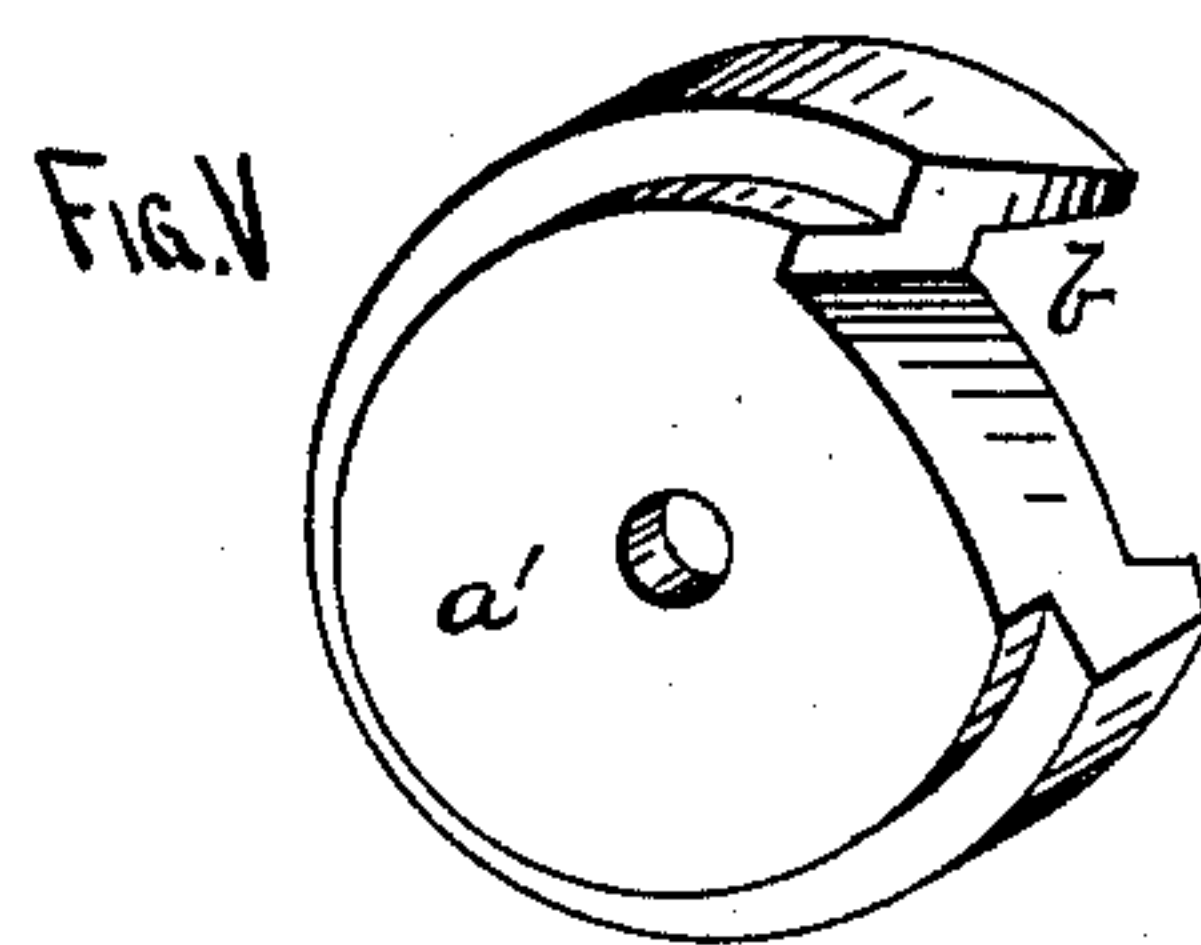
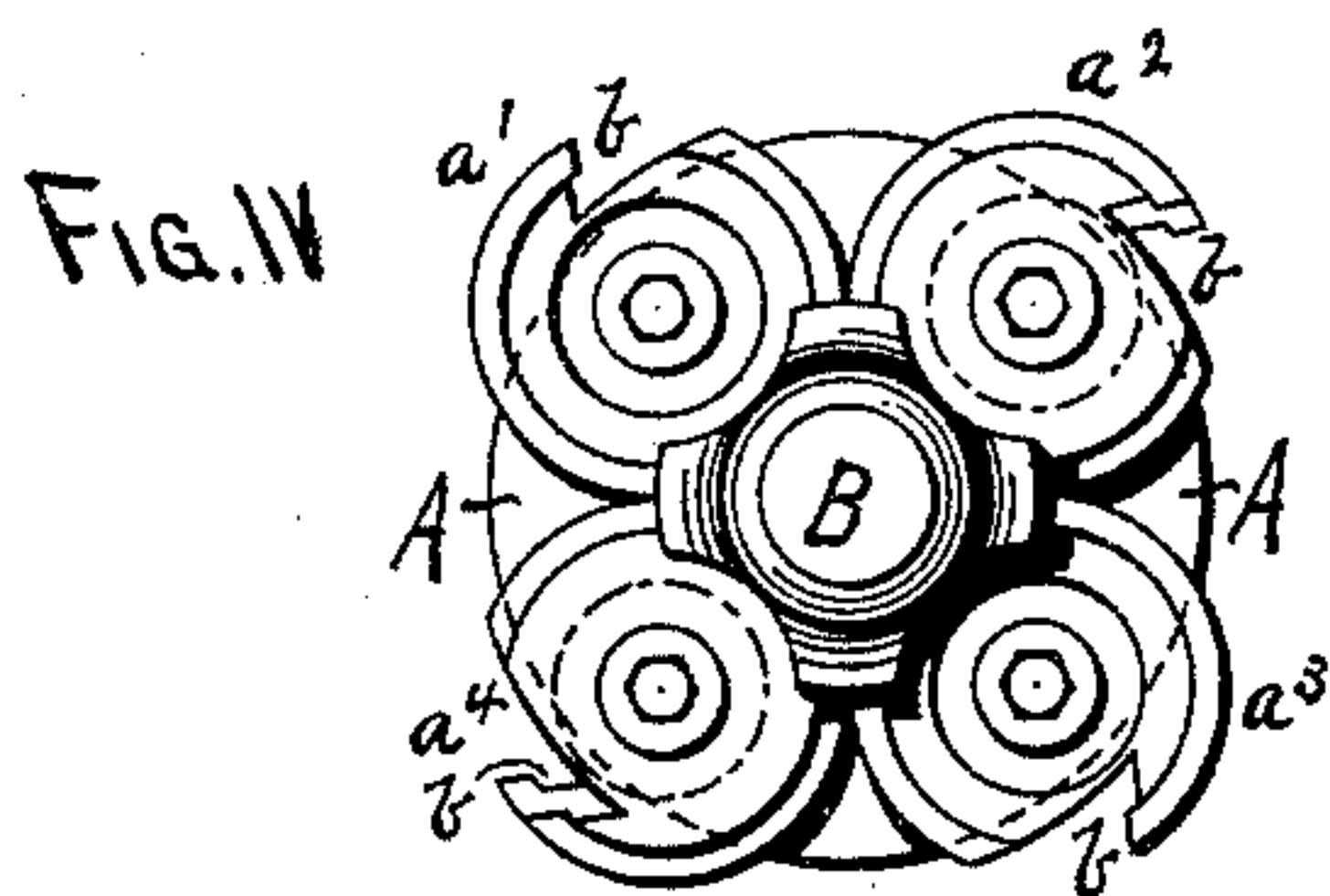
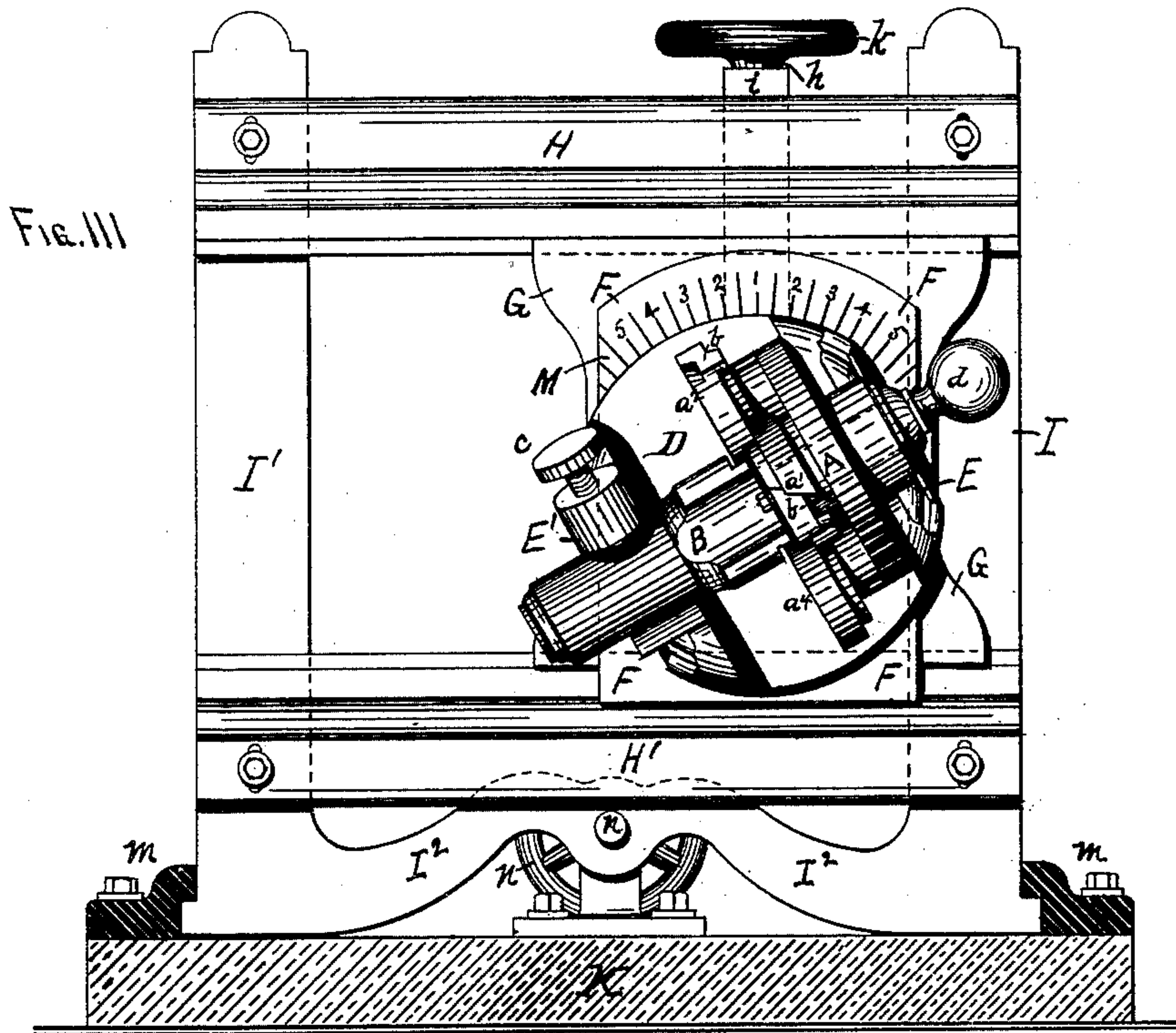


WITNESSES.
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E. M. Nichols.

Warren Leonard Stetson,

INVENTOR, BY
Louis Fessenden and Chas. N. Woodward, Atty's.

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UNITED STATES PATENT OFFICE.

WARREN C. STETSON, OF MINNEAPOLIS, MINNESOTA.

IMPROVEMENT IN MACHINES FOR GRINDING THE BITS OF PLANING-MACHINE CUTTER-HEADS, &c.

Specification forming part of Letters Patent No. **223,076**, dated December 30, 1879; application filed July 24, 1879.

To all whom it may concern:

Be it known that I, WARREN CONANT STETSON, of Minneapolis, in the county of Hennepin and State of Minnesota, have made certain new and useful Improvements in Machines for Grinding the Bits of Planing-Machine Cutter-Heads, &c., which improvements are fully set forth in the following specification and accompanying drawings, in which—

Figure I is a side elevation, partially in section. Fig II is a plan view. Fig. III is a front elevation with the emery-wheel and its frame removed; Fig. IV, a plan view of one of the cutter-heads removed; Fig. V, an enlarged perspective view of one of the cutting-bits removed.

This invention relates to the grinding or sharpening of the bits or cutters of the cutter-heads of molding-machines; and it consists of a universally-adjustable and sliding hanger or frame for holding the cutter-head, acting in conjunction with an emery or other grinding wheel, whereby all the bits may be ground evenly at any desired angle, and without removing them from the head-block, as set forth.

This device is intended to be used more particularly upon that class of cutter-heads shown in the patent of Geo. J. Shimer, January 26, 1875, No. 159,226, one of which is shown in all the figures.

This head or block consists of a face-plate or disk, A, and a shaft or stud, B, by which it is secured in the molding or striker machine.

a' a^2 a^3 a^4 are a series of small disks or bits secured at equal distances apart upon the large disk A, and whose outer rims are cut into the shape it is desired to form upon the wood.

In the drawings a head for forming the tongue on matched lumber or flooring is shown; but any desired form may be produced.

A notch, b , is cut into the side of each bit a , &c., thereby forming a cutting-edge on each.

By this arrangement the bit does not lose its shape by sharpening.

Heretofore great difficulty has been experienced in sharpening these cutters, and to sharpen them easily and quickly, and without removing them from the face-plate A, is the object of my invention.

This consists of a frame or hanger, D, having two standards, E E', one in the form of a yoke, with a set-screw, c , to receive and hold the stud B, and the other with a hole through which a pin, d , passes into the disk A.

By this means the head A B may be adjusted upon its axis and held at any desired point.

The hanger D E E' is pivoted at e upon a plate, F, which is arranged to slide vertically upon a second plate, G, which in turn is arranged to slide laterally, by means of ways or guides H H', upon two uprights, I I'.

The pivot e will be provided with a thumb-nut or hand-wheel, e' , passing through a clamp, J, on the outside of the plate or slide G, whereby the two plates F G and hanger D may be clamped rigidly together, as hereinafter described.

g is a lug projecting from the upper part of the clamp J, and through which a screw, h , is tapped. The upper end or head of this screw revolves loosely in a bracket, i , upon the slide G, and is provided with a hand-wheel, k , by turning which, when the thumb-nut e' is loosened, the plate F and hanger D may be raised or lowered, as desired.

The two uprights I I' are attached to a frame, I², which is arranged to slide forward and backward upon a bed-plate, K, by means of slides m and a screw, n . By this means the whole apparatus may be moved nearer to or farther from the emery-wheel L.

Graduations M will be cut upon the face of the plate F, so that the hanger D may be set at any desired angle, as hereinafter set forth.

The cutter-head A B, carrying the bits a , will be placed in the hanger, as before described.

The proper angle at which the bits are to be ground being determined, the hanger D will be adjusted upon the plate F so that the center point, s , of the hanger will come opposite the proper line of the scale M. The plate F will then be adjusted to the proper height for the emery-wheel L by the screw h , and the thumb-nut e' tightened up, which will thus hold the hanger D and plate F firmly to the slide G. The frame I I' I² will then be adjusted by the screw n to bring the bits to the proper distance from the emery-wheel. The slide G will then be run across the machine, which will

bring the bit which is next the emery-wheel in contact with it. The slide will then be run back and forth across the machine until the bit is sufficiently ground, the operator meanwhile at every stroke turning up the screws h n to keep the bits in contact with the emery-wheel.

When one bit is sharpened the set-screw c is loosened, and the stud B turned around in the standards E E' until the opposite bit, a^3 , comes in position to be acted upon, when the same operation is repeated.

It will be seen by reference to the drawings that two of the bits, a^1 a^3 , are arranged to cut the right-hand side of the tongue on the lumber, while the other two, a^2 a^4 , are arranged to cut the left-hand side. This necessitates forming the cutting-edges also right and left handed. Hence, to sharpen the other two bits it is necessary to loosen the hanger D and turn it partially around on the pivot e until the center mark, s , on the hanger comes opposite to an equal graduation on the scale M from the one it was set to for the other bits. This will enable me to set the head so that all the knives will be ground at precisely the same angle, and thus insure uniformity of cutting.

By these arrangements a universal adjustment is obtained in a very simple manner.

The plates G and F may be arranged to move in any desired direction to accomplish the same result.

The position of the hanger will be reversed to grind the opposite cutter-head, which is arranged to cut in the opposite direction from the one shown.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The hanger D , provided with screw-bolt e and brackets E E' , one of the latter formed with a yoke and provided with a screw, as described, in combination with the vertically-adjustable plate F , laterally-adjustable plate G , and longitudinally-movable frame I , whereby a tool may be held and ground, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WARREN CONANT STETSON.

Witnesses:

C. N. WOODWARD,
LOUIS FEESER.