

No. 703,212.

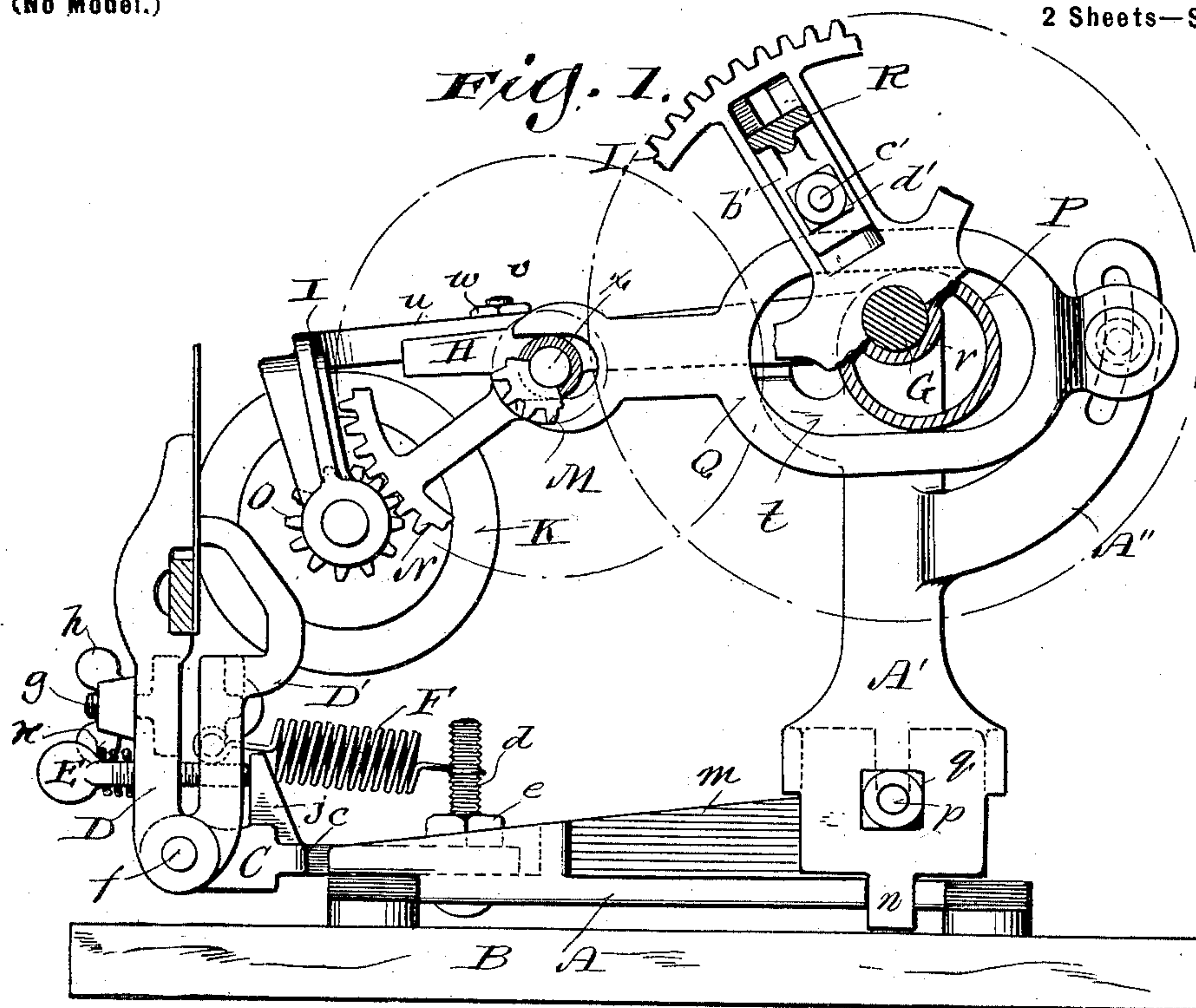
Patented June 24, 1902.

M. W. NEUENS.
GRINDING MACHINE.

(Application filed Dec. 30, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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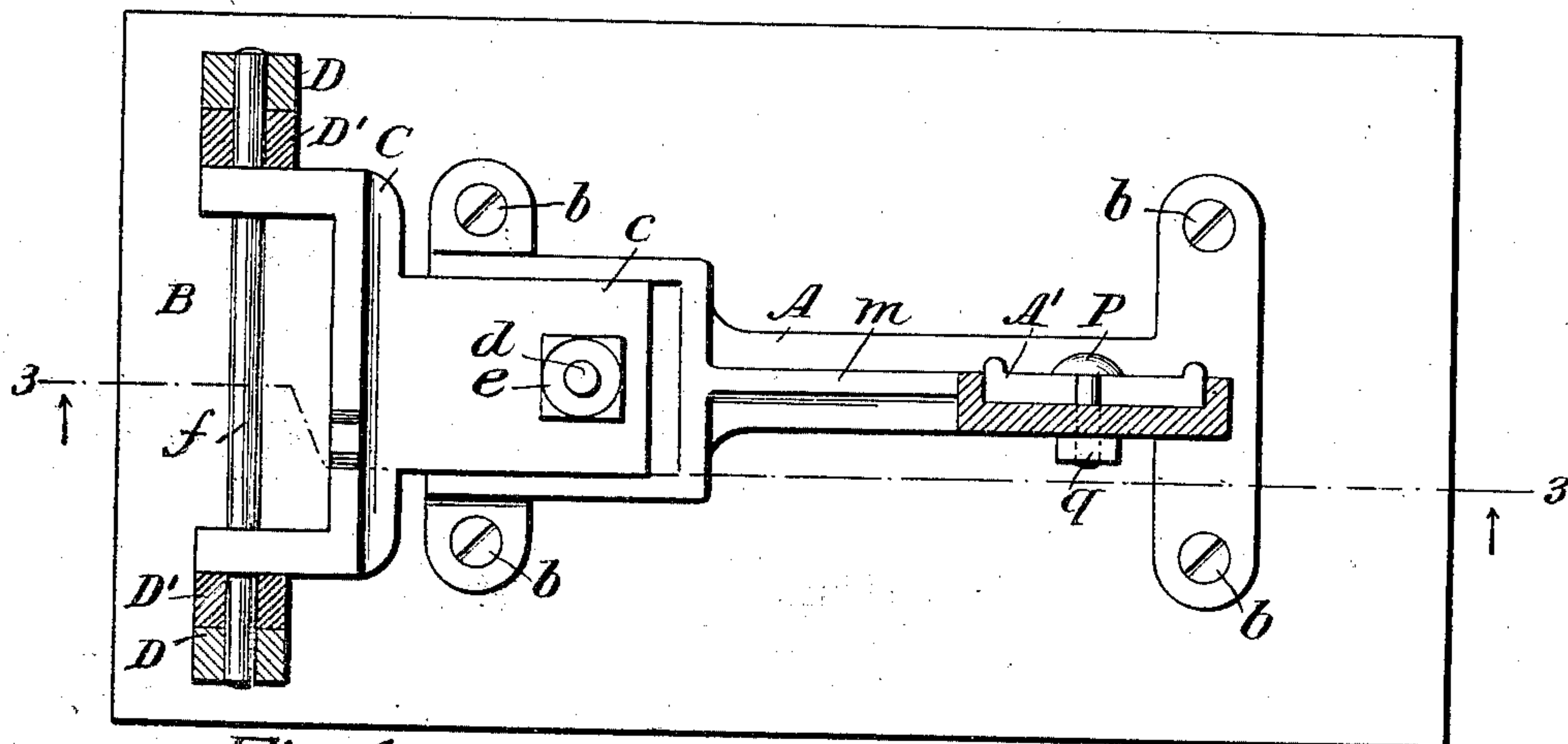
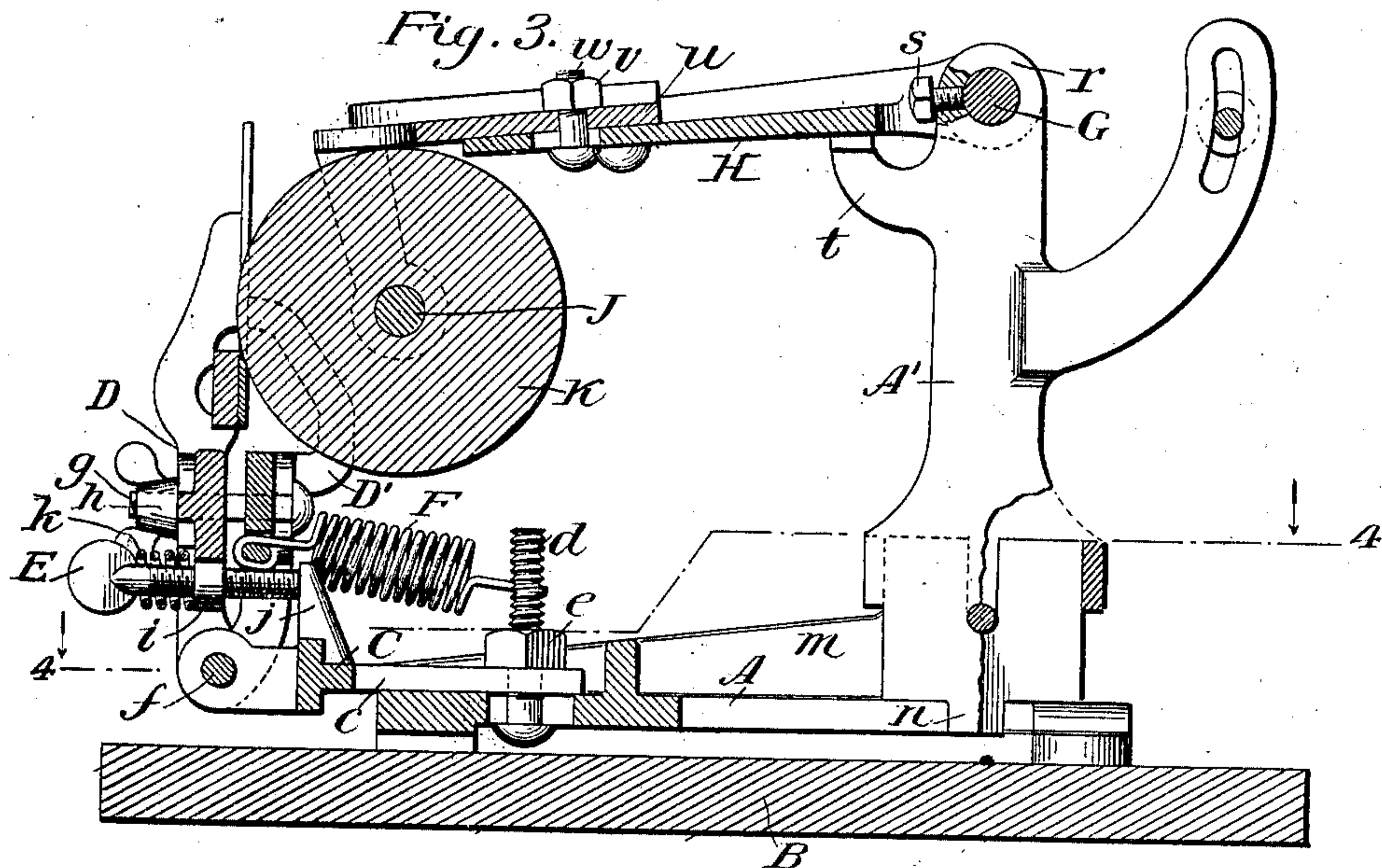
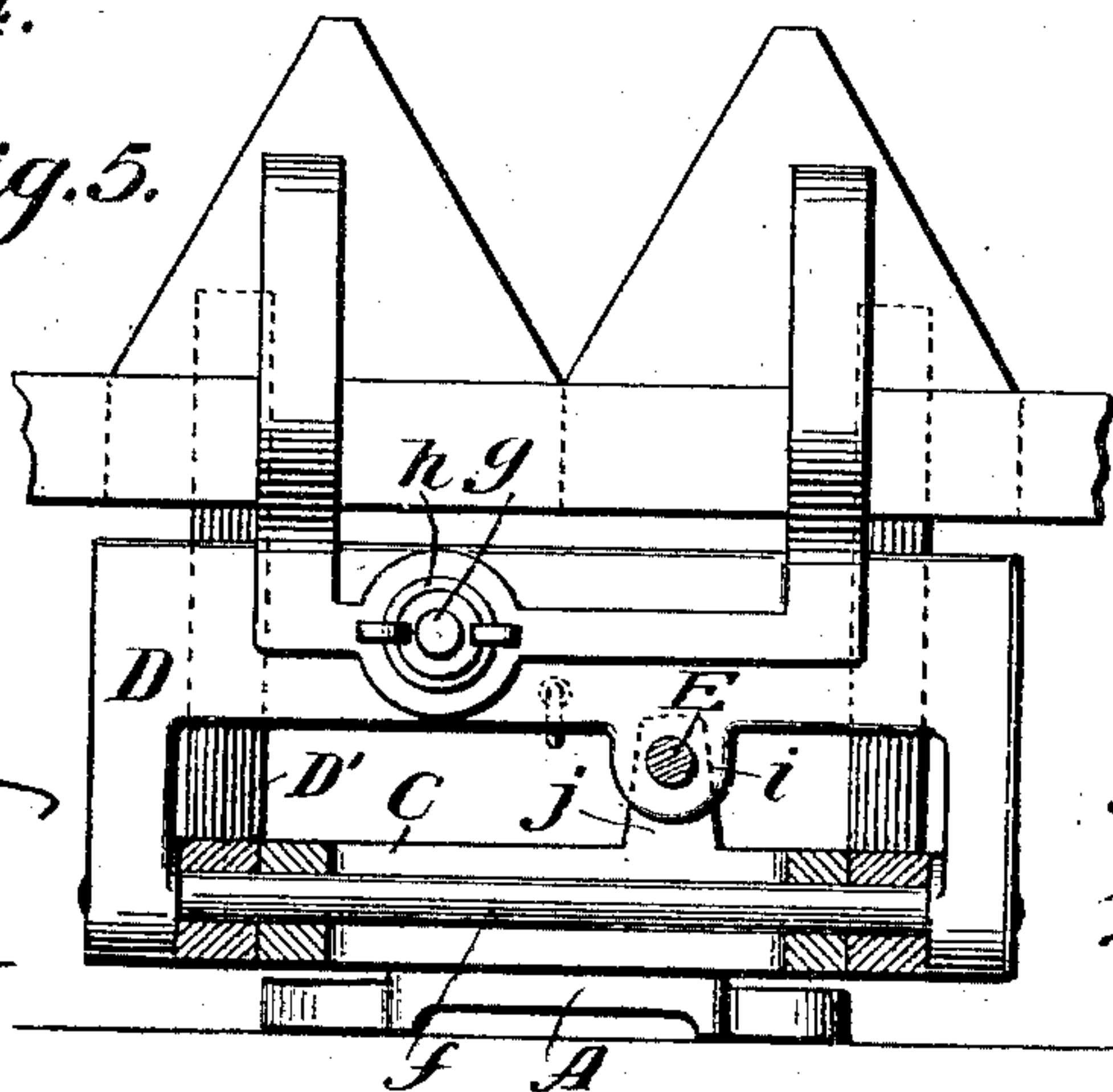


Fig. 4.

Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

MICHAEL W. NEUENS, OF PORT WASHINGTON, WISCONSIN, ASSIGNOR TO
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GRINDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 703,212, dated June 24, 1902.

Application filed December 30, 1901. Serial No. 87,761. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL W. NEUENS, a citizen of the United States, and a resident of Port Washington, in the county of Ozaukee and State of Wisconsin, have invented certain new and useful Improvements in Grinding-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to simplify and cheapen grinding-machines of that class especially designed for agriculturists; and it consists in certain peculiarities of construction and combination of parts hereinafter particularly set forth with reference to the accompanying drawings and subsequently claimed.

Figure 1 of the drawings represents a gear side elevation of a grinding-machine in accordance with my invention, parts of the same being broken away and in section; Fig. 2, a plan view of the machine, partly in horizontal section; Fig. 3, a vertical longitudinal section of said machine, indicated by lines 3 3 in the second and fourth figures; Fig. 4, a horizontal section of the aforesaid machine, indicated by lines 4 4 in the third figure; and Fig. 5, a partly-sectional front elevation of clamp and tension mechanism embodied in the machine.

Referring by letter to the drawings, A indicates the base of my machine, provided with lateral end ears having apertures for screws *b*, by which said base is made fast to a board B or other suitable support. Fitting a longitudinal recess in the forward portion of base A is the shank *c* of a bracket C, and a bolt *d*, engaging a longitudinal slot of said base and an aperture provided in the bracket-shank, has a set-nut *e* run thereon to hold said bracket in adjusted position.

Mounted in bearings constituting arms of bracket C is a pivot-rod *f* of a pair of clamp-jaws D D', both of which are engaged by a bolt *g*, having a set-nut *h* run thereon. A screw E is adjustable in a lug *i* of clamp-jaw D against an arm *j* of bracket C to regulate tension of a spiral spring F, hooked at its

ends to clamp-jaw D' and the bolt *d* aforesaid. A similar spring *k* is arranged under compression between the head of the tension-screw and clamp-jaw D to prevent automatic play of said screw incidental to jarring of the machine.

In match fit with the high rear portion of a longitudinal web *m* of base A is a standard A', having a foot *n* extending under said base, and a bolt *p*, engaging the base-web and the standard, has a set-nut *q* run thereon. The head of the standard is in the form of a sleeve *r*, and by means of a set-screw *s* an arbor G is made fast in engagement with the sleeve. Astraddle of the sleeve end of the standard A' is the yoke end of an arm H in oscillative engagement with arbor G, said standard being provided with a lug *t*, that constitutes a rest for said arm and limits downward play of same. Fitting a longitudinal recess in the forward portion of arm H is the shank *u* of a hanger I for the arbor J of a grinding device K, and a bolt *w*, engaging a longitudinal slot in said arm and an aperture in the hanger-shank, has a set-nut *v* run thereon to hold said hanger in adjusted position. The grinding device herein shown is one especially designed for sharpening triangular knife-sections of sickle-bars, and a portion of such a bar, with knife-sections thereon, is shown held in the clamp above specified.

Held to turn loose on arbor G is a driving spur-wheel L, that meshes with a pinion M, constituting part of the hub of another spur-wheel N, arranged to turn on a lateral boss *x* of arm H and mesh with a pinion O, fast on arbor J of the grinding device. The hub of spur-wheel L is partly in the form of an eccentric P, engageable with a rocker Q in the form of a link, one end of which is held in pivotal connection with a rear branch A'' of the machine-standard, the other end being in the form of a fork engaging an annular shoulder of boss *x* aforesaid. The standard branch A'' is shown provided with a segmental slot engaged by a shouldered bolt *y*, that constitutes the pivot for rocker Q, and a set-nut *z*

is run on the bolt to clamp the same in adjusted position in said slot. Spur-wheel L is shown provided with a radial side recess and slot. A crank R has an offset b' engaging the wheel-recess, and a bolt c' engages the crank-offset, wheel-recess, and a set-nut d' , this nut being tightened on the bolt to hold the crank in adjusted position, adjustment of said crank serving to vary leverage on said wheel.

- 10 A sickle-bar is clamped in the machine to have the knives thereof face the grinding device K, bracket C, hanger I, and tension of spring F being properly adjusted. By turning crank R rotatory motion is imparted to the grinding device simultaneous with an oscillation of the same due to the action of eccentric P in rocker Q, high speed being had with but little effort on the part of the operator in proportion to set of crank R in connection with the driving spur-wheel, and adjustment of hanger I compensates for wear of said grinding device and knife-sections on which it operates.

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

1. A grinding-machine comprising a base and standard, an arm in swing connection with the standard, a rotatory grinding device in suspension from the arm, a sickle-bar clamp in pivotal connection with the base, a clamp-controlling spring, means for regulating spring tension, grinding-device drive-gear having the main wheel thereof provided with an eccentric, and a rocker astride the eccentric in connection at its ends with said arm and a branch of said standard.

2. A grinding-machine comprising a standard having the upper end thereof in the form of a sleeve, an arbor held fast in the sleeve, an arm having a yoke end astraddle of said sleeve and loose on the arbor, a rotatory grinding device in suspension from the arm, a sickle-bar clamp in pivotal connection with the base, a clamp-controlling spring, means for regulating spring tension, grinding-device drive-gear having the main wheel-hub thereof in the form of an eccentric loose on said arbor, and a rocker astride the eccentric in connection at its ends with said arm and a branch of said standard.

3. A grinding-machine comprising a base and standard, an arm in swing connection with the standard, a rotatory grinding device in suspension from the arm, a pivotal sickle-bar clamp having a bracket-shank thereof adjustable on the base longitudinally of the same, a clamp-controlling spring, means for regulating spring tension, grinding-device drive-gear having the main wheel thereof provided with an eccentric, and a rocker astride the eccentric in connection at its ends with said arm and a branch of said standard.

4. A grinding-machine comprising a base

and standard, an arm in swing connection with the standard, a rotatory grinding device having a hanger provided with a shank in adjustable connection with the arm longitudinally of the same, a sickle-bar clamp in pivotal connection with the base, a clamp-controlling spring, means for regulating spring tension, grinding-device drive-gear having the main wheel thereof provided with an eccentric, and a rocker astride the eccentric in connection at its ends with said arm and a branch of said standard.

5. A grinding-machine comprising a base and standard, an arm in swing connection with the standard, a rotatory grinding device in suspension from the arm, a sickle-bar clamp consisting of a base-bracket, a pivot-rod supported by the bracket, clamp-jaws loose on the rod, a spiral spring connecting one of the jaws with a stationary portion of the machine, a tension-screw carried by the other of the jaws to abut an arm of said bracket, a bolt engaging both jaws and a set-nut on the bolt; grinding-device drive-gear having the main wheel thereof provided with an eccentric, and a rocker astride the eccentric in connection at its ends with said arm and a branch of said standard.

6. A grinding-machine comprising a base and standard, an arm in swing connection with the standard, a rotatory grinding device in suspension from the arm, a sickle-bar clamp in pivotal connection with the base, a clamp-controlling spring, means for regulating spring tension, a spur-wheel having a pinion-hub loose on a lateral boss of said arm, a pinion on the grinding-device arbor in mesh with said spur-wheel, an eccentric hub-driving spur-wheel loose on an arbor constituting the swing-arm axis, and a rocker astride the eccentric hub in connection at its ends with said swing-arm boss and a branch of said standard.

7. A grinding-machine comprising a base and standard, an arm in swing connection with the standard, a lug on said standard arranged to constitute a rest for the swing-arm, a rotatory grinding device in suspension from said arm, a sickle-bar clamp in pivotal connection with the base, a clamp-controlling spring, means for regulating spring tension, grinding-device drive-gear having the main wheel thereof provided with an eccentric, and a rocker astride the eccentric in connection at its ends with said arm and a branch of said standard.

8. A grinding-machine comprising a base and standard, an arm in swing connection with the standard, a rotatory grinding device in suspension from the arm, a sickle-bar clamp in pivotal connection with the base, a clamp-controlling spring, a screw arranged to regulate tension of said spring, a spiral spring on the screw between its head and the

adjacent clamp-jaw, grinding-device drive-gear having the main wheel thereof provided with an eccentric, and a rocker astride the eccentric in connection at its ends with said
s arm and a branch of said standard.

In testimony that I claim the foregoing I have hereunto set my hand, at Port Washing-

ton, in the county of Ozaukee and State of Wisconsin, in the presence of two witnesses.

MICHAEL W. NEUENS.

Witnesses:

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EDW. BARELMAN.