

No. 700,226.

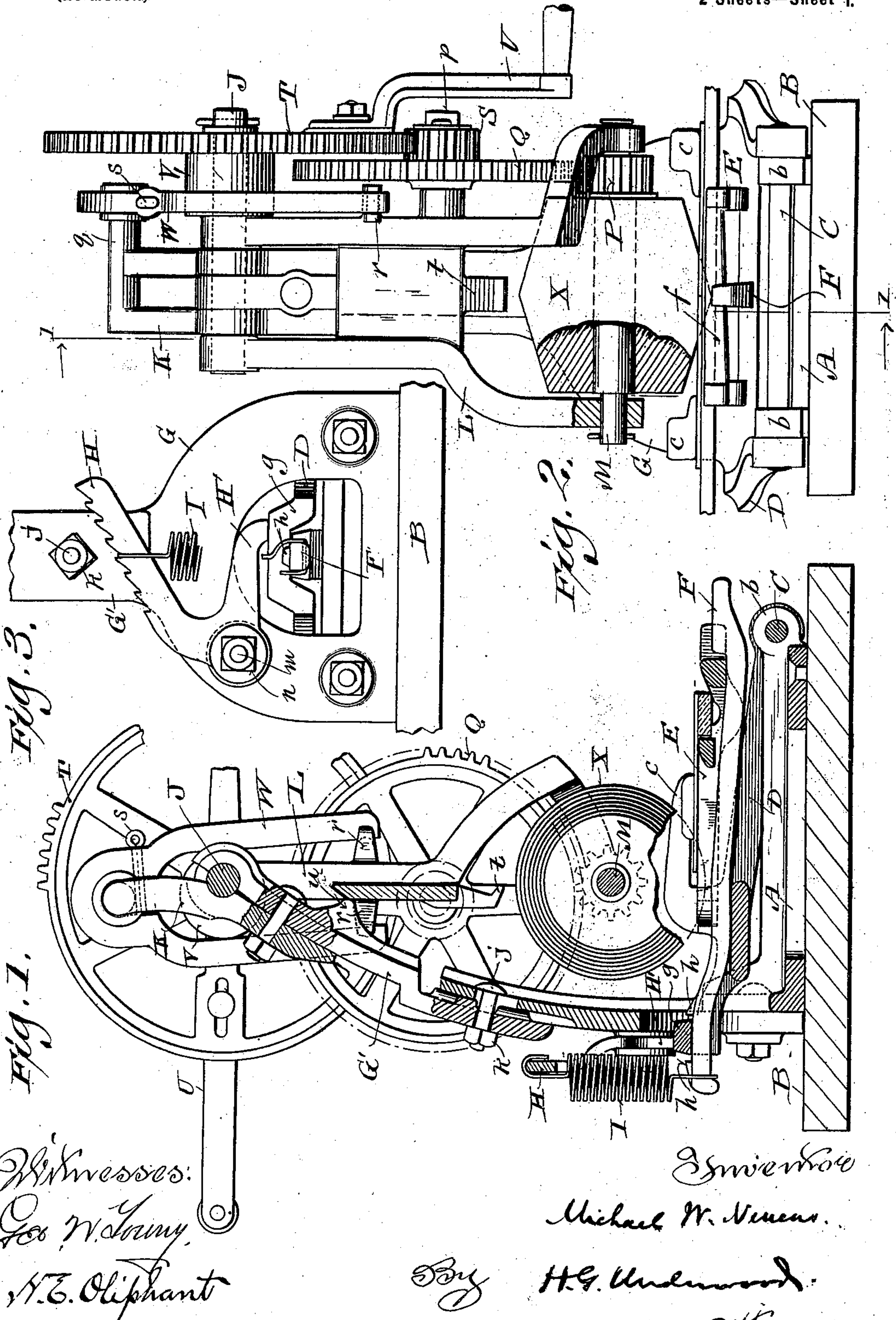
Patented May 20, 1902.

M. W. NEUENS.
GRINDING MACHINE.

(Application filed Dec. 30, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
Geo. W. Young,
A. E. Oliphant

Michael W. Neuens.
By H. G. Underwood.
Attorney

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Fig. 4.

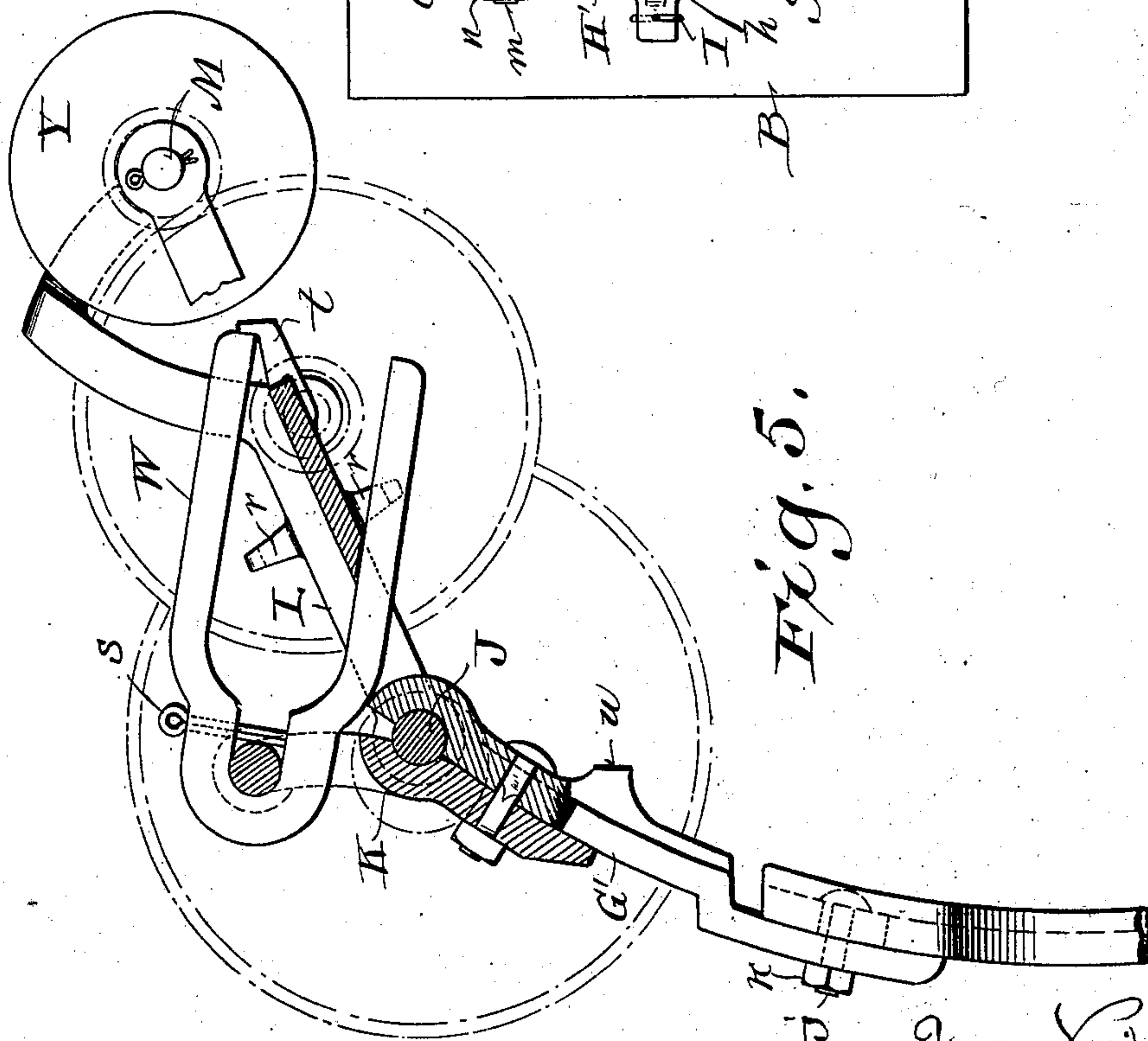
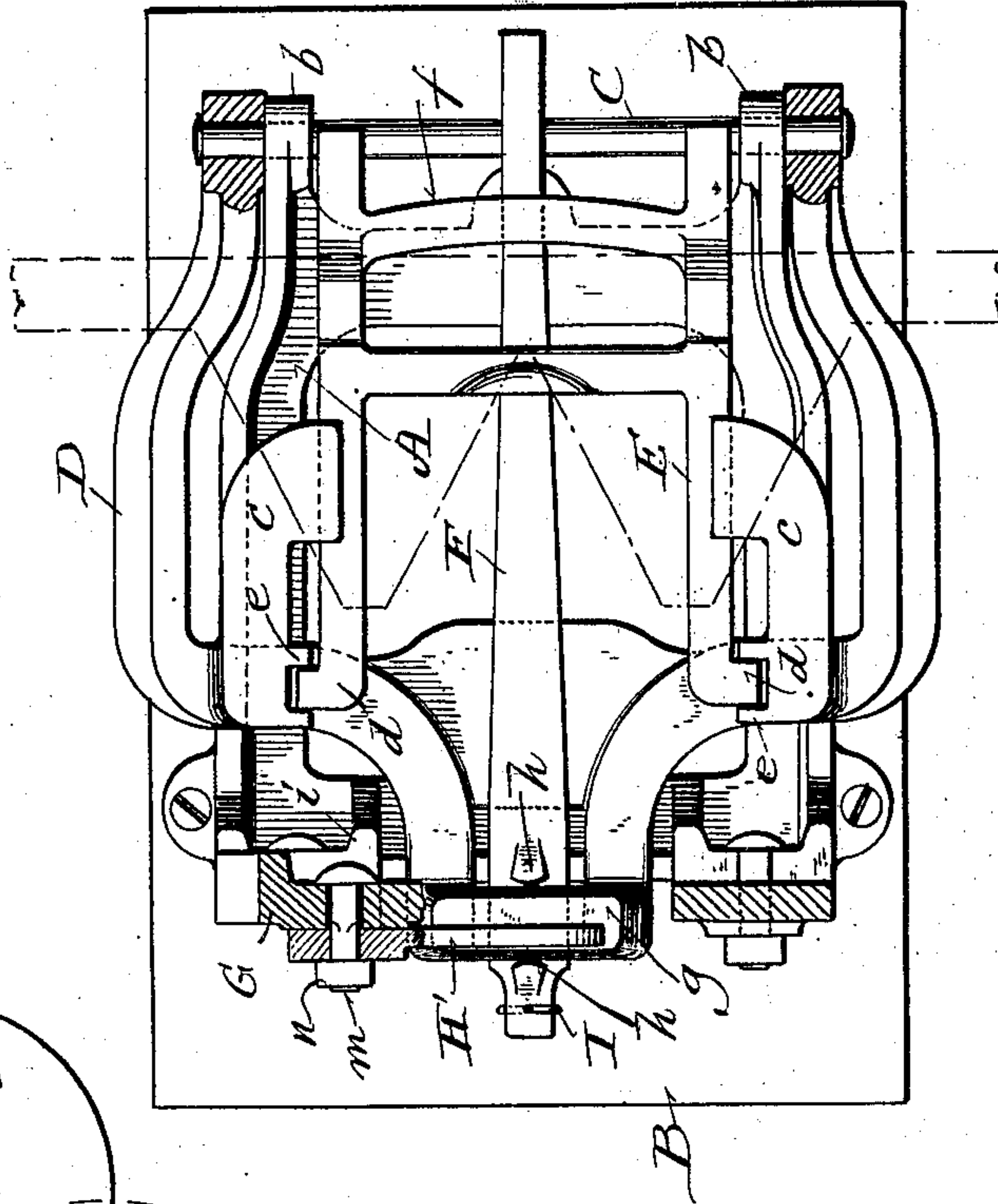


Fig. 5.

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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. 700,226, dated May 20, 1902.

Application filed December 30, 1901. Serial No. 87,762. (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 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 vertical sectional view of a grinding-machine in accordance with my invention, this view being indicated by line 1 1 in the second figure; Fig. 2, a front elevation of the machine; Fig. 3, a rear elevation of a portion of said machine; Fig. 4, a plan view, partly in horizontal section, illustrating clamp mechanism embodied in the aforesaid machine; and Fig. 5, a detail partly-sectional elevation of a portion of the machine, transformed from a grinder for sickle-bar knife-sections to a grinder for edge-tools of various kinds.

Referring by letter to the drawings, A indicates the base of my machine, attachable to a board B or other suitable support by screws or otherwise. Front ears *b* of the base constitute bearings for a pivot-rod C, and fast on the rod is a bracket D, having arms *c*, that overhang a removable frame E, provided with lateral pivot-studs *d*, engaging open sockets *e* in said bracket. A cross-bar *f* of frame E has its under surface inclined, as shown in Fig. 2, to constitute a cam opposing a lever F, supported on bracket D under an elevated rear bar *g* of same, a pair of lugs *h* on the lever being arranged to face opposite sides of the bracket-bar.

The bracket, frame, and lever herein specified constitute a clamp that is virtually the same as the one set forth in my Patent No. 660,389, of October 23, 1900, except that in the new machine the bracket portion of the clamp is pivotal instead of stationary, and le-

ver F is caught under a bar of said bracket instead of under a key engaging a vertical projection of the machine-base.

Bolted to upturned rear ears *i* of base A are the branches of partly-curved standard G, the upper portion of this standard-section being provided with a longitudinal slot engaged by a bolt *j*, that also engages an aperture in another section G' of the standard, a set-nut *k* being run on the bolt against the latter standard-section to bind the same in adjusted connection with the section aforesaid. Another bolt *m*, engaging standard-section G, constitutes a pivot for a rear fork, and a set-nut *n*, run on this bolt, holds the fork in pivotally-adjusted position. The branches H H' of the pivotally-adjustable fork are at an acute angle to each other, the upper edge of the upper branch being serrated. Hung in a serration of the upper fork branch is a hook end of a spiral spring I, having its other hook end caught under the rear end of lever F, tension of the spring being regulated by its adjustment on said serrated fork branch. The lower branch H' of the fork opposes elevated bar *g* of bracket D, constituting part of the aforesaid clamp, normal adjustment of this spring-controlled yielding clamp being determined by adjustment of said fork.

The head of the upper standard-section is shown in the form of an open seat for an arbor J, clamped therein by means of a detachable standard branch K, bolted to said upper standard-section. Astraddle of the upper seat end of the sectional standard is the yoke end of an arm L, in swing engagement with arbor J, this swing-arm constituting a hanger for the arbor M of a grinding device. Fast on the grinding-device arbor is a pinion P, in mesh with a spur-wheel Q, loose on a lateral boss *p* of arm L, and a pinion S, constituting part of the hub of said spur-wheel, meshes with a driving spur-wheel T, loose on the arbor J, this driving spur-wheel being provided with a crank U, that is preferably adjustable to vary leverage.

The hub of the driving spur-wheel is partly in the form of an eccentric, V engageable with a rocker W, having the form of an open link recessed at its closed end and hung on a boss *q* of standard branch K, in engagement with

notches in lugs *r* on opposite sides of arm *L*, a key *s* being employed in connection with the rocker under said boss to hold said rocker in the arrangement set forth.

5 As thus far described the machine is organized for automatic oscillation of a grinding device *X* especially designed for sharpening knife-sections of sickle-bars, a portion of such a bar, with knife-sections thereon, be-
10 ingshown held in the spring-controlled clamp aforesaid, the standard of the machine being in sections adjustable one upon another to compensate for wear of the grinding device and knife-sections.

15 If at any time it is desirable to have hand control of the grinding device *X*, the rocker *W* is displaced from the machine and arm *L* oscillated by the operator, the standard-section *G'* being provided with a nose *u*, that
20 limits back throw of said arm.

As shown in Fig. 5, the rocker *W* may be engaged with an eye of bracket *K* and the yoke end of arm *L*, the upper branch of said rocker being then impinged against a flanged
25 lug *t* of said arm ahead of lugs *r* aforesaid. In this organization of the machine the arm *L* is held stationary in swung-up position by rocker *W* serving as a support and brace, said rocker being held in engagement with
30 the round head of bracket *K* by means of key *s* aforesaid. When the machine is thus organized, a grinding device *Y*, suitable for sharpening various edge-tools, is substituted for the one *X* above specified.

35 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, a bracket in spring-controlled pivotal connection with the base, a tilt-frame hung in the
40 bracket under arms of the same, a frame-controlling lever, a standard, an arm in swing connection with the standard, a rotatory grinding device hung in the swing-arm, grinding device drive-gear having the main wheel
45 thereof provided with an eccentric, and a rocker astride of the eccentric in connection at its ends with said arm and a branch of said standard.

50 2. A grinding-machine comprising a base, a bracket in spring-controlled pivotal connection with the base, a tilt-frame hung in the bracket under arms of the same, a lever on said base opposing a cam-bar of the frame
55 and provided with lugs arranged to face opposite sides of a bracket-bar, a standard, a swing-arm in connection with the standard, a grinding device hung in the arm over the clamp consisting of said bracket, tilt-frame
60 and lever; and means for imparting rotatory motion to the grinding device simultaneous with an oscillation of said arm.

3. A grinding-machine comprising a base, a bracket in pivotal connection with the base, a
65 tilt-frame hung in the bracket under arms of the same, a lever on said base opposing a cam-bar of the frame and provided with lugs

arranged to face opposite sides of a bracket-bar, a standard, a stop in pivotally-adjustable connection with the standard opposite
70 said bracket, a spring in adjustable tension connection with the stop and connected to said lever, a swing-arm in connection with said standard, a grinding device hung in the arm over the spring-controlled clamp consist-
75 ing of the aforesaid bracket, tilt-frame and lever; and means for imparting rotatory motion to the grinding device simultaneous with an oscillation of said arm.

4. A grinding-machine comprising a stand-
80 ard in sections one adjustable on the other, an arbor seated in the upper standard-section, a detachable branch of the standard constituting a clamp for the arbor, a swing-arm on said arbor, a grinding device hung in the
85 swing-arm, means for imparting rotatory motion to the grinding device simultaneous with an oscillation of said arm, and a sickle-bar clamp arranged under said grinding device.

5. A grinding-machine comprising a base,
90 a sickle-bar clamp in pivotal connection with the base, a standard, a fork in pivotally-adjustable connection with the standard and having its arms at an acute angle to each other, the lower arm being arranged to op-
95 pose the clamp; a clamp-controlling spring in adjustable tension connection with the upper arm of the fork, a swing-arm in connection with said standard, a grinding device hung in the arm over the clamp, and means for im-
100 parting rotatory motion to the grinding device simultaneous with an oscillation of said arm.

6. A grinding-machine comprising a base, a sickle-bar clamp in pivotal spring-controlled
105 connection with the base, a standard, a swing-arm constituting a grinding-device hanger in connection with the standard, grinding-device drive-gear having the main wheel thereof provided with an eccentric, and a
110 swing-arm rocker engageable with the eccentric, but transferable to constitute a support for said arm and parts therewith in stationary position.

7. A grinding-machine comprising a stand-
115 ard and drive-gear, a swing-arm in connection with the standard, and an open-end link adjustable in connection with a standard branch and said arm to straddle an eccentric of the drive-gear or to clear said eccentric and hold
120 the aforesaid arm stationary.

8. A grinding-machine comprising a drive-gear, a standard provided with a rounded-end eye branch having a boss, a swing-arm in connection with the standard having notched op-
125 posite side lugs and another lug ahead of those aforesaid, and an open-end link adjustable to engage the standard-branch boss and notched lugs of the swing-arm astraddle of an eccentric constituting part of the drive-
130 gear or to engage the standard-branch eye astraddle of said arm against the lug ahead of those aforesaid.

9. A grinding-machine comprising a stand-

ard provided with an arbor-seat, an arbor-clamp attachable to the standard, a swing-arm on the arbor that is held in its seat by said clamp, a grinding device hung in the
5 swing-arm, means for imparting a rotatory motion to the grinding device, a stop on the standard limiting play of the swing-arm under hand control, and a sickle-bar clamp arranged under said grinding device.
10 10. A grinding-machine comprising a standard, a swing-arm in connection with the standard, a grinding device hung in the swing-arm, a sickle-bar clamp arranged under the grinding device, a spur-wheel having
15 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, an open-end link astraddle of a standard branch and the eccentric-hub, and lugs on the aforesaid arm engaging branches of the link. 20

In testimony that I claim the foregoing I have hereunto set my hand, at Port Washington, in the county of Ozaukee and State of Wisconsin, in the presence of two witnesses. 25

MICHAEL W. NEUENS.

Witnesses:

H. W. BOLENS,
EDW. BARELMAN.