

No. 677,149.

Patented June 25, 1901.

E. F. WEBSTER & G. W. TONEY.
GRINDING MACHINE.

(Application filed Oct. 18, 1900.)

(No Model.)

2 Sheets—Sheet 1.

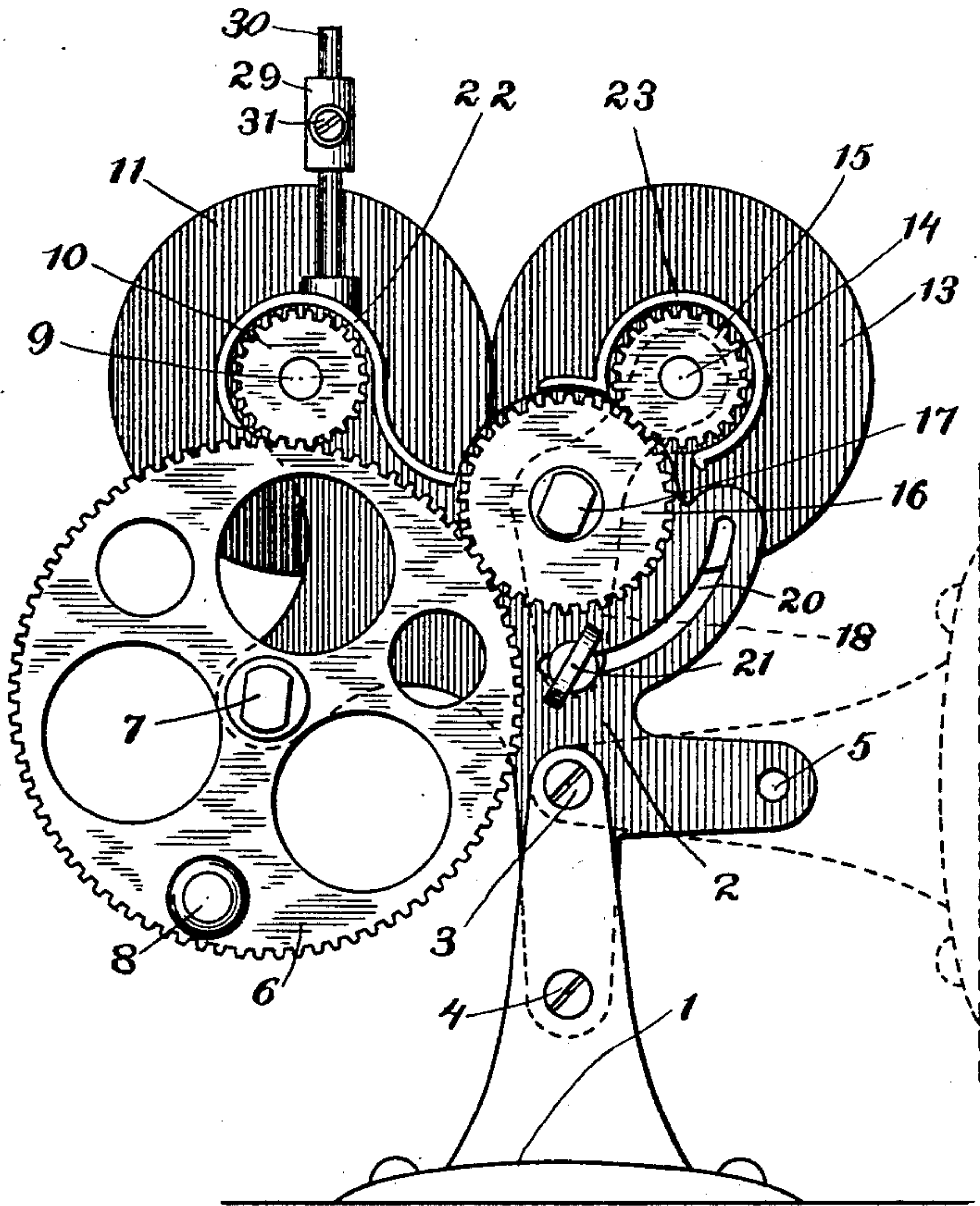
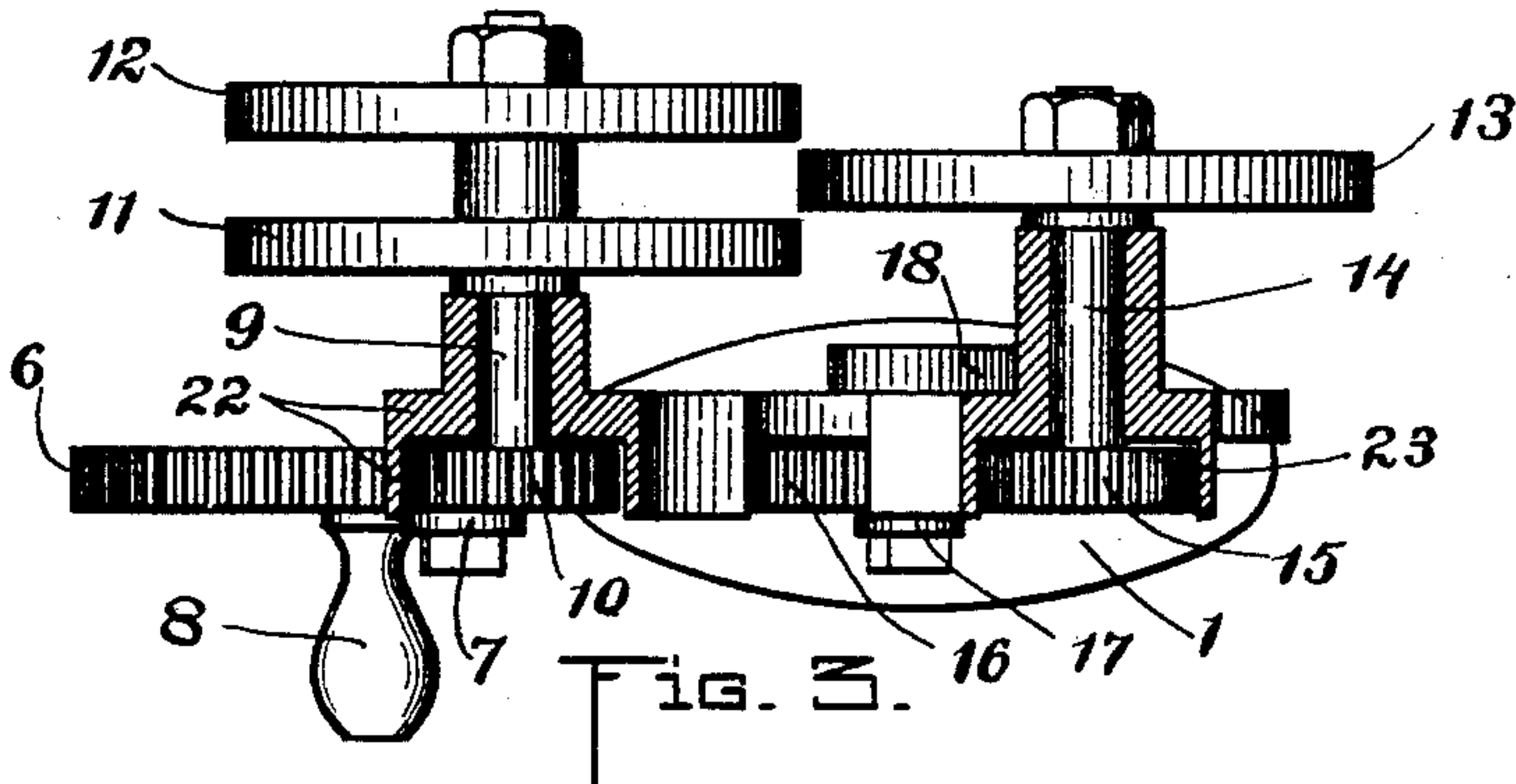


Fig. 1.



WITNESSES:
A. H. Brown.
J. H. Harrison

INVENTORS:
Edgar F. Webster
George W. Doney
by Wright, Brown & Quinby
Attorneys

No. 677,149.

Patented June 25, 1901.

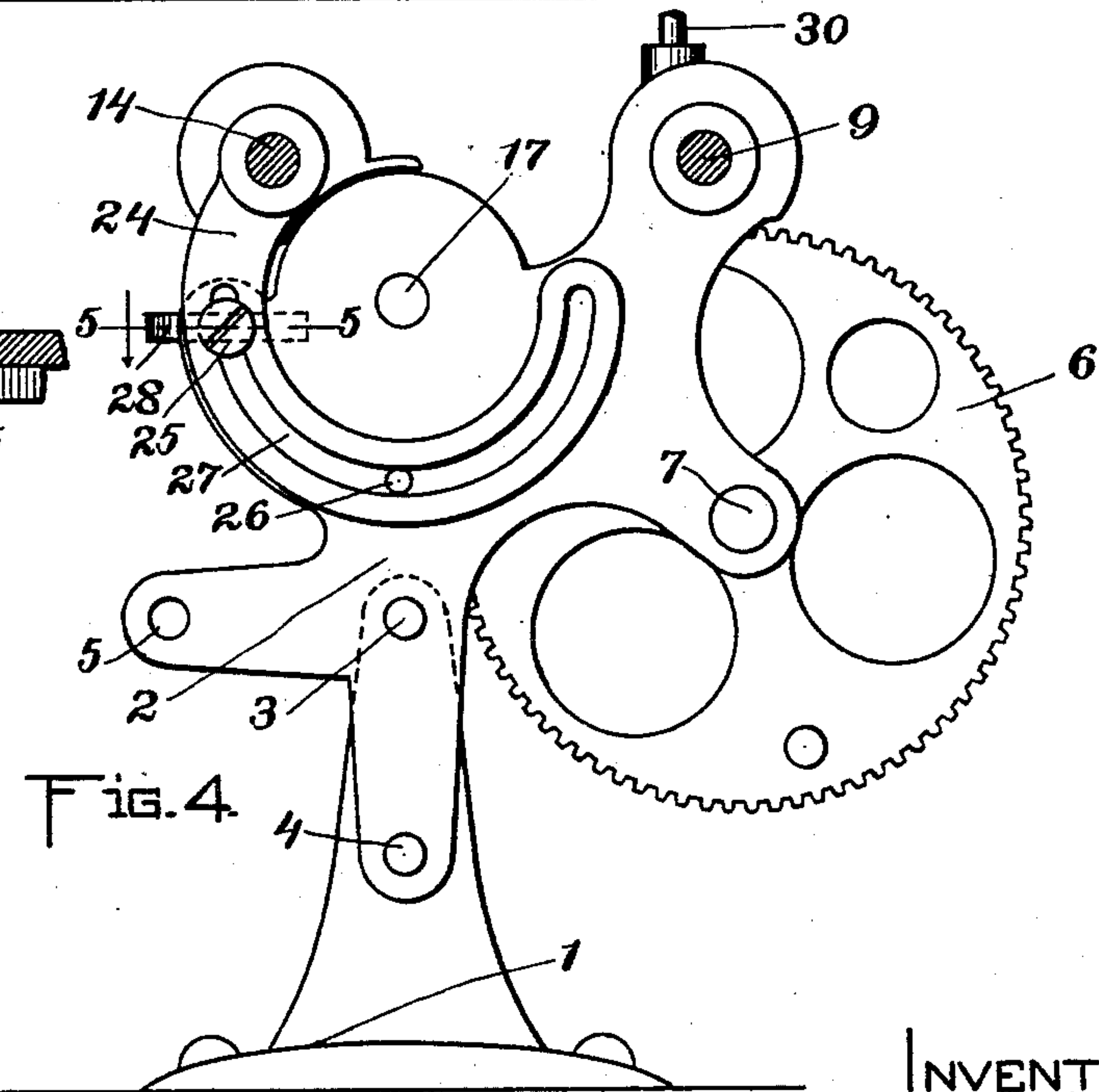
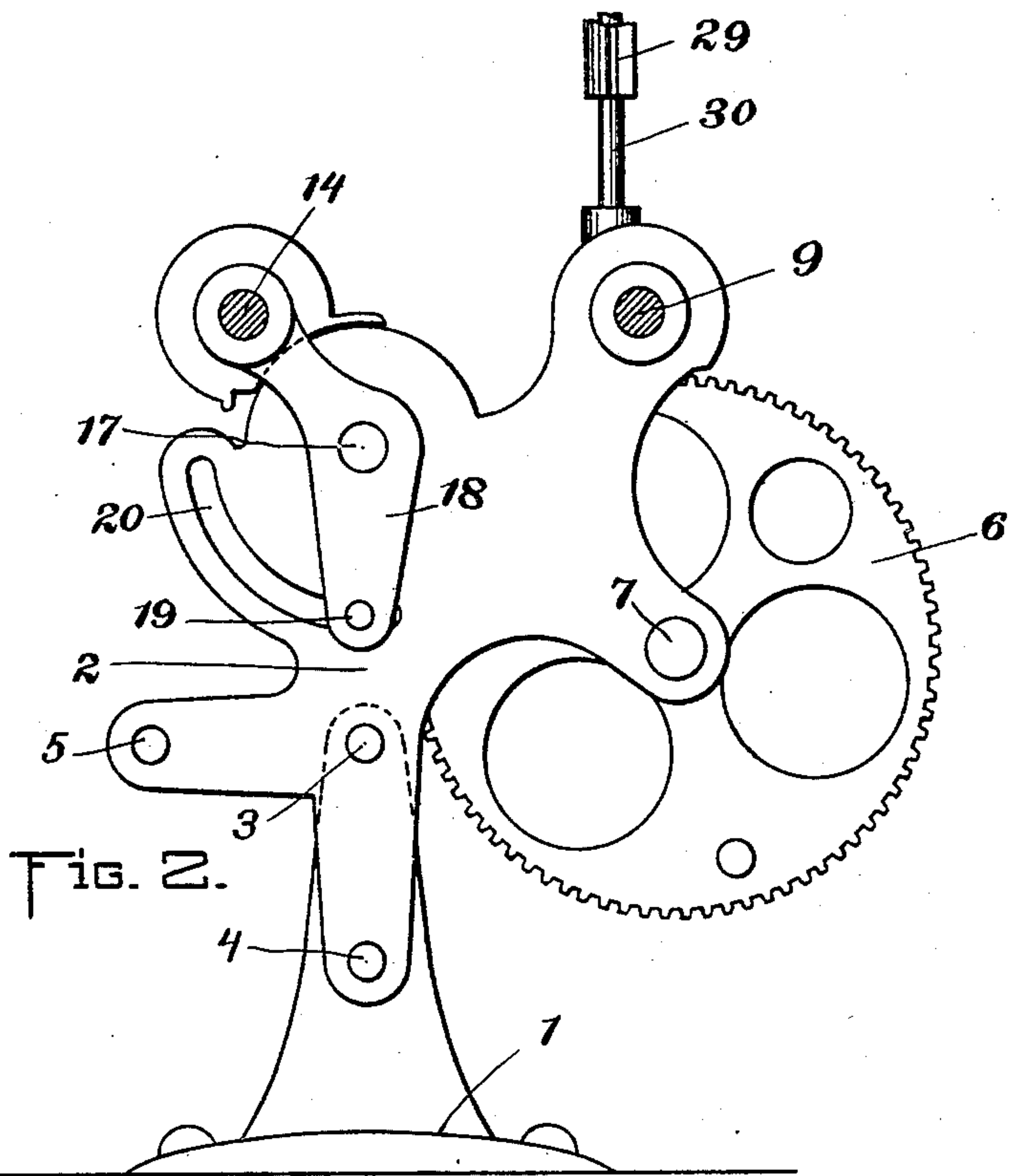
E. F. WEBSTER & G. W. TONEY.

GRINDING MACHINE.

(Application filed Oct. 18, 1900.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES:
A. H. Brown,
A. W. Harrison

INVENTORS:
Edgar F. Webster and
George W. Toney
by Wright, Brown & Quincy
Attorneys

UNITED STATES PATENT OFFICE.

EDGAR F. WEBSTER AND GEORGE W. TONEY, OF WALTHAM,
MASSACHUSETTS.

GRINDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 677,149, dated June 25, 1901.

Application filed October 18, 1900. Serial No. 33,487. (No model.)

To all whom it may concern:

Be it known that we, EDGAR F. WEBSTER and GEORGE W. TONEY, of Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Grinding - Machines, of which the following is a specification.

This invention relates to grinding-machines employing two grinding - wheels or sets of wheels adapted to simultaneously grind opposite sides of a knife or similar edge-tool.

The principal object of the invention is to attain adjustability in the machine, so as to permit the grinding-wheels to be adjusted toward and from each other, and at the same time to increase its simplicity and compactness and decrease the cost of manufacture.

A further object of the invention is to make improved provisions for grinding scissors; and a third object is to provide an improved adjustment of the machine with respect to its base, whereby the grinding mechanism may occupy the same position whether the machine be mounted upon a vertical surface, such as a wall, or a horizontal surface, such as a table.

The invention consists in the improvements which we will now proceed to describe and claim.

Of the accompanying drawings, Figure 1 represents a side elevation of a grinding-machine constructed in accordance with our invention. Fig. 2 represents an elevation of the opposite side, partly in section. Fig. 3 represents a plan view. Fig. 4 represents an elevation, partly in section, showing a modification. Fig. 5 represents a section on line 5 5 of Fig. 4. Fig. 6 represents a detail view of the scissors-rest and a portion of the supporting-rod.

Referring to the drawings, Figs. 1 to 3, inclusive, 1 represents a base or standard upon which a supporting-frame 2 is mounted. The base 1 has a flat face and is adapted to be attached by screws to a flat surface, such as a wall or table. The base is pivotally secured to the frame 2 by means of a screw-stud 3 and is provided with another securing-screw 4, adapted to occupy either of two apertures in the frame, the screw 4 being shown as occupying one of the apertures, while the other

aperture is represented at 5. The two apertures in the frame are located at equal distances from the pivot-stud 3 and are ninety degrees apart, so that the base 1 may be affixed to the frame 2 either in its full-line position or in its dotted-line position, (shown in Fig. 1,) the former being employed to support the machine upon a horizontal surface and the latter upon a vertical surface. 6 is a large spur driving-gear mounted upon a fixed bearing-stud 7 on the supporting-frame 2 and having a handle 8 for rotating it. Also mounted in fixed bearings on the frame is a shaft 9, to which are affixed a pinion 10, meshing with the driving-gear 6, and a grinding-wheel 11. The said wheel 11 may have a duplicate 12 on the same shaft, as illustrated in Fig. 3. 13 is a cooperating grinding-wheel, mounted upon a shaft 14 and located in a plane between the planes of the two wheels 11 12, the said wheels 11 12 being adapted to grind one side of a knife and the wheel 13 the opposite side. The shaft 14 has affixed to it a pinion 15, preferably of equal size with pinion 10. 16 is an intermediate gear mounted on a fixed bearing-stud 17 on the frame 2 and meshing with pinion 15 and driving-gear 6. When, therefore, the driving-gear 6 is rotated, the two sets of grinding-wheels will be driven in opposite directions the adjacent portions of their peripheries moving in the same direction at an equal speed, thus giving a proper grinding action. The shaft 14 is journaled in a bearing carried at the upper end of an arm or holder 18, which is pivoted upon the rear end of the same stud 17 which journals the intermediate gear 16. The lower end of holder 18 carries a clamping-bolt 19, the stem of which occupies an elongated slot 20, concentric with stud 17, the front end of said bolt having a thumb-piece 21, whereby the bolt may be fixed in any position along the slot. Provision is thus made for adjusting the grinding-wheel 13 in any desired position with respect to the opposed grinding-wheels 11 12, and in making this adjustment the pinion 15 is obviously compelled to remain in mesh with the intermediate gear 16. When the bolt 19 is loosened, it may be used as a handle to move holder 18 from one adjustment to another. The frame 2 and holder 18 are shown as

formed with hoods or guards 22 23 for the pinions 10 15.

A modification of the above - described means for mounting the adjustable grinding-wheel is shown in Figs. 4 and 5. 24 is a segmental holder carrying the shaft 14 of the grinding-wheel 13 and supported upon a clamping stud or bolt 25 and a fixed stud 26 back of the frame, said studs occupying a segmental slot 27 in the holder 24, the holder being adjustable concentrically about the bearing-stud 17 of the intermediate gear. The bolt 25 is mounted in the frame 2 and is provided with a head on one end and a thumb-nut 28 on the other end, which may be tightened up to clamp the holder in its various adjustments.

29 represents a scissors-rest located in juxtaposition to the peripheries of grinding-wheels 11 and 12 and so located as to support a scissors-blade in the proper position to secure the desired angle on its edge. The rest 29 is fitted upon a cylindrical rod 30, mounted on the frame 2 at one side of the grinding-wheel 11, and is adapted to be fixed to said rod by means of a set-screw 31. The rest 29 may be moved inwardly to compensate for wear of the grinding-wheels, and although not essential it may also be adjusted concentrically with the rod 30, so as to support the scissors-blade at slightly-different angles with respect to the plane of the grinding-wheel should it be desired to so grind the blade.

We claim—

1. A grinding-machine comprising a supporting-frame, a driving-gear and a pinion meshing therewith, both supported in fixed bearings on the frame, a grinding-wheel attached to the pinion, a second grinding-wheel overlapping the first grinding-wheel and having an attached pinion, a fixed intermediate gear meshing with the last said pinion and the driving-gear, a holder carrying the second grinding-wheel and pinion and adjustable concentrically about the axis of the intermediate gear, whereby the coöperative relation of the grinding-wheels is varied, and means to fix said holder to the frame at its different adjustments.

2. A grinding-machine comprising a supporting-frame, a driving-gear and a pinion meshing therewith, both supported in fixed bearings on the frame, a grinding-wheel at-

tached to the pinion, a second grinding-wheel overlapping the first grinding-wheel and having an attached pinion, a fixed intermediate gear meshing with the last said pinion and the driving-gear, a holder carrying the second grinding-wheel and pinion and pivoted on an axis coincident with the axis of the intermediate gear, whereby the coöperative relation of the grinding-wheels may be varied, and a clamping-bolt mounted on said holder and having a stem which occupies a slot in the frame concentric with said axes, for fixing the holder at its different adjustments.

3. A grinding-machine comprising a supporting-frame, a grinding-wheel supported thereon, a cylindrical rod mounted on said frame parallel to and at one side of the grinding-wheel, a scissors-rest fitted on said rod and adjustable longitudinally thereof whereby it may be moved independently of the rod toward and from the periphery of the grinding-wheel, and a set-screw to fix said rest to the rod.

4. A grinding-machine comprising a supporting-frame, grinding mechanism mounted thereon, a base or standard formed for attachment to a flat surface and having a pivotal connection with the frame, and means to fix the base to the frame in either of two positions which are substantially at right angles to each other, whereby the frame assumes the same position, whether the base be affixed to a horizontal or a vertical surface.

5. A grinding-machine comprising a supporting-frame, grinding mechanism mounted thereon, a base or standard formed for attachment to a flat surface and having a pivotal connection with the frame, two apertures in the frame at equal distances from the pivot thereof and substantially ninety degrees apart, and a screw mounted in the base and adapted to pass through either of said apertures to fix the frame thereto, the said construction permitting the frame to assume the same position, whether the base be affixed to a horizontal or to a vertical surface.

In testimony whereof we have affixed our signatures in presence of two witnesses.

EDGAR F. WEBSTER.
GEORGE W. TONEY.

Witnesses:

CHARLES WOOD BOND,
MELVIN M. JOHNSON.