

No. 812,465.

PATENTED FEB. 13, 1906.

P. H. SWEET.  
PINKING MACHINE.

APPLICATION FILED MAR. 17, 1905.

FIG. 1.

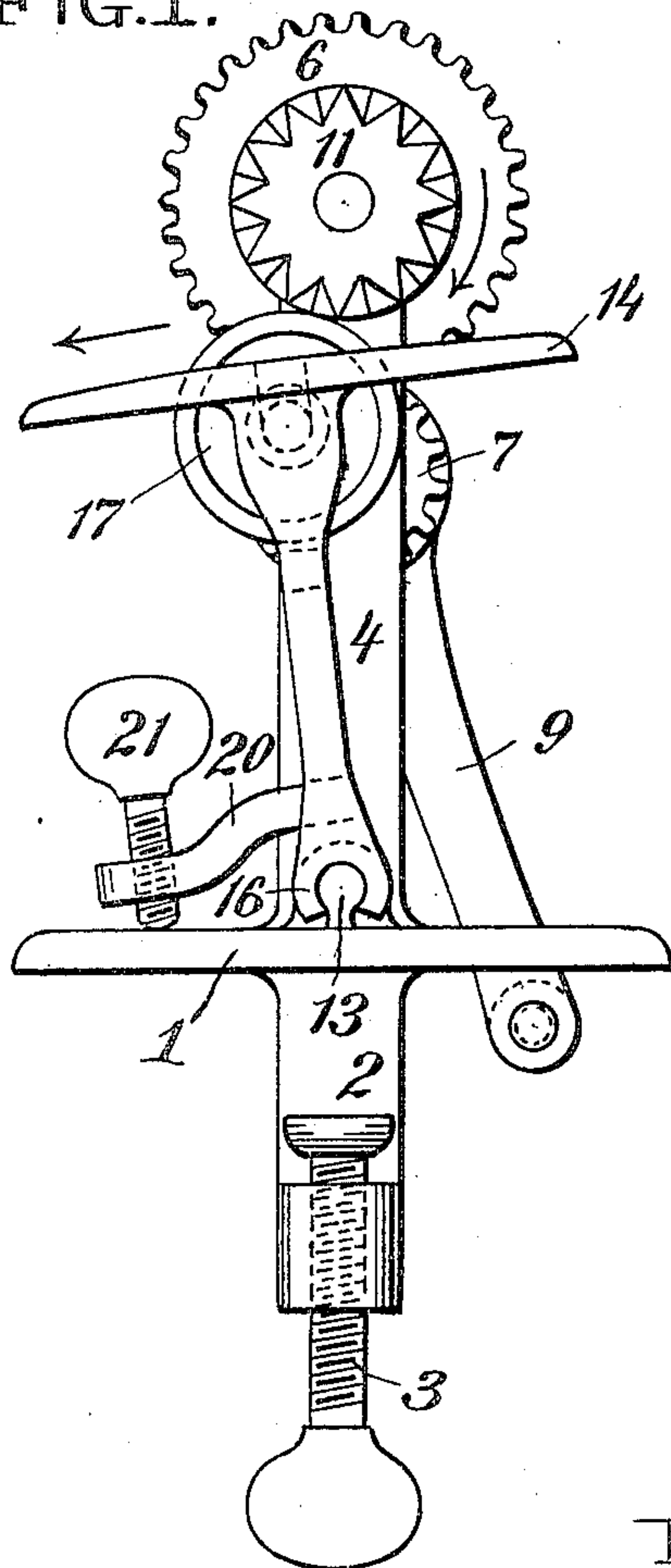


FIG. 2.

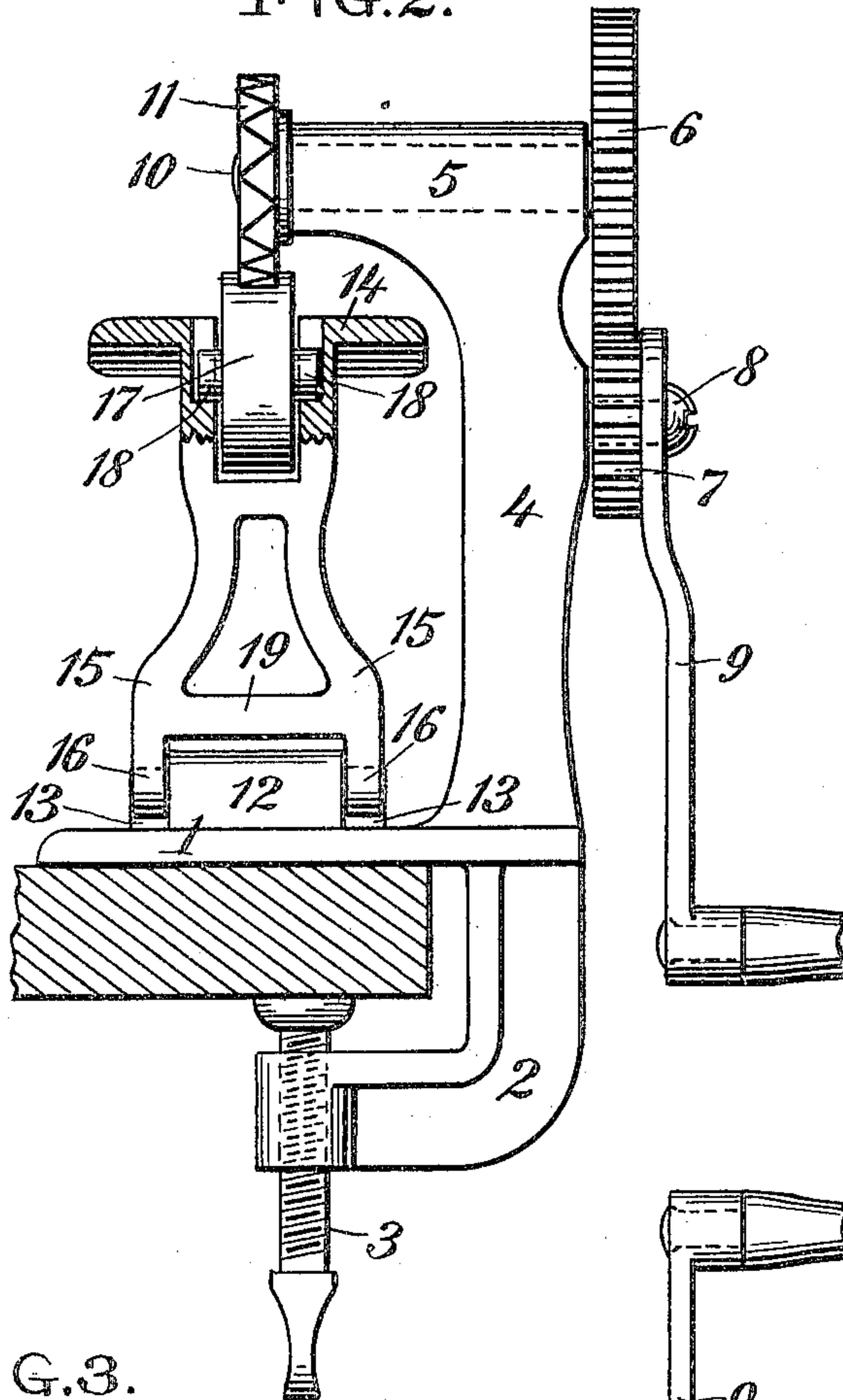


FIG. 3.

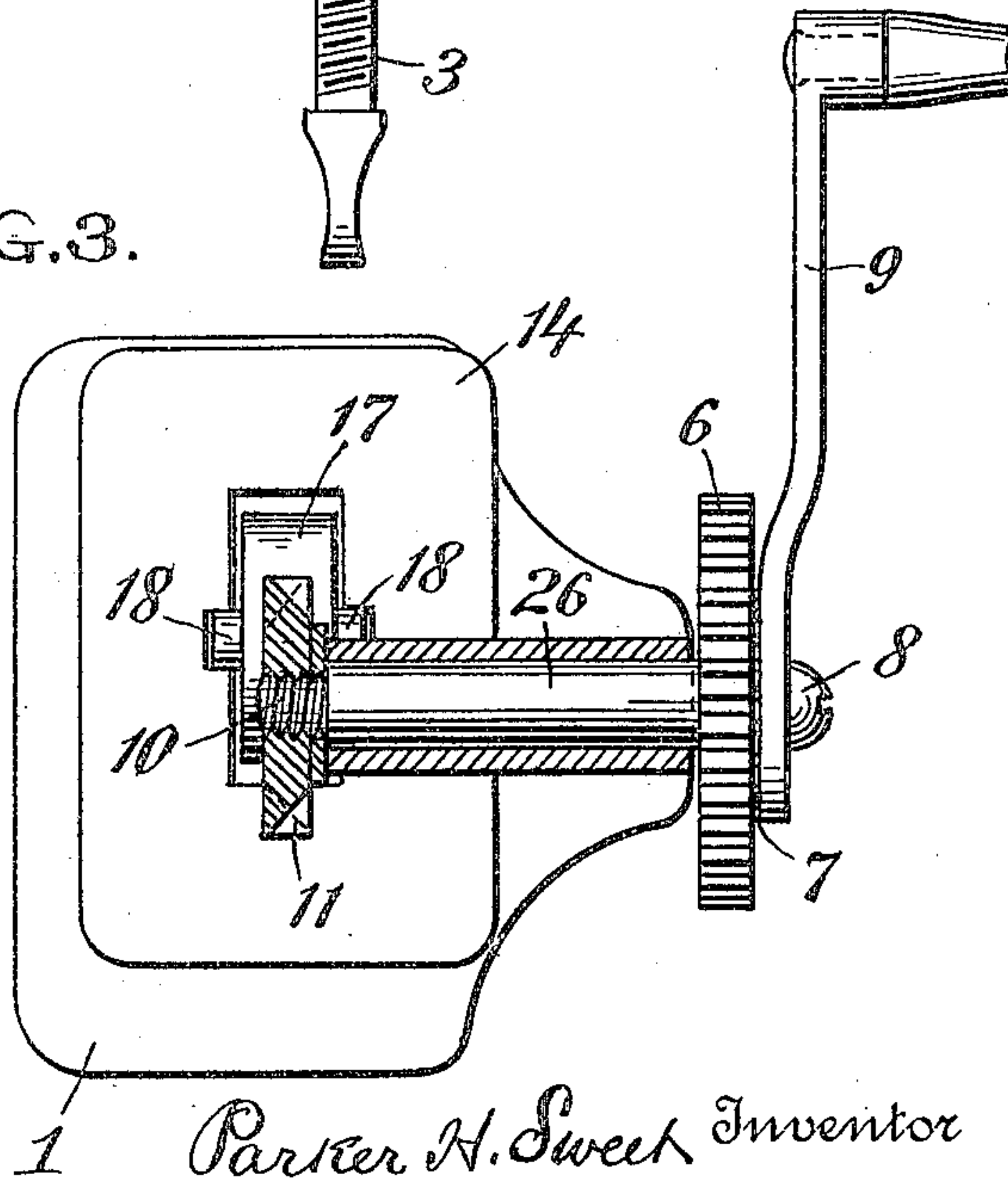
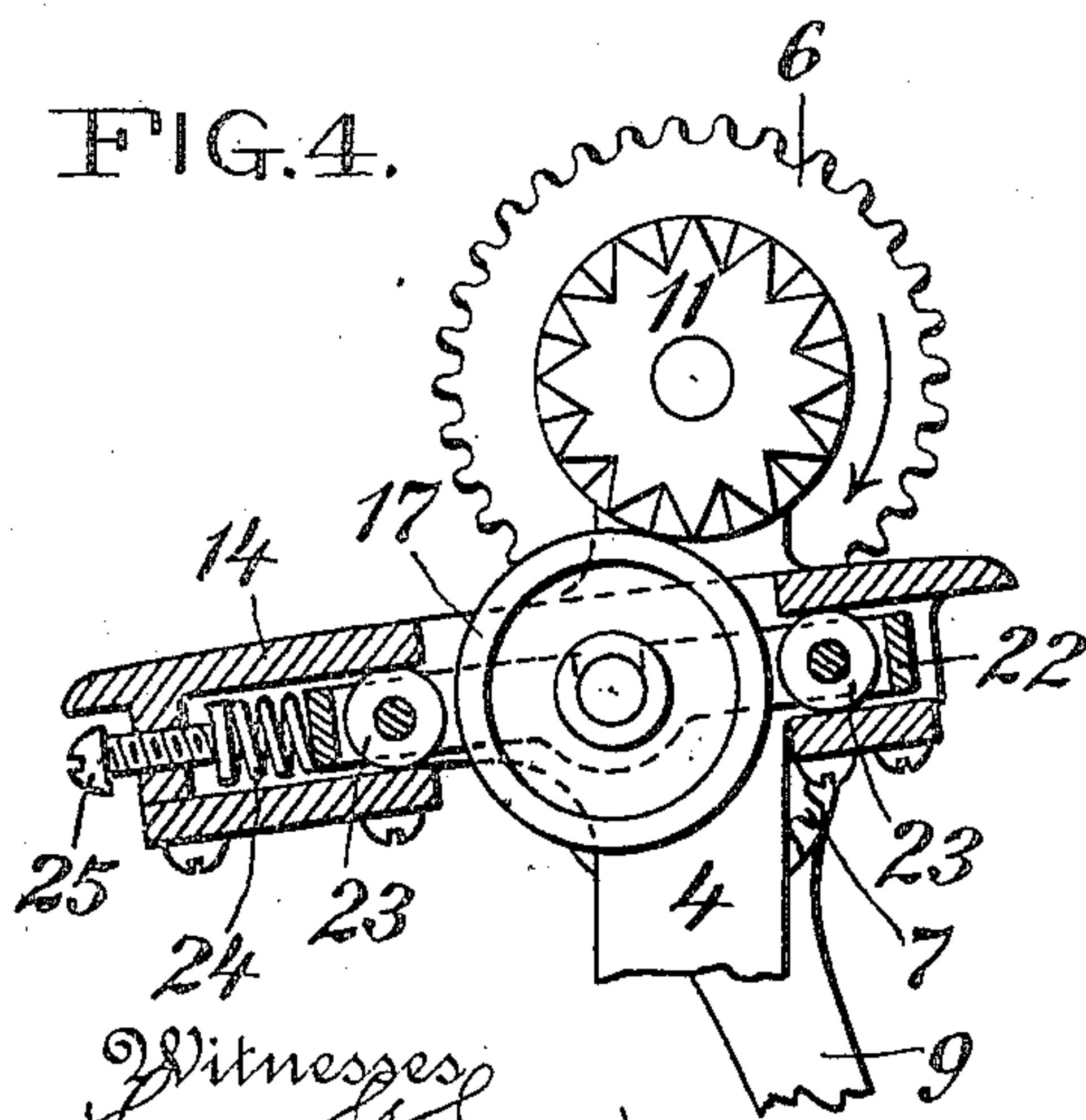


FIG. 4.



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## PINKING-MACHINE.

No. 812,465.

Specification of Letters Patent.

Patented Feb. 13, 1906.

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*To all whom it may concern:*

Be it known that I, PARKER H. SWEET, a citizen of the United States, and a resident of the city of New York, county of Kings, State of New York, have invented certain new and useful Improvements in Pinking-Machines, of which the following is a specification.

My invention relates to that class of machines used for pinking or similarly ornamenting cloth, leather, and other like materials by passing such materials between two revolving rolls, the one being provided with cutting edges, the other acting as a bearing or anvil roll therefor.

The object of my invention is to secure in a rotary pinking-machine an automatic relative adjustment of the cutting and anvil rolls such that the latter will present a relatively constant resistance to varying pressures within normal limits; but when breaking pressures occur the anvil-roll will automatically yield to such abnormal increase. I attain these objects by my novel construction hereinafter more particularly described, reference being had to the drawings, throughout which like reference-numerals indicate the same or corresponding parts in the several views.

In the drawings, Figure 1 is a perspective elevation of my improved machine. Fig. 2 is a perspective elevation of the machine, taken at right angles to Fig. 1. Fig. 3 is a plan view from the top. Fig. 4 is a detail view showing an alternative construction of the compensating mechanism.

The frame of the machine (best shown in Fig. 2) is preferably cast in one piece and consists of the bed-plate 1, the downwardly and inwardly curved projection 2, through which passes the clamping-screw 3 for attaching the machine to a table or bench, and the standard 4, terminating in the sleeve 5, projecting at right angles to the standard.

Mounted rotatably in the sleeve 5 is a shaft 26. (More clearly shown in Fig. 3.) At the outer end of this shaft and for reasons of economy, preferably integral therewith is the gear-wheel 6, meshing with the cogged driving-wheel 7, which is secured to the standard by the screw 8. Attached to or preferably integral with the wheel 7 is the crank 9 for imparting motion to the machine. If desired, a driving-pulley may be substituted

for this crank, and the machine may be belted to any convenient source of power.

The shaft 26 terminates in a threaded portion 10, the thread being left-handed. Upon this threaded portion is screwed the cutting roll 11, which is tapped to fit closely thereto. This thread being left-handed it will be noticed that the cutting-roll may be turned up on this threaded portion by simply holding the cutter-roll against this threaded portion and rotating the crank clockwise in the usual way. Moreover, to remove the cutter it is sufficient to merely rotate the crank counterclockwise, in which case the friction of the anvil-roll will cause the cutter-roll to be turned off from the shaft. The cutting edge of this cutter may be of any desired form or may be provided with a series of punches for making holes of any desired shape.

Integral with the bed-plate 1 is a projection horizontally elongated in alinement with the standard and having the cylindrical terminals 13 13. Bent to partially encircle these cylindrical projections are the forked ends of the two supports 16 16, fastened to or integral with the table 14. The table and its supports are thus loosely fastened to the bed-plate, while pivotal motion is permitted about the projections 13 13. The supports are of sufficient length and thickness and of the proper material to be capable of a certain amount of spring for the purpose hereinafter set forth. The center of this table is provided with a slot to admit the anvil or bearing roll 17. This roll is provided at its center with a journal or cylindrical trunnions, the ends of which bear in the lower ends of channels cut in the table and supports. The roll is thus easily inserted and removed, while the channels are of the proper depth to allow the periphery of the roll to project somewhat above the surface of the table. Integral with the cross-brace between the supports and at right angles to such brace an arm 20 projects substantially horizontally in the direction in which the material passes through the machine. Near its middle portion this arm is provided with a downwardly-tending offset, while near its extremity it is drilled and tapped to receive the set-screw 21, which passes downward through the arm and against the bed-plate. The height from the bed-plate to the most distant point on the pe-



riphery of the anvil-roll is slightly greater than the vertical height to the periphery of the cutting-roll, so that when the two rolls touch their centers are appreciably out of vertical alinement. The pressure of the anvil upon the cutter can thus be regulated at will by adjusting the tilt of the table by means of the set-screw 21. The supports of the table are made of wrought-iron or any convenient metal of sufficient elasticity, and by means of the spring of these metal supports the device is protected against and compensation is made for any abnormal damaging force. The two rolls and the supports are so nearly in line that the ordinary downward pressure is resisted, and the set-screw 21 permits such pressure to be regulated at will under ordinary circumstances. The abnormal strains, however, act obliquely and often nearly horizontally, and the spring of the table amply compensates therefor. The turning force being exerted in a plane parallel to the base and the cutting force being exerted downwardly at right angles thereto, the resultant stress is exerted upon the anvil-roll at a varying angle more or less acute with relation to the base. By mounting said roll upon an arm pivotally supported at said base said point of support being in vertical alinement with the center of said cutting-roll, but the center of said anvil-roll lying without said alinement, and by so proportioning the length and thickness of said arm that it has the necessary degree of rigidity, yet will yield under the excessive pressure resultant from an abnormal cutting force, the anvil-roll is free to move through an arc substantially in the line of resultant stress, and its degree of tendency to yield to or resist such stress is regulated by means of an adjusting-screw turning in an offset from said pivotal support and bearing on said base-plate.

In Fig. 4 I have shown an alternative form of means for compensating for abnormal pressure which, like the other form, resists the ordinary downward pressure, but yields to the damaging forces acting horizontally or obliquely. The table 14 is formed upon or fastened to the standards 4 and has a slight inclination downward in the direction in which the material passes over it. The table in this modified form consists of a hollow shell with a removable bottom, the top and bottom having slots to admit the anvil-roll. Within this shell is a movable skeleton carriage 22, mounted upon the rolls 23 23, the trunnions of which bear in the outer frame of the carriage. The trunnions of the anvil-roll in a like manner bear upon the frame of the carriage, which in practice should be reinforced at these points. As in my preferred form, when the peripheries of the anvil and cutting rolls are in contact the center of the former is slightly out of the perpendicular line from the center of the cutter to the bed-plate.

The movement of the carriage, and consequently the pressure of the rolls, is controlled by the spring 24, the tension of which is regulated by means of the screw 25, passing through the lower end of the hollow table. The principle embodied in this modification is identical with that of the previously-described form. The centers of the two rolls are sufficiently nearly in line, so that ordinary pressure will cause little or no pressure upon the spring 24, but in the event of any abnormal horizontal or oblique pressure the spring will compensate therefor and prevent any damage to the mechanism.

Having described my invention, what I claim is—

1. In a pinking-machine the combination of a cutting-roll and an anvil having their centers vertically out of alinement and means for maintaining a relatively constant pressure therebetween.

2. In a pinking-machine the combination of a cutting-roll and an anvil-roll having their centers vertically out of alinement and means for automatically adjusting the resistance of the latter to abnormally varying pressures.

3. In a pinking-machine the combination of a cutting-roll and an anvil-roll normally contacting, the former journaled in a fixed support, and the latter in a pivotally-mounted yielding support, the two supports mounted upon a common base, said pivot being in vertical alinement with the center of said cutting-roll, the center of the said anvil-roll being in the same plane without said alinement.

4. In a pinking-machine the combination of a cutting-roll and an anvil-roll normally contacting, the former journaled in a fixed support, and the latter on a pivotally-mounted yielding support, said pivot being in vertical alinement with the center of said cutting-roll but the said anvil-roll being in the same plane but without said alinement, together with means for adjusting said anvil-roll with respect to said alinement.

5. In a pinking-machine the combination of a cutting-roll rotatably mounted upon a fixed support; an anvil-roll carried upon a slightly-inclined table, supports to said table of slightly-elastic material, an arm projecting substantially horizontally from said supports, and an adjustment-screw passing through the extremity of said arm and against the base, substantially as and for the purposes set forth.

6. In a pinking-machine the combination of the bed-plate 1, the standard 4, the clamp 2, the set-screw 3, the gear-wheel 6, meshing with the geared driving-wheel 7, the crank 9, the cutting-roll 11, attached by a left-hand thread to the shaft 26, the anvil-roll 17, mounted upon the table 14, the table-supports 15 15, pivotally connected by cylindrical projections upon the said bed-plate, the adjustment-arm 20, the adjustment-



5 screw 21, the anvil-roll support being of such length that it normally contacts with the cutting-roll at a point without the perpendicular line from the center of the cutting-wheel to the base.

10 7. In a pinking-machine the combination of a cutting-roll rotatably mounted upon a fixed support, a slightly-inclined hollow table attached to said support, an anvil-roll mounted upon a sliding carriage within said hollow table, screw and spring means for ad-

justing the position of said carriage and anvil-roll and for compensating for abnormal pressures, the said cutting and anvil rolls normally contacting at a point slightly without the perpendicular line from the center of the cutting-roll to the base, substantially as described. 15

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