

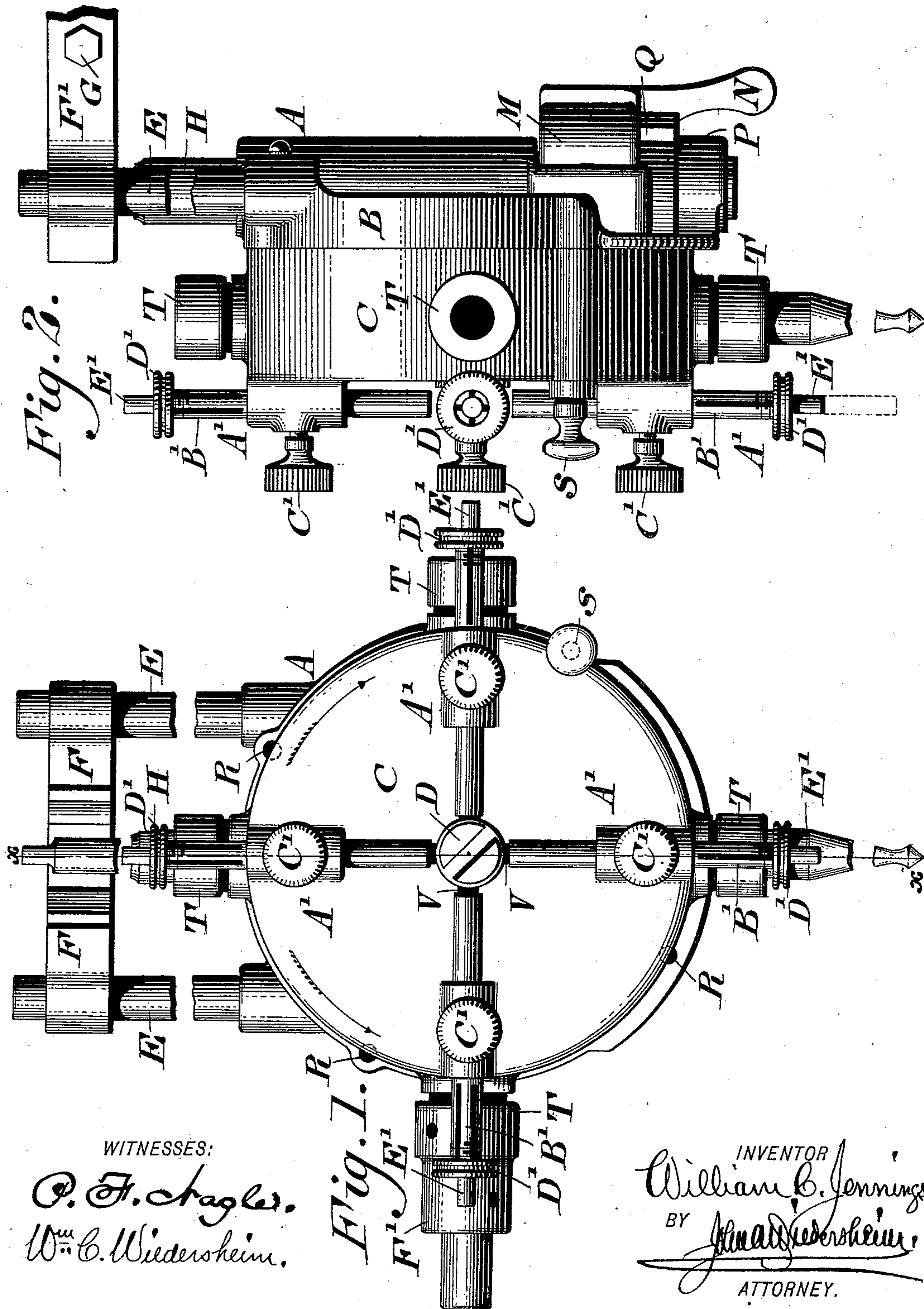
(No Model.)

4 Sheets—Sheet 1.

W. C. JENNINGS.
TURRET HEAD FOR DRILL MACHINES.

No. 520,362.

Patented May 22, 1894.



WITNESSES:

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Fig. 1.

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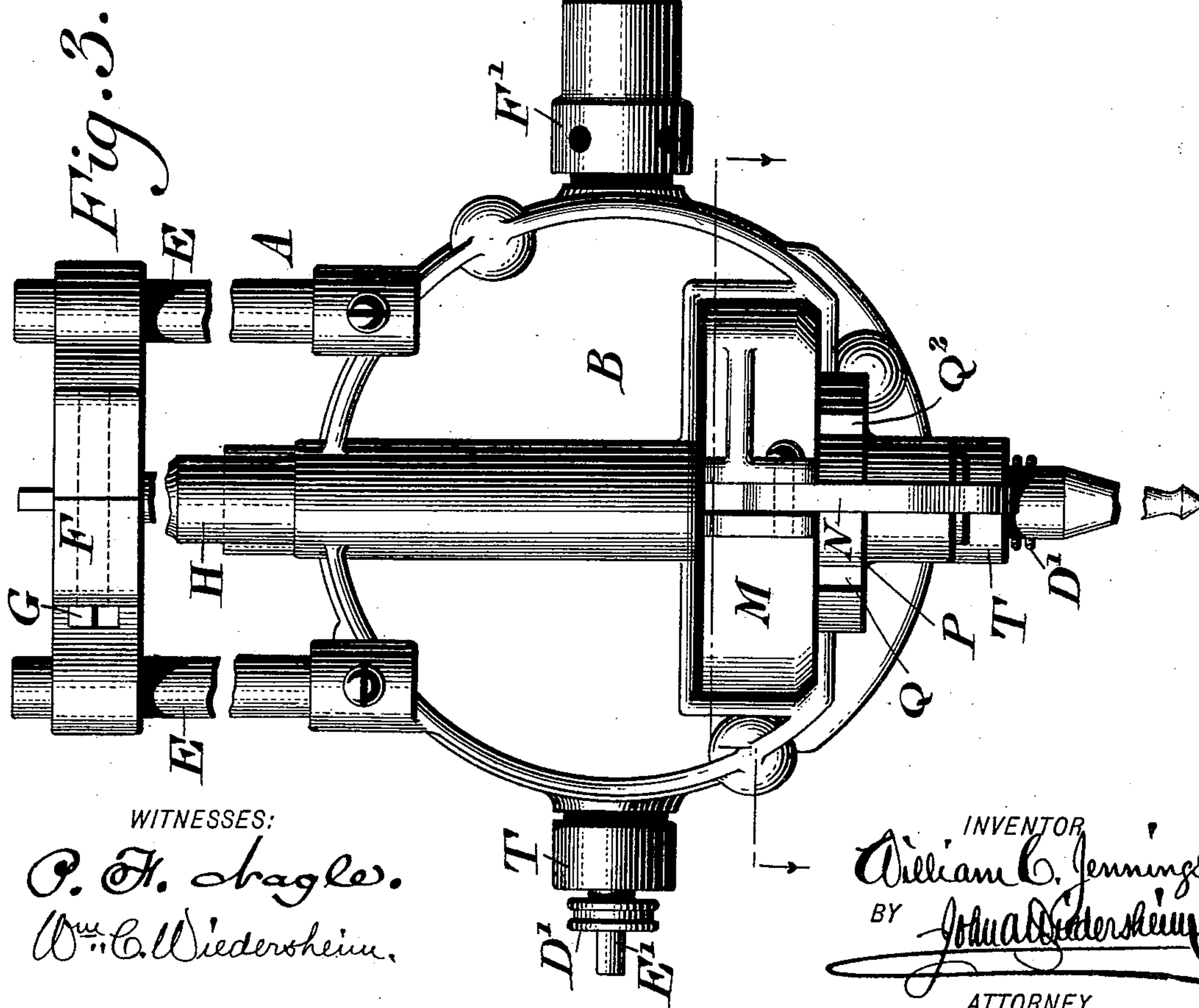
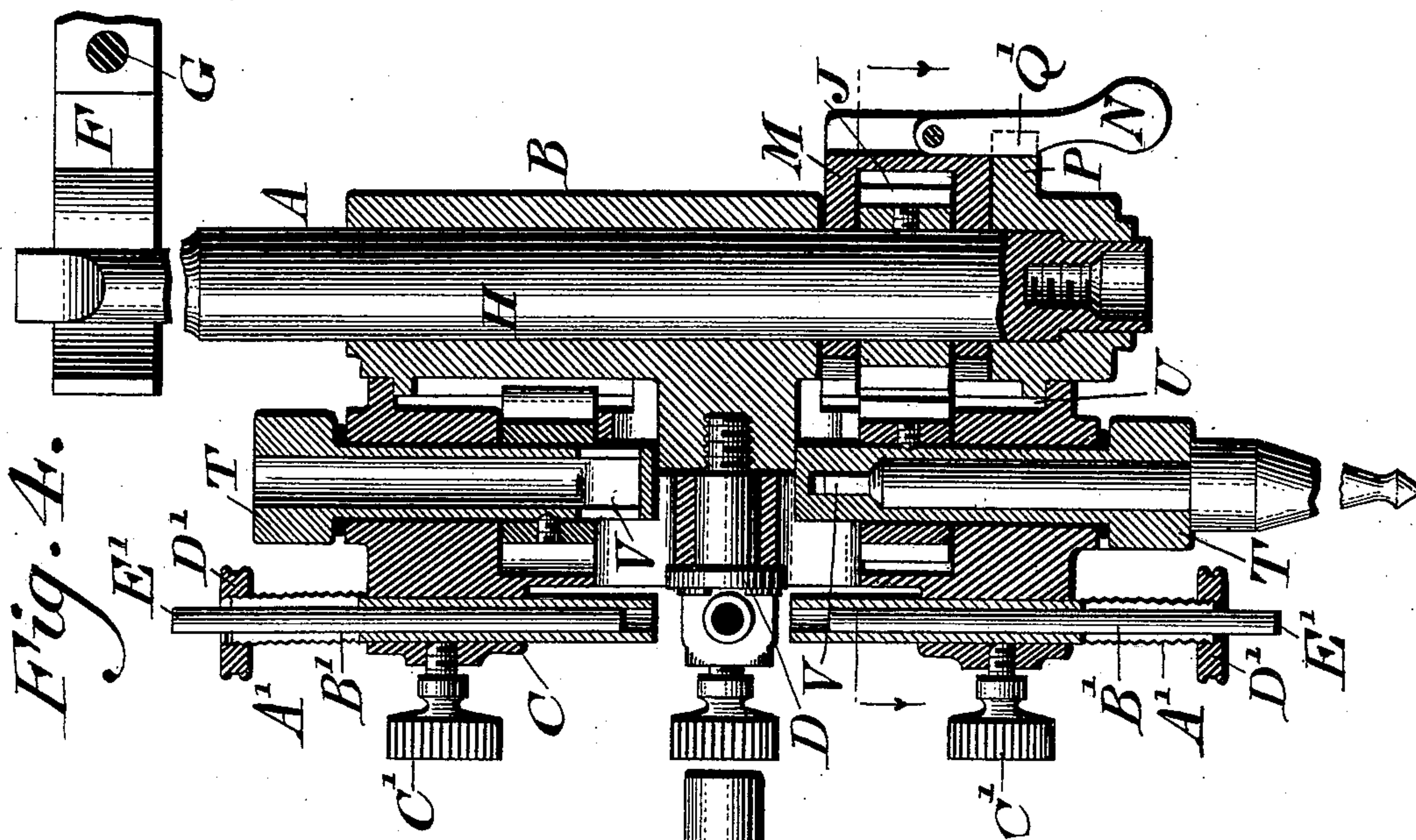
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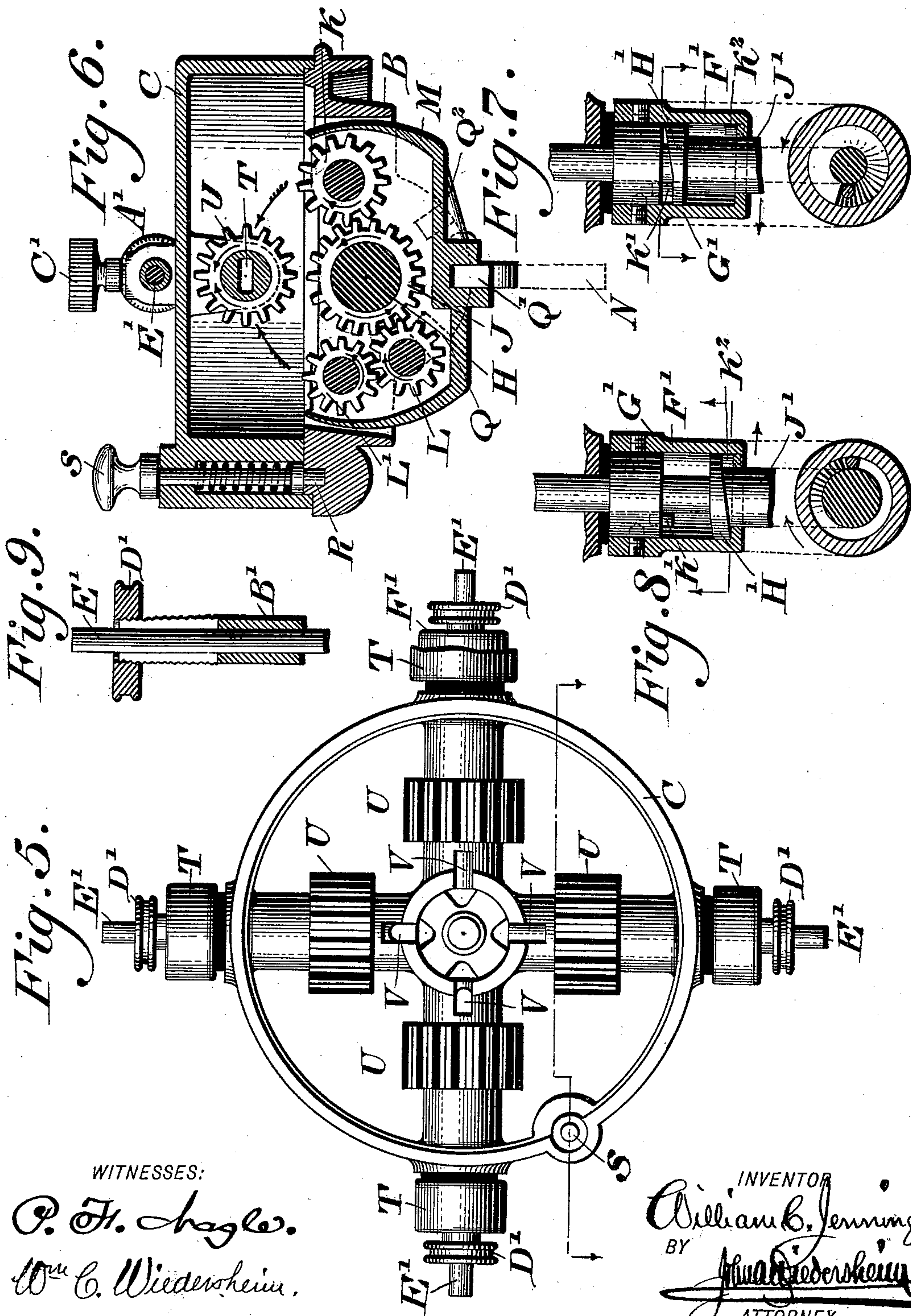
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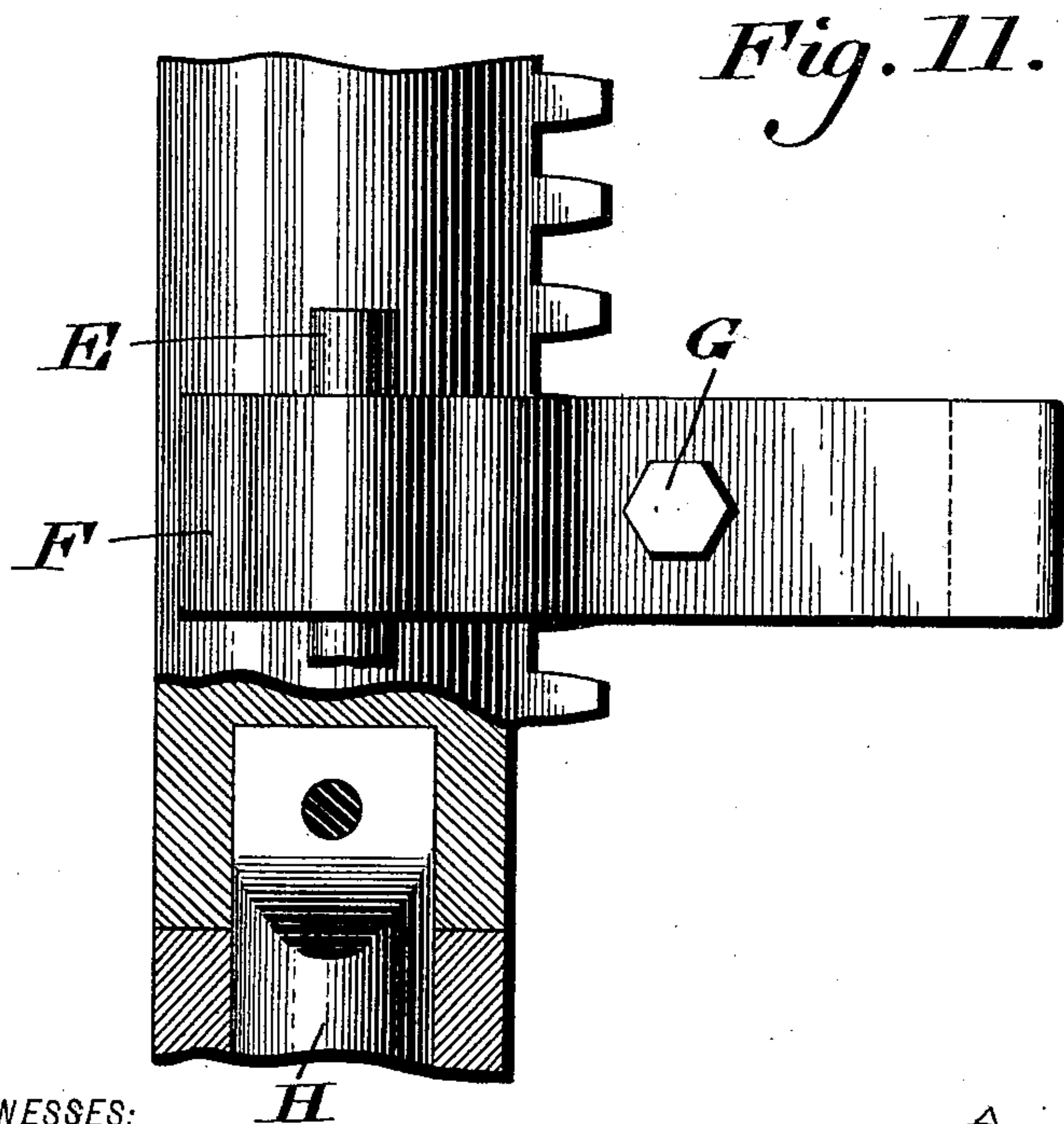
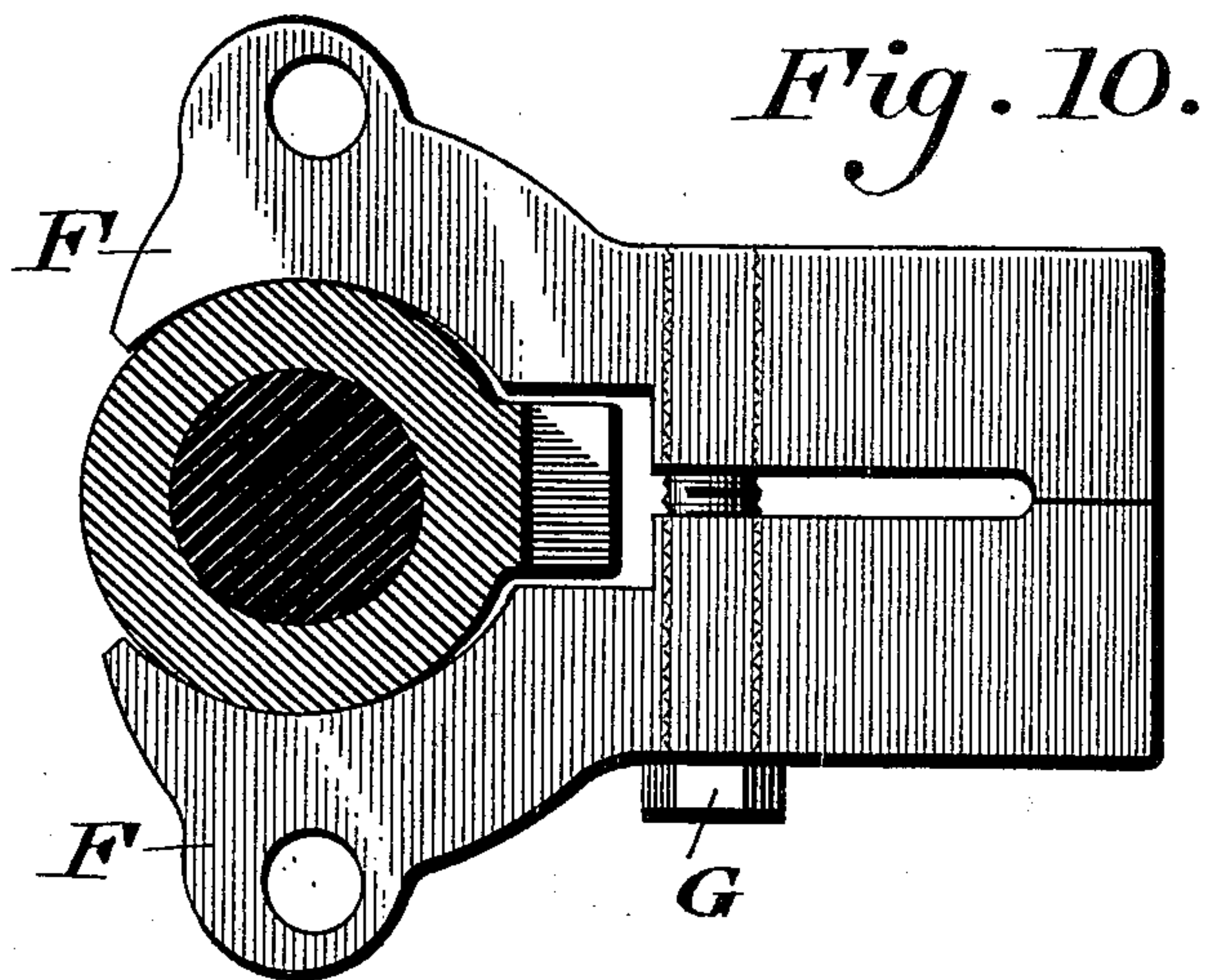
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TURRET-HEAD FOR DRILL-MACHINES.

SPECIFICATION forming part of Letters Patent No. 520,362, dated May 22, 1894.

Application filed May 15, 1893. Serial No. 474,361. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. JENNINGS, a citizen of the United States, residing in the city and county of Camden, State of New Jersey, have invented a new and useful Improvement in Turret-Heads for Drill-Machines, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of an improvement in turret heads for use on drill presses, provided with means substantially as hereinafter described for holding a number of tools, drills, reamers, counter bores and taps, &c.

It also provides means for reversing the motion of the tools without stopping the drill press, for the purpose of backing out taps.

It also provides means for removing and changing tools while one spindle is engaged at work.

It further consists of the parts hereinafter described.

Figure 1 represents a front elevation of a device embodying my invention. Fig. 2 represents a side elevation thereof. Fig. 3 represents a rear elevation thereof. Fig. 4 represents a section on line x, x , Fig. 1. Fig. 5 represents a side view of the front portion of a turret head embodying my invention. Fig. 6 represents a section on line y, y , Figs. 3, 4, and 5. Figs. 7, 8, and 9 represent sectional views of detached portions of my device. Figs. 10 and 11 represent on an enlarged scale, a plan view and side elevation respectively, of brackets which are employed for securing the turret head to the drill.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings: A designates a turret head for drilling machines, consisting of the two separable parts B, C, which are pivoted to each other, and held by a screw D. The part B is secured to the drill press and is thereby stationary, the part C having a hub which revolves on the screw D secured to said part B.

In order to attach the part B to the drill, I employ the brackets F, which are clamped to the spindle by means of the screw G, and have bosses which receive the rods E, which are secured to the part B.

Mounted in a sleeve in the stationary part

B is a spindle H, which is secured in the spindle of the drill press, and carries a gear J. Said spindle H serves to transmit power to operate the spindles of the turret head, and acts as a pivot for the swivel M, which carries the gear J, and also the gears K, L, L'. Said gears K and L are adapted to mesh with said gear J, and as the latter receives motion from the spindle H, motion is also imparted to the said gears K, L, L'. A handle N is secured to the swivel M, and beneath the latter is a quadrant P, which is provided with the notches Q, Q', Q², into which said handle N is adapted to be placed, whereby the swivel is firmly held in place, the position depending on the direction of the motion required, as will be hereinafter described.

R designates openings in the circumference of the stationary part B, which receive a spring-actuated bolt S, which is situated in a sleeve on the movable part C, so that when said bolt enters one of the openings R, the parts B, C, will be locked in a proper position ready to operate. Situated in the part C are the drill spindles T which carry the gears U, the latter being adapted to mesh with either the gears K or L', whereby motion is imparted to the tools. Slots V are provided in the drill spindles through which the tools may be reached and forced out of the sockets in the spindles. Gages A' are placed on the movable part C at suitable points, the same consisting of a tube B' having a split end, and secured by the set screw C'. In the tube is a rod E', which is secured in position by the nut D' working on the split end of the tube B'.

A screw tap socket F' is secured to a turret head spindle, which consists of a casing G' on the interior of which are the pins K', K², one at the upper and the other at the lower end of the casing. A shoulder head H' of the tap socket J' works on the interior of the casing, the shoulders of said head having clutches to engage with the pins K', K², whereby when the spindle is turned to the left as shown, the pin K' at the upper end of the casing is engaged, while when the reverse motion is applied the head H' engages with the pin K².

The operation of the device is as follows: The bracket F is fastened to the drill press,

and the rods E inserted in the bosses thereon, whereby the turret head connected to said rods E is properly secured to the drill press. The tools to be used are placed in the sockets 5 of the spindles of the turret head, and the gages are set the desired depth. The shaft H is secured in the spindle of the drill press, and hence power is transmitted to the intermediate gears L, L, and K, through gear J, to 10 driving gears U, U, U, U, by which power and motion are imparted to the turret head spindles T, T. The movable part C is revolved and the tool to be used is in correct position, when the two parts B, C, are locked by the 15 bolt S entering one of the openings R. In this position the gear U is opposite the gear J, but not contacting therewith. The swivel M is now rotated until the gear L' meshes with the gear U, whereby motion is transmit- 20 ted thereto, and hence to the tools. The swivel is locked in this position by placing the handle N in the notch Q. To reverse the motion, the swivel is turned until the gear K meshes with the gear U. The swivel is locked 25 at that point. Should it be desired to use another tool the swivel is locked by placing the handle in the notch Q', whereby the gears are out of engagement, the bolt S is withdrawn from the openings F, and the part C turned 30 until the new tool is in the desired position, when the parts are again locked and the operation is repeated. It will be seen that by this device, time is saved and stoppage of the machine prevented.

35 The device is of simple but durable construction, and easily operated, and accurate.

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

40 1. A turret head for a drill press consisting of two separable parts, one stationary having means connected therewith for securing it to the press, the other part being rotatably 45 mounted on said stationary part, means substantially as described for locking said parts together, said rotatable part carrying tool-spindles with gears thereon, and a swivel carried by the stationary part and provided with gearing substantially as described, said parts 50 being combined substantially as described.

2. A turret head for a drill press having a stationary part, a separable rotatable part mounted on said stationary part, a spindle 55 mounted in said stationary part having a gear thereon, a swivel pivoted on said spindle and having gearing mounted therein, means for

locking said swivel to said stationary part, and tool-spindles mounted in said rotatable part and having gearing meshing with said swivel gearing, said parts being combined 60 substantially as described.

3. A turret head for a drill press having a stationary part with a rotary spindle therein, a gear wheel on said spindle, a swivel pivoted on said spindle and having gearing mounted 65 thereon, means for locking said swivel on said stationary part, a rotatable part mounted on said stationary part and a screw tap socket secured to a turret head spindle, and provided with a shoulder head with clutches for engag- 70 ing pins on the interior of said socket, said parts being combined substantially as described.

4. A turret head for drill presses formed of two parts, a spindle with a gear, a swivel car- 75 rying gears, means for locking said swivel, and drill spindles with sockets having slots for drifting out tools, and gears which are adapted to contact with the gears in the swivel, sub- 80 stantially as described.

5. A turret head for drill presses formed of two parts, a spindle with gearing, a swivel carrying gears, means for locking said swivel, drill spindles with sockets with slots for drift- 85 ing tools out of spindles, and gears, and gages secured at any suitable place, substantially as described.

6. A turret head for a drill machine having a stationary part adapted to be secured to the machine, a rotatable part mounted on said 90 stationary part, a rotary spindle journaled in said stationary part, a swivel mounted on said spindle and carrying gearing adapted to mesh with a gear wheel on said spindle, and a locking device for said swivel, said parts 95 being combined substantially as described.

7. A turret head for a drill machine having a stationary part adapted to be secured to the drill machine, a rotary part mounted on the former part, a rotary spindle journaled in 100 said stationary part and having a gear wheel therein, a swivel mounted on said spindle and carrying gear wheels substantially as described, a locking device for said swivel, and a locking device for said rotatable part, said 105 parts being combined substantially as set forth.

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Witnesses:

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