

P. J. POITRAS & W. CARON.
GRINDING MACHINE.
APPLICATION FILED SEPT. 24, 1909.

961,010.

Patented June 7, 1910.

4 SHEETS—SHEET 1.

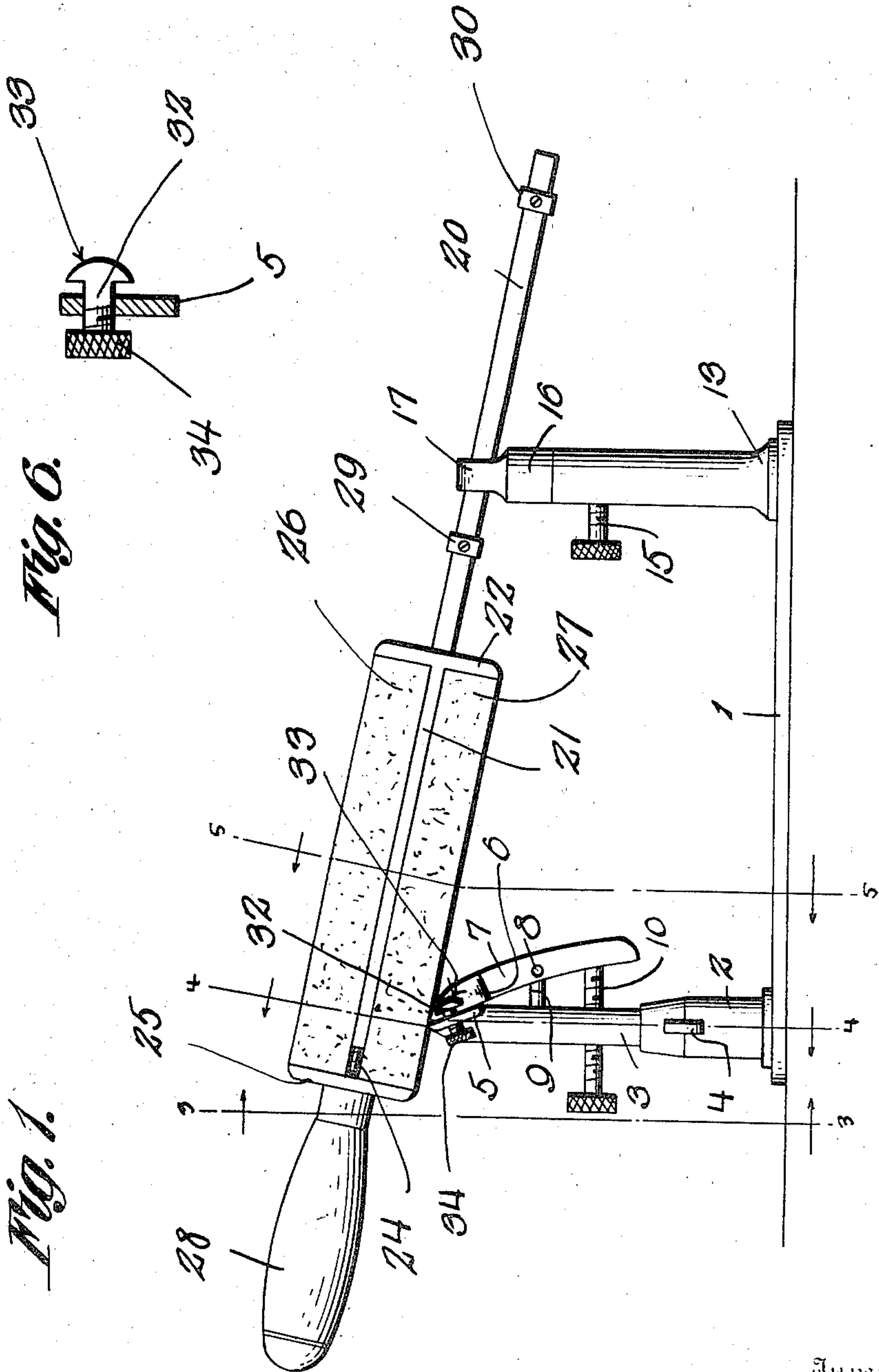


Fig. 1.

Fig. 6.

Witnesses

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4 SHEETS—SHEET 3.

Fig. 3.

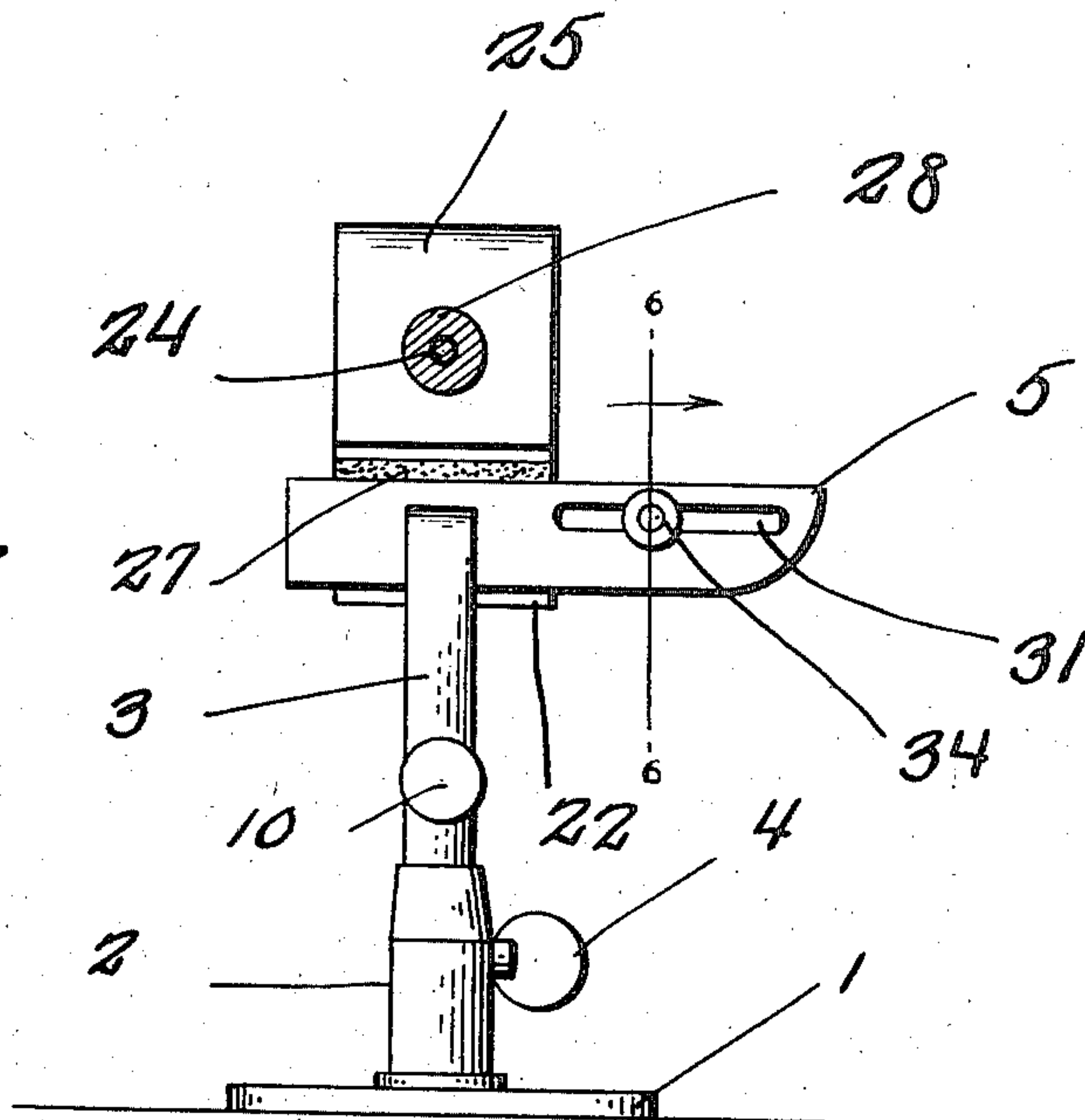
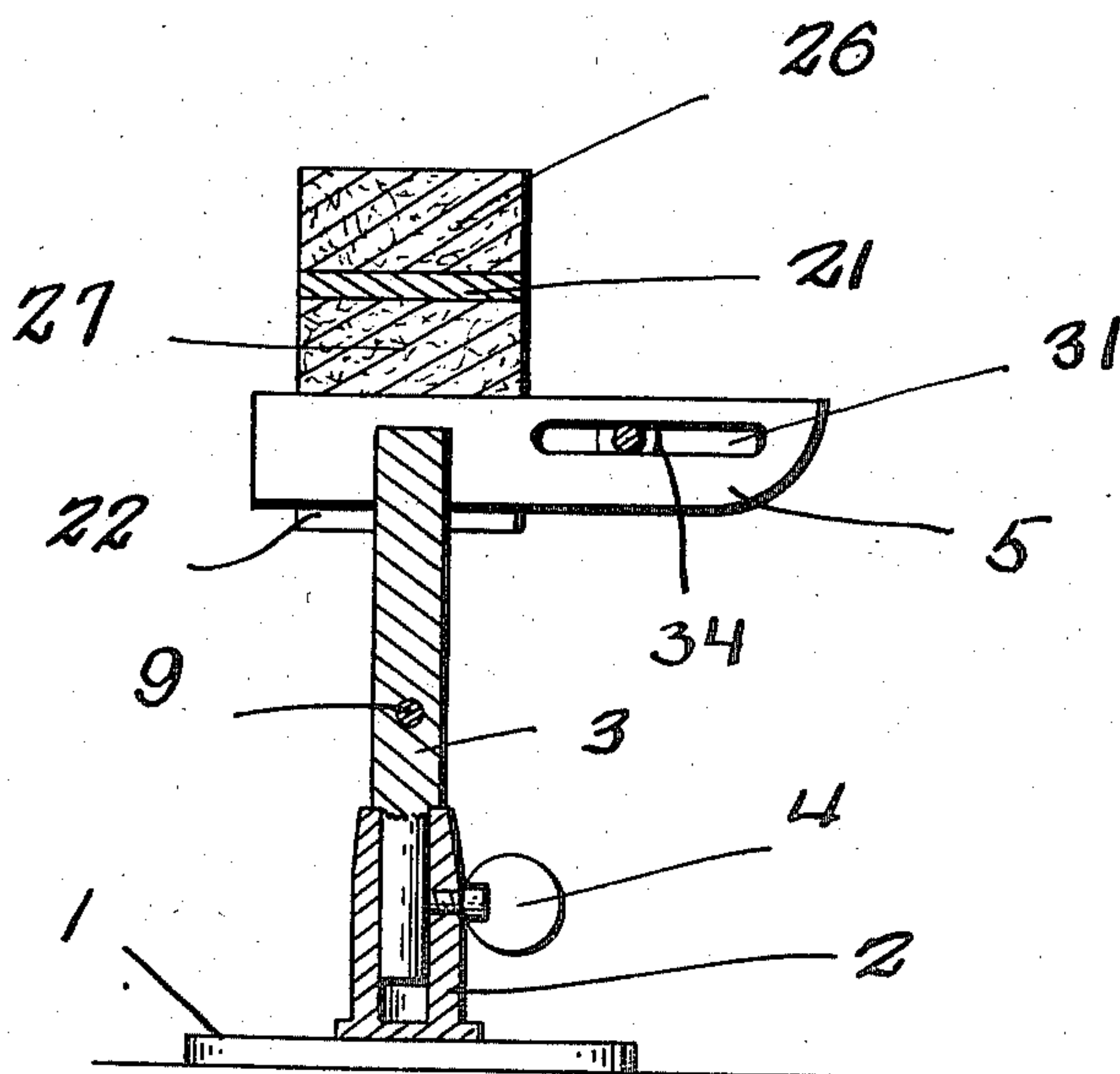


Fig. 4.



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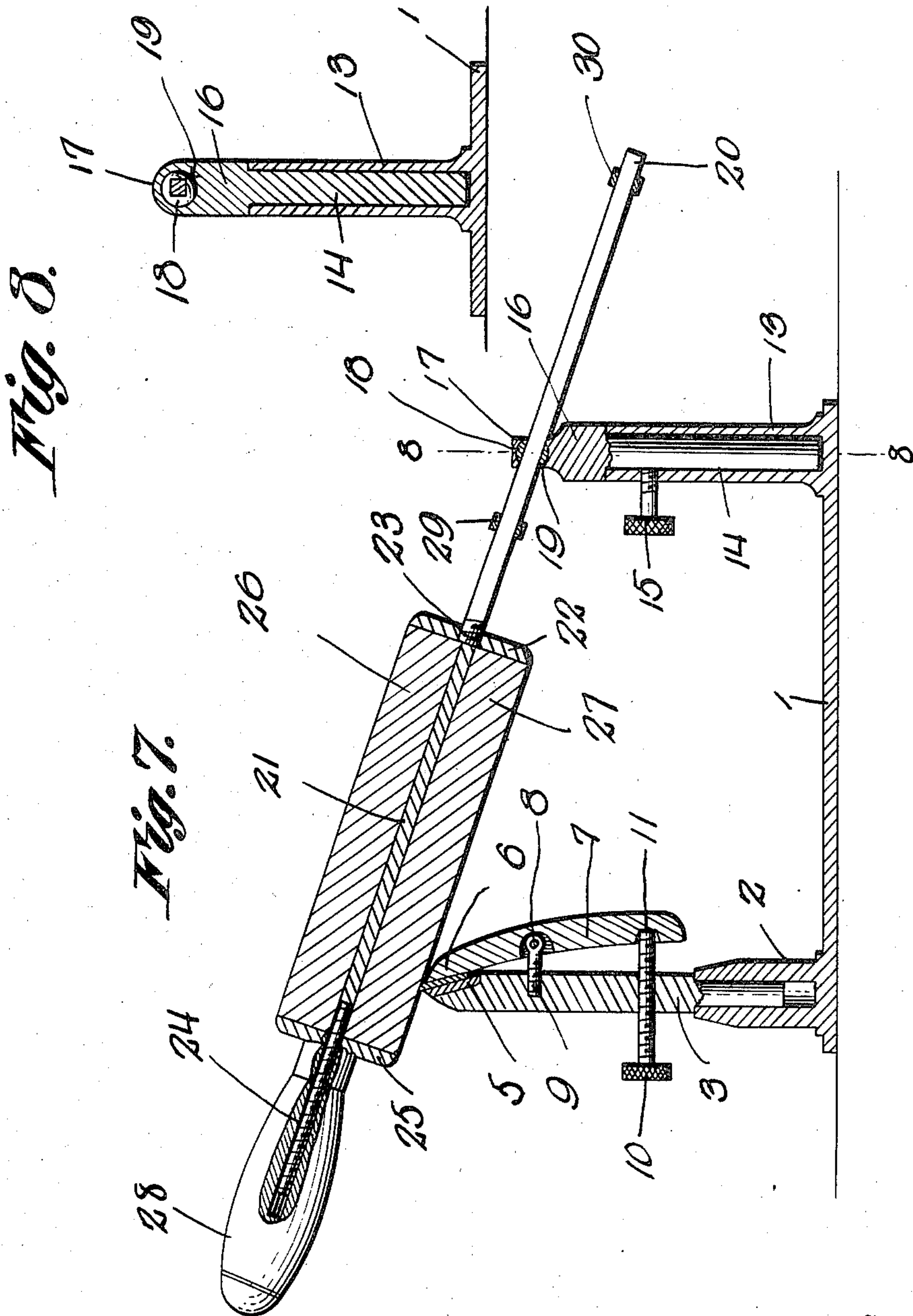
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4 SHEETS—SHEET 4.



Witnesses

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UNITED STATES PATENT OFFICE.

PIERRE J. POITRAS AND WILFRID CARON, OF RUMFORD, MAINE.

GRINDING-MACHINE.

961,010.

Specification of Letters Patent.

Patented June 7, 1910.

Application filed September 24, 1909. Serial No. 519,491.

To all whom it may concern:

Be it known that we, PIERRE J. POITRAS and WILFRID CARON, citizens of the United States, residing at Rumford, in the county of Oxford and State of Maine, have invented new and useful Improvements in Grinding-Machines, of which the following is a specification.

This invention relates to shears sharpening machines, the object of the invention being to provide a simple, manually operated machine for quickly sharpening the blades of shears, scissors and the like, the machine embodying several adjustments by means of which the abrasive member may be operated at a variety of angles corresponding with the body of the cutting edge of the blade of the shears. The machine also embodies novel means for clamping the blade of a shears in a fixed position, and includes means for securely holding the point of the blade so as to enable an even sharpening of the blade to be effected throughout the entire length thereof.

With the above and other objects in view, the invention consists in the novel construction, combination and arrangement of parts as herein fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a side elevation of a shears sharpener embodying the present invention. Fig. 2 is a plan view of the same. Fig. 3 is a vertical cross section on the line 3—3 of Fig. 1. Fig. 4 is a vertical cross section on the line 4—4 of Fig. 1. Fig. 5 is a vertical cross section on the line 5—5 of Fig. 1. Fig. 6 is a detail vertical cross section on the line 6—6 of Fig. 3. Fig. 7 is a central vertical longitudinal section through the machine. Fig. 8 is a vertical cross section on the line 8—8 of Fig. 7.

The grinding machine contemplated in this invention comprises essentially a base 1 at one end of which is arranged a tubular vise standard holder 2 containing a vise standard 3 which is adjustable up and down in the socket piece 2 and adapted to be held at any desired point of adjustment by means of a set screw 4. The upper end of the standard 3 carries a broad-faced vise jaw 5 against which the blades of a pair of shears are adapted to be clamped one at a time. Opposite the jaw 5 is arranged a clamping jaw 6 of the pivoted member 7 of the vise, said pivoted member 7 being fulcrumed at

a point intermediate its ends as shown at 8 on a short lateral bracket 9 extending from the standard 3. The jaws are forced together by means of a clamping screw 10, which is threaded through an opening in the standard 3 and bears at its end against the lower arm of the member 7 of the vise, as clearly shown in Figs. 1 and 7, the end of the screw preferably fitting in a socket 11 in the member 7 as shown in Fig. 7. At the opposite end of the base 1, there is arranged a hollow or tubular standard 13 in which is slidably arranged a bearing post 14 adapted to be adjusted up and down and held at any desired point by means of a set screw 15. The upper end of the bearing post 14 is enlarged to form a bearing head 16 which is provided with a spheroidal socket 17. In this socket 17 is arranged a ball shaped bearing 18 and through said bearing there extends a guide opening 19 which receives a reciprocatory slide rod 20 forming part of the hand-operated sharpening member of the machine.

The sharpening member of the machine comprises a stone holder consisting of a flat body portion 21 provided at one end with a tee-shaped head 22 formed in its outer face with a threaded opening 23 to receive the correspondingly threaded end of the slide rod 20, as clearly shown in Fig. 7. At its opposite end the body 1 is provided with a longitudinally extending threaded shank 24 upon which is placed a clamping head 25 adapted to be clamped against the adjacent ends of a pair of sharpening stones 26 and 27 which are thus held in place against the opposite sides of the body 21 and between the heads 22 and 25.

28 designates a handle which is internally threaded to constitute a nut and is adapted to screw upon the threaded shank 24 up against the clamping head 25, as shown in Fig. 7, so as to force the head 25 against the grinding or sharpening stones.

The rod 20 which slides through the bearing 18 guides the sharpening stones in their movement across the cutting edge of the plate of the shears and in order to limit the reciprocatory movements of the stones, stop collars 29 and 30 are secured to the rod 20 at suitable points at sides of the bearing 18 said stops being adapted to come in contact with the bearing head 16 to prevent the stones 26 and 27 from passing entirely out of engagement with the shear blades. One

of the stones 26 may be of fine textile and the other of coarse textile so that after the coarser stone has been employed to sharpen the shears, the reciprocatory member of the machine may be inverted or turned over bottom side up to bring the other or finer stone into use. The reciprocatory member is operated by means of the handle 28 which is grasped in the hand of the operator and thrust back and forth in a manner readily understood.

The vise jaw 5 is provided at one side with a longitudinal slot 31 in which is received the shank 32 of a point clamp 33 for clamping the point of the blade of the scissors and shears against the jaw face 5 thereby securely holding the point while being operated upon by the sharpening element of the machine. That portion of the shank 32 which is received in and slidable lengthwise of the slot 31 is left smooth and is preferably square in cross section while the projecting end of the shank is threaded to receive a clamping nut 34.

In operation, the blade of the shears is clamped between the jaws of the vise and the standard 3 is then adjusted in height to bring the edge of the shears and the abrasive surface of the stone into parallelism. If the vertical adjustment of the standard 3 is not sufficient further adjustment may be effected by raising and lowering the bearing head 16. After finally bringing the stone into the proper relation to the edge of the shears, the coarser side of the sharpener is first reciprocated across the inner edge of the blade and the work is completed by dressing said edge off with the aid of the finer stone. During this operation the blade of the shears is held between the main jaws of the device while the point of the shears is held rigidly pointed by means of the tee-shaped point clamp 32. It will be understood that the stone sharpening member may be reversed or turned over without detaching the same from the machine. The stone is also adapted to be swung in the arc of a circle while in contact with the edge of the shear blade, indicated in plan view in Fig. 2.

We claim:—

1. A sharpening device of the class specified, comprising a base, a vertically adjustable vise thereon adapted to clamp and hold the blade to be sharpened, a vertically adjustable bearing post arranged at a distance from the vise standard, and a reciprocatory

sharpening member provided with a guide rod supported by the bearing post, said sharpening member being adapted to be moved back and forth across the edge of the blade to be sharpened, substantially as described.

2. A sharpening device of the class specified, comprising a base, a vertically adjustable blade holding vise mounted on said base, and a sharpening member comprising a body having a tee-shaped head at one end thereof, a movable clamp head at the opposite end thereof, one or more sharpening stones held between said heads, a handle at one end of said sharpening member, and a guide rod projecting from the opposite end thereof and working through a guide opening in said bearing head.

3. A sharpening device of the class described comprising a base, a vertically adjustable blade holding vise mounted thereon, a vertically adjustable bearing head supported by the base, and a stone holder comprising a flat bolt, a fixed tee-shaped head at one end thereof, a guide rod extending from said head through an opening in said bearing head, a movable clamping head arranged opposite the fixed head, an operating handle constituting a nut for forcing the clamping head against the sharpening stone or stones, and stop collars on said guide rod cooperating with said bearing head.

4. A sharpening device of the class described comprising a base, a vertically adjustable blade holding vise mounted on the base, a vertically adjustable bearing head mounted on the base, a ball shaped guide mounted in a socket in said bearing head and provided with a guide opening, and a stone holder comprising a flat body, a tee-shaped head at one end thereof, a guide rod projecting from said head and working through the opening in the ball shaped guide, a threaded shank at the opposite end of the holder, a clamp head having an opening through which said stone passes, and a combined handle and nut threaded on said shank, substantially as and for the purpose specified.

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

PIERRE J. POITRAS.
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Witnesses:

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