

No. 782,278.

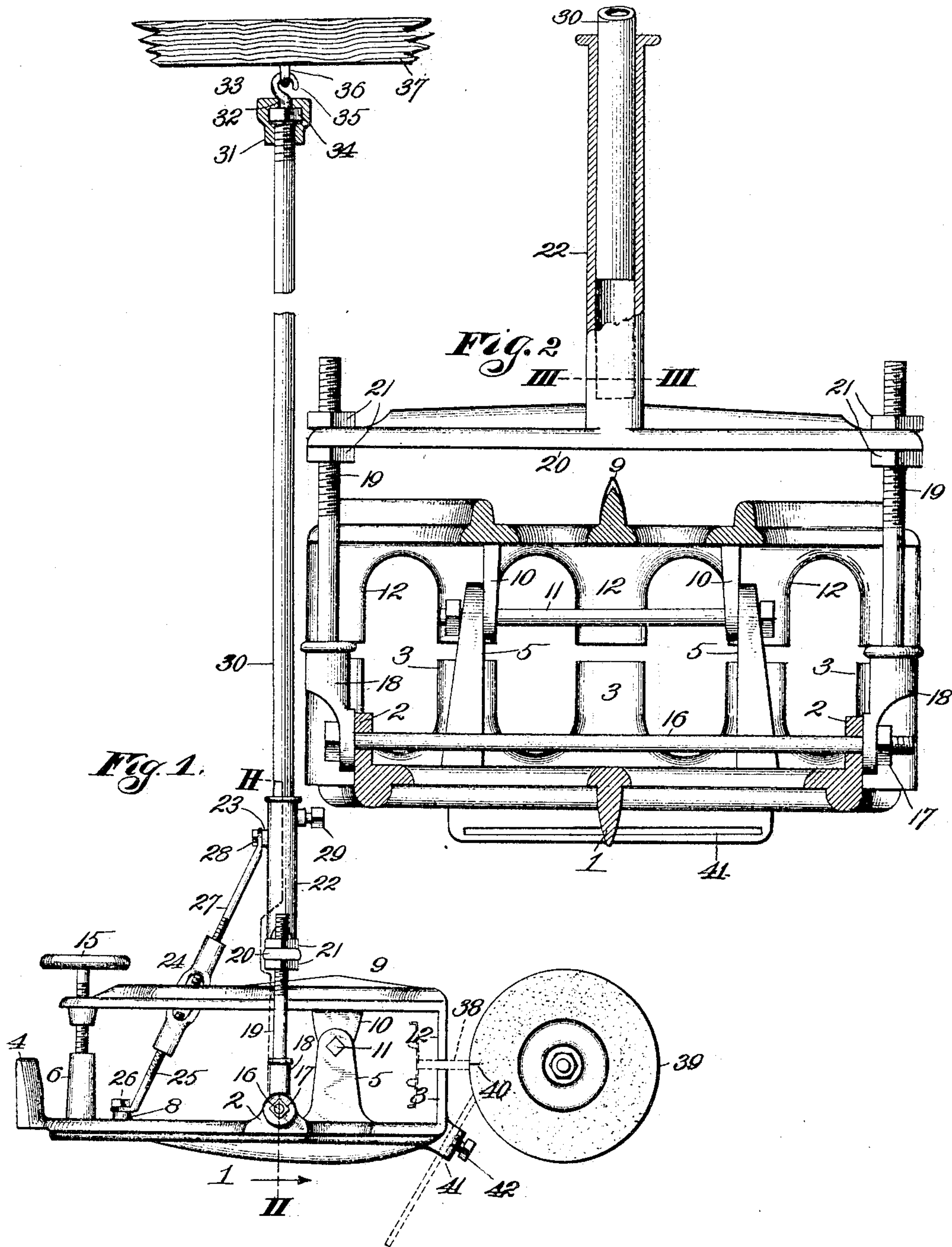
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M. B. RUSS.

SKATE OR TOOL HOLDER FOR GRINDING MACHINES.

APPLICATION FILED APR. 15, 1904.

2 SHEETS—SHEET 1.



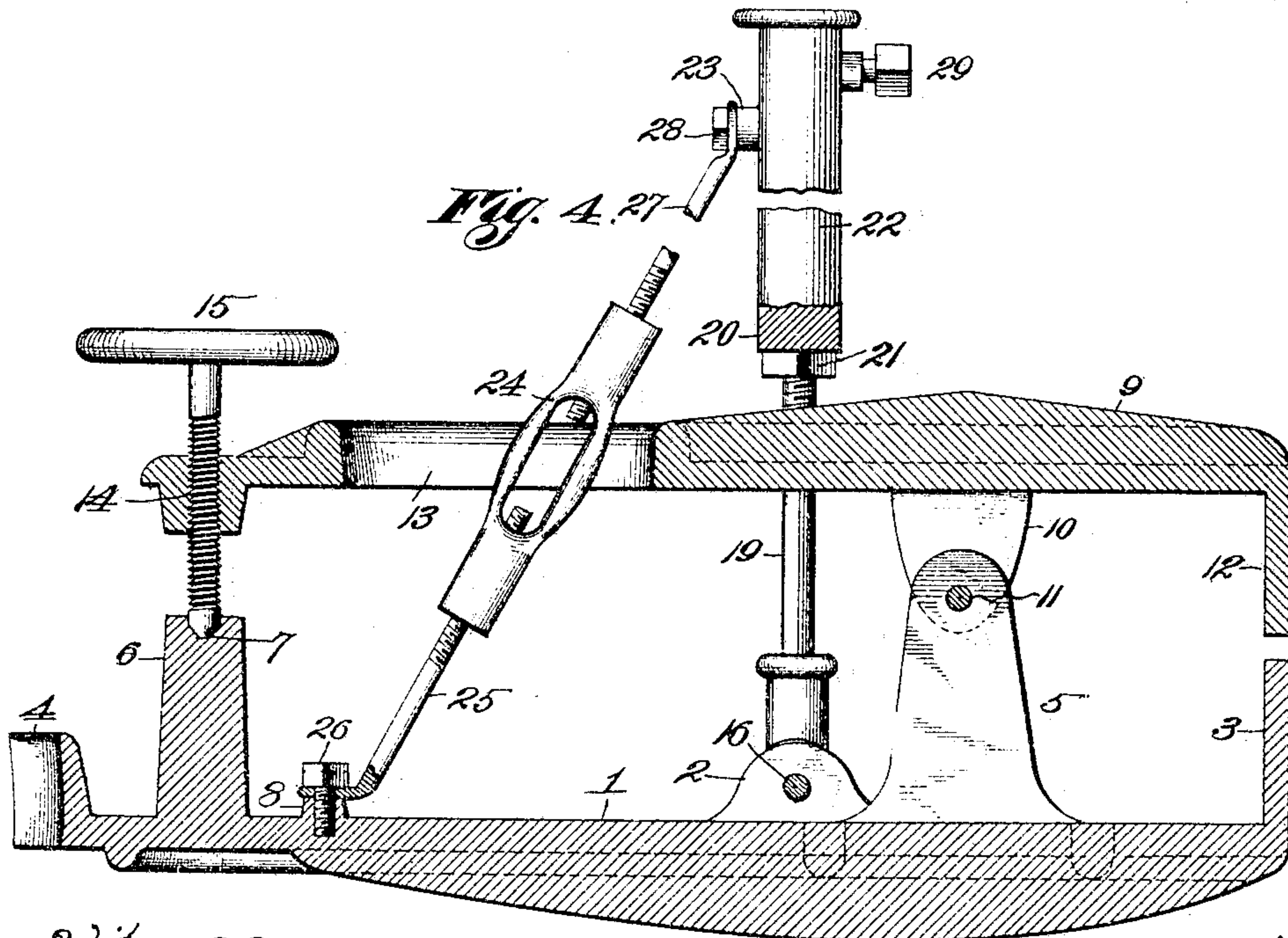
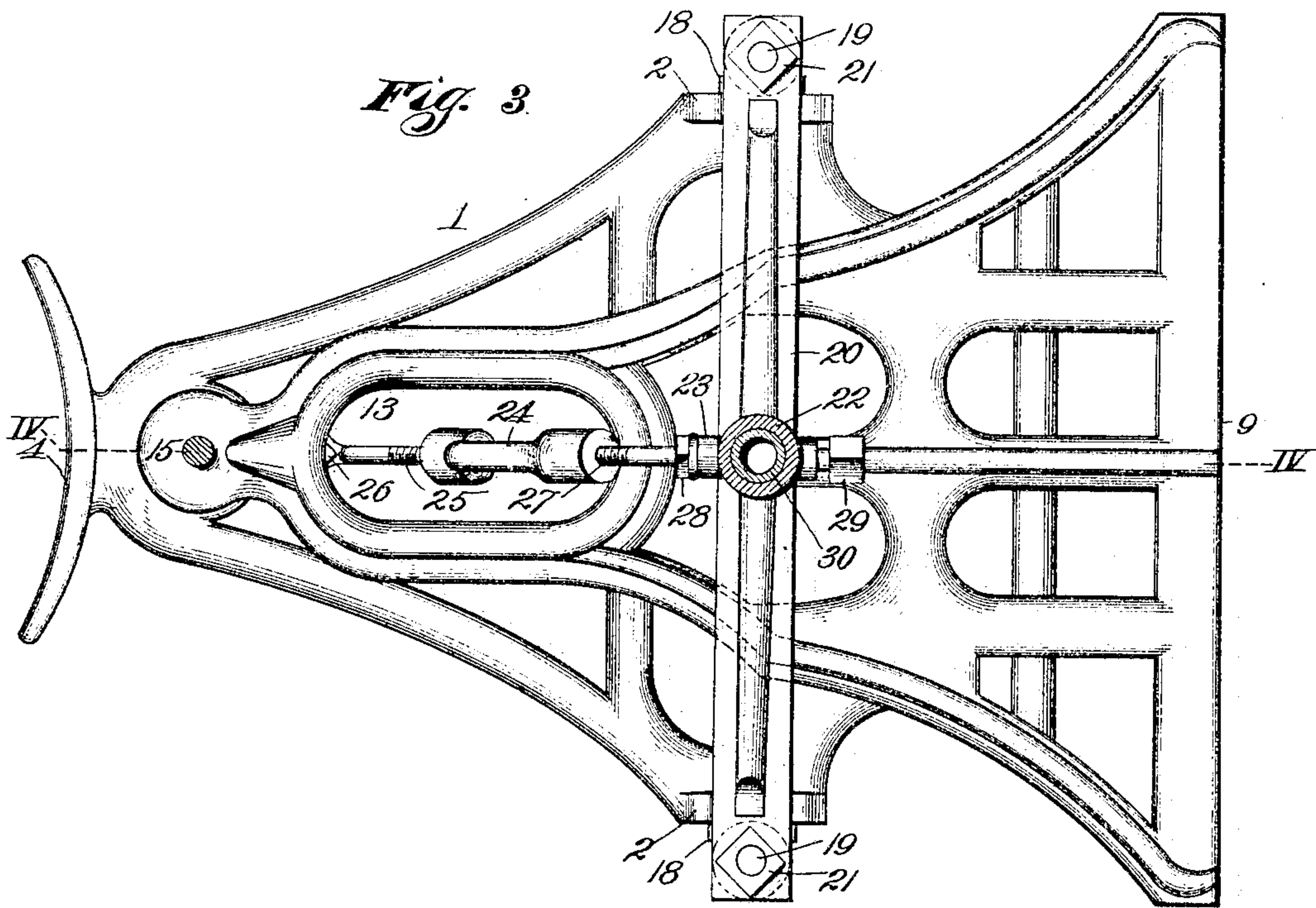
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

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## SKATE OR TOOL HOLDER FOR GRINDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 782,278, dated February 14, 1905.

Application filed April 15, 1904. Serial No. 203,280.

*To all whom it may concern:*

Be it known that I, MYRON B. RUSS, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Skate or Tool Holders for Grinding-Machines, of which the following is a specification.

This invention relates to skate and tool holders for grinding-machines, and has for its object to produce a device for holding a skate or tool in such relation to a grinding-wheel that the skate-runner or the tool can be easily and quickly and evenly sharpened.

A further object is to produce a device of this character which can be used in connection with any type of grinding-machine and when not in use can be disposed inoperatively with relation to the grinding-wheel to permit the latter to be used for other purposes.

With these general objects in view the invention consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a side elevation, broken away and partly in section, of a skate and tool holding device in operative relation to a grinding-wheel. Fig. 2 is a vertical cross-section taken on the line II II of Fig. 1, but on a larger scale. Fig. 3 is a horizontal section taken on the line III III of Fig. 2. Fig. 4 is a central longitudinal section taken on the line IV IV of Fig. 3.

In the said drawings, 1 designates a suitable frame, of skeleton construction by preference and provided at its side margins with upwardly-projecting ears 2 and at its front end with an upwardly-projecting jaw, the jaw being also of skeleton form and composed of a series of lugs 3. At its rear end the frame is provided with a concave leg-rest 4 and forward and inward of ears 2 with a pair of lugs 5. Just forward of leg-rest 4 is an upwardly-projecting post 6, having a cavity 7 in its upper end, and forward of said post is a boss 8 for a purpose which hereinafter appears.

A second frame, 9, also of skeleton con-

struction by preference, is provided with depending lugs pivotally connected to lugs 5 by a cross-bolt 11. At its front end frame 9 is provided with a depending skeleton jaw 12 to oppose jaw 3 and rearward of pivot 11 with a slot 13 and a threaded passage 14, carrying a clamping-bolt 15, having its lower end engaging the cavity 7 of post 6, the arrangement being such that the operation of bolt 15 will cause frames 1 and 9 to move their jaws 3 and 12, respectively, toward or from each other, so as to clamp tightly between them, as shown by dotted lines in Fig. 1, the runner of a skate, the bottom of the runner being disposed forward of said jaws and the body of the skate between the frames and the lugs and jaws thereof.

16 designates a headed bolt extending through ears 2, and 17 a tap engaging said bolt and in connection with the head thereof holding reliably upon the bolt the heads 18 of bolts 19, said bolts extending up through the arms of the inverted-T-shaped frame 20, nuts 21 engaging the bolts at opposite sides of said frame 20, so as to hold the "vise," as the skate-holding frames 1 and 9 are hereinafter termed, at the desired distance below said frame 20. The stem 22 of the inverted-T frame is preferably tubular and near its upper end is provided with a rearwardly-projecting boss 23, said boss being adjustably connected with boss 8 by an adjustable brace constructed as follows: 24 is a turnbuckle engaging a bolt 25, secured upon boss 8 by screw-bolt 26. The turnbuckle also engages oppositely-threaded bolt 27, secured to boss 23 by screw-bolt 28, the arrangement being such that the lengthening or shortening of the brace by the rotation of the turnbuckle results in vertically adjusting the front portion of the vise, and therefore the skate-runner. 29 is a set-screw carried by the inverted-T frame 20 and securing the same adjustably upon the lower end of a rod 30, which rod may be a single piece, as shown, or composed of several pieces, if desired. The upper end of the rod is screwed into a cap 31, provided with a central hole 32, through which loosely extends a bolt 33, engaged within the cap by a nut 34, the upper end of the bolt terminating in a hook or eye



35, engaging the eye of an eyebolt 36, screwed into a suitable timber or other support 37, the construction being such as to permit the skate-holder at the lower end of rod 30 to be given  
 5 a swivel movement, wherein cap 31 turns on bolt 33, or a swinging movement in any direction, the swinging movement being from the hook-and-eye connection 35 and 36.

In practice the skate-runner 38 is clamped  
 10 between the jaws of the vise by means of screw 15 and bearing-post 6, as shown in Fig. 1. The grinding-wheel 39, adapted to be driven by the usual mechanism (not shown) and provided with a radial mark 40, is now disposed  
 15 with said mark toward the skate and extending horizontally, so that the operator can see at a glance whether the longitudinal center of the skate-runner registers with the said indicating-mark. If it is materially below or  
 20 above said mark, the holding device can be bodily raised or lowered by adjustment of the T-frame on rod 30. If but slightly out of alinement, it is preferably disposed in the proper position by the adjustment of the turn-  
 25 buckle, which results in shortening the brace, of which it forms a part, and in turning the vise upon pivot-rod 16, so as to raise or lower the front end of the vise, and therefore the runner. For a very fine vertical adjustment  
 30 of the vise or for an adjustment of one side of the same independent of the other, so as to raise or lower one end of the skate-runner, the nuts 21 are manipulated properly to raise or lower the bolts engaged thereby, the slight  
 35 adjustment thus effected being permitted by the centrally-disposed brace, as will be readily understood. It will be seen, therefore, by this arrangement that the skate-runner can be  
 40 easily and quickly so disposed with relation to the grinding-machine that it can be ground evenly from one end to the other.

The practical manipulation of the device in sharpening a skate is as follows: The screw  
 45 15 is turned to open the jaws 3 and 12 sufficient to admit the runner of the skate when the latter is turned sidewise, and then the manipulation of said screw is reversed to clamp the skate-runner tightly between said jaws. The proper adjustments to dispose the runner hori-  
 50 zontally and in the same horizontal plane as the axis of the grinding-wheel are then made. The operator then presses his leg against the rest 4 so as to press the runner with the required force against the grinding-wheel, and  
 55 at the same time he swings the device laterally, so that the runner shall be operated upon for its entire length, and in said lateral movement the device is also turned slightly to accommodate the curve of the base of the runner, the swivel connection at the top of the sus-  
 60 pended rod permitting this action to occur, it being also noted in this connection that by having the suspending-rod of sufficient length the movement of the skate will be in a substantially straight line, so that the grinding-

surface shall be practically uniform for its entire length. It will thus be seen that a skate-runner of any configuration can be easily, quickly, and accurately sharpened and that the form of the grinding-wheel will determine  
 70 whether or not the runner is to be hollow-ground. When the device is not in use, it can be swung aside and held by any suitable means out of the way of one desiring to use the grinding-machine for ordinary purposes. For hold-  
 75 ing tools such as plane-bits and flat tools the lower frame of the vise is provided with a slot 41 and with one or more clamping-screws 42 to bind upon and hold the tool or plane-bit extending through said slot at substantially  
 80 the angle shown in Fig. 1. The upper frame of the vise and the screw 15 are of course functionless when sharpening tools supported only by the lower frame; but in other respects the device is manipulated as hereinbefore ex-  
 85 plained for the purpose of securing the tool in the desired relation to the grinding-wheel.

From the above description it will be apparent that I have produced a skate and tool holding device which embodies the features  
 90 of advantage enumerated as desirable, and while I have shown the same as suspended it will be readily understood that the rod 30 might be arranged to operate horizontally or its pivoted and swiveled end be disposed below  
 95 instead of above the vise. It will furthermore be apparent that various changes as regards the form, proportion, detail construction, and arrangements of the parts may be made without departing from the essential  
 100 spirit and scope or sacrificing any of its advantages.

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

1. A device of the character described, comprising a vise supported to have movement in a substantially horizontal plane in any direction, and an adjustable brace attached to said vise and its support for tilting the former  
 110 with reference to the latter.

2. A device of the character described, comprising a vise supported to have movement in a substantially horizontal plane in any direction, and an adjustable brace attached to said  
 115 vise and its support for tilting the former with reference to the latter, and consisting of oppositely-threaded bolts and a turnbuckle connecting the same.

3. A device of the character described, comprising a vise, a suitable support, bolts pivoted to the vise and extending through said support, and nuts engaging the bolts at opposite sides of the support.  
 120

4. A device of the character described, comprising a vise and a suitable support therefor, a rod swiveled to the support, a frame secured to said rod, and bolts pivoted to opposite sides of the vise and vertically adjustable on said  
 125 frame.  
 130



5. A device of the character described, comprising a vise, a suitable support therefor, a rod swiveled to the support, a frame secured to said rod, bolts pivoted to opposite sides of the vise and vertically adjustable on said frame, and an adjustable brace attached at its opposite ends to said frame for tilting the former with reference to the latter.

6. A device of the character described, comprising a suitable support, a rod pivoted to said support for swinging movement, and swiveled for rotary movement, a frame mounted on the free end of the rod, a vise, bolts pivoted to said vise and vertically adjustable on said frame, and an adjustable brace attached at its opposite ends to said vise and the frame for tilting the former with reference to the latter.

7. A device of the character described, comprising a suitable support, a bolt pivoted thereto, a nut on said bolt, a cap swiveled on the bolt and resting on the nut, a rod rigidly secured to and depending from the cap, a frame secured to the lower end of the rod, vertically-adjustable bolts depending from the frame, and a vise pivoted to and between said bolts.

8. A device of the character described, comprising a suitable support, a bolt pivoted thereto, a nut on said bolt, a cap swiveled on the bolt and resting on the nut, a rod rigidly secured to and depending from the cap, a frame secured to the lower end of the rod, vertically-adjustable bolts depending from the frame, a vise pivoted to and between said bolts, and an adjustable brace connected at its opposite ends to said frame and the vise.

9. The combination with a grinding-wheel, of a vise provided at its rear end with a leg-rest, a frame supported to have movement in a substantially horizontal plane in any direction, means vertically adjustable on said frame and pivoted to the vise to permit the latter to operate pivotally in a vertical plane, and an adjustable brace attached at its opposite ends to said vise and frame for tilting the former on said pivotal point, with reference to the latter.

10. In a device of the character described, a vise comprising a pair of frames pivoted together and one of them provided along its longitudinal center but rearward of its pivotal point with a slot or opening, vertical bolts pivoted to the other frame at opposite sides of its center, a frame suitably supported for horizontal movement in any direction, and vertically adjustable on said bolts, and an adjustable brace extending through said slot or opening and attached at its opposite ends to the vertically-adjustable frame and to the vise-frame to which said bolts are pivoted.

11. The combination with a suitable support, a tool-carrying frame pivotally carried by said support, and an adjustable connection between the support and said frame for changing the angle of the latter with reference to the former, in combination with a grinding-machine.

In testimony whereof I affix my signature in the presence of two witnesses.

MYRON B. RUSS.

Witnesses:

H. C. RODGERS,  
G. Y. THORPE.