

(No Model.)

O. PARPART.

CLEARANCE CUTTING MACHINERY FOR TWIST DRILLS.

No. 488,218.

Patented Dec. 20, 1892.

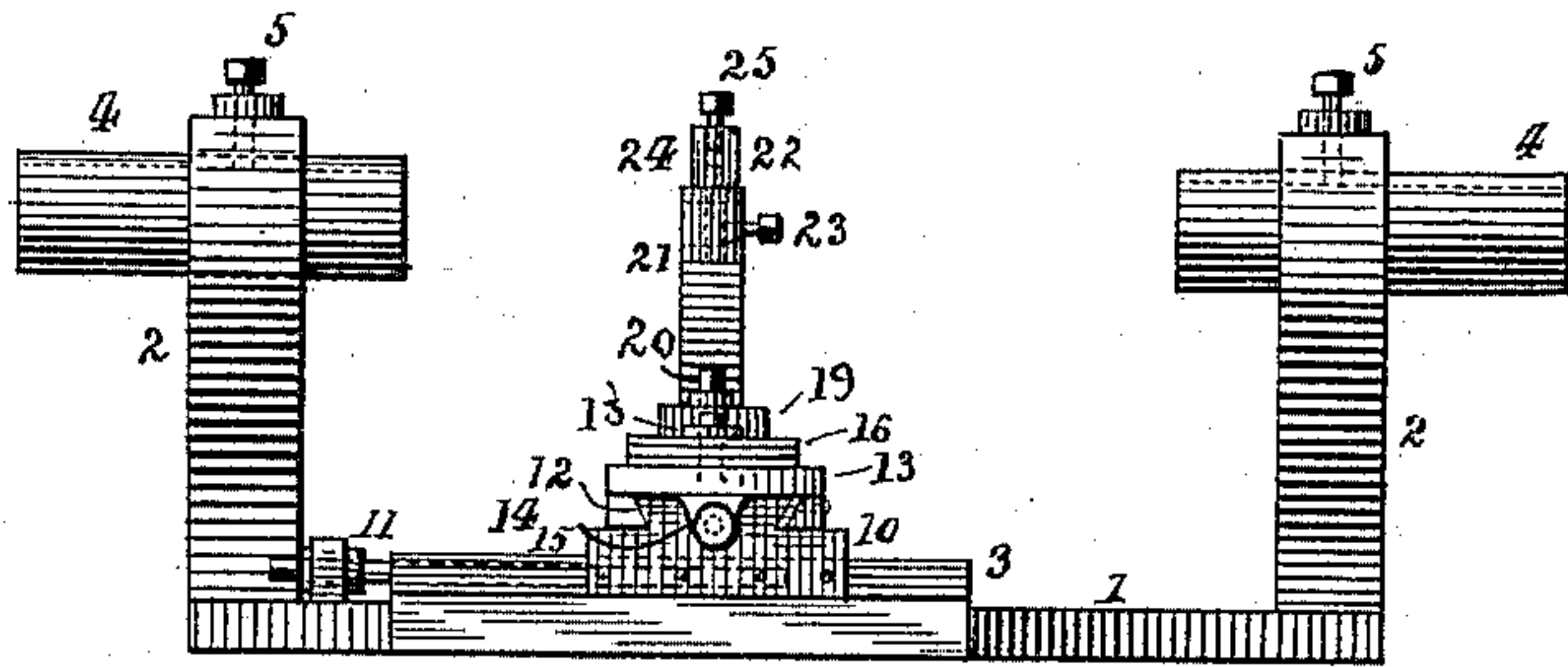


Fig. 1.

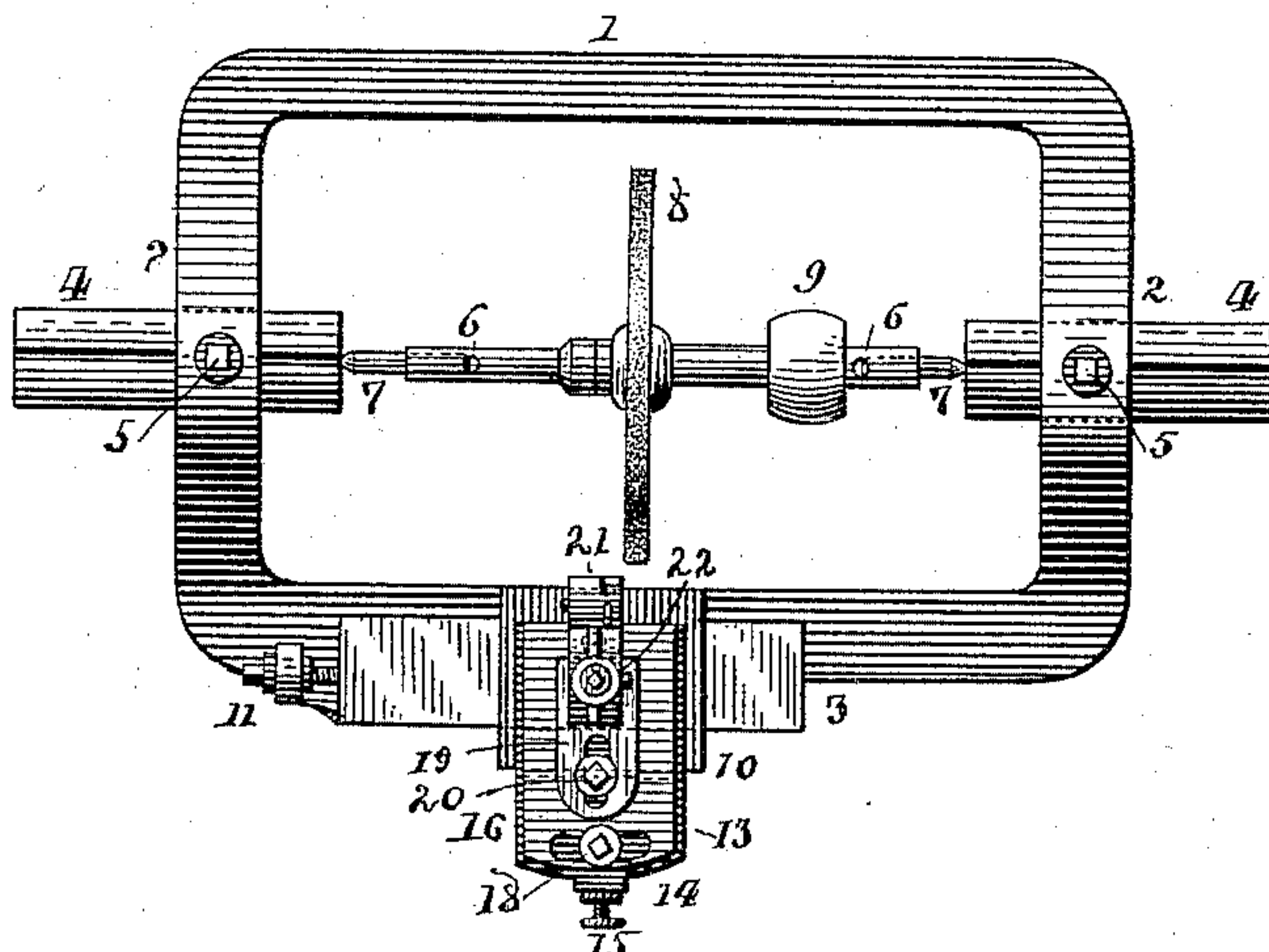


Fig. 2.

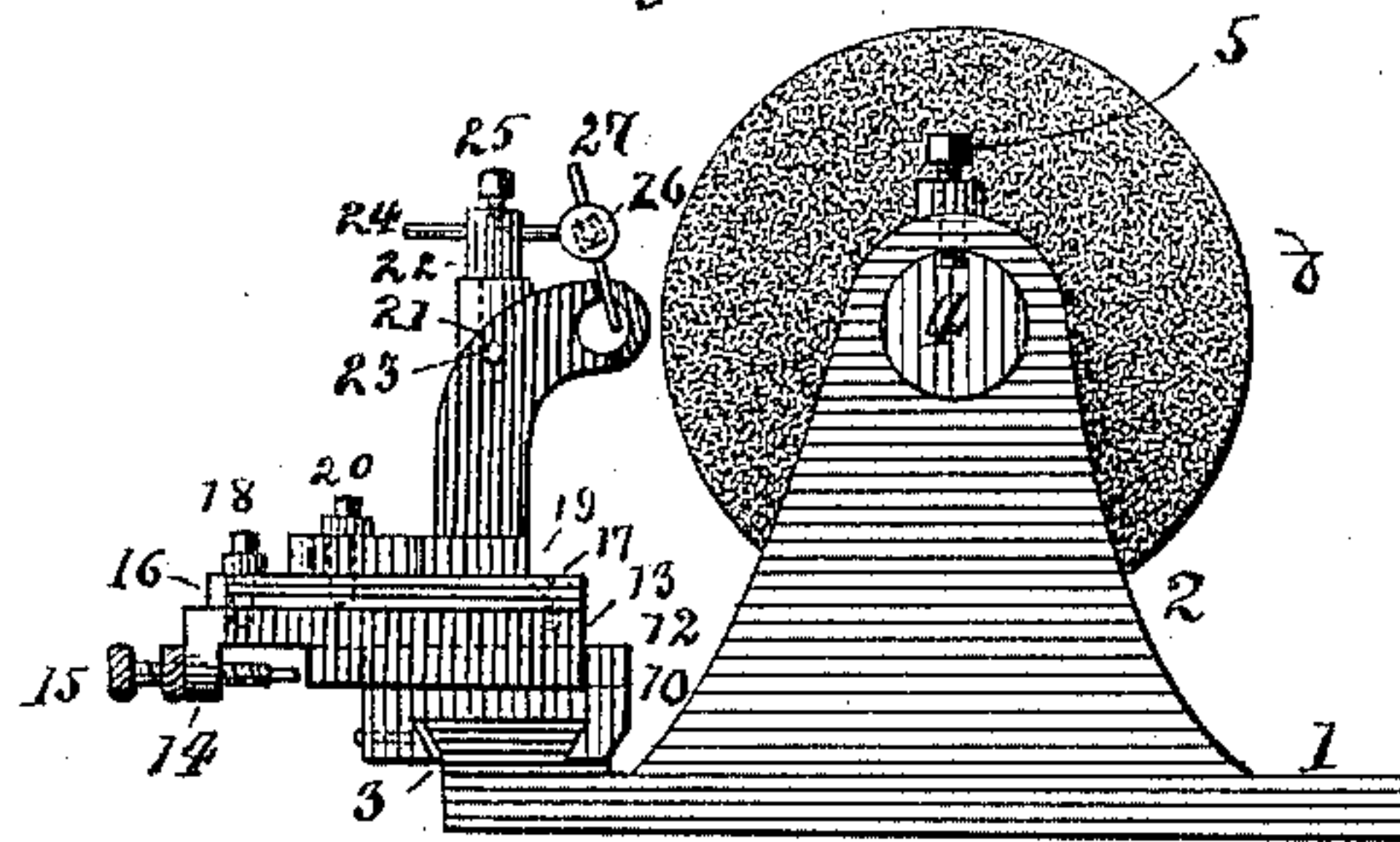


Fig. 3.

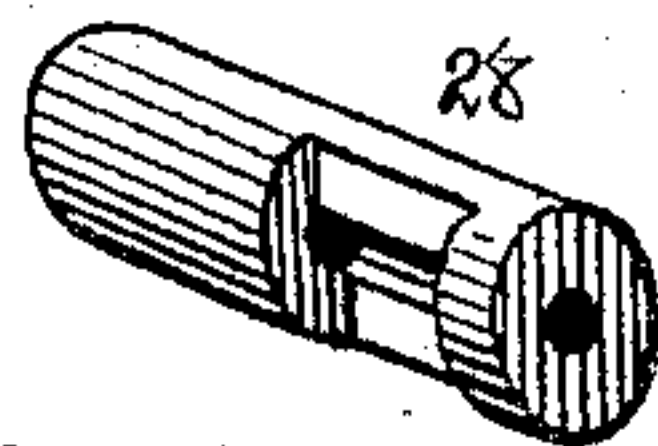


Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

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CLEARANCE-CUTTING MACHINERY FOR TWIST-DRILLS.

SPECIFICATION forming part of Letters Patent No. 488,218, dated December 20, 1892.

Application filed December 14, 1891. Serial No. 414,997. (No model.)

To all whom it may concern:

Be it known that I, OTTO PARPART, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvement in Clearance-Cutting Machinery for Twist-Drills, of which the following is a specification.

My invention has relation to improvements in machines for cutting the clearance of twist-drills; and the object of my invention is to provide improved mechanism whereby the drill shall be fed with a positive movement against the cutting wheel, and firmly and securely held against said wheel until the cutting is completed and which mechanism shall be readily adjustable to hold the drill at different angles, and provided with stop mechanism to limit the cut to any desired size of the drill.

To the aforesaid object my invention consists in the peculiar and novel construction, arrangement and combination hereinafter described, and then specifically pointed out in the claims, reference being had to the accompanying drawings forming a part of this specification.

In the accompanying drawings similar reference numerals indicate like parts in the several figures.

Figure 1, is a front elevation of my machine. Fig. 2, a plan of the same; Fig. 3, an end elevation of the same; and Fig. 4, a perspective view, enlarged, of one of the sleeves hereinafter described.

Referring to the drawings, 1, is a bed, preferably consisting of a rectangular form with rounded corners as shown, having on its narrower opposite sides oppositely disposed uprights 2, and on one of the intermediate longer sides a base having a dove-tail slide-way 3. In the uprights 2, are two sliding bolts 4, arranged to be adjusted and held by set screws 5, and having conical bearings in their inner ends in which is mounted a shaft 6, by means of adjustable conical end journals 7, which slide in holes in the ends of said shaft and are held by binding screws and bearing a grinding wheel 8, preferably of emery, and a driving pulley 9. Mounted on the base and fitting the dove-tail slide-way 3, is a carriage 10, arranged to be moved along

said slide-way, and controlled by a screw 11; which carriage is provided on its upper face with a dove-tail slide-way 12, at a right angle with the slide-way 3. On the latter slide-way 12, is fitted and arranged to slide to and from the wheel 8, a plate 13, having a dependent lip 14, through which passes an adjusting screw 15, arranged to encounter the carriage 10, and limit the motion of the plate toward said wheel. On the plate 13 is a plate 16, having its inner end pivotally connected therewith by the screw 17, and its outer end by the screw 18, passing through a segmental slot into the plate 13, thereby permitting its lateral horizontal adjustment with the axis of the shaft 6. On the plate 16, is a base 19, arranged to slide therein to and from the grinding wheel 8, and adjustably retained by a set screw 20, passing through a slot into the plate 16. Rigidly attached to the base 19, and preferably integral therewith is an upright forwardly turned arm 21, arranged to pass beyond the periphery of the grinding wheel 8, and having in the end adjacent to said wheel an opening parallel with the shaft 6, and adapted to receive sleeves of the same external diameter, but of different internal diameter to fit the different sizes of drills to be ground, one of which sleeves 28, is shown, enlarged in perspective, in Fig. 1. In the upper front end and at one side of the arm 21, opposite the wheel 8, is a notch or recess to permit the entrance of the wheel to engage the drill to be cut; and on its curved back a cylindrical boss having a central, vertical hole in which is fitted a post 22, held by a set-screw 23, through the upper end of which post is a hole transverse to its axis in which is inserted a horizontal rod 24, retained by a set-screw 25. A small plate, see Fig. 3, is pressed against one side of the end of the rod 24, toward the wheel 8, by a set-screw 26; the rod and plate constituting a clamp which grasps and rigidly holds a steel pin 27, having its lower end rounded for a purpose to be stated. The sleeve 28, is adapted to fit the opening of the arm 21, and has at one side an opening arranged to register with the transverse opening therein to permit the entrance of the wheel 8.

In operation a sleeve 28, of suitable internal diameter to receive the drill to be cut is

placed in the opening of the arm and secured therein in any suitable manner, as by a set-screw, with its transverse opening in alignment with the transverse opening in said arm
 5 hereinbefore described. By means of the several adjusting devices hereinbefore described, the arm 21, bearing the sleeve 28, is turned to the angle at which it is desired to cut the clearance on the drill and brought in
 10 such position in front of the wheel 8, that the latter will enter the transverse openings in said arm and sleeve; and the stop screw 15, adjusted to permit the approach of the drill to the wheel 8, to cut the desired clearance.
 15 The pin 27 is then adjusted to enter the groove in the drill and simultaneously form an abutment to resist the tendency to revolve from the attrition of the wheel, and constitute a guide to cause the revolution of the
 20 drill as it is moved horizontally. Motion being communicated to the wheel 8, a drill is inserted in the sleeve 28, with the pin 27 resting in its groove; the plate 13 is then pushed inward bringing the drill in contact with the
 25 wheel 8, and the drill is then moved lengthwise through the sleeve by hand once or more as may be necessary to sufficiently cut the clearance.

I claim as my invention:—

30 1. In a twist-drill clearance-cutting machine, the supporting frame and the emery-wheel journaled therein, and the horizontally-adjustable carriage and the sliding plate

mounted on said carriage and arranged to approach and recede from said wheel, and provided with an adjustable stop to limit its motion toward said wheel, combined with the upright arm adjustably attached to said sliding plate and arranged to be rigidly connected and move therewith, and provided in
 35 its upper end with an opening to receive a sleeve to hold the drill while being ground, substantially as shown and described.

2. In a clearance-cutting machine for twist-drills, the journaled emery wheel and horizontally-adjustable carriage, and the sliding-plate mounted on said carriage and arranged to approach and recede from said wheel and provided with an adjustable stop to limit its
 45 motion toward said wheel, combined with the upright arm adjustably attached to said sliding plate and arranged to be rigidly connected and move therewith, and provided in its upper end with an opening to receive a sleeve to hold the drill while being ground, and having the adjustable holding mechanism connected therewith for retaining a guide-pin in the drill groove, substantially as shown
 50 and described.

In testimony that I claim the above I hereunto set my hand.

OTTO PARPART.

In presence of—

C. P. HUMPHREY,
 C. E. HUMPHREY.