No. 649,121. Patented May 8, 1900.

J. E. WISE.

ROLLER GUIDE FOR BAR CHANNELING MACHINES.

(No Model.) (Application filed Mar. 25, 1899.) 2 Sheets—Sheet 1.

Fig. 1.

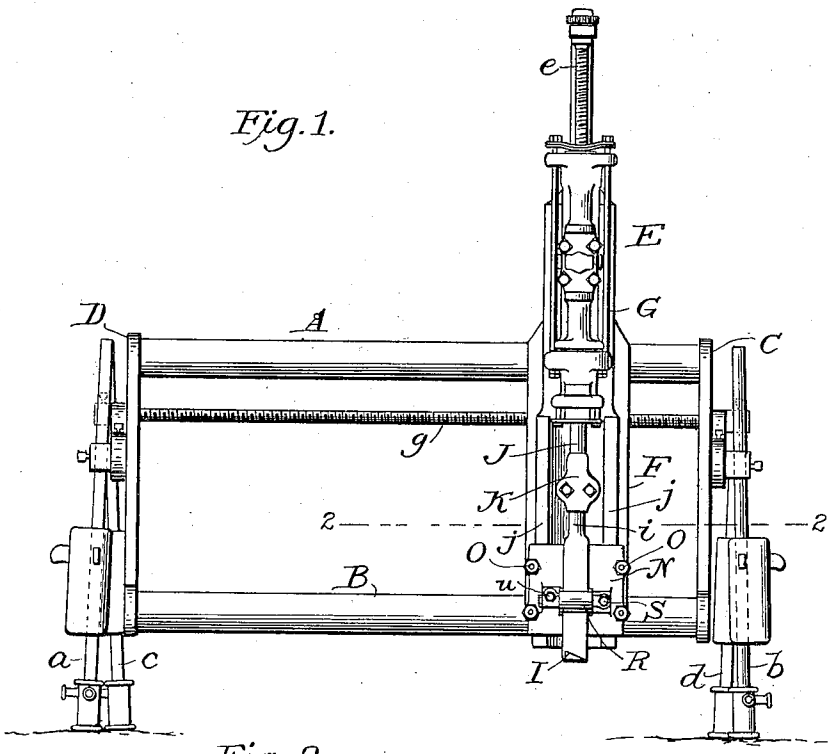


Fig. 2.

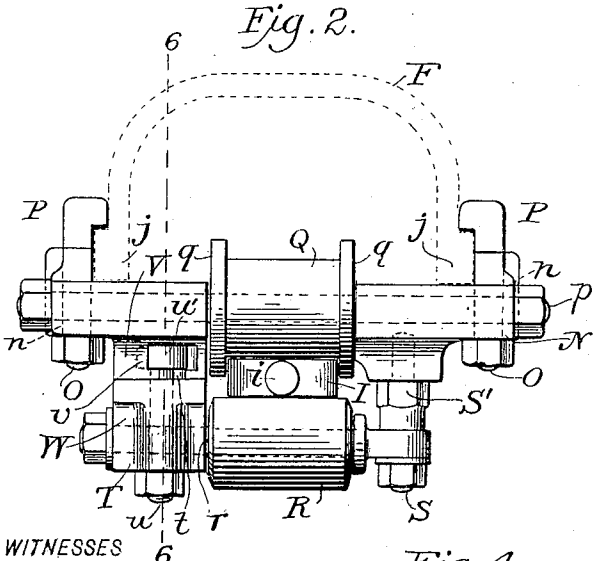


Fig. 3.

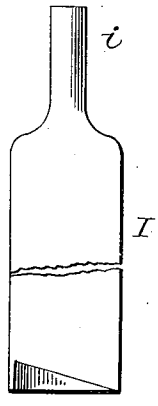
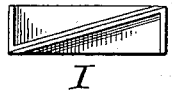


Fig. 4.



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Fig. 5.

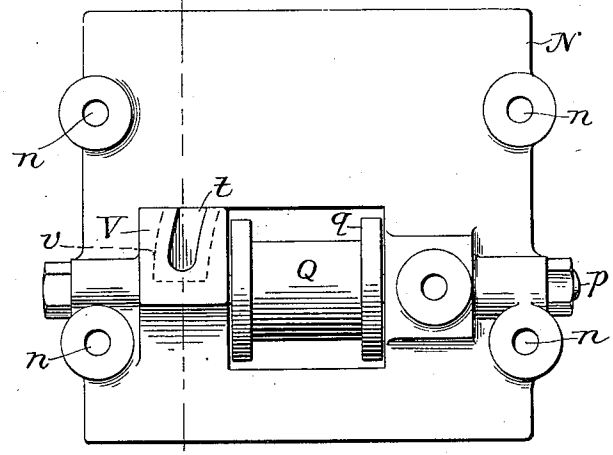
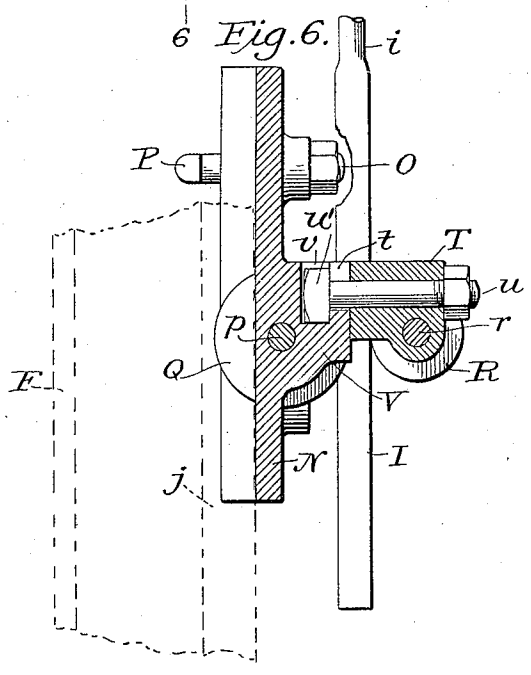


Fig. 6.



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UNITED STATES PATENT OFFICE.

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ROLLER-GUIDE FOR BAR-CHANNELING MACHINES.

SPECIFICATION forming part of Letters Patent No. 649,121, dated May 8, 1900.

Application filed March 25, 1899. Serial No. 710,496. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. WISE, a citizen of the United States of America, and a resident of the city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Roller-Guides for Bar-Channeling Machines, of which the following is a specification.

This invention relates to improvements in channeling-machines; and it consists in the employment, in connection with a channeling-machine, of a single cutting-tool instead of the group of cutting-tools heretofore used in connection with means for holding and guiding such tool, so as to give increased steadiness and accuracy of cut, and also in dispensing with certain of the parts ordinarily used with this type of apparatus, as will hereinafter more fully appear.

In the drawings, Figure 1 is a view in elevation showing a bar-channeler to which the invention has been applied. Fig. 2 is an enlarged detailed view of the roller-guide and bit on the line 2 2 of Fig. 1. Fig. 3 is an enlarged view of the bit or cutting-tool. Fig. 4 is an end view of the cutting-tool. Fig. 5 is an enlarged and detailed elevation of the guide-roller plate with the front roller removed. Fig. 6 is a sectional elevation of the roller-guides and supporting-plate on the line 6 6, Fig. 2.

In the drawings, A and B are parallel bars upon which the reciprocating engine E, which operates the cutting-tool, is mounted and fed laterally. The bars A B are united by end pieces C D, to which are connected the legs *a b c d* and upon which the apparatus is supported.

F is a shell which is connected with yoke G, which is arranged to be moved back and forth upon the parallel bars by a suitable feed-screw *g*. The shell extends from a point a few inches from the ground to a sufficient height to carry the drilling-engine E, which is attached thereto by a guiding-head which engages the edges of the upper part of the shell in the usual manner and is provided with a suitable feed-screw *e* connected therewith, by which the said engine is raised and lowered upon the said upper part of the shell.

The lower end of the piston-rod J of the drilling-engine is provided with an ordinary drill-chuck K.

Usually a pair of shell-caps are applied to the edges *j* of the lower part of the shell, within which a cross-head attached to the piston-rod is guided, and to this cross-head is secured a clamp carrying three or five drilling-steels the combined action of which makes the longitudinal groove or cut formed by a channeling-machine.

According to my invention the shell-caps, cross-head, clamp, and plurality of drills are dispensed with, and in place thereof is employed a single cutting-tool I, which is oblong in cross-section and the face of which is formed into an elongated Z-bit. The body of the tool is of uniform size, and its upper portion is contracted to form a shank *i*, adapted to fit into the ordinary drill-chuck K at the end of the piston-rod J. So far as I know it has not been usual to afford any support to drilling-tools below their point of attachment to the reciprocating part. By my present invention additional support is provided by a pair of roller-guides which are attached to the edges of the shell at a point between the limit of the downward stroke of the piston and the end of the shell. N is a plate of metal formed with holes *n*, carrying bolts O, adapted to engage the edges of the lower portion of the shell, to which it is adjustably secured by hooks P on the ends of the bolts O. Upon the plate N is secured a spindle or bolt *p*, carrying the roller Q, which has flanges *q* at its ends, between which the cutting-tool is held and guided and can move freely. R is a flat-face roller which is adapted to rest against the front side of the drill, the same being free to move vertically between the two rollers Q R. The front roller R is mounted upon a spindle *r*, which is pivoted at one side upon a bolt S, which screws into the plate N, and is held at the desired distance therefrom by a collar or lock-nut S′. At the opposite side of the plate is a short projection V, formed with a groove or recess *v*, having a radial notch *t* in its face of less width than the groove *v* behind it. The block W is secured on the outer end of the spindle *r*, forming a support or bearing therefor, and abuts against and when in operative

position is secured to the projection V on the plate N by a locking-bolt *u*. The bolt *u* passes transversely through the block and has a nut upon its outer end, and upon its inner end is formed with a head *u'*, adapted to fit into the recess *v*, the shank on the bolt passing freely in notch *t*. The lower part of the block W is thus bored longitudinally to receive the spindle *r*, as indicated, while its upper portion is bored transversely to carry the locking-bolt *u*, the head of which projects beyond the bolt and fits into the recess *v* in the plate N, the shank of said bolt moving in the radial slot *t* in the face of the projection V. With this construction when it is desired to get at the drill the nut on the outer end of the locking-bolt *u* is loosened, when the block W, together with roller R and locking-bolt *u*, is then raised a short distance, freeing the head of the locking-bolt from its groove, the spindle *r* turning upon its pivot S. At this point the block W may be turned upon the spindle *r*, so that its longest dimension hangs downward, and this will permit it to pass the drill in the further radial movement of the said spindle upon its pivot S, when the block W and roller R can be swung radially upon the pivotal support S over to one side and entirely out of the way of the drill and the roller Q, both of which are then accessible for any desired purpose.

The guide-plate N can be detached from and raised or lowered upon the shell, according to the length of the cutting-tool and the depth at which the cut is being made, it being only necessary to keep clear of the lowest point of movement of the piston-rod.

In addition to the advantage of guiding and supporting the cutting-tool at a lower point than heretofore the action of the rollers will show to the operator whether the tool is inclining to be deflected outwardly or inward from the vertical line and enable the attendant to take measures to rectify the divergence before the tool becomes jammed. Furthermore, I consider it a great advantage to substitute a single tool for the group formerly necessary to perform this work. There is also a considerable saving of time in adjusting a single tool in a chuck over that required to adjust a number of tools in the clamp heretofore used, and the front roller is specially designed to be quickly moved to liberate the cutting-tool.

While I have described my invention in detail, it will be apparent that various minor modifications may be made without departing therefrom.

Without limiting myself to the construction described, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a drilling-engine having a reciprocated piston-rod and a parallel-sided cutting-tool secured to said piston-rod, and a shell supporting said engine, of an adjustable guide-plate attached to said shell, a flanged roller-guide supported upon said plate and adapted to engage the rear side and edges of the cutting-tool, and a second roller radially movable upon a pivotal support upon said plate and rotatably sustained when in operative position in front of said first-mentioned roller and engaging the front side of the cutting-tool.

2. A roller-guide for a drilling-tool comprising a stationary flanged roller adapted to engage the rear side and edges of the tool, a roller adapted to engage the front side of the tool, said roller pivotally mounted at one side of the plate upon its central axis, a block attached to the opposite end of its axis to hold said roller in position, and a locking-bolt engaging the block and supporting-plate.

Signed by me at New York, N. Y., this 22d day of March, 1899.

JAMES E. WISE.

Witnesses:
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J. KENNEDY.