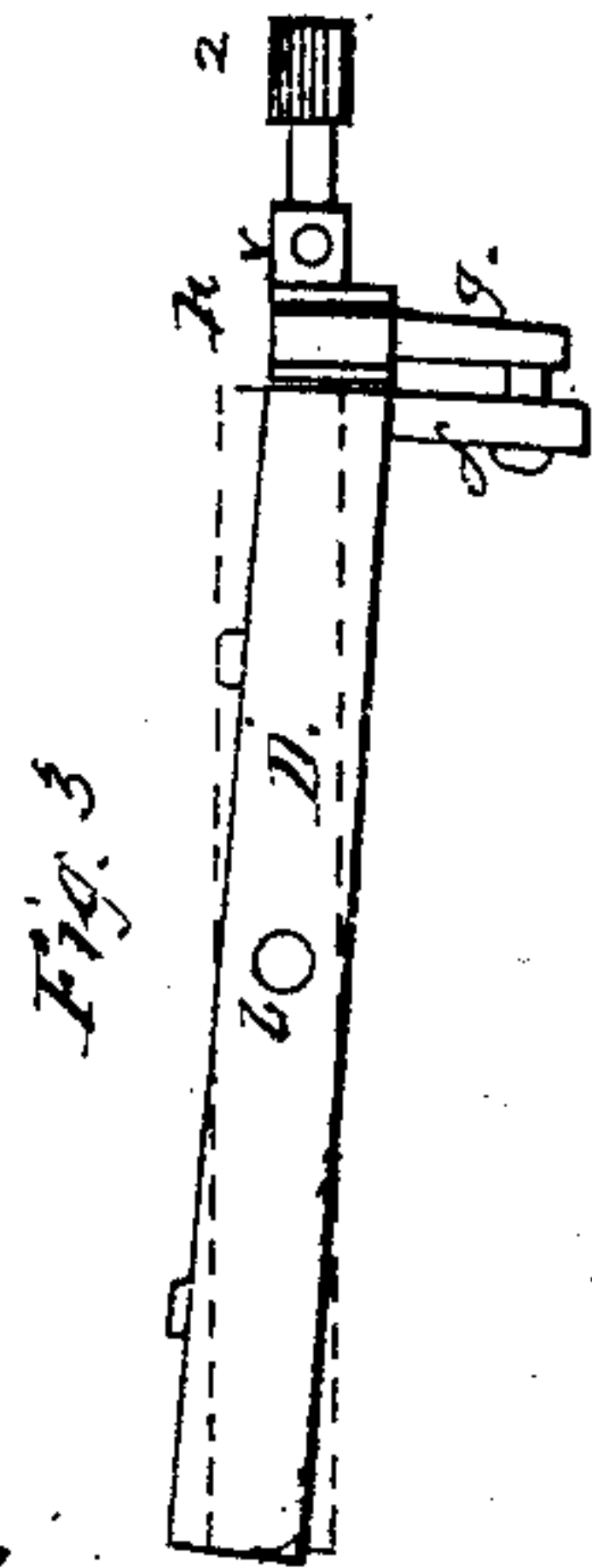
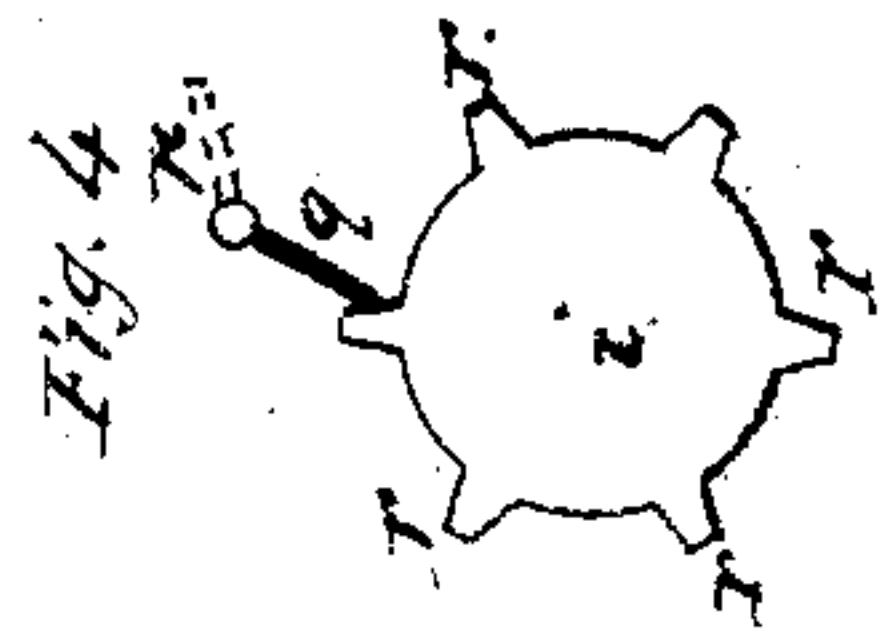
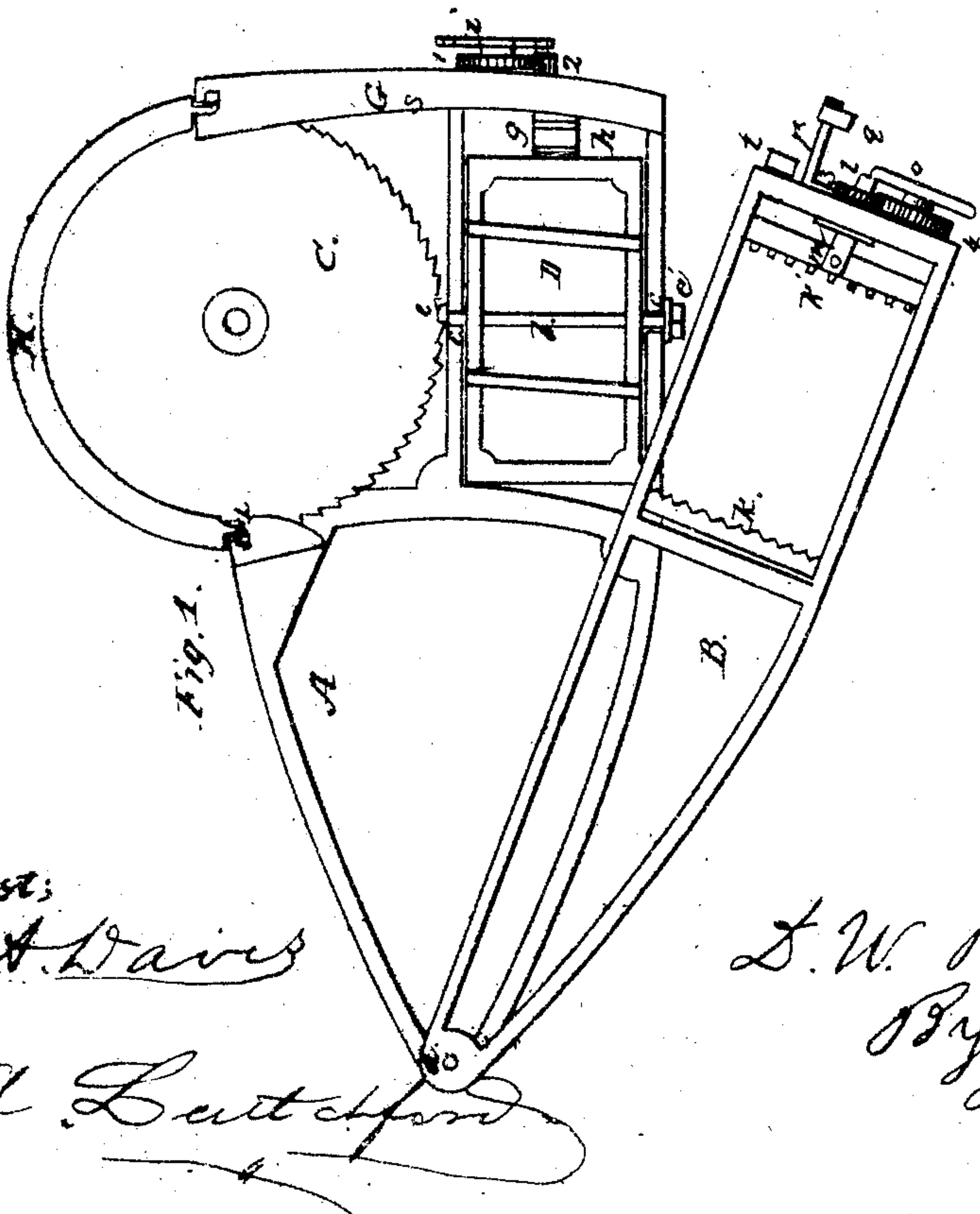
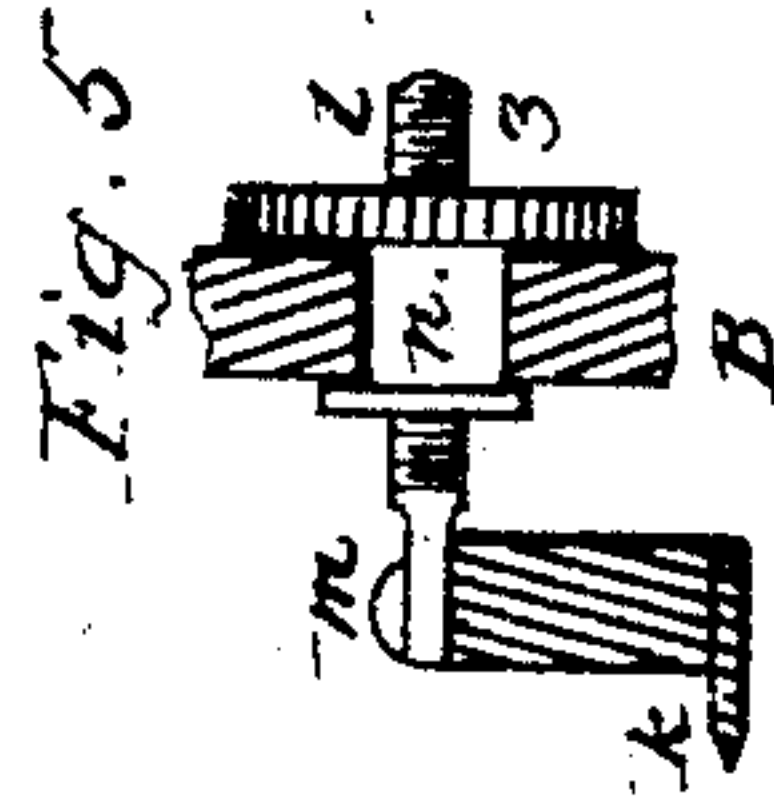
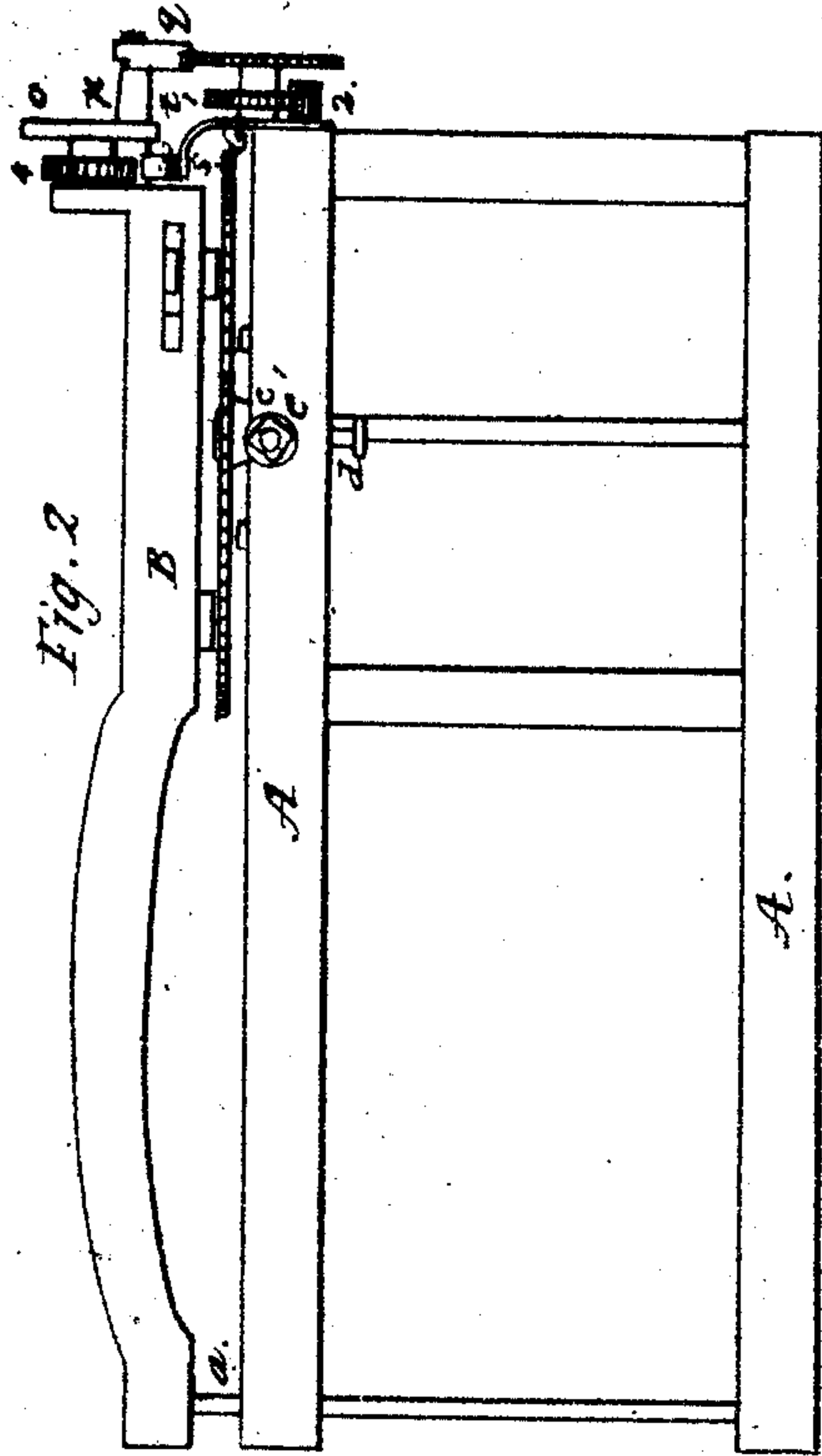


D. W. Roche.
Shingle-Machine.
No 76250
Patented Mar. 31, 1868.



Attest:
J. A. Davis

A. L. Litchford

D. W. Roche
By J. Fraser & Co.
Atty.

United States Patent Office.

D. W. ROCHE, OF ROCHESTER, NEW YORK, ASSIGNOR TO HIMSELF AND
J. P. ROCHE, OF SAME PLACE.

Letters Patent No. 76,250, dated March 31, 1868; antedated February 25, 1868.

IMPROVEMENT IN SHINGLE-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, D. W. ROCHE, of Rochester, in the county of Monroe, and State of New York, have invented certain new and useful Improvements in Machines for Sawing Shingles and Barrel-Heads; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification:

Figure 1 is a plan of my improved machine.

Figure 2, an elevation of the same.

Figures 3, 4, and 5, detailed views, showing the operating parts of the platform and carriage.

Like letters of reference indicate corresponding parts in all the figures.

My improvement belongs to that class of sawing-machines in which the bolt or block from which the cut is to be made rests upon a tilting-platform that rocks to set the angle of the cut, and from which platform said bolt or block is dogged and carried forward to a horizontal circular saw. The invention consists in the special arrangement of the operating parts connected with the tilting-platform and carriage, and also in so constructing the track for the carriage, in moving up to and back from the saw, as to answer as the sawdust-discharge spout, as hereinafter set forth.

As represented in the drawings, A is a main frame, and B a carriage, which swings over it, moving around pivot *a*. The main frame has a horizontal circular saw, C, and a tilting-platform, D, which latter supports the bolt or block from which the shingles or barrel-heads are to be cut. The axis *b*, on which the platform turns, rests in open notches or bearings *c c* of the main frame, so as to be adjusted up or lifted out at pleasure. The up-and-down adjustment of the axis is accomplished by thumb-screws *d d*, resting beneath, as shown in fig. 2. At one end the axis is provided with a solid head, *e*, and at the opposite end it has a nut and washer, *e'*, by which means, when the proper adjustment of the axis is attained, it can be tightened or clamped by simply turning up the nut. The outer end of the platform is provided with a projection, *f*, fig. 3, which is hinged to the platform, and with which connects a crank, *g*. This crank is in the form of a strap, which passes over an eccentric, *h*, having a bearing in the frame, so as to give the desired reciprocating movement to the platform. The crank-pin should be adjustable in a vertical slot in the projection or arm *f*, so that when the platform is adjusted up or down in its bearings *c c*, the crank *g* may be equally adjusted in the opposite direction to compensate for the platform adjustment, and leave the eccentric-shaft in the same position, relative to the platform, as before; and not only is the arm *f* hinged to the platform, to allow a free vibratory movement thereof, but the crank-pin has a slight turning movement in the crank, to allow the arm *f* to vibrate as much as necessary. The eccentric, *h*, is likewise adjustable to any position around its shaft, as indicated by the set-screw *y*, fig. 3. The object of this adjustment is to vary the extent of the tilting movement by varying the height and depth to which the eccentric moves at the close of each semi-revolution of its shaft. This arrangement always lowers one end of the platform just as much as the other, however much the extent of tilting movement varies—a very essential desideratum, in order to make the shingles of uniform thickness at the ends. Other machines of this class are defective in this respect. The outer end of the eccentric-shaft is provided with a pinion, 2, with which gears a cog-wheel, 1, having rigidly secured thereto a star-wheel, *i*, operated by the action of the carriage, as will be presently described.

The carriage is provided with two dogs *k k'*, the first fixed and rigid, and the last movable forward and back. This reciprocating movement is accomplished by a screw, *l*, pivoted, at *m*, to the head-block, and passing through a circular nut, *n*, fig. 5, turning in the end of the carriage. This nut has a pinion, 3, with which meshes a cog-wheel, 4, connected with hand-wheel *o*. By turning this hand-wheel, it will be seen that the nut will move the screw, and consequently the head-block, forward or back as may be desired. In this manner the bolt or block from which the article is cut, is dogged and released. The hand-wheel *o* is located on the carriage in the proper position for using it to move the carriage toward and from the saw; and the gearing between the hand-wheel and the nut *n* is so proportioned that while handling the hand-wheel to move the carriage forward and back, sufficient turning movement is imparted to the wheel without releasing or changing the grasp of the hand to

alternately dog and release the bolt, thereby making the whole operation simple, convenient, and expeditious. It is obvious that two screws may be employed, if desired, or the single screw might be attached rigidly to the dog. The end of the carriage is provided with a projecting arm, *p*, having hinged at its outer end a pawl, *q*, arranged to fall to such a position that when the carriage is retracted or drawn back, it will strike the uppermost spur *r* of the star-wheel *i*, as shown in fig. 4, and throw it back to such an extent as to tilt the platform as before described. When it is desired that the carriage should act without tilting the platform, (as in cutting barrel-heading,) the pawl *q* is simply thrown over into the position indicated by red lines in fig. 4, in which case it does not engage with spur *r*.

The action of the machine, as above described, will be readily understood. The bolt or block is placed upon the tilting-platform, and if shingles are to be cut the platform is tilted to the extreme of one position. In this condition the carriage is moved over the bolt, and the latter is firmly dogged to the same by moving up the head-block *k'*. When thus secured, the bolt is swung up to the saw, which makes the desired cut. When the carriage has swung back over the platform again, the bolt is undogged and allowed to fall thereon. At this moment the pawl *q* strikes the spur *r* and tilts the platform to the opposite position, and the bolt is in condition to be dogged again for another cut, as before.

The great advantage in the above-described invention consists in the arrangements for operating the platform and the dogging-device of the carriage. The dog moving freely on the pivot *m*, adapts itself readily to any incline of the end of the bolt without any change required by hand. The arrangement for opening and closing the dog is also of a very simple and effective character, and the action is accomplished by the right hand of the operator resting in the position necessary for throwing the carriage forward and back, so that he does not have to change his position or his hold. The vertical adjustment of the platform by the axis *b*, resting in the open bearings of the frame, as described, enables the same to be adapted to any thickness of cut, or to be easily removed from the frame when desired. The employment of the strap *g*, passing over the eccentric, *h*, insures a positive action to the platform without fail. Where the action of the platform is accomplished simply by the reaction of a weight, it is uncertain in its operation, especially if the bolt or block is very heavy, or there is a great deal of friction. I employ a sawdust-discharge spout, *G*, as usual, but I place it upon the opposite side of the machine from that ordinarily employed, and revolve the saw in the opposite direction, whereby it has a tendency to draw the bolt in, instead of crowding back against it, as in the usual way of turning the saw; and furthermore elongate or extend it, as shown in fig. 1, and provide it with a horizontal projecting flange, *s*, fig. 2. By thus extending the spout, and providing it with the flange, it not only serves as the discharge for the dust, but also as a "way" to receive the friction-rollers *t t* of the carriage, as it is moved forward and back.

I am not aware that this arrangement has ever before been known or used. I employ a guard, *H*, outside the saw, which is simply hung to the frame by hooks *u u*, as shown in fig. 1. By this arrangement it can be readily applied or removed. When removed, the saw can be easily detached by loosening it, and raising it up, and then drawing it out. I am aware that a tilting-platform and reciprocating carriage have before been used in similar manner, but such, broadly, I do not claim.

What I claim as my invention, and desire to secure by Letters Patent, is—

The screw *l*, revolving nut *n*, and hand-wheel *o*, geared to said nut, all arranged and operating in connection with the movements of the carriage, substantially as and for the purpose herein specified.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

D. W. ROCHE.

Witnesses:

R. F. OSGOOD,
J. A. DAVIS.