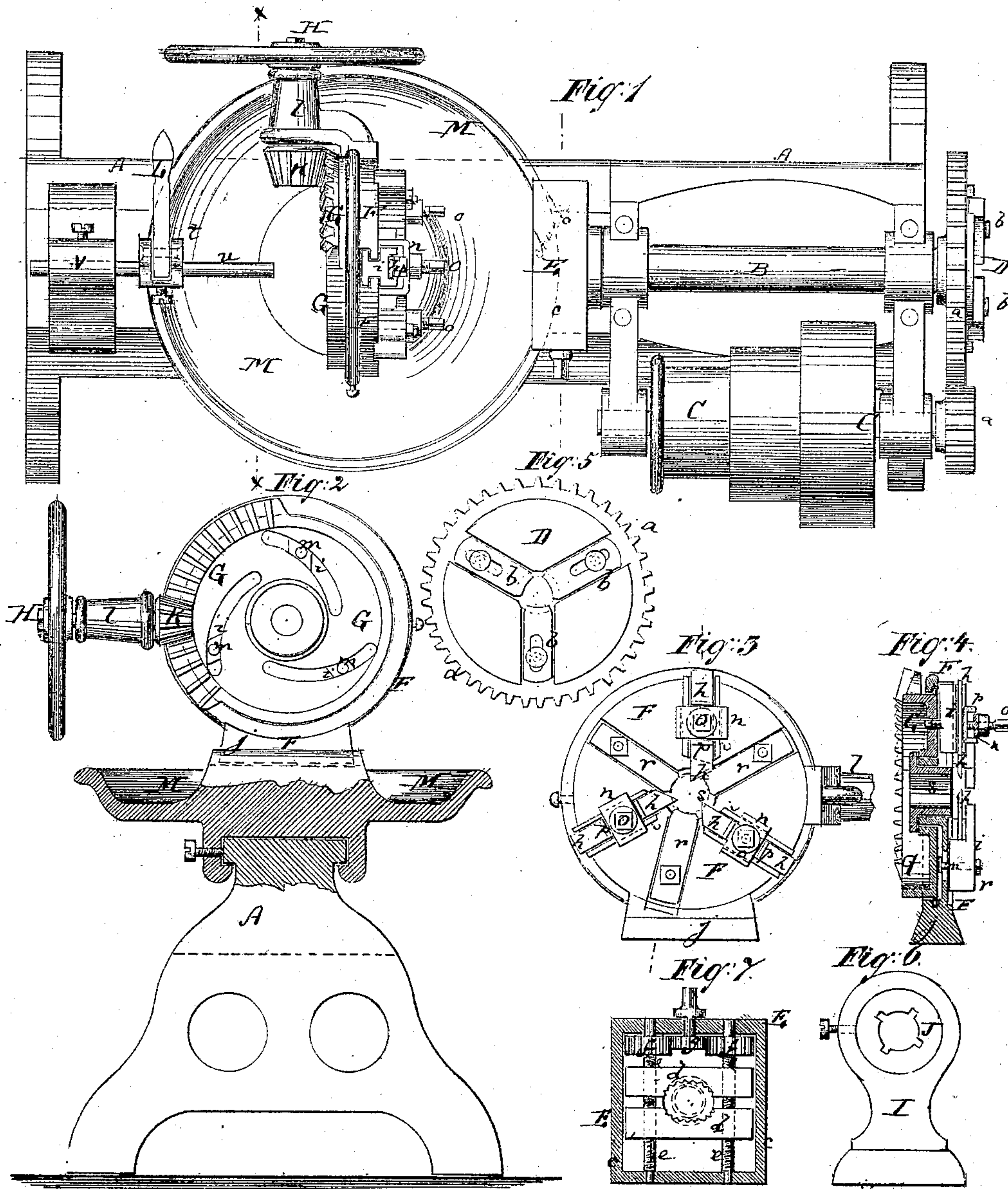


G. BLAKE.
MACHINE FOR CUTTING OFF SHAFTS AND PIPES AND FOR CUTTING
SCREW THREADS.

No. 106,458.

Patented Aug. 16, 1870.



Witnesses:

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GEORGE BLAKE, OF WHITBY, CANADA.

Letters Patent No. 106,458, dated August 16, 1870.

IMPROVEMENT IN MACHINES FOR CUTTING OFF SHAFTS AND PIPES AND FOR CUTTING SCREW-THREADS.

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, GEORGE BLAKE, of Whitby, Ontario county, Canada, have invented an Improvement in Machines for Cutting Shafts, Pipes, Screw-Threads, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a plan or top view of my improved cutting-machine.

Figure 2 is a vertical transverse view of the same taken on the plane of the line *x x*, fig. 1.

Figure 3 is a face view of the cutting-apparatus.

Figure 4 is a vertical central section of the same.

Figure 5 is a face view of the outer holder.

Figure 6 is a face-view of the screw-cutting attachment.

Figure 7 is a vertical transverse section of the inner holder or chuck.

Similar letters of reference indicate corresponding parts.

This invention relates to improvements in machines for cutting bars of iron into suitable lengths for shafting and other purposes, such as are used in the manufacture of reaping and mowing-machines, &c., also for cutting pipes or tubes, and for forming screw-threads on the ends of such tubes or shafts.

The invention consists in the combination and arrangements of parts, as hereinafter described, and as particularly specified in the claims.

A, in the drawing, represents the frame of my improved cutting-machine.

B is the tubular axle, hung in the frame for holding and rotating the shafting that is to be cut or operated upon.

The axle B receives rotary motion by means of gear-wheels *a a*, or other mechanism, from a suitable driving-shaft, C.

D and E are two holders or chucks, formed, respectively, at the outer and inner ends of the tubular axle B.

The outer chuck, D, which is shown in fig. 5, is composed of three, more or less, adjustable slotted slides *b b*, which may be brought in contact with the shaft, and secured in that position by means of clamp-screws, for the purpose of holding, or assisting to hold, said shaft while being operated on.

The inner chuck, E, which is more fully shown in fig. 7, consists of a case, *c*, two sliding-jaws *d d*, two right and left-hand screws *e e*, of which each carries

a pinion, *f*, and, finally, of a pinion, *g*, which connects the pinions *f*, as shown.

The arbor of the pinion *g* projects through the side or end of the case, and can be turned by suitable means. It will, when so turned, revolve the two pinions *f* and the screws *e*, to thereby move the jaws *d*, *d* more or less apart.

The apparatus for cutting the shaft or tube consists of three, more or less, cutters, *h h*, which are secured to slides *i i*, that are fitted into a grooved plate, F.

This plate F is secured upon a dovetail foot, *j*, which is arranged in a dovetail groove in the cup M, which is arranged to slide on the frame A, and may be clamped therein, at will.

In the plate F is held a disk, G, which has a toothed edge, to be revolved by a pinion, R, on a shaft, H.

The shaft H is hung in ears *l*, that project from the plate F.

The disk G has curved slots, as shown in fig. 2, and each slot receives a pin, *m*, projecting from one of the slides *i*.

Thus, by turning the disk G, the slides, with their cutters *h*, can be moved so as to converge or separate, as may be desired.

Each cutter *h* is secured to its slide *i* by means of a bridle or clamp, *n*, screw *o*, and interposed gibs *p*, as shown.

r r are dogs, secured in shallow grooves to the face of the disk G, and adjustable thereon. Their object is to steady the shaft or tube to be cut.

In order to assist in steadying the shaft, bush *s* is fitted through the center of the plate F and disk G, as shown.

This bush is made removable for the purpose of allowing the substitution of others, either larger or smaller, to suit the shafts to be operated on.

The disk G is grooved, at its outer edge, and is held in place by a pin or pins projecting into such groove from the overlapping rim of the plate F.

The holder F may be readily adjustable toward the chuck E by moving the cup M, whose projecting lugs, on the under side, clasp the flanges of the frame A. The holder, with all its appendages, can be readily removed from the cup M to admit, in its place, a standard, I, which is adapted to receive a die, J, for cutting screw-threads.

The foot of the standard I is shaped like the foot *j* of the plate F, to fit the dovetail groove. Thus, all kinds and sizes of shafting, tubes, rods, &c., can be readily cut into pieces of suitable length, or screw threads can be cut into their ends, if desired.

A gauge or stop for arresting the end of the shaft or tube to be cut is provided in form of a lever, L, which is pivoted to slide *t*, that is adjustable on a horizontal pin or bar, *u*, as shown in fig. 1.

The pin *u* projects from the back-head V of the machine.

In practice, the slide *t* is adjusted on the slide-bar *u*, to suit the various lengths of shafts to be cut. The lever L is then raised to a vertical position, and the shaft passed through the tubular axle and chucks till its end comes in contact with the stop-lever L, when it is set or secured and cut off. Then, by dropping the lever L, said shaft may be drawn out of the holding devices, when the lever is raised, as before, for gauging the length of the next shaft.

That part of the frame A which surrounds the grooved part for the support of the plates F or I is made concave, to form a large cup, M, which is to receive the drippings, &c., and prevent their soiling the floor. Such cup may, if desired, be removably attached to the frame, as in fig. 2.

Having thus described my invention,

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

1. The combination of the tubular axle B, the chuck D, provided with the adjustable slotted slides *b*, and the toothed rim *a*, and the chuck E, consisting of the right and left-hand screws *e*, pinions *f* *g*, and jaws *d*, all constructed and arranged as shown and described for the purpose specified.

2. The improved gauge or stop, consisting of the lever L, slide *t*, rod *u*, and head *v*, combined and arranged as shown and described.

3. The combination, with the frame A, of the cup M and plate F, the latter provided with the foot *j*, and all arranged as shown and described, whereby said parts are adapted to be relatively adjusted or to be detached, one from the other.

4. The combination of the stop or gauging device, plate F, disk G, chucks E D, and tubular shaft B, said disk, plate, and chucks being provided with the holding and cutting devices shown and described, and all constructed and arranged as specified.

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