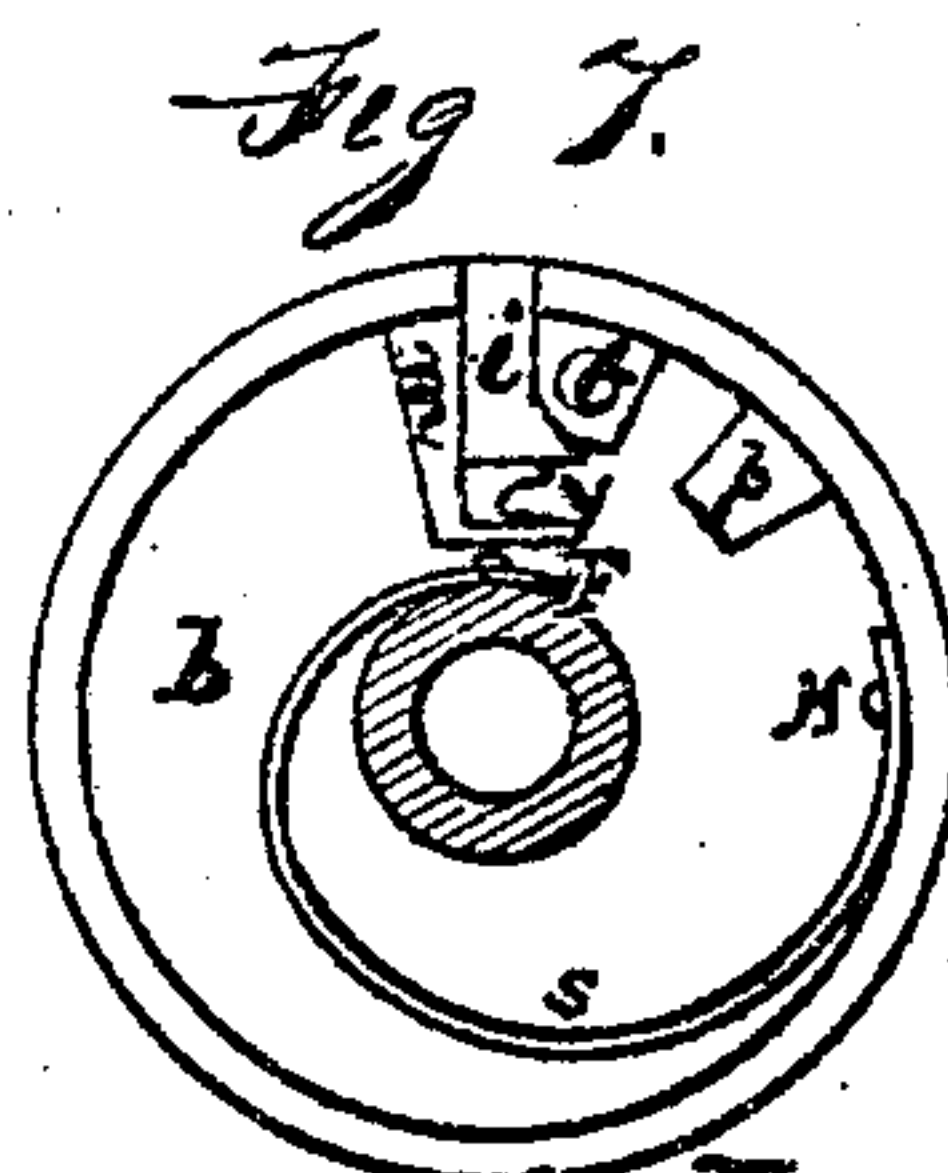
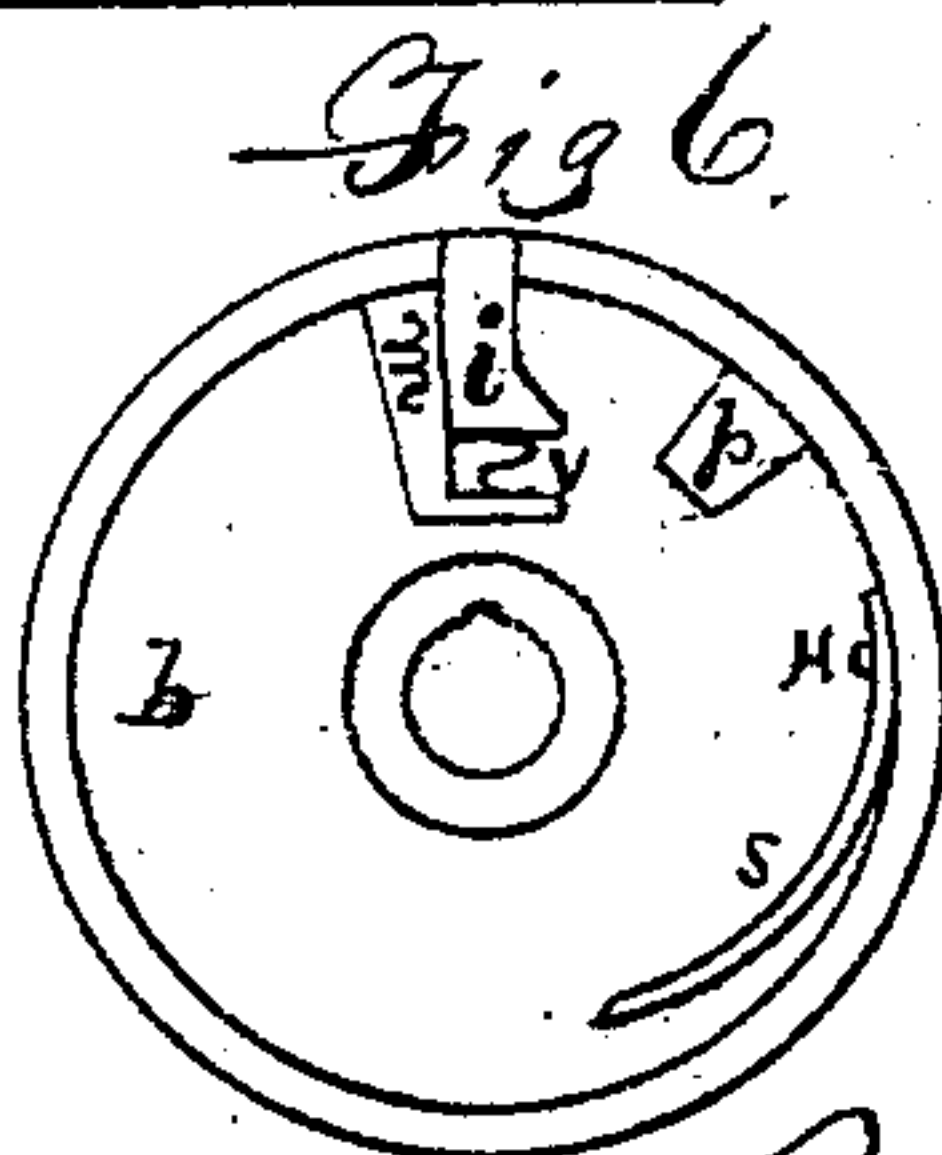
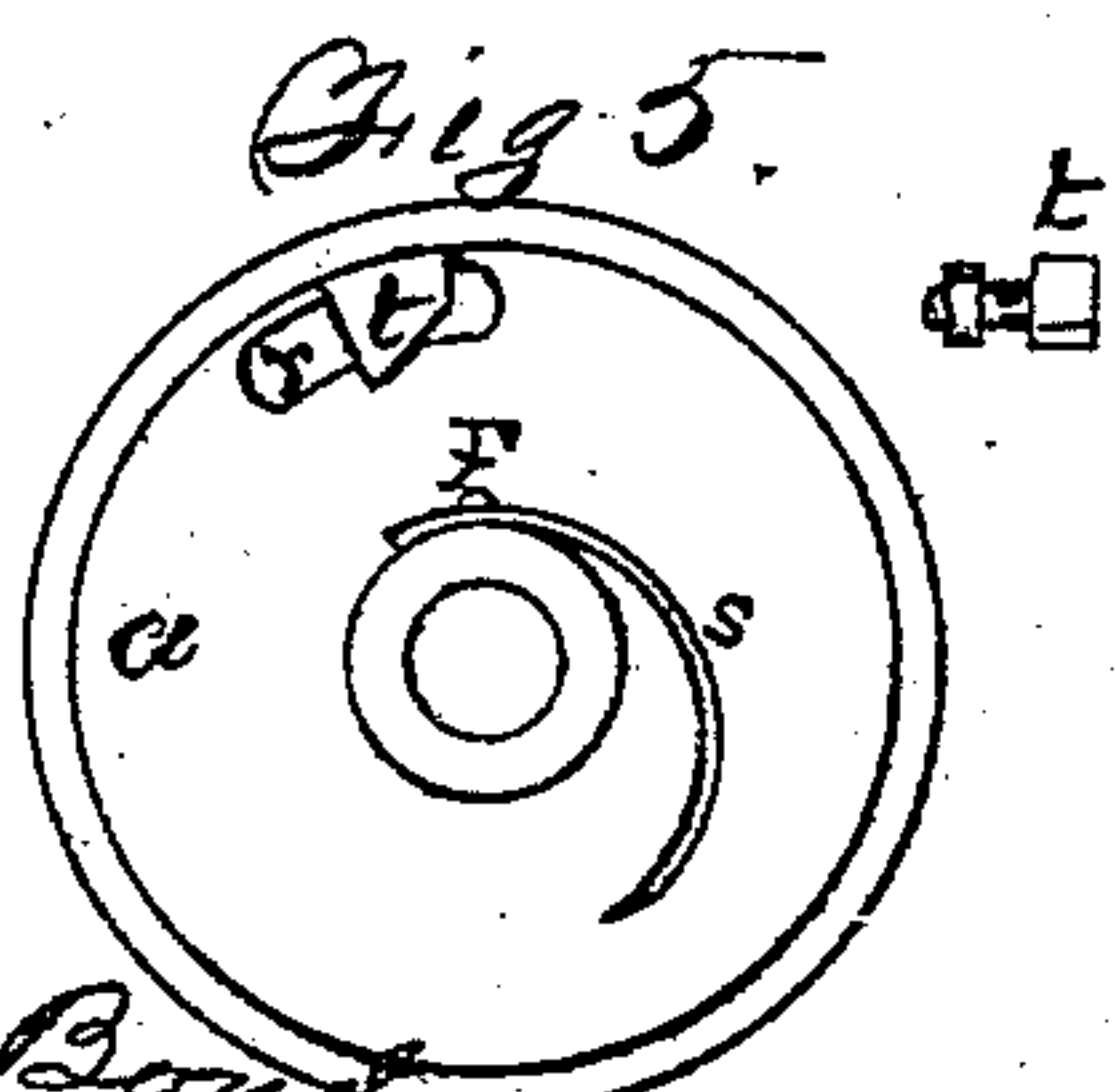
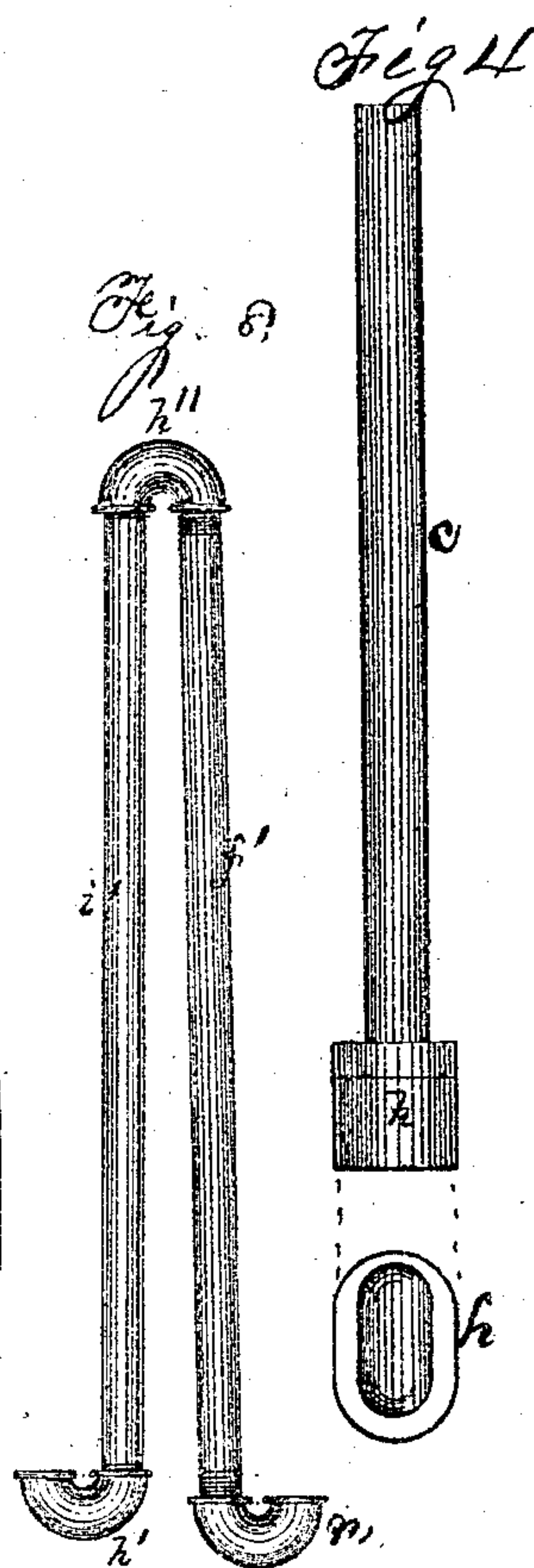
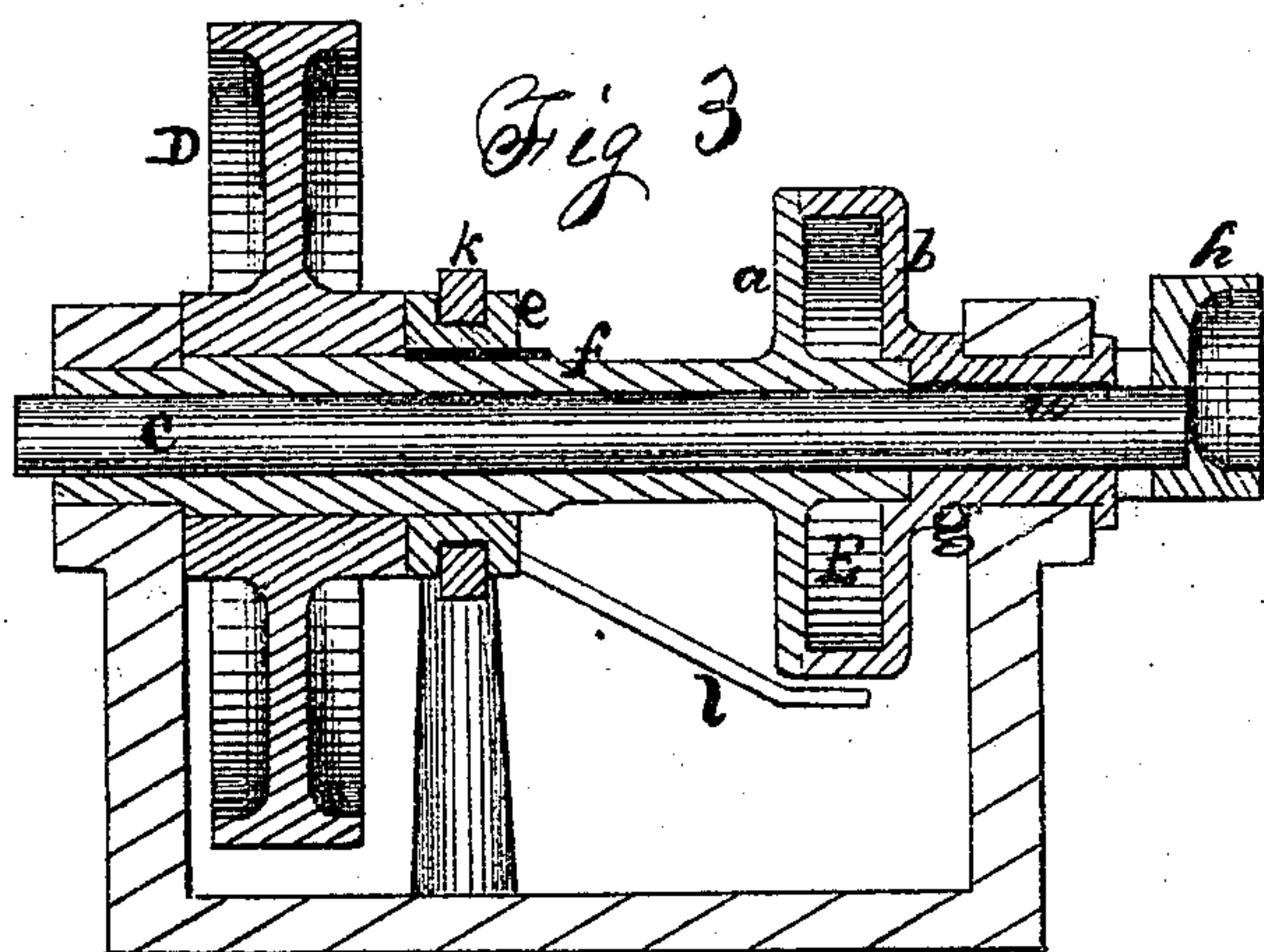
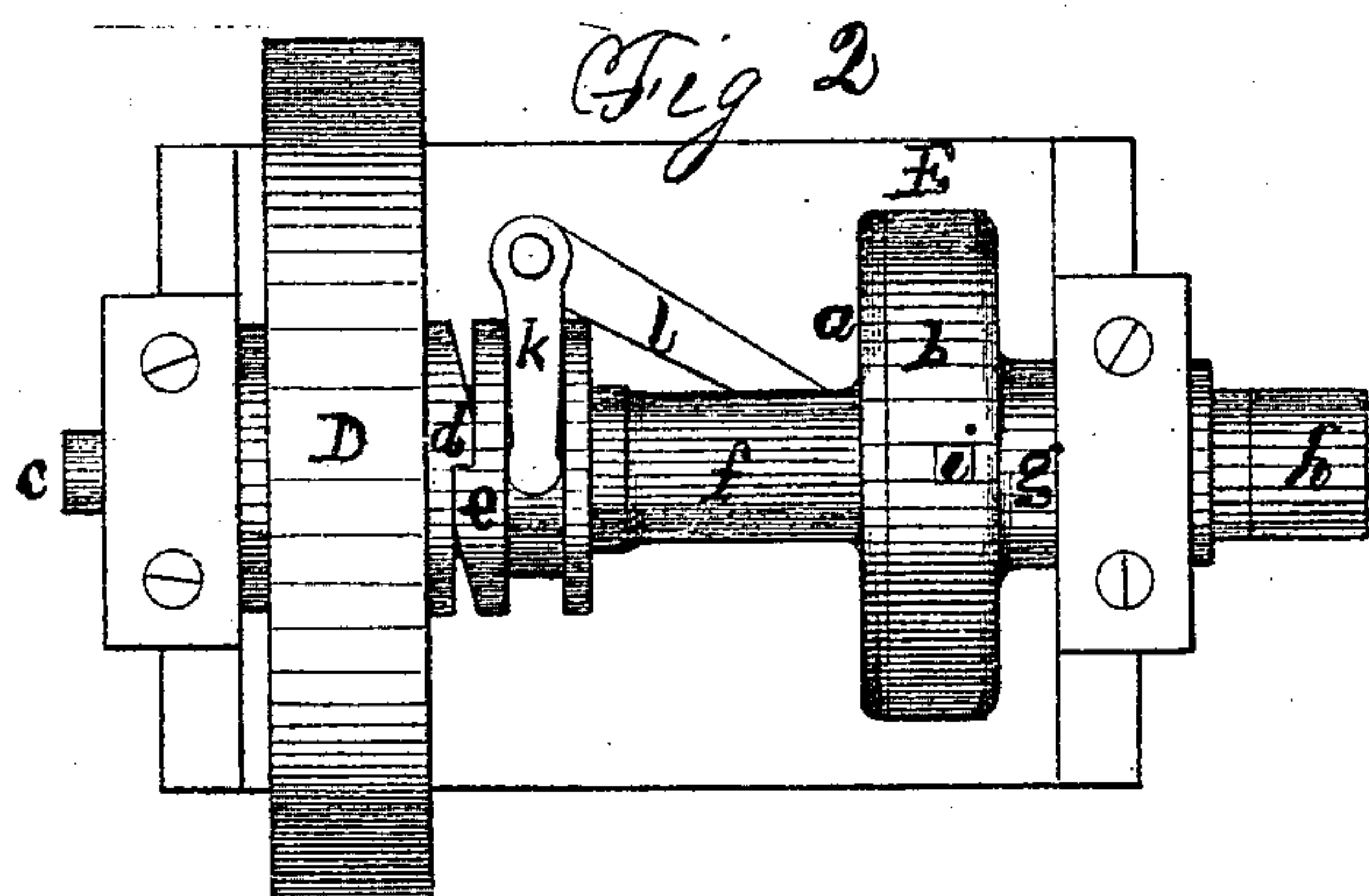
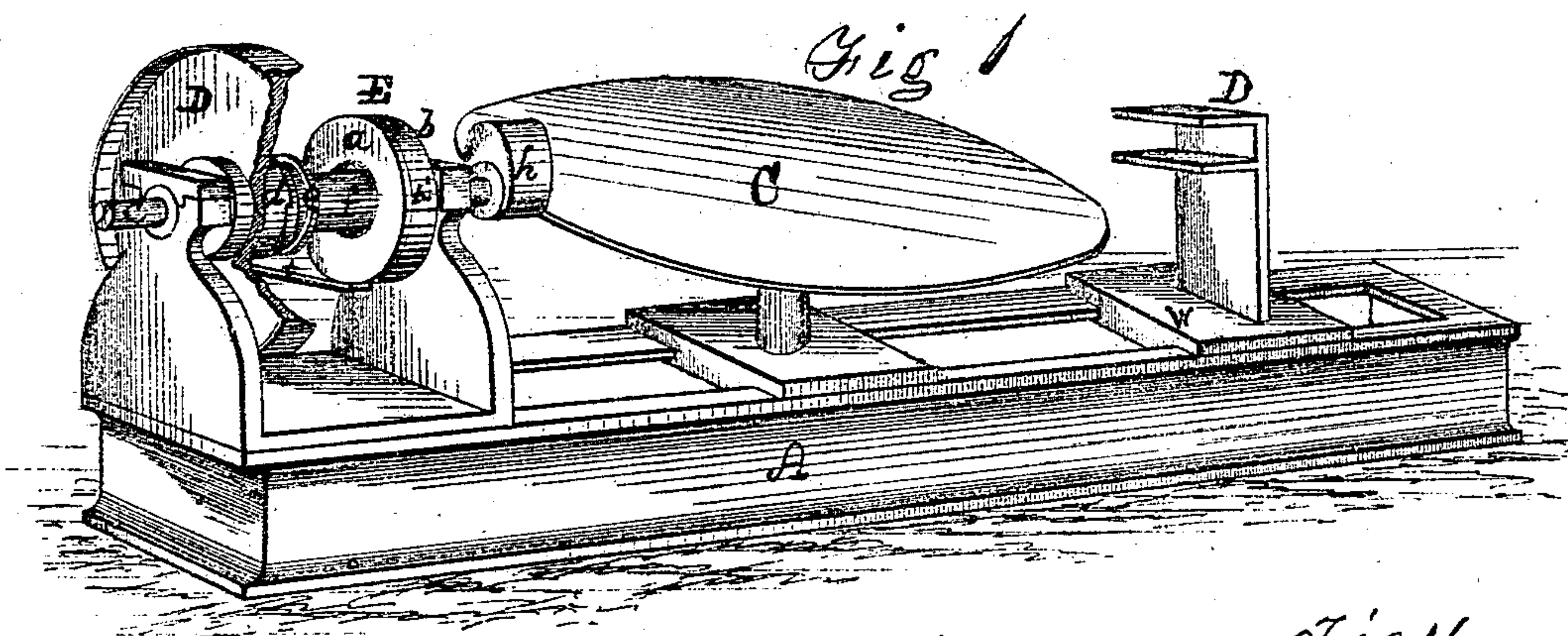


Improvement in Machines for Screwing Pipes together.  
No. 123,382. Patented Feb. 6, 1872.

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*Richard T. Crane* Inventor.



# UNITED STATES PATENT OFFICE.

RICHARD T. CRANE, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN MACHINES FOR SCREWING PIPES TOGETHER.

Specification forming part of Letters Patent No. 123,382, dated February 6, 1872.

### SPECIFICATION.

I, RICHARD T. CRANE, of the city of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Machine for Screwing Pipes Together, of which the following is a full description, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a perspective; Fig. 2, a top view of part; Fig. 3, a vertical section of the same; Fig. 4, a detached view of the spindle with a view of the end or chuck. Figs. 5, 6, 7 illustrate the barrel containing the spring; Fig. 5 showing the inside of *a*; Fig. 6, central section; Fig. 7, the inside of *b*. Fig. 8 shows two pieces of pipe and fittings.

My machine is especially designed to be used in the manufacture of steam-heating apparatus; and is adapted to screw the return bend pipe fittings upon the heating-pipes, but may be used for analogous purposes. This work has heretofore been done wholly by hand.

In the drawing, *A* represents the bed of the machine, about which there is nothing peculiar. *B* is a jaw upon a standard, which is attached to a movable plate, *w*. *C* is a table, upon which the pipes are supported—it may be fixed or rotating. *D* is the driving-pulley, which is loose on the sleeve *f*; one end, *d*, of the hub forms one-half of the clutch. *e* is the other half of the clutch; it has a feather seat. The feather is on the sleeve *f*, and is indicated by a dark line, not lettered. The sleeve may be said to be in two parts, *f g*; the former being enlarged, as seen at *a*, and the latter enlarged, as seen at *b*, the two parts *a b* forming a barrel, *E*, within which is a spring, *s*, which connects the two parts of the sleeve together; one end of the spring being secured at *F* to the end of *f* within the barrel; the other end being fastened at *H* within the rim *b*. The part *g* of the sleeve has a feather, *u*, and an elongated feather-seat is cut into the spindle *c* permitting lateral movement of the spindle. Secured to the spindle is a chuck, *h*, to receive a return bend fitting. Within *b* is a bolt, *i*, the head of which is cut angling; this bolt extends through an opening in the rim *b*, its outer end being, in its natural position, flush with the outside of said rim. *m* is a support for the bolt or trip *i* and spring *v*, which throws *i* out when *t* is withdrawn. *t* is

a fixed bolt, having an angle on one side of the head corresponding with the angle on *i*. It passes through a slot, *r*, in *a*, and is held by a nut on the outside. *p* is a stop secured to *b*. *k l* form a jointed lever for moving the clutch *e*. *i'*, Fig. 8, is a piece of pipe, to each end of which a fitting, *h' h''*, has been secured. *f'* is another pipe, to which the fittings *h''* and *n* are to be secured.

The operation of the machine is as follows: The fittings *h' h''* having been secured to the pipe *i'*, as shown, (which can be done by the machine,) *h''* is placed in the jaw *B*, and *n* in the chuck *h*, the pipe *f'* having been first entered into the fittings far enough to hold while being handled. The clutch *d e* is then thrown into gear, and *D* being driven in the usual manner, the spindle *c*, chuck *h*, sleeve *f a g b* will revolve together, screwing *n* upon *f'*, and *f'* into *h''*, *g* being rotated by the tension of the spring *s*, connecting *a* and *b*, which is to be set to the required strain. When the fittings have been so far screwed on that the resistance of the chuck *h* overcomes that of the spring the plate *a* will commence to turn without *b*, the latter remaining for a moment at rest, and the fixed bolt-head *t* will be carried away from the bolt *i*, which will be forced out by the spring *v*; the end of *i* will then project outside of *b*. After *t* comes in contact with the stop *p* the two parts *a b* will be carried around together until *i* comes in contact with the end of the lever *l*, throwing the clutch *e* out of gear. During the operation the chuck is held up against the work by a suitable lever in the ordinary manner, which is not shown. The ends of the pipes are then reversed and the operation repeated. The tension of the spring *s* can be adjusted by changing the position of the bolt *t* in the slot *r*. If the chuck be made deep instead of putting the fitting *n* into the chuck in the manner above described, the chuck can be pressed up against the fitting, after the pipe and fittings have been placed on the table; and then, as the work progresses, it will not be necessary to continue to press the chuck against the fitting.

It is evident that my device could be readily adapted to be used with a weight instead of the spring *s*.

What I claim as my invention is—

1. The combination of the sleeve *f g*, enlarged

as at *a b*; the spring *s* connecting the parts of said sleeve; the shaft *c*, provided with a chuck and connected with the part *g* of the sleeve, with mechanism for stopping the motion of the shaft when the action of the spring has been overcome, substantially as described.

2. The combination of the shaft *c*, sleeve *f*

*g*, enlarged as at *a b*, the spring *s*, pin *t*, bolt *i*, and the clutching mechanism, substantially as specified.

RICHARD T. CRANE.

Witnesses:

L. L. BOND,

O. W. BOND.