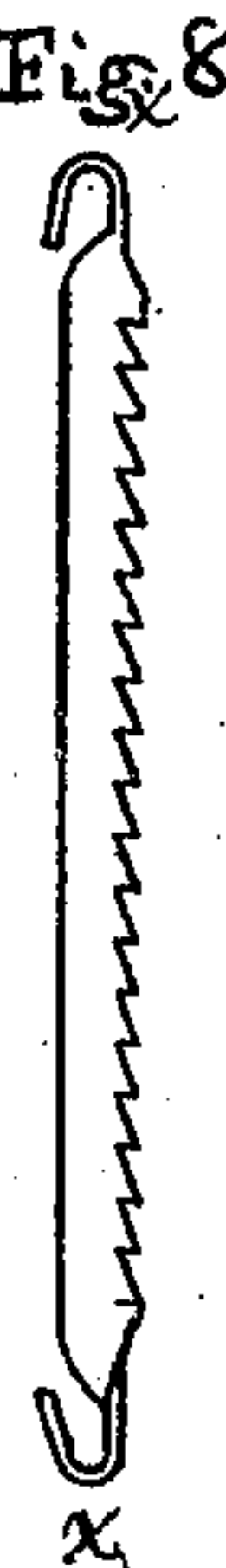
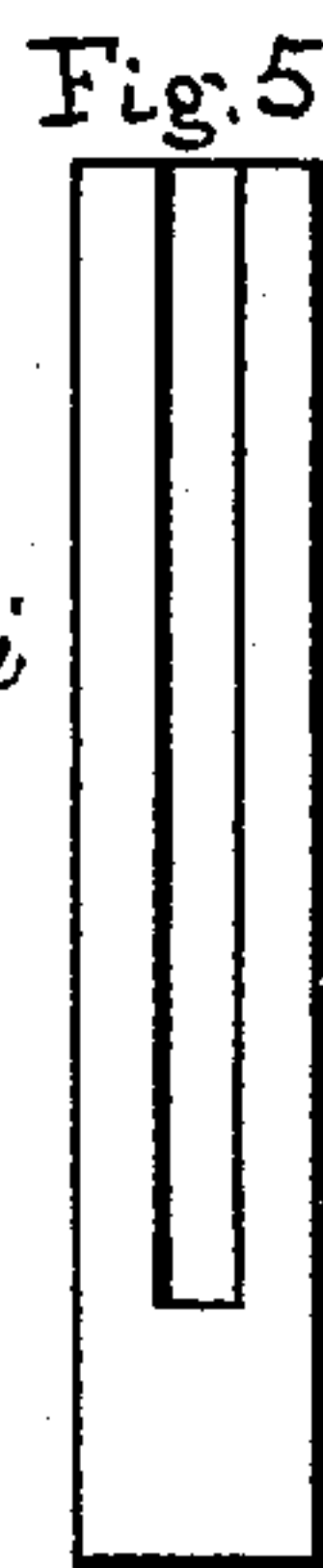
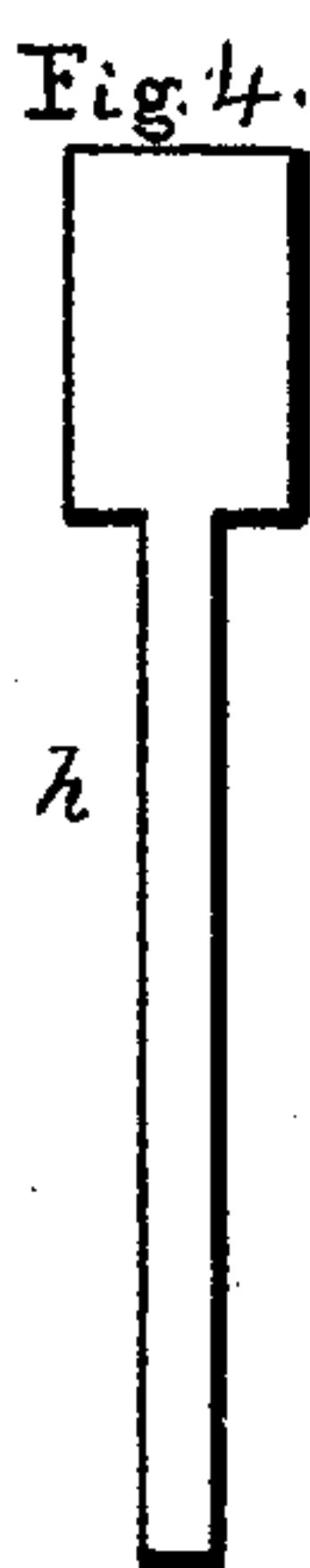
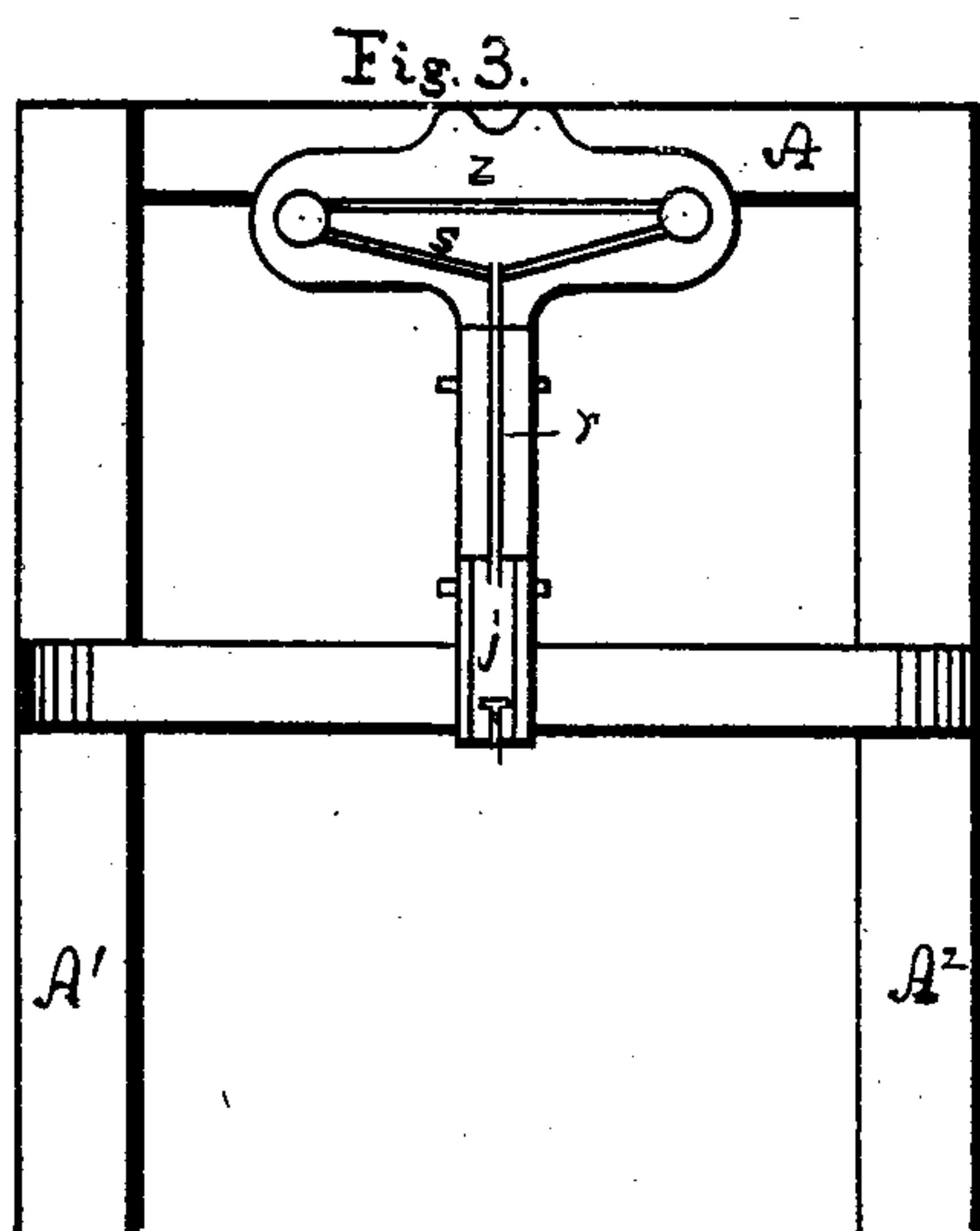
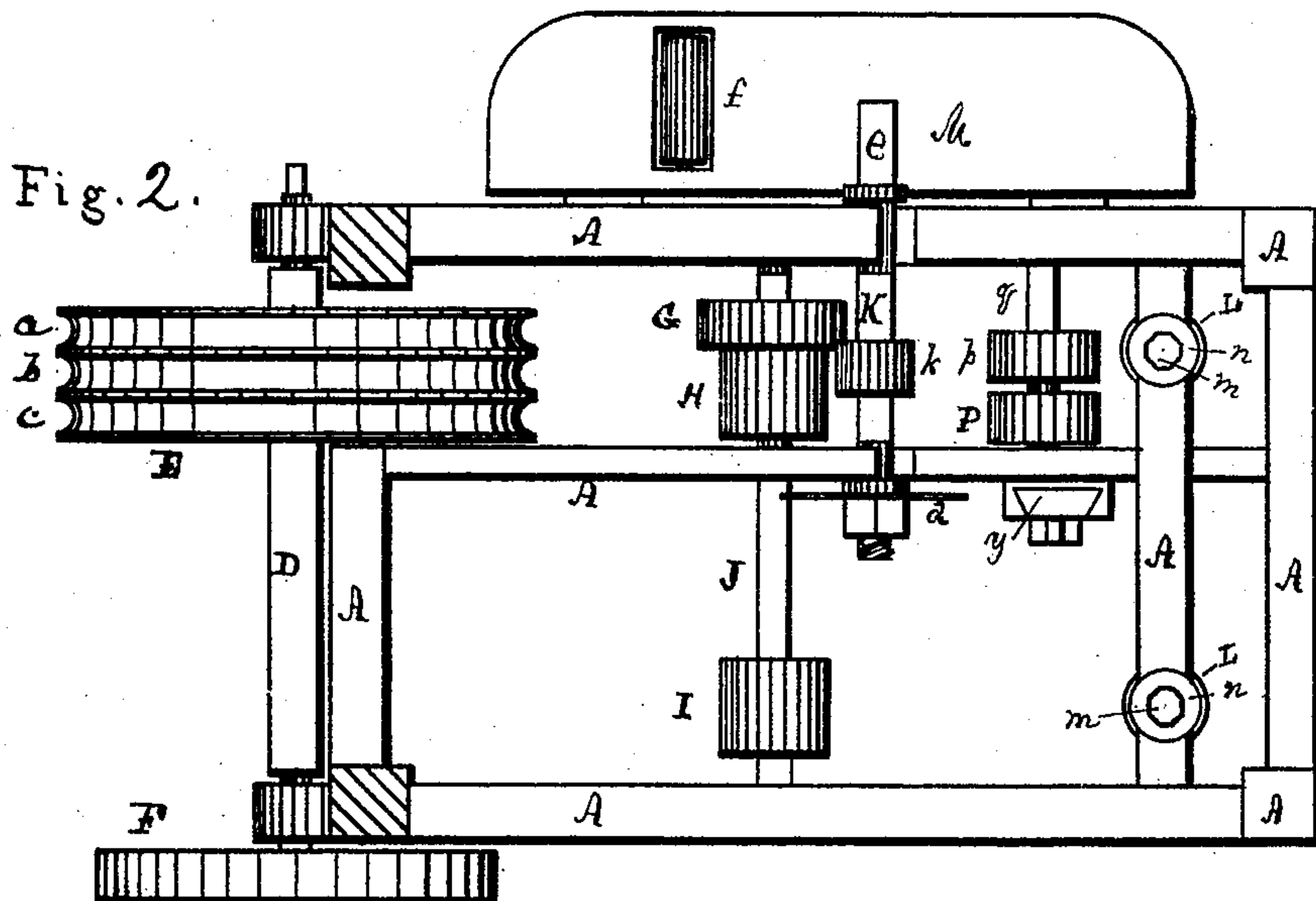


W. HEAYSMAN.
Sawing-Machines.

No. 149,311.

Patented April 7, 1874.



Witnesses:
C. A. West
O. W. Bond

Inventor:
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UNITED STATES PATENT OFFICE.

WILLIAM HEAYSMAN, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN SAWING-MACHINES.

Specification forming part of Letters Patent No. **149,311**, dated April 7, 1874; application filed May 16, 1873.

To all whom it may concern:

Be it known that I, WILLIAM HEAYSMAN, of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sawing-Machines for sawing, shaping, sticking, &c., of which the following is a full description, reference being had to the accompanying drawings, consisting of two sheets, making a part of this specification, in which—

Figure 1 is a side elevation with a portion of the frame removed; Fig. 2, a plan view with the table and a portion of the upper part of the machine removed; Fig. 3, an end view of the upper part of the machine which supports the vertical saw; Figs. 4, 5, and 6, details showing the mode in which the upper end of the vertical saw is secured; and Figs. 7 and 8, two views of the vertical saw.

The object of my invention is to construct a combined machine designed chiefly for the use of small manufacturers, by means of which scroll-sawing, work usually done by circular saw, shaping and sticking, and similar operations, can be performed.

In the drawings, A represents the several portions of the frame of the machine; A¹ A², two uprights at the rear of the machine upon the cross-bar, at the top of which is located a bar, B, the outer end of which is supported by a brace, C, to which the head for the vertical saw is secured. D is a shaft at the rear of the machine, upon one end of which is a driving-pulley, E, having three grooves, *a b c*, for the reception of three separate driving-belts. At the other end of this shaft is a driving-pulley, F. J is a shaft, upon which are three pulleys, G H I. *l* are two vertical shafts, on each of which is a pulley, L. On each shaft is a collar, *n*; and the upper end, *m*, of each of these shafts is so formed that suitable knives or cutters, for cutting molding, can be placed thereon, as usual. The lower ends of these two shafts run in suitable bearings in a cross-bar; and just below the collar *n* are bearings, so constructed that the shafts can be readily removed when not in use. An easy way of doing this is to make a hole in the cross-bar with an opening thereto similar to that shown at *t*, Fig. 1. K is another shaft, on one end of which is a circular saw, *d*. The other end, *e*,

is formed so as to receive such tools as may be required. This shaft has a driving-pulley, *k*. M is a table, placed upon the side of the machine to receive the work which is to be operated upon by the tools on *e*. This table may be so connected with the machine that it can be adjusted vertically. This can be done by attaching to the sides of the machine bars N, each having a slot, *g*, therein to receive the pins placed upon the brackets upon which the table M rests, the same being held by the nuts *n*. Only one of these bars, N, with the slot *g*, is represented. *q* is a shaft located in suitable bearings near the lower portion of the frame, on the outer end of which is a crank-wheel, R, for the purpose of driving the vertical saw Q. This shaft *q* has upon it a fixed driving-pulley, P, and a loose pulley, *p*, may be used to receive the driving-belt when the saw Q is not in use. All of the bearings of these several shafts may conveniently be made similar to that represented at *t*. The head with which the upper end of the vertical saw is connected is composed of two pieces, *h i*. The upper end of *h* is permanently secured to the bar B, and the part *i* has a slot in the upper portion fitting over the piece *h*, to which it is secured by means of pins passing through the holes *v*, and this part *i* can be adjusted vertically by means of these pins and holes. *j*, Figs. 3 and 6, is a block running in a groove provided for it in the front portion of the head *i*, to the lower end of which block *j* the upper end of the saw Q is connected, and to the upper end of the block is secured a rod, *r*, which is connected with a spring, *s*, suitably connected with the part *z*. The spring *s* may be a rubber spring, or might be a coil metal spring. The lower end of the saw is connected to a block, *y*, moving in a suitable groove, as usual. The upper and lower ends of the saw are formed as represented in Figs. 7 and 8; and this saw is not permanently connected at its upper and lower ends to the machine; but the hooks *x* are simply passed over pins connected to the blocks *j* and *y*. The action of the spring *s* holds the saw in position, prevents it from slipping off from the pins with which it is connected, and aids in returning it and the block *j* to the position shown in Fig. 1, after a downward stroke of the saw. This construction of the saw fur-

nishes a very ready means of removing it. The hooks *x* are formed from the same plate as the rest of the saw, the same being turned one-half round and bent over, as represented.

It is not designed to use the circular saw and perpendicular saw at the same time. Either one can be removed when the other is in operation.

By means of cutters placed upon the tops *m* of the shafts *l*, moldings and flutings for various purposes can be made. By means of suitable tools placed upon the end *e* of the shaft *K*, sticking, tonguing, grooving, matching, fluting, and boring can be done, the material operated upon being placed on the table *M*, which is adjustable. As the parts are arranged the shaft *K* is driven by a belt placed in the central groove *b* on *E*. The reciprocating saw is driven by a belt located in the groove *c* on *E*, and passing over the pulley *P*. The shaping-knives upon the tops *m* of the shafts *l* are driven by two belts, one of which passes over the drum *I* and one of the pulleys *L*, and the other over the drum *H* and the

other pulley *L*, which drums, *H* and *I*, are driven by a belt in the groove *a* on *E*, which passes over the pulley *G*. The shaft *K* and the shafts *l* can readily be removed from the machine when not required. The cutters upon the end of the shaft *K*, and those upon the shafts *l*, can be operated at the same time, if desired.

The whole machine can be operated by hand, a crank-pin being placed upon the drum *F*; or the same can be driven by power applied through a belt to the drum *F*.

What I claim as new is as follows:

In a machine, substantially as described, the arrangement of the saws *Q* and *d* and shafts *L*, with heads *m* for cutters, and the operative mechanism, all constructed and arranged for operation, as and for the purpose herein set forth.

WILLIAM HEAYSMAN.

Witnesses:

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