

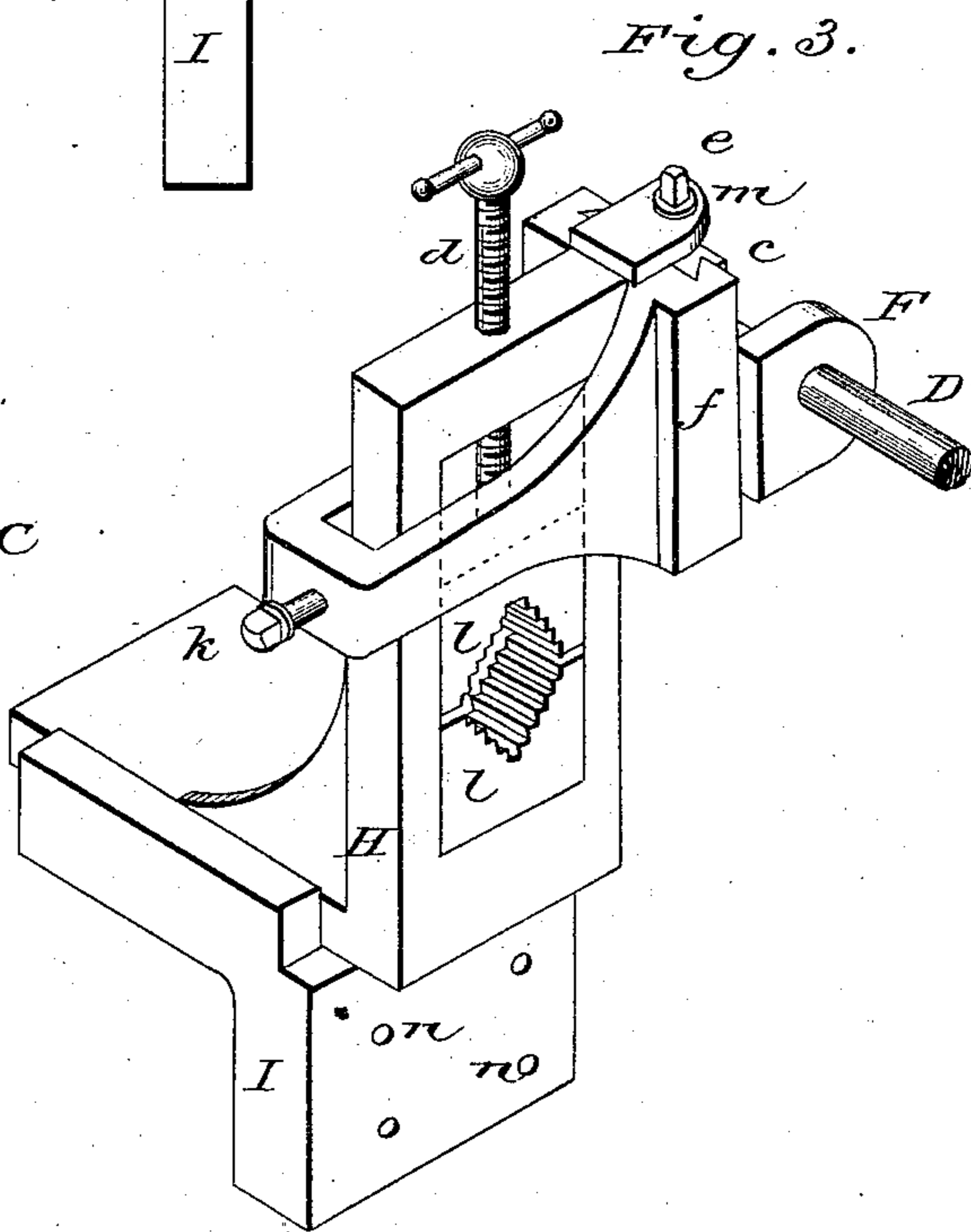
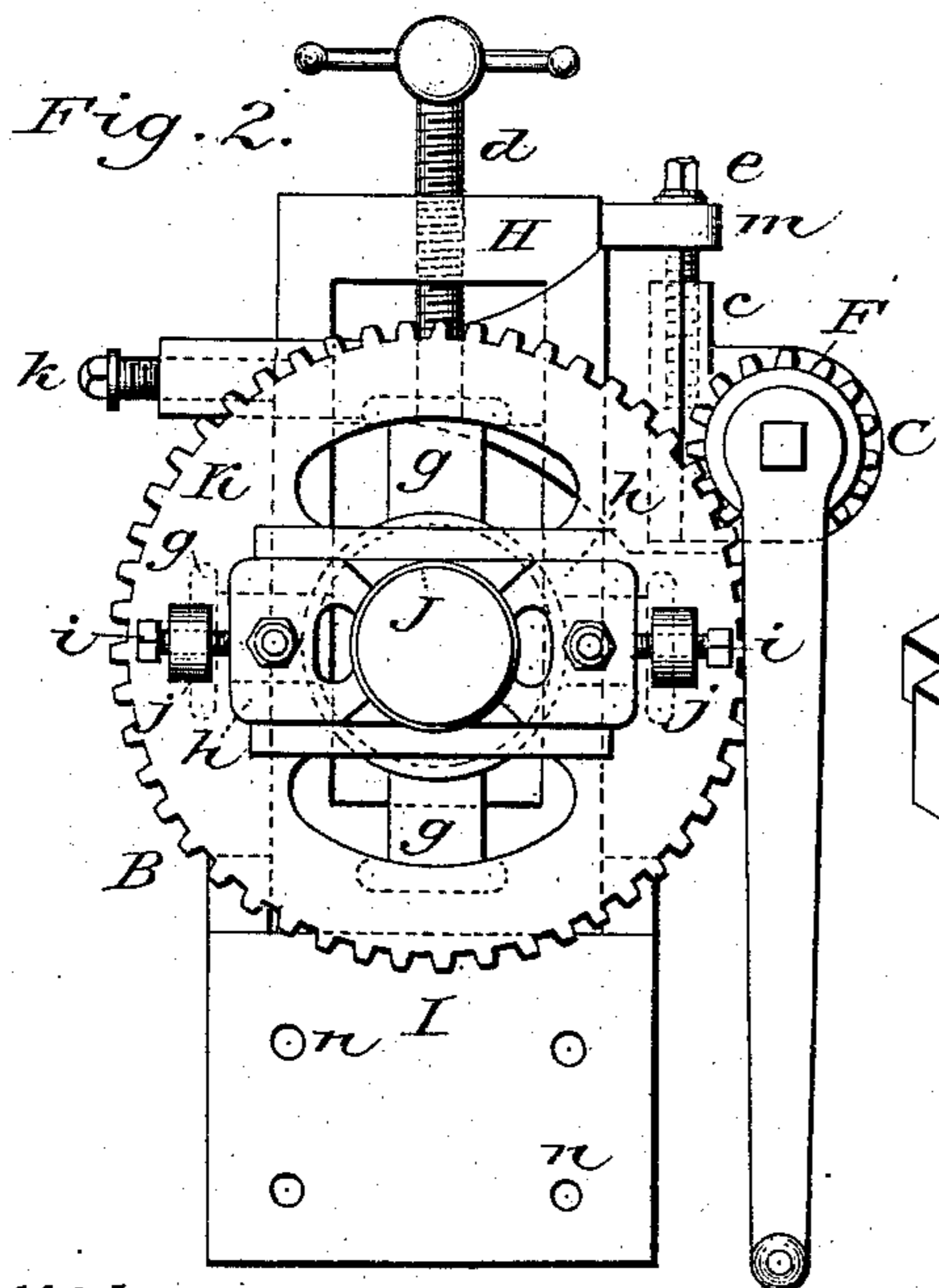
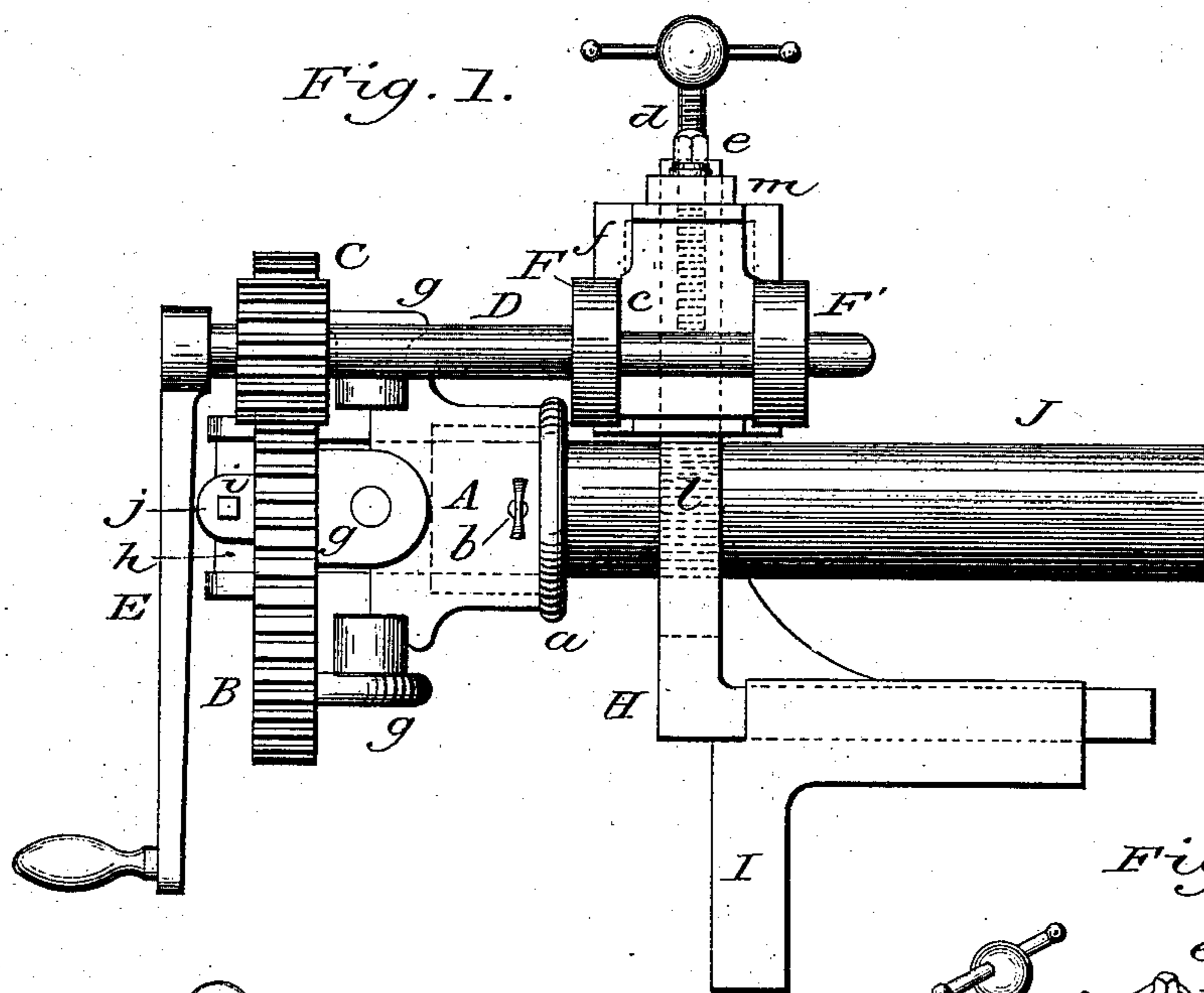
(No Model.)

F. ARMSTRONG.

DIE STOCK.

No. 291,268.

Patented Jan. 1, 1884.



Witnesses:

F. L. Brown
Lewis Lammond.

Inventor:

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UNITED STATES PATENT OFFICE.

FRANK ARMSTRONG, OF BRIDGEPORT, CONNECTICUT.

DIE-STOCK.

SPECIFICATION forming part of Letters Patent No. 291,268, dated January 1, 1884.

Application filed June 27, 1881. (No model.) Patented in England July 15, 1881, No. 3,099.

To all whom it may concern:

Be it known that I, FRANK ARMSTRONG, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Die-Stocks; and I do hereby declare that the following is a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of die-stock operated by hand for cutting pipes or rods, and is more especially intended for cutting threads on pipes.

Prior to my invention it was customary, in the earlier history of the art, to cause the rotation of the die-stock by the employment of radial arms or levers, which required the services of two operatives; and, in order to overcome this necessity for the labor of two men, it was subsequently suggested to rotate the die-stock through the medium of a pinion geared with the periphery of the die-stock, and several different constructions were devised, one of which involved the employment of a threaded hub arranged on the pipe to be cut, which served as a lead for the die-stock, so that a given hub and die-plates were required for different threads. Other constructions were suggested involving comparatively complex mechanism and proportionately increased power.

My invention has for its object simplicity of construction and ease of operation in that class of machines involving the employment of a driving-pinion; and it consists in the peculiar construction and arrangement of parts hereinafter described and specifically claimed.

To more clearly understand my invention, reference is had to the drawings accompanying this specification and forming part of the same, in which—

Figure 1 is a side elevation of my improved die-stock. A is the portion of the stock which slips over the pipe. *a* is one of a series of thumb-screws used for different sizes of pipes. *b* is a thumb-screw for securing the same. B is the gear cut on the periphery of the cutter-head. C is the pinion engaging therein; D, the shaft for the pinion. E is the handle for operating the same. F F' are projections or ears, having bearings for the shaft D. *c* is a sliding gate, to which the ears F F' are attached. H is the vise for holding pipes. I is the chair which

supports the vise H. J is the pipe secured in the vise. *d* is a screw for tightening the pipe within the vise. *e* is the screw for raising and lowering the gate *c*. *f* is the yoke attached to the vise H. *g* are projections, having sockets to receive handles which are now used to operate die-stocks.

Fig. 2 represents a front elevation of Fig. 1. K is the cutter-head, having the gear B cut on its periphery. *h h* are the cutting-dies. *i i* are the adjusting-screws for the dies *h h*. *j j* are projecting lugs, holding the screws *i i*. *k* is the screw for holding the yoke *f* firmly to the vise H.

Fig. 3 is a perspective view of the vise H, and showing more clearly the manner of attaching the yoke *f* to the same. *l l* are the jaws for clamping and holding the pipe while in the operation of being threaded. *m* is a lug or support for the screw *e*, used for raising and lowering the gate *c*. *n n n n* are holes by which the chair I, holding the vise H, is secured to the bench.

The construction and operation are as follows: The cutter-head K, with the dies *h h*, and the manner of adjusting them, the stock A, having the socket *g* for handles, and the vise H, with its jaws *l*, are what are now employed for cutting or threading pipes, and are therefore not new. When cutting small pipes it requires comparatively little labor, with the aid of the handle, to form the thread; but when necessary to cut pipes of large diameters it requires the service of from two to four men to operate it, making it a difficult and tiresome operation; but by means of the gear and pinion one man can easily cut the largest pipes. The pipe J is placed within the jaws *l l* of the vise H, and held firmly there by the tightening-screw *d*. The stock A, with the cutter-head B, is slipped on the pipe, and the shaft D inserted in its bearings in the ears F F', and the pinion and gear brought in contact, and by means of the handle E the cutter-head is made to revolve. When the pipe is threaded up far enough, instead of reversing the cutter-head or turning it backward by means of the handle E, the shaft D is taken from its bearings in the ears F F'. The shaft D, having the handle and pinion attached, is laid aside for future use. The cutter-head is then whirled back quickly by hand and removed from the pipe.

In cutting pipes extremely large or small it

will become necessary to employ different-sized jaws in the vise, and as the axis of the gear B will be higher or lower, according to the size or height of the jaws of the vise, the relation 5 between the cogs on the periphery of said gear and the pinion C will vary, thus rendering it necessary to provide for adjustment for the pinion C, which I accomplish through the medium of the screw *e*. This latter is threaded 10 in the gate *c*, in the ears F of which the pinion-shaft has its bearing, so that as the screw *e* is turned in one or the other direction the gate *c* and pinion C are accordingly raised or lowered.

The yoke *f*, as seen more clearly at Fig. 3, 15 and to which the gate *c* is attached, is secured to the vise H by means of the screw *k*, and may be thus secured at any point required.

It will be observed that the die-stock is provided with the usual handle-sockets, *g*, and also 20 the gear B, so that either means may be used at pleasure for operating the die-stock, and it will also be observed that the pinion-shaft D moves longitudinally in its bearings on the gate *c*, so that the shaft may be instantly drawn from its 25 bearings when it becomes desirable to use the

stock in the ordinary way with handles, or when a thread has been cut and it is desired to run the stock back quickly, and the disengagement of the gear and pinions thus becomes desirable.

Having thus described my invention, what I 30 claim as new, and desire to secure by Letters Patent, is—

1. In combination with the die-stock A, provided with the gear B, the operating-pinion C, having its shaft D arranged in bearings F F' 35 upon a vertically-movable gate, *c*, and adapted to slide longitudinally therein, substantially as and for the purpose set forth.

2. The die-stock A, provided with a gear, B, adapted to be operated by a pinion, and 40 also provided with handle-sockets *g*, substantially as and for the purposes set forth.

In testimony that I claim the foregoing, I have set my hand in the presence of two subscribing witnesses.

FRANK ARMSTRONG.

Witnesses:

NATHANIEL W. VANDEGRIFT,

HENRY E. BOWSER.