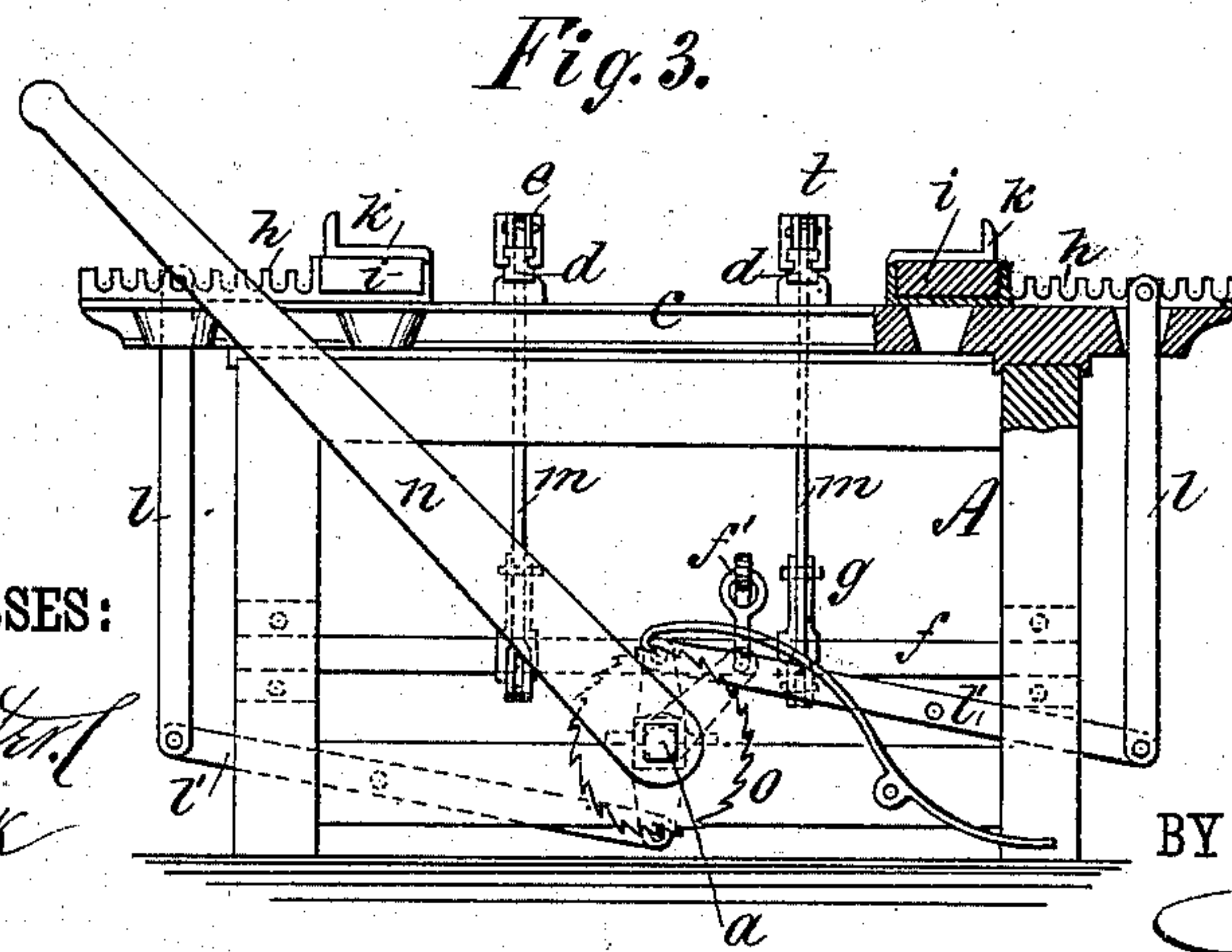
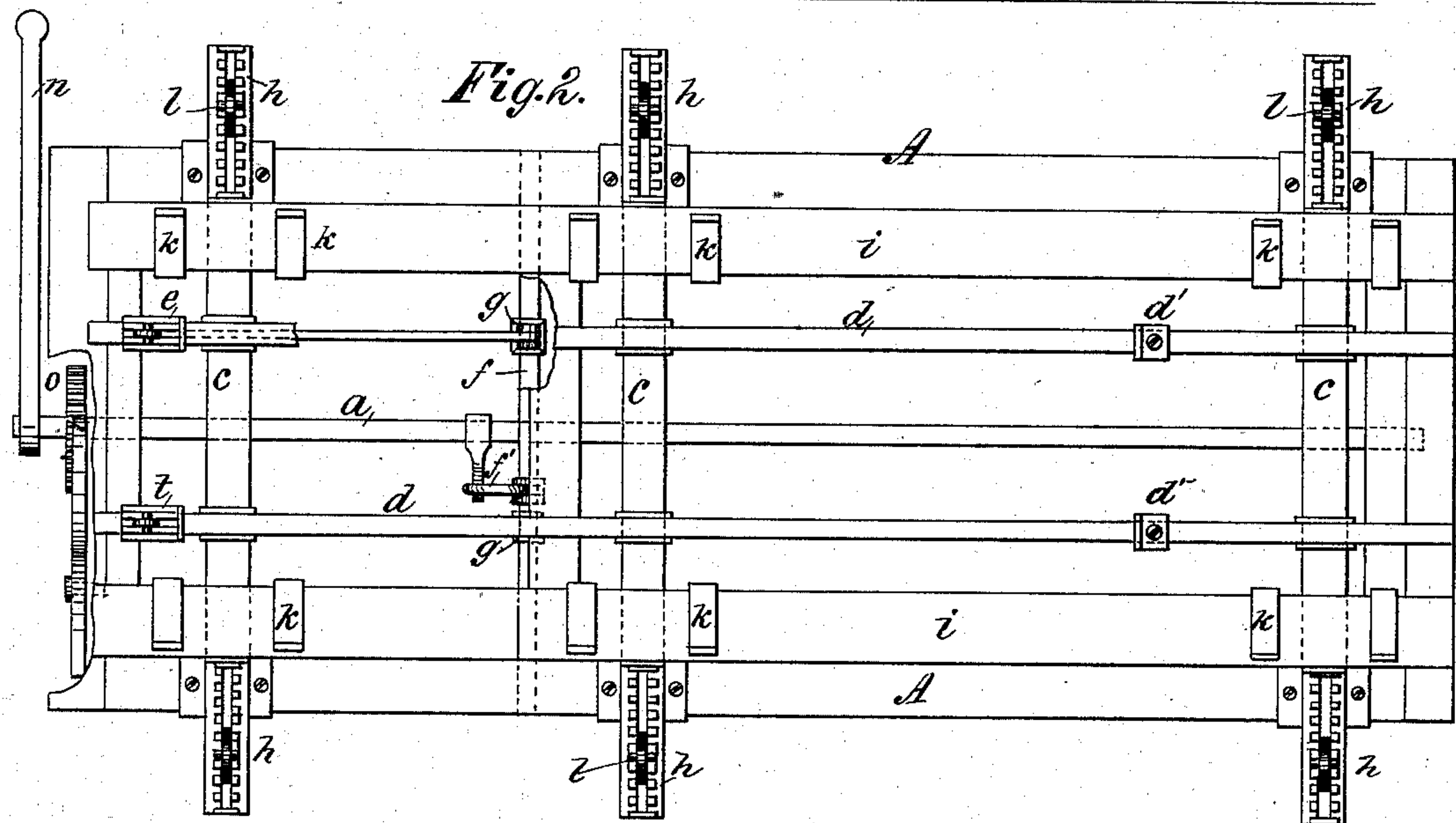
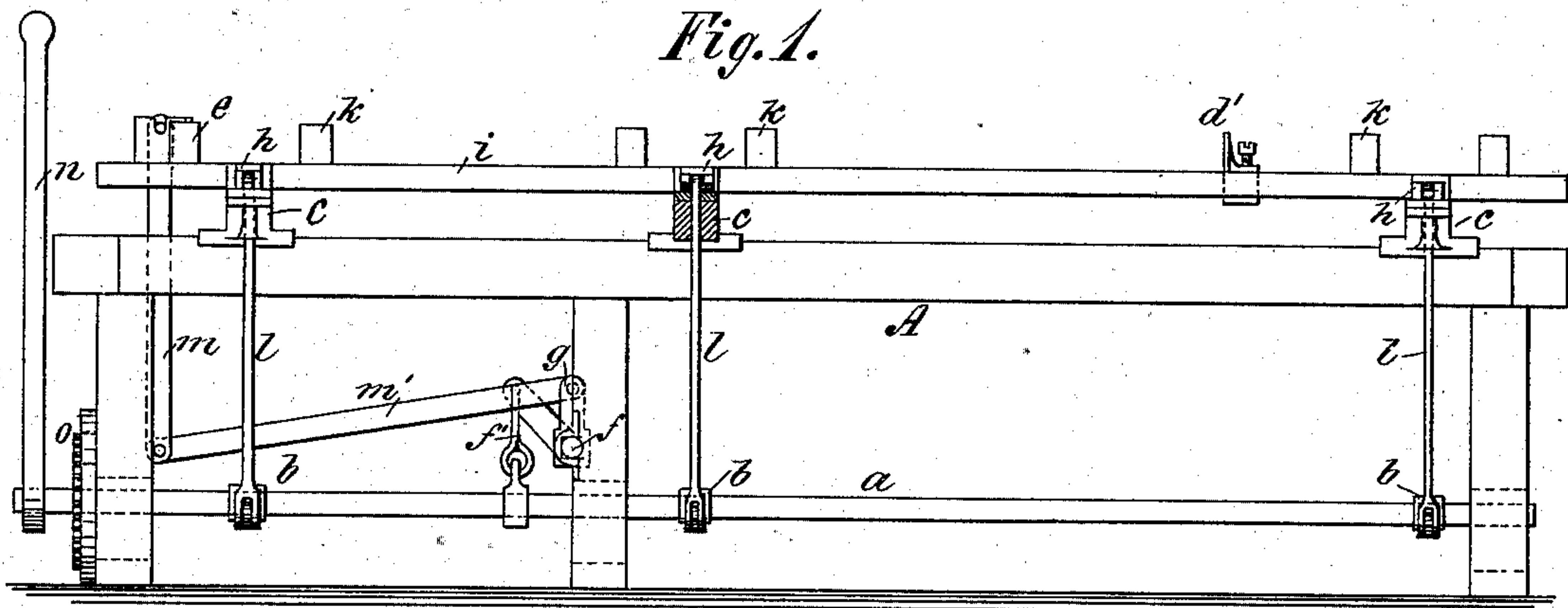


(No Model.)

A. W. ALE.
DOOR AND SASH CLAMP.

No. 249,568.

Patented Nov. 15, 1881.



WITNESSES:

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INVENTOR:

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BY

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UNITED STATES PATENT OFFICE.

ATLEY W. ALE, OF CARO, MICHIGAN.

DOOR AND SASH CLAMP.

SPECIFICATION forming part of Letters Patent No. 249,568, dated November 15, 1881.

Application filed May 13, 1881. (No model.)

To all whom it may concern:

Be it known that I, ATLEY W. ALE, of Caro, in the county of Tuscola and State of Michigan, have invented a new and Improved Door and Sash Clamp, of which the following is a full, clear, and exact description.

My improvements relate to clamping tables or benches for holding doors and sashes during the process of their manufacture. The invention consists in a novel combination of levers and locking devices, whereby the door or sash can be clamped equally upon all sides and at one operation, as hereinafter described.

In the accompanying drawings, Figure 1 is a side elevation, partially sectional, of the apparatus. Fig. 2 is a plan view of the same, and Fig. 3 is an end view, partially in section.

Similar letters of reference indicate corresponding parts.

A is the bed-frame carrying the mechanism. *a* is the operating-shaft, extending the whole length of the frame, and sustained in bearings in the lower cross-bars of the legs.

b b b are hubs, fixed on shaft *a*, formed with arms at opposite sides, that serve as crank-arms. One end hub is fitted on the shaft, so as to be movable endwise thereon, to allow adjustment.

c c c are cross-bars, preferably of metal, secured upon the top of the frame A.

d d are bars extending upon the frame lengthwise, fitted near one end with ear-pieces or stops *d'*, held in place by set-screws, to allow adjustment, and fitted near their other end with clamping-slides *e*.

f is a cross-shaft, sustained in suitable bearings on the legs of frame A, and connected with shaft *a* by a link and crank-arms *f'*, so that the movement of shaft *a* shall be communicated to shaft *f*. Gearing may be substituted for the link-connection, if desired.

g g are crank-arms on shaft *f*.

h h are slides upon the bars *c*, notched at their outer ends and formed with lugs or flanges at their inner ends, in which are fitted bars *i i*, that extend lengthwise of the frame A.

k k are movable ear-pieces fitted on the bars *i*.

l l are levers, connected by links *l'* with the arms of hubs *b* of shaft *a*, and extending through apertures in bars *c* to the slides *h*, with which the levers connect by lugs or pins taking into the notches.

m m are levers, connected to the arms *g* of shaft *f* by links in and passing to the slides *e* through apertures in bars *d*. 55

On the end of the shaft *a* is a hand-lever, *n*, and also a ratchet-wheel, *o*, and pawl. When the lever *n* is turned back the connecting-links are slackened, so that the slides *h*, bars *d*, and the clamping-slides *e* can be set up closely to the work which is to be laid upon the bars *d i*. Then by reversing the lever *n*, to give the shafts *a f* a quarter turn, the levers *l m* are thrown outward at their lower ends and the slides *h e* moved simultaneously inward against the sides and ends of the door or sash, and at the same time tightened upon their sustaining-bars *c i*. The door or sash is thus squarely and securely clamped. 60 65

The construction as described gives powerful leverage, while but a short movement of the operating-lever is required. 70

Any ordinary-sized door, sash, or blind can be clamped in the machine.

To provide for narrow work, the bars *c* have apertures within the sides of frame A, so that the levers *l* can be shifted thereto. 75

I am aware that it is not new to combine adjustable clamping-bars, slides, operating-shafts, arm, rock-shaft, and operating-lever with a table having raised frames; but 80

What I claim is—

1. The shaft *a*, having hubs *b*, with crank-arms at opposite sides, one hub being movable, in combination with the cross-bars *c*, bars having adjustable stops *d'*, with clamping-slides *e*, the cross-shaft *f*, connected by link and crank-arms with shaft *a*, the slides *h*, carrying bars *i*, and the levers *l*, connected by links with hub-arms extending through bars *c*, and connecting by notches and lugs with the slides *h*, as and for the purpose specified. 85 90

2. The combination, with the apertured bars *d*, the shaft *f*, having arms *g*, and the slides *e*, of the levers *m m*, connected by links *m'* with said arms, and passing through bars *d* to slides *e*, as shown and described. 95

ATLEY W. ALE.

Witnesses:

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CYRENEUS P. BLACK.