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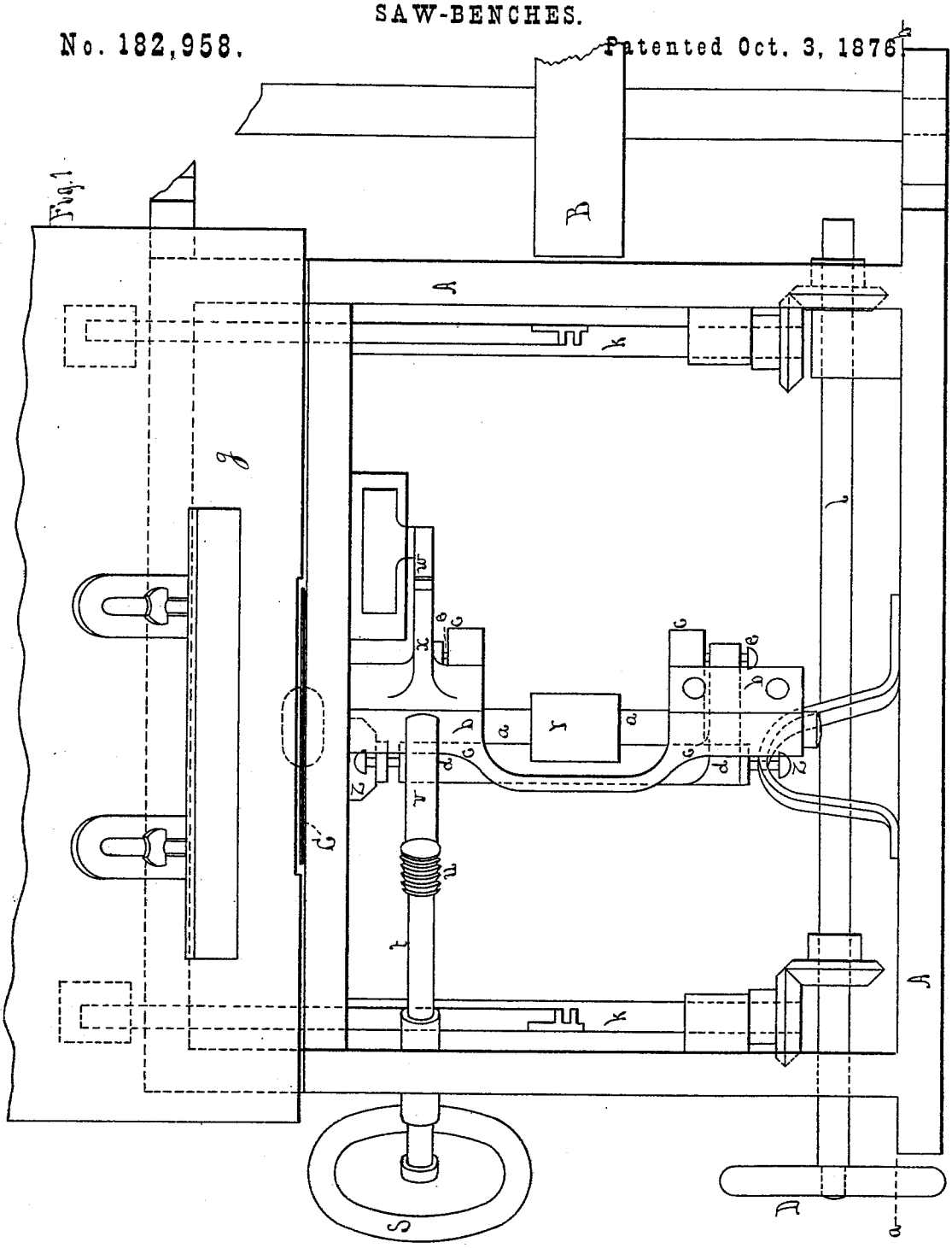
D. H. RICE & J. W. MURKLAND.

SAW-BENCHES.

No. 182,958. Patented Oct. 3, 1876.

Fig. 1.



Witnesses
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3 Sheets—Sheet 2.

D. H. RICE & J. W. MURKLAND.

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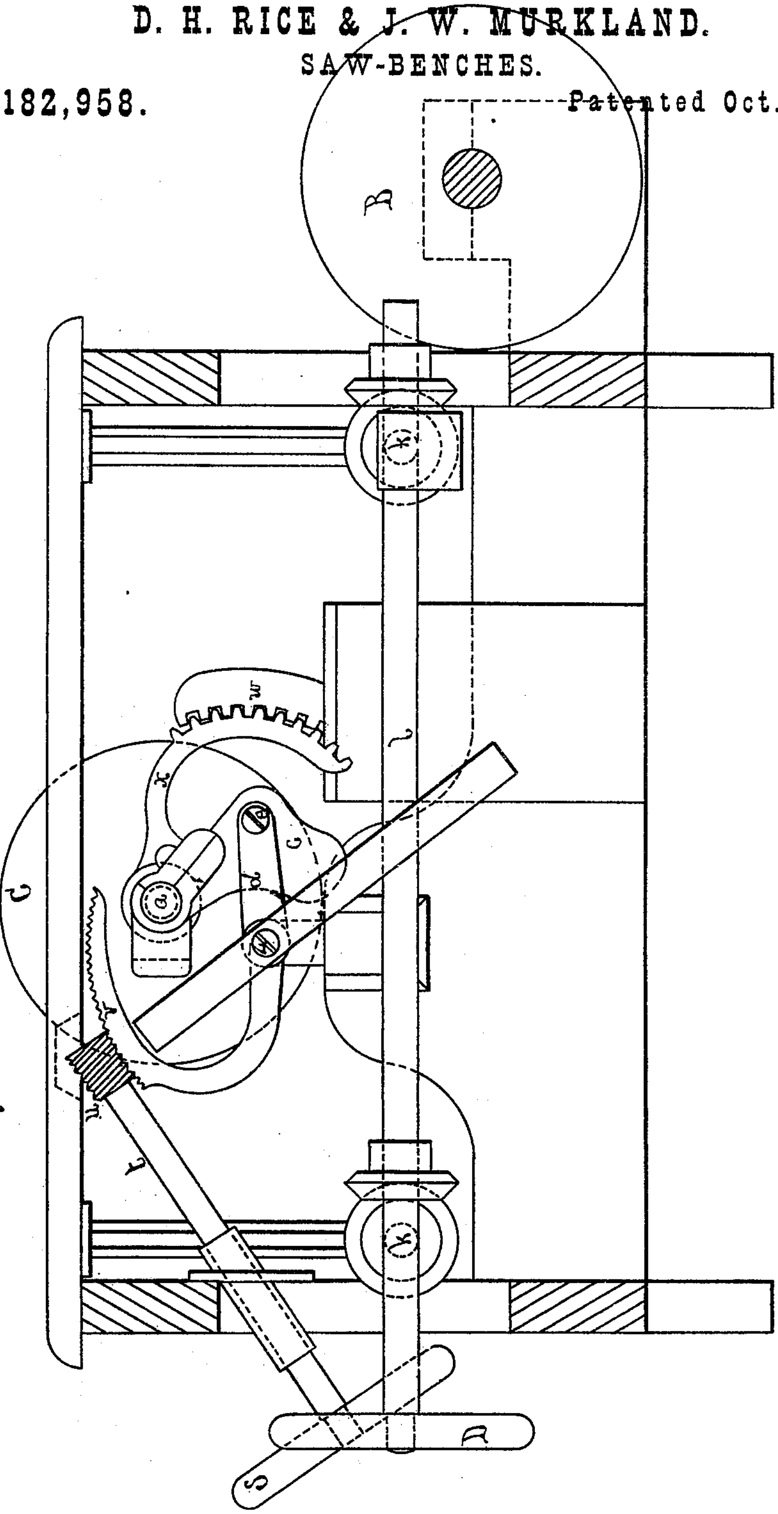

Fig. 2.

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SAW-BENCHES.

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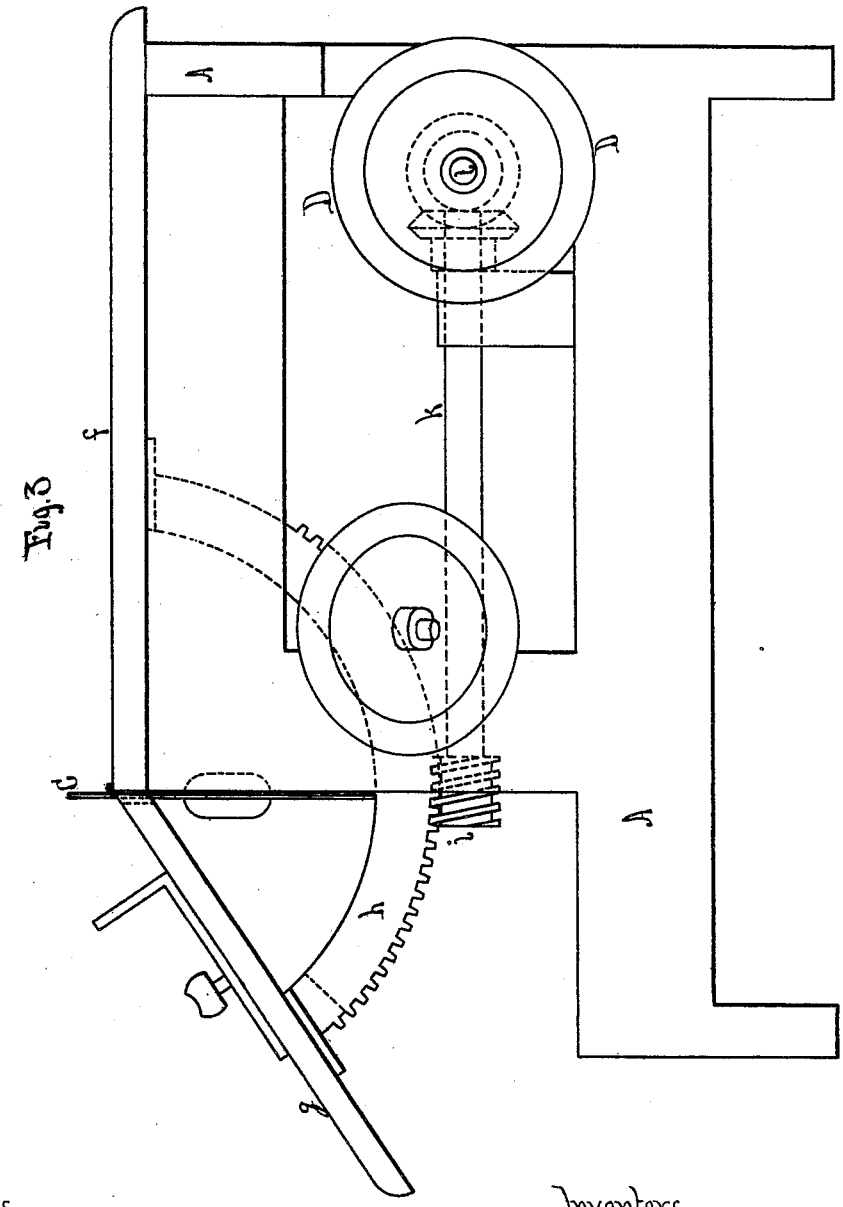

Fig. 3

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UNITED STATES PATENT OFFICE.

DAVID HALL RICE AND JOHN W. MURKLAND, OF LOWELL, MASSACHUSETTS; SAID MURKLAND ASSIGNOR TO SAID RICE.

IMPROVEMENT IN SAW-BENCHES.

Specification forming part of Letters Patent No. **182,958**, dated October 3, 1876; application filed October 2, 1875.

To all whom it may concern:

Be it known that we, DAVID HALL RICE and JOHN W. MURKLAND, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Adjustable Saw-Benches, of which the following is a specification:

Our improvements are a modification or improvement upon our invention patented to us March 2, 1875, No. 160,350, whereby we are enabled to use a pair of frames combined at their centers, and working thereon to move the saw-mandrel up and down instead of the disks shown in that patent, the object of this being to simplify the said former invention, cheapen its cost, and make it more perfect in operation.

In the drawings, Figure 1 is a top plan view of our improved saw-bench, with part of the stationary portion of the table-top removed, showing the saw-adjusting mechanism. Fig. 2 is a side elevation of the same. Fig. 3 is an end view of the same, showing the combination of the adjustable saw with the inclined and stationary parts of the table.

A is the frame of the saw-bench. B is the driving-pulley, by which the saw-mandrel is driven, in the usual way. C is the saw, groover, or analogous cutting instrument. The saw is hung upon a mandrel, *a*, secured in boxes *b b* in a frame, *c*. This frame *c* is hung and swings within another frame, *d*, upon the points of the set or center screws *e e*. These screws pass through the projecting arms or ends of the frame *d*, and into the sides of the frame *c*, as shown. The frame *d* is itself hung or suspended upon the frame of the bench, by means of the set or center screws passing through studs upon the frame of the bench, and projecting into the frame *d*, so that it can swing upon them. These screws are lettered *z z*. Upon the frame *c* is attached an arm, *x*, on which is formed the segment of a gear-wheel, which meshes into the stationary concave rack *w*, the latter being firmly secured to the frame of the saw-bench. On the frame *d* is attached an arm, *v*, in the upper side of which is formed a worm-gear, as shown, into which the worm *u* turns. The worm *u* is attached to the shaft *t*, to which is attached the hand-wheel *s*, the central part of the shaft revolving in a box secured to the saw-bench frame. The arms or sides of the frame *d*, being made of the proper length from the set-screws *z* to the set-screws *e*, and the shaft *a* being set in the frame *c* at the proper distance from the set-screws *e* in proportion to the distance from the shaft *a* to the driving-pulley B, the frames *c* and *d* are held from swinging out of position by the rack *w* and worm *u*, respectively.

In order to raise and lower the saw, it is only necessary to turn the hand-wheel *s*, when the joint action of the frames *c* and *d* will carry the saw-mandrel *a* up or down in the arc of a circle, whose center is that of the driving-pulley B, and thus keep the tension of the belt from the latter to the pulley *r* on the shaft *a*, always uniform. This is accomplished by maintaining the proportions of the various parts to each other, as above described.

It will be observed that by this improvement we dispense with much of the labor of fitting and adjusting parts described in our former patent, and produce a more simple and solid machine in construction.

Our saw-table is constructed with one part, *f*, extending up to the plane of the saw C, fastened solidly to the frame A, while the other part *g* is made to be adjusted on an incline by the curved arms *h* sliding in curved grooves or guideways attached to the frame A. In the arms *h* are made worm-gears, into which worms *i i*, on the shafts *k k*, work, the latter being driven by the shaft *l* with bevel-gears, as shown. On the shaft *l* is fixed the hand-wheel D, to revolve it, and adjust the incline of the table-top *g*. The curved arms *h* are made on the arc of a circle, whose center is the upper inside corner of the top *g*, next the saw C, and lying in the plane of the latter, and by this means the upper inside corner of the table *g* always remains in the same plane and on the same level, whatever the inclination of the top. This gives the saw-table great capacity in sawing miters, bevels, &c., at the same time that it will saw right angles on the table *f*, and the combination of this bevel top

with the adjustable saw allows the latter to cut any given depth on any given angle within its capacity without difficulty.

By adjusting the top *g* to the level of the top *f* it also has all the capacity and size of table of an ordinary saw-bench.

Among the advantages of making the part *g* of the saw-table alone adjustable, as described, is, greater lightness of parts and a larger table than can be successfully used if the whole table-top were made to incline at once.

What we claim as new, and our invention, is—

The combination of the frame *d*, attached to the same-bench frame, with the frame *c*, and mandrel *a*, substantially as described.

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JOHN W. MURKLAND.

Witnesses:
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