

(No Model.)

2 Sheets—Sheet 1.

J. B. SHENGLE.
DOWELING MACHINE.

No. 446,954.

Patented Feb. 24, 1891.

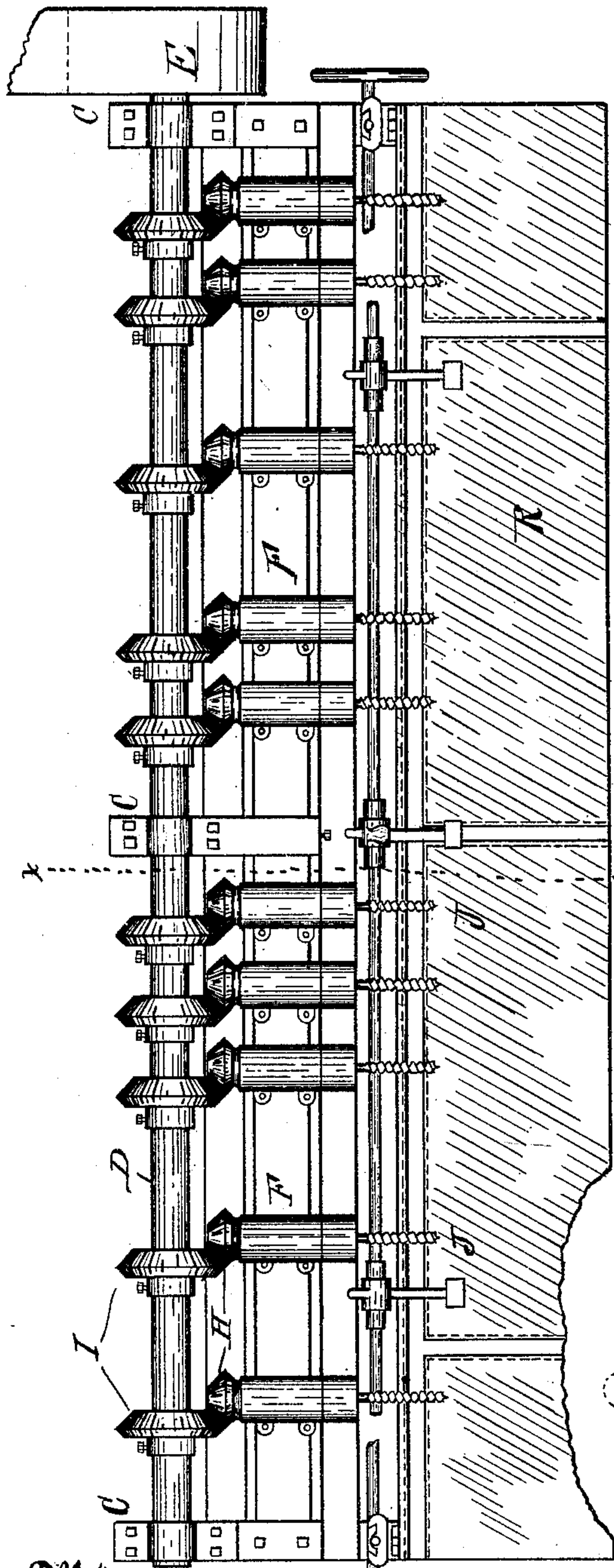


Fig. 1.

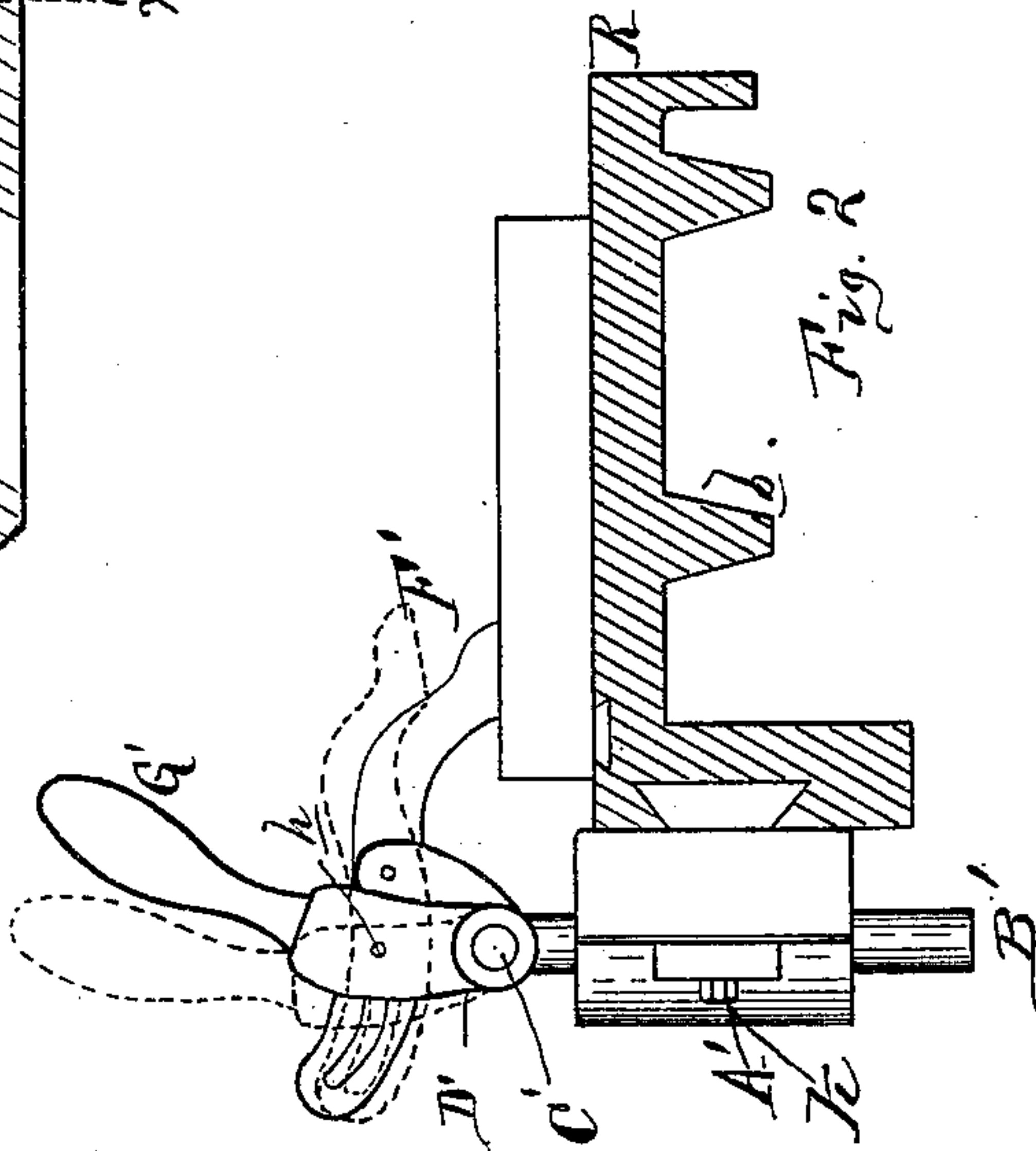


Fig. 2.

Witnesses

W. M. C. J.
Henry H. Johnson

Inventor

John B. Shengle
By *Osborne & Co.* Attorneys

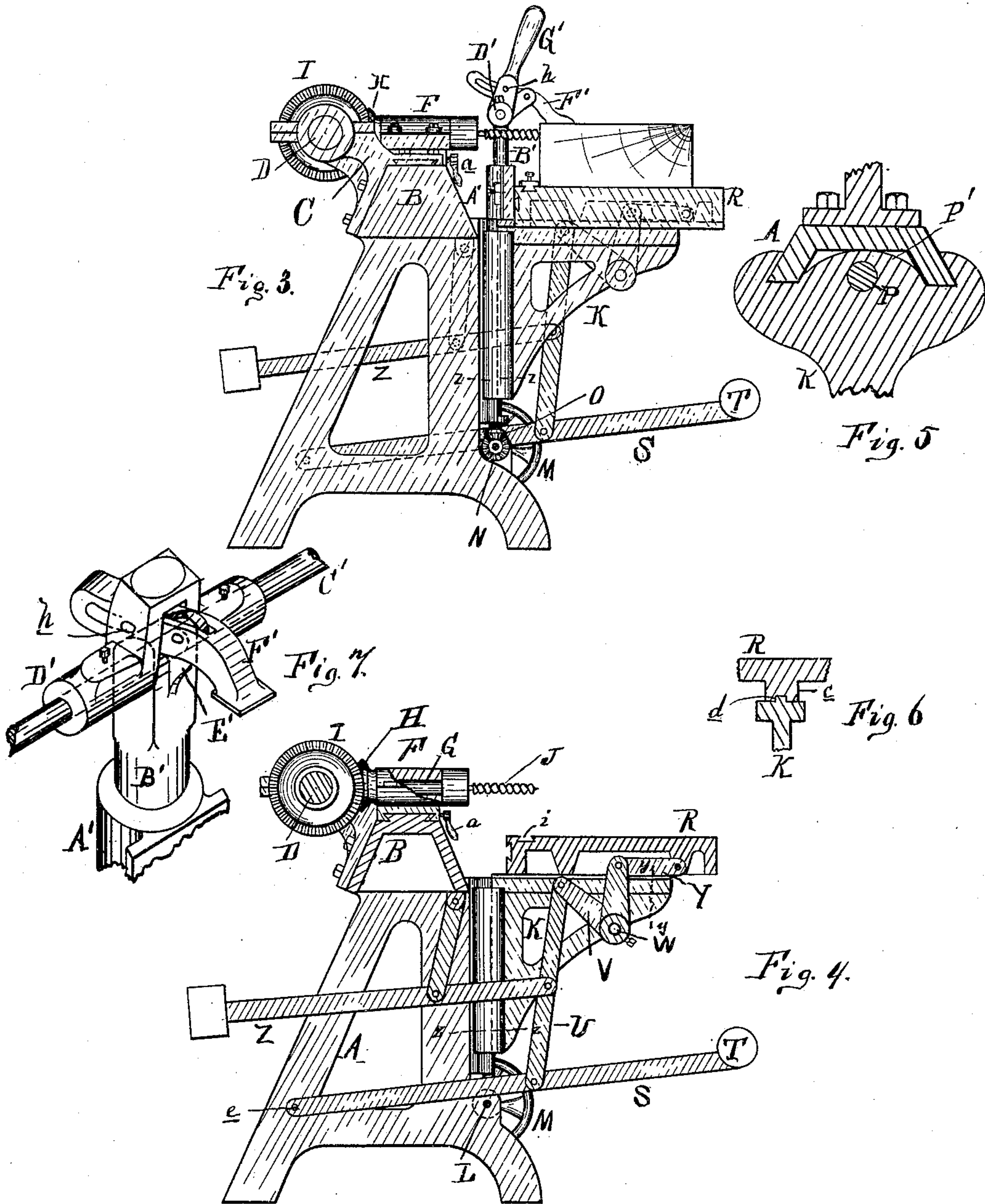
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By *Osborne* Attorney
Osborne

UNITED STATES PATENT OFFICE.

JOHN B. SHENGLE, OF CLEVELAND, OHIO, ASSIGNOR TO McALLISTER & DALL,
OF SAME PLACE.

DOWELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 446,954, dated February 24, 1891.

Application filed March 11, 1890. Serial No. 343,538. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. SHENGLE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Doweling-Machines, of which the following, with the accompanying drawings, is a specification.

This invention relates to certain new and useful improvements in doweling-machines.

The object of the invention is to construct a machine in the use of which the stiles and rails of doors may be bored to receive the dowel-pins at different distances apart, but upon the same horizontal line.

The invention consists in the peculiar construction and arrangement of the boring apparatus proper, whereby lateral adjustment of the bits upon the bed of the machine is obtained; in the construction of and means employed for vertically adjusting the movable table, upon which is placed the material to be operated upon; in the construction and operation of the clamps, and in the peculiar construction, arrangement, and various combinations of the parts, all as more fully hereinafter set forth, and pointed out in the claims.

Figure 1 is a top plan of my improved doweling-machine. Fig. 2 is an enlarged vertical section through the adjustable table, showing one of the clamps in elevation. Fig. 3 is an end elevation. Fig. 4 is a vertical cross-section on the line $x x$ in Fig. 1. Fig. 5 is an enlarged section on line $z z$ in Fig. 4. Fig. 6 is a similar view on line $y y$ same figure. Fig. 7 is an enlarged perspective view of one of the clamps.

In the accompanying drawings, which form a part of this specification, A represents the frames which support the operating parts of the device. Upon the top of the frame A is rigidly secured a bed B, which carries rearwardly-projecting brackets C, in which is properly journaled the driving-shaft D, to one end of which is secured a pulley E, by means of which the said shaft may be rotated from any convenient power.

The upper face of the bed B is formed as a dovetail way, with which engage the sliding boxes F, and which latter are provided with

suitable set-screws a , by means of which the said boxes may be secured to their adjusted positions in the longitudinal direction of the shaft or bed of the machine. In each of these boxes F is properly journaled a shaft or bit-stock G, the rear end of which carries a bevel-pinion H, adapted to mesh with a similar bevel-pinion I upon the shaft D, said pinions I being adjustable in the longitudinal direction of the shaft to positions relative to the boxes F. In the forward ends of these bit-stocks are secured the desired bits J.

The front vertical edges of the frames A are formed as dovetail ways, with which engage the vertical arms of the brackets K. A rod or shaft L is properly journaled in suitable bearings across the front of the frames, and is provided with a hand-wheel M, by means of which it may be rotated. N are bevel-pinions secured upon the shaft L, said pinions being adapted to mesh with similar pinions O upon the lower ends of the threaded rods P, which latter engage with a threaded opening in a rearwardly-projecting lug P', formed on the back of the vertical arm of the bracket K, as shown in Fig. 5, the parts being so constructed and arranged that as the shaft L is rotated the brackets K may be either raised or lowered, as may be desired.

R represents the table of the machine, upon which is placed the material to be operated upon. This table I preferably make of cast-iron, provided with longitudinal and lateral strengthening-ribs b and c , respectively, upon its under face. In the lateral ribs c , which are coincident with the upper edges of the brackets K, are formed guide grooves or channels adapted to engage with guide-ribs d , formed on the upper edges of the brackets in such manner that said table may have a lateral sliding movement upon the brackets.

S is a treadle-lever, one end being fulcrumed, as at e , to each end frame A, their outer ends being connected together by a foot bar or rail T. Each of these levers S is connected by a bar U to one arm of a bell-crank lever V, secured upon a rod W, extending between the brackets K, the other arm of such bell-crank lever being connected to the table by links Y, this arrangement being such that as the

treadle-lever is raised or lowered the table R may be retracted from or advanced toward the bits. To facilitate this movement of the table, I suspend a counterweighted lever Z
5 from the bed B and pivotally connect the end of such lever Z to the bar U, as shown in Fig. 4.

In the rear edge or face of the table R is formed a dovetail way, with which engages a
10 series of two or more sliding boxes A', which carry the vertically-adjustable rods B', Figs. 2 and 8. These rods B' are adapted to have a vertical movement through the sliding boxes A', through which latter is tapped a
15 set-screw, (not shown,) by means of which the said rods B' may be secured in their vertically-adjusted positions; or, if preferred, the sliding boxes A' may be formed in halves, as shown in Fig. 2, in which case the rods B' are
20 clamped between the two parts of the boxes by means of the bolts k, which secure the parts of the boxes together. A rock-shaft C' passes through the upper ends of these rods B', and also through the bifurcated castings
25 D', which are secured upon the shaft C'. An arm E' projects from the upper ends of the rods B', and to each of these arms a clamp F' is pivotally secured, the rear end of such clamp being slotted and extending back
30 through the bifurcated casting D', a pin h engaging with the slot, as is clearly shown in Fig. 8. One of the castings D', preferably the center one, is provided with a handle G', by means of which the rock-shaft may be par-
35 tially rotated, so as to depress the clamps F' upon the material being operated upon, or to raise them from the work after the dowel-holes have been formed, as shown in Figs. 2 and 3.

40 By the employment of a machine of this character and general construction it will

readily be seen that dowels may easily be bored in door stiles and rails at different distances apart and yet upon the same horizontal plane. It will also be seen that by verti- 45 cally adjusting the table R the work may be brought into such relative position with the bits as to form the dowel-holes at the center of the work or upon either side thereof, as may be desired. 50

What I claim as my invention is—

1. In combination with the table of a dowing-machine, a series of castings adjustable in the longitudinal direction of said table, vertically-adjustable rods carried by said ad- 55 justable castings, a rock-shaft passing through the upper ends of said vertically-adjustable rods and carrying a series of bifurcated castings, which engage with clamps pivotally secured to the said rod, the parts being so con- 60 structed and arranged as to depress the said clamps upon the work being operated upon as the said shaft is partially rotated, substantially as described.

2. In a machine of the character described, 65 a supporting-bed B, provided with adjustable sliding boxes F, bit-stocks G, journaled in said sliding boxes, pinions H and I, and driving-shaft D, in combination with adjustable clamps F', adapted to be simultaneously 70 actuated by means of a rock-shaft C', the parts being constructed, arranged, and operating substantially in the manner and for the purposes described.

In testimony whereof I affix my signature, 75 in presence of two witnesses, this 21st day of January, 1890.

JOHN B. SHENGLE.

Witnesses:

H. S. SPRAGUE,
W. M. COPE.