

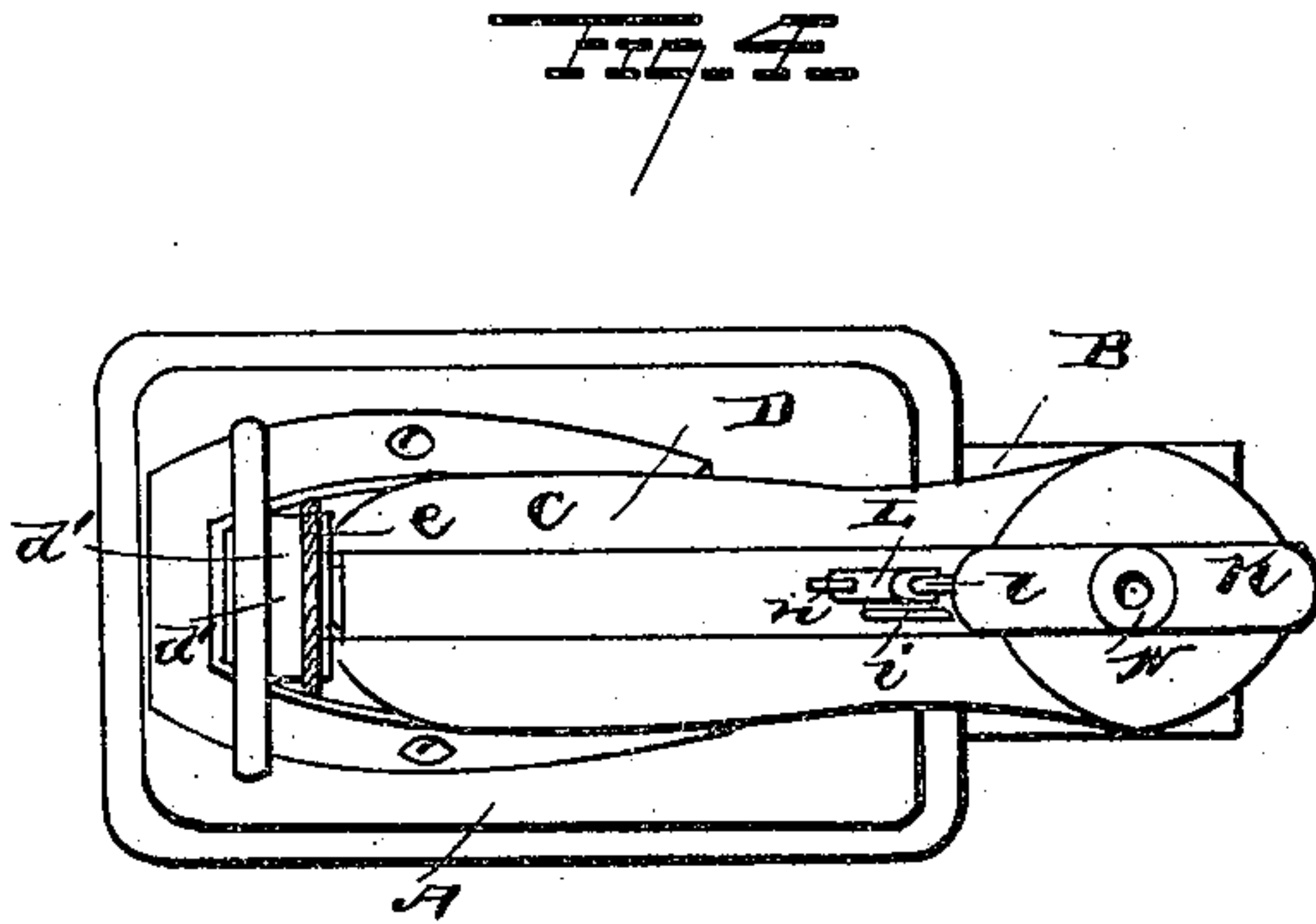
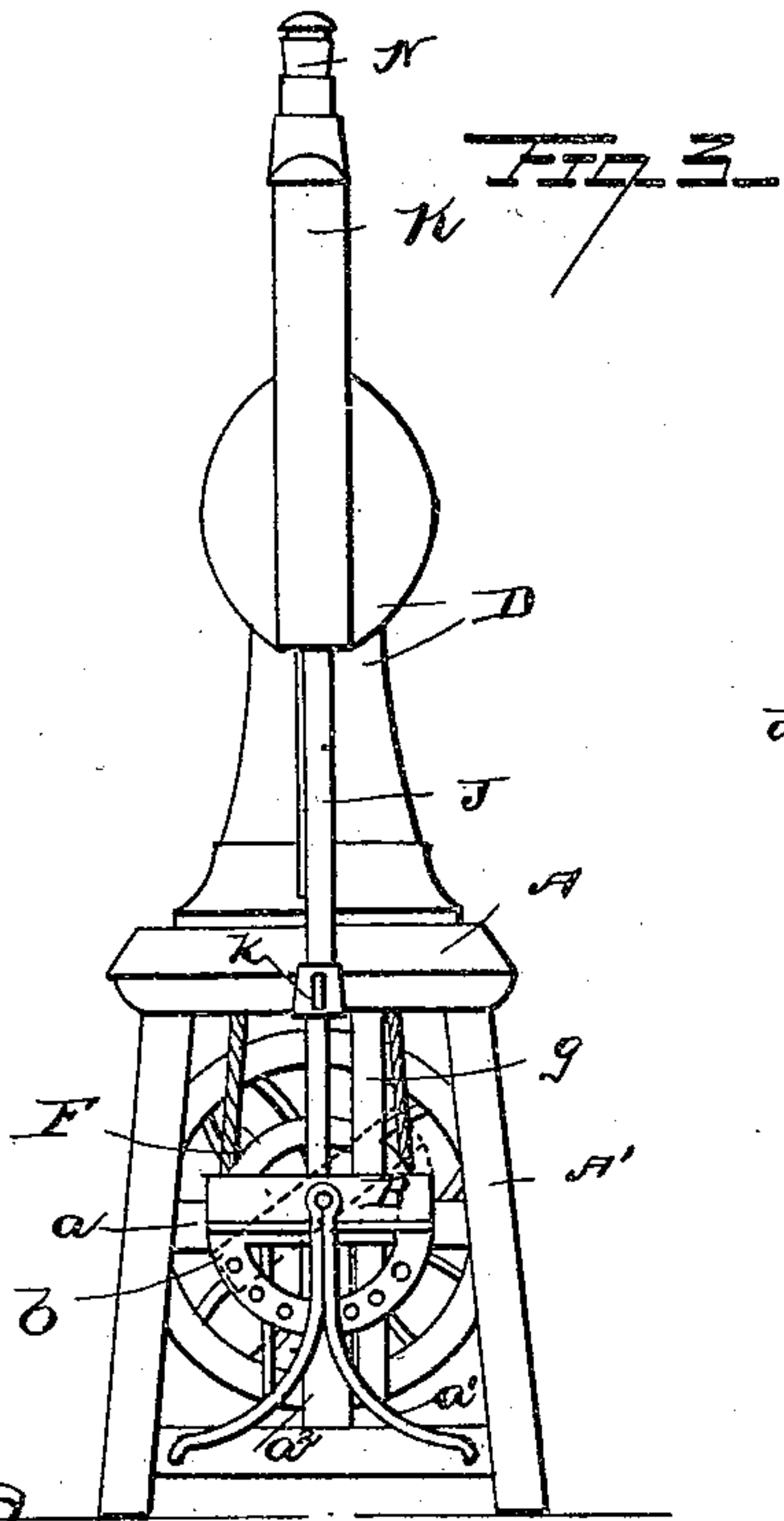
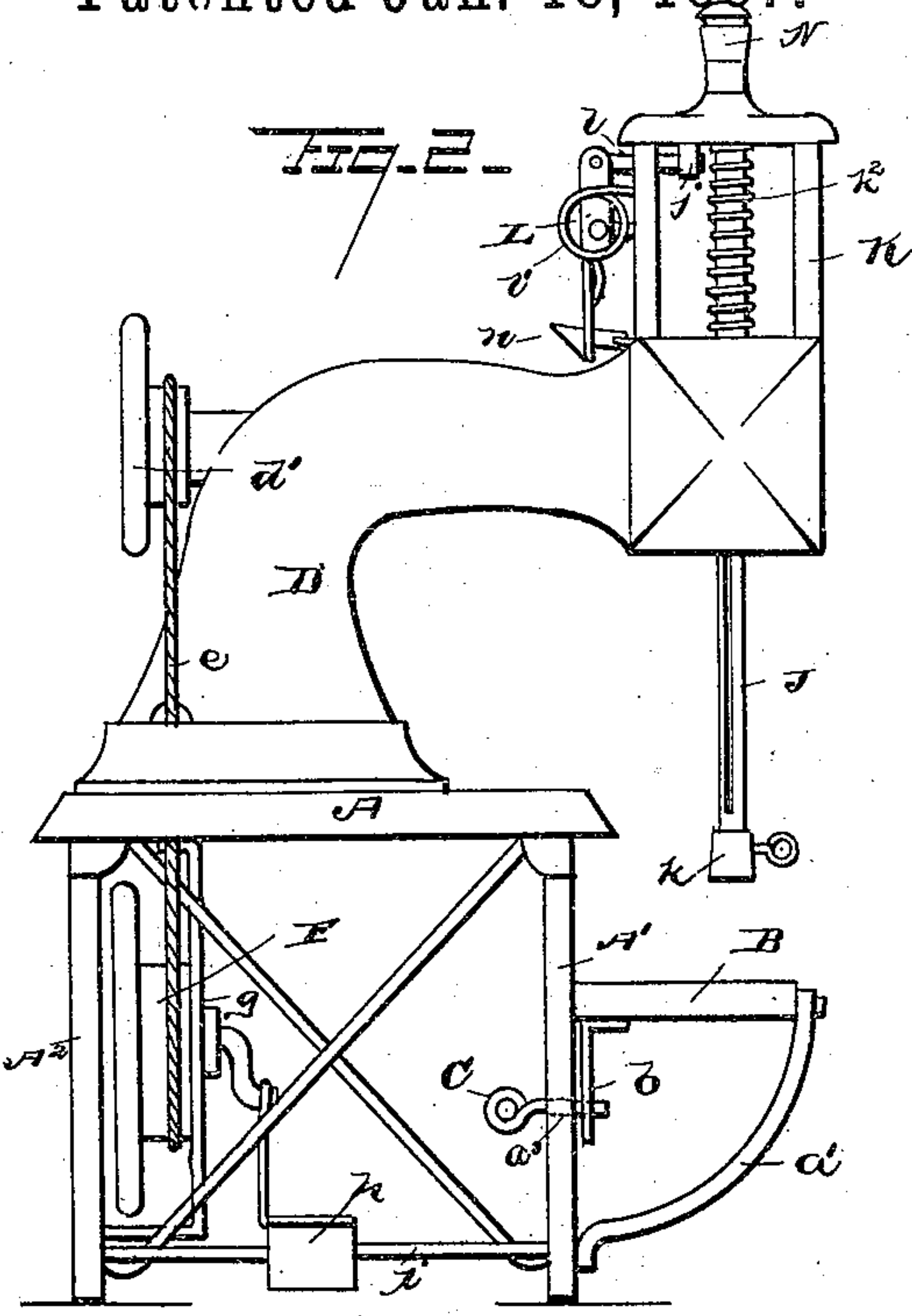
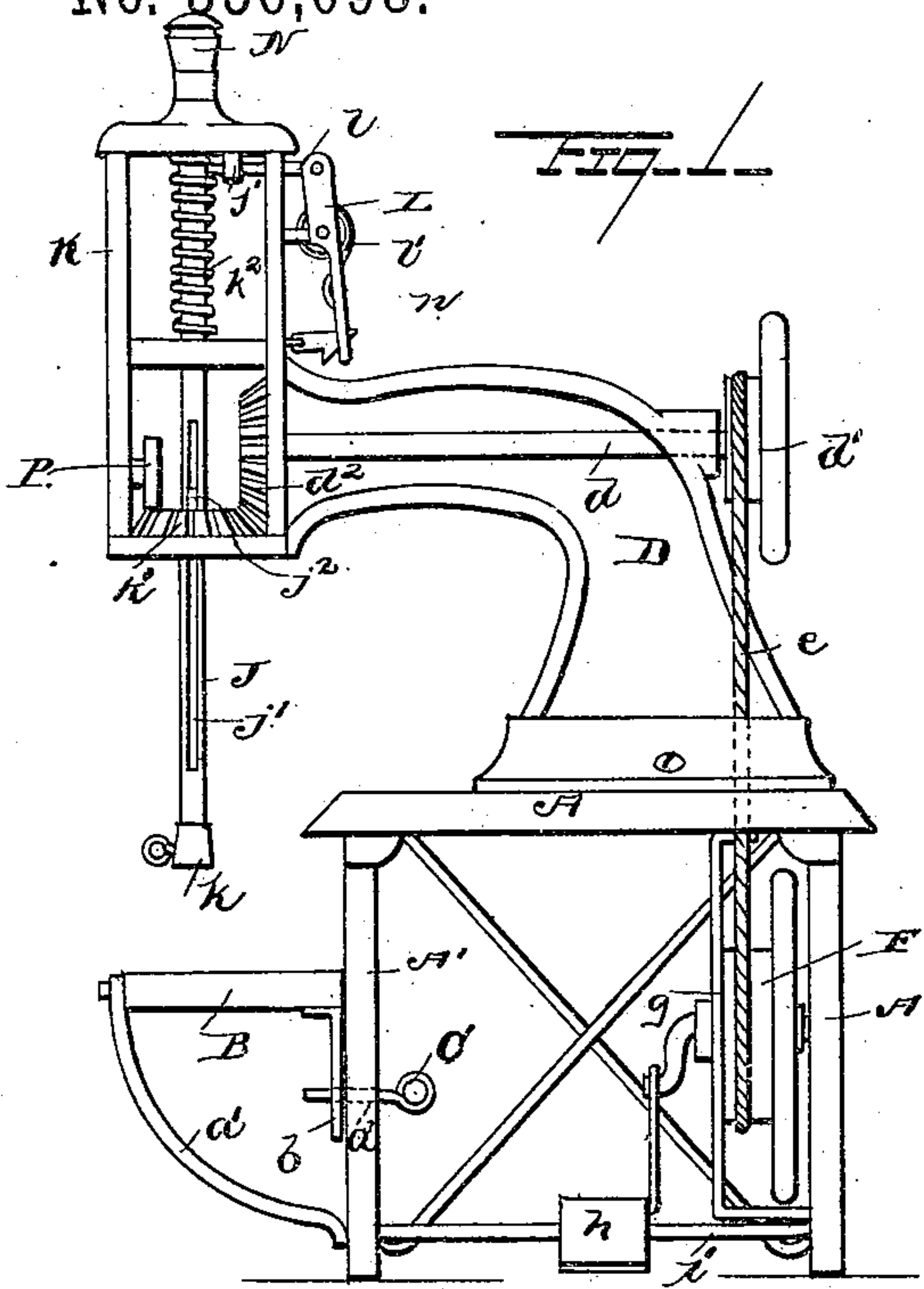
(No Model.)

H. F. BUNDY.

MACHINE FOR BORING WOOD OR METAL.

No. 356,098.

Patented Jan. 18, 1887.



Witnesses

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MACHINE FOR BORING WOOD OR METAL.

SPECIFICATION forming part of Letters Patent No. 356,098, dated January 18, 1887.

Application filed July 8, 1886. Serial No. 207,483. (No model.)

To all whom it may concern:

Be it known that I, HERBERT F. BUNDY, a citizen of the United States, residing at Welcome, in the county of Otsego and State of New York, have invented a new and useful Improvement in Machines for Boring Wood or Metal, of which the following is a specification.

This invention relates to machines for boring wood or metal; and the object of the invention is to simplify the construction of this class of machines, to facilitate their operation, and to enlarge their capacity.

To the above purposes the invention consists in certain peculiar and novel details of construction and combination, as hereinafter described and claimed.

In order that the invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved machine with the side of the casing removed. Fig. 2 is a side view taken from the opposite side. Fig. 3 is an end elevation of the machine. Fig. 4 is a plan view.

In the said drawings, A designates the face or bed of the machine, and A' A² designate suitable supports for the standards of the same.

B designates a rest which is pivoted upon a cross-piece, a, of the standard A', and also upon the upper end of a bracket, a', extending upward and outward from the lower part of said standard.

b designates a segment having a series of perforations, as shown, and secured upon the inner end of the rest B and depending downward therefrom.

a² designates a vertical piece extending upward from the base of the standard a' and connected at its upper end to the cross-piece A, and this vertical piece is provided with a perforation, a³, through which a pin, C, is inserted, said pin also entering into one of the perforations in the segment b. By virtue of this construction the rest B is capable of being turned upon its pivots, as indicated by dotted lines in Fig. 3, so as to bring the line of cut of the drill or boring-tool either directly or obliquely through the wooden or metal object to be operated upon.

D designates the supporting-housing upon which the operating parts connected directly with the drill or boring-tool are mounted. As shown in Fig. 1, the housing D is constructed with a removable section, e, and is hollow throughout. Within this housing D is mounted a horizontal driving-shaft, d, upon the outer end of which is a band-wheel, d', and the opposite end of said shaft carries a beveled gear-wheel, d². A suitable belt, e, extends down through the bed A and runs over the pulley F, which is journaled in a bracket, g, at one side, and in the standard A² at the opposite side. This band-wheel is driven by a treadle, h, upon a cross-bar, i, of the machine.

J designates the rod for actuating the drilling or boring tools, said rod extending vertically through the upper end of the casing and working at its upper end through a supplementary frame, K. The lower end of this rod carries the socket k to receive the tool, and within the upper end of the housing D a beveled gear-wheel, k', which meshes with the beveled gear d², before referred to.

Upon the upper part of the rod J is formed a screw-thread or worm, k², which is engaged at times by a sliding pin, l. This pin l is mounted upon the upper end of an actuating-lever, L, which is pivoted upon the frame K, as shown, and said pin works laterally through the said frame and a guide, j, thereon. A spring, l', mounted upon the frame K, engages the lever L below its pivot and tends to throw the lower end of said lever outward and the upper end inward. A hook-shaped catch, n, is pivoted to the lower part of the supplemental frame and passes outward through the lower part of the lever L. Thus when the lower end of the lever L is thrown inward the shoulder of the hook n drops over the lower end of the slot in the lever L and holds the pin l out of engagement with the worm or screw-thread of rod J, while if said catch n be raised so as to disengage the shoulders from the lever the spring l' will throw the sliding pin l into engagement with said screw or worm.

The upper end of the rod J may be provided with a swiveled head, N, upon which pressure may be applied, if desired, in boring the ground.

The vertical tool-carrying shaft J is provided with a longitudinal groove, j', at one

side, and in this groove is fitted a key or pin, j^2 , which is connected to the bevel gear-wheel K' , whereby the said wheel K' is caused to rotate the said rod J, and at the same time permit the latter to move longitudinally without partaking of its longitudinal movement. The gear-wheel rests upon the inner side of the housing D, and is thereby prevented from vertical movement in a downward direction with the rod or shaft J, and the reverse movement of the said wheel with the shaft is prevented by the bevel gear-wheel d^2 on one side and a friction-wheel, P, that is located at the opposite side of the wheel K' , the said friction-wheel merely resting upon the bevel gear-wheel and journaled on a suitable pin or shaft that is rigidly affixed or secured in the housing, as will be very readily understood.

The operation of this machine is as follows:
 20 The object to be drilled or bored is placed upon the rest B, said rest being placed either horizontally or obliquely, according to the direction of the cut desired. The tool-carrying rod or shaft is lifted by hand to the desired point, the
 25 sliding pin L having been first withdrawn from engagement with the screw or worm of the shaft or rod. Upon releasing the pull upon the pin, the spring impels it into engagement with the screw or worm on the tool-carrying
 30 shaft, and the machine is now in condition for operation. Power is applied to the foot-treadle, and is transmitted by the intermediate mechanism to the horizontal driving-shaft d , to rotate the tool-carrying rod or shaft J through
 35 the bevel gear-wheels d^2 K' . The tool-carrying shaft is thus given a rotary motion, and a longitudinal movement is imparted thereto by the pin engaging the screw or worm to feed the drill or boring-tool in the coupling N into
 40 the work. When the drilling or boring operation is completed, the sliding pin is withdrawn from engagement with the screw or worm on the tool-carrying shaft J, and held in this position by the latch n engaging the lower
 45 end of the pivoted lever L. The shaft J and the tool therein can now be readily and quickly raised to its upper limit, in readiness for continued operation.

It will thus be seen that the machine is sim-

ple and durable in construction, and is capable of making a great variety of cuts by virtue of the adjustment of the table B, and is also capable of being strictly adjusted either before or after making the cut.

Having thus described my invention, I claim—

1. In a boring and drilling machine, the combination of a horizontal driving-shaft, a vertical tool-carrying shaft having a longitudinal groove in which is fitted a spline of a gear-wheel that is fitted on the shaft and meshes with a similar wheel on the driving-shaft, the said tool-carrying shaft having a worm or screw at its upper end, a centrally-pivoted lever having a pin pivotally connected thereto at one end and passing through a suitable guide, j , a spring bearing against the lever to normally impel the pin connected thereto into engagement with the worm or screw on the vertical shaft, and a pivoted latch adapted to engage the free end of the lever to withdraw and retain the pin out of the path of the worm, substantially as described.

2. In a boring and drilling machine, the combination of a frame having the fixed transverse and vertical bars a a^2 , and the outwardly extending supporting-arm a' at one end, the swinging adjustable table B, pivoted in the transverse bar a and the supporting-arm a' , and having the perforated segment b rigidly affixed thereto at one end, the pin passing through one of the apertures of the segment and adapted to be removed to permit the table to be adjusted, and the vertical bar a^2 , to hold the table in its adjusted position, a horizontal driving-shaft journaled in the frame above the table, and a vertical tool-carrying shaft arranged above the vertical center of the table and geared to the driving-shaft, to be rotated thereby, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HERBERT F. BUNDY.

Witnesses:

MARY E. BUNDY,
 AMANDA GARDNER.