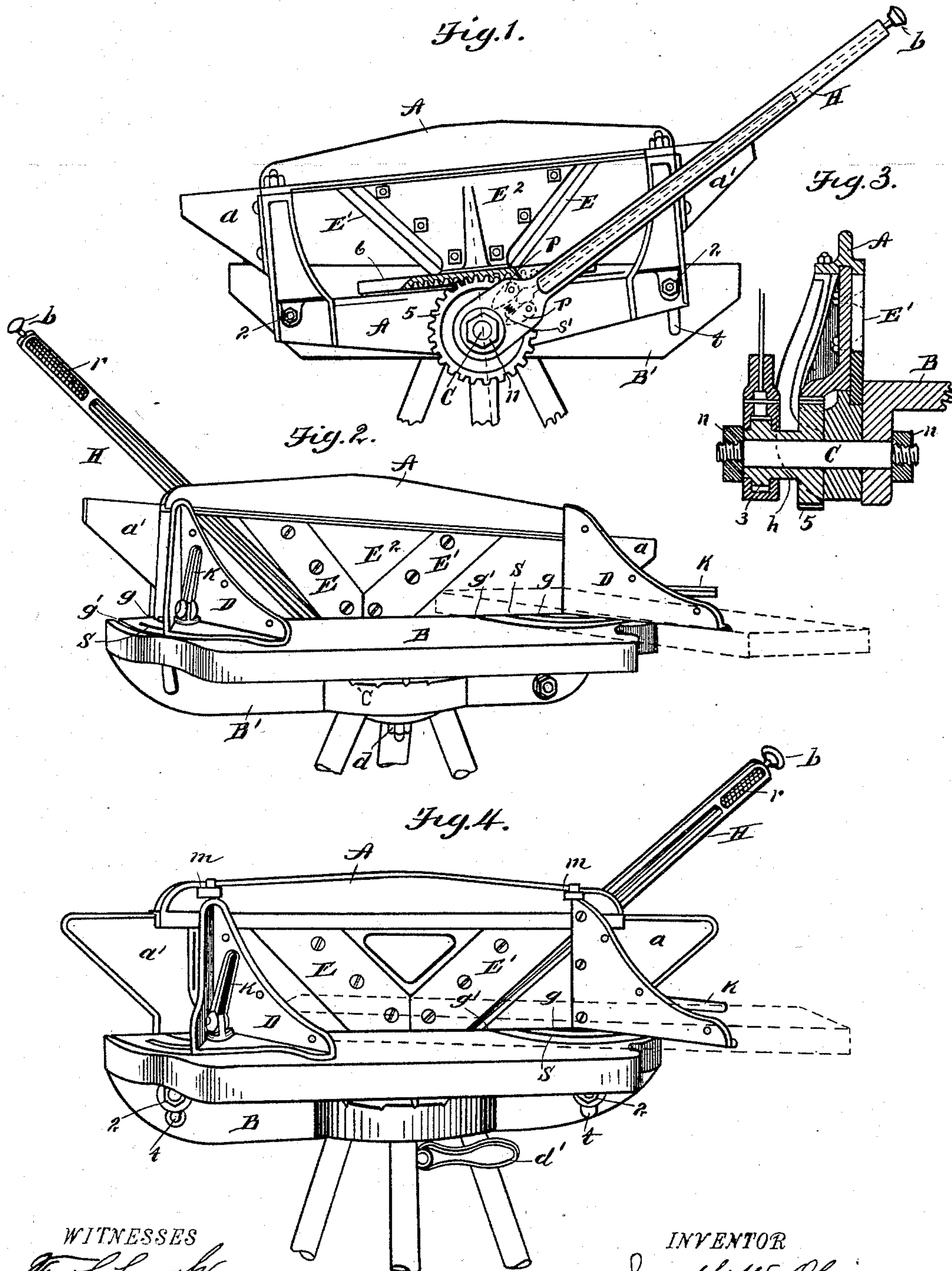


(No Model.)

J. W. OLIVER.
MITER CUTTING MACHINE.

No. 526,634.

Patented Sept. 25, 1894.



WITNESSES
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UNITED STATES PATENT OFFICE.

JOSEPH W. OLIVER, OF GRAND RAPIDS, MICHIGAN.

MITER-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 526,634, dated September 25, 1894.

Application filed May 26, 1891. Serial No. 394,181. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH W. OLIVER, a citizen of the United States, residing at Grand Rapids, in the county of Kent, State of Michigan, have invented certain new and useful Improvements in Miter-Cutting Machines; and I hereby declare the following, when taken in connection with the accompanying drawings, which form a part of this specification, to be a full, clear, and exact description of my invention.

This invention relates to miter cutting machines or trimming machines and has for its object improvements adapted to make them more positive in action and simpler in operation.

In the drawings, Figure 1, is a front elevation. Fig. 2, is a perspective seen from the rear. Fig. 3, is a section, lengthwise of the central bolt. Fig. 4 shows a trimmer with some modifications.

B, indicates the main table or bed plate of the machine at the front edge of which is a hanging flange B', and at the middle of the flange B', is a bolt hole through which passes the central pivot c, on which all the operative parts of the machine swing. These in the order in which they are located forward of the hanging flange B', are, first, the knife frame A; second, a spur gear 5, and united to the spur gear 5, is a ratchet wheel 3, spaced from the spur gear 5, but united to it by a neck h. On the neck h, and on a hub on the ratchet gear 3, is journaled the forked lower end of the ratchet actuating lever H. All these parts are held together by the pin c, and the two burrs n, n. The knife holding frame A, has at its ends, bolts 2, 2, which pass through holes in the frame A, and through slots t, t, in the hanging flange B'. The frame A, supported on the central bolt c, can swing until the track which it carries rests at an inclination to the surface of the bed B, and it can then be secured by the bolts 2, 2, in its inclined position.

The upper part of the frame A, is provided with a groove and the lower part with a feather, and secured within the frame held by the groove and the feather which engage in suitable running parts, is a knife plate E² to which are secured knives E, E'. The cutting edges of these knives diverge from each

other at an angle of about ninety degrees. They are arranged to shear closely with the front side of the bed B.

At the ends of the frame beyond the posts which support the upper bar of the frame, are two extensions a, a', arranged to guard the edges of the knives from being accidentally struck by anything that will injure them or by anything that they will injure.

The knife plate E², is reciprocated by the lever H, the lower end of which is forked, and which carries between the prongs of the fork a double pawl p, p', one part of which engages the teeth of the ratchet wheel when the lever is actuated with a right hand motion, and the other part of which engages with the ratchet wheel when the lever is actuated with a left hand motion. Both the pawls can be thrown out of engagement when it is desired to do so by pushing inward the arrow headed plunger b, the head of which acts as a wedge between the nearly parallel pawls and spreads the points of the pawls apart from one another throwing both out of engagement with the ratchet wheel. Normally the points are held in engagement with the wheel by a spring s'. The plunger b, is normally held in position to leave the pawls free to act by a spring r.

On the knife frame E², is a rack 6, of which the teeth are presented downward thus protecting the teeth from dust, dirt, shavings, &c.

At each end of the bed B, are adjustable gages D, which regulate the angle at which the work is presented to the knives.

The guides D, are triangular in horizontal cross section and provided with dowels on the bottom which engage in two grooves g, g', in the bed-plate. These grooves are circular arcs concentric, and having their common center in a line which forms the meeting edge or shearing edge between the knives E', and the front angle of the gage. Between the grooves g, g', is a groove S, through which passes a bolt having a head on the lower side of the table, and the upper end of the bolt passes through the base plate of the gage D, where it engages with a cam lever K, and by means of the bolt and the cam lever the gage can be secured in any desired position.

In the modification shown in Fig. 4, there are on the knife frame A, two lugs m, through

which pass pins rising from the upper side of the gages. When these pins are employed in connection with the lugs the knife frame must be secured rigidly to the hanging flange 5 B', so that it will not swing on the pin c.

The entire machine is supported preferably on a tripod and is placed on the head C', of the tripod, and is secured thereto by a screw d, (as shown in Fig. 2,) or by a clamp 10 d', as shown in Fig. 4.

The entire machine is adjustable around the head of the tripod.

What I claim is—

1. In a miter cutting machine, the combination of the bed B, the centrally pivoted, vertically swinging frame A, knife plate E², sliding therein, the inverted rack and gear wheel, the actuating lever and the bolt c, uniting the swinging parts to the bed B.

20 2. In a miter cutting machine, the combination of a centrally pivoted, vertically swinging knife frame, knives adapted to slide therein, an actuating lever pivoted on the knife frame pivot and means intermediate

the lever and knives whereby the knives are 25 actuated, the bed having concentric grooves at each end and gages with projections extending into said grooves, and means for locking the gages to the bed, substantially as described. 30

3. In a miter cutting machine, the combination of a centrally pivoted, vertically swinging frame and knives sliding therein, the tripod head C', means for securing the bed to the tripod head adjustably and means 35 for clamping the bed in its fixed position, substantially as and for the purpose specified.

4. In a miter cutting machine, the combination of the bed, B, with adjustable gages, the centrally pivoted, vertically swinging 40 frame, A, the sliding knife plate and knives E, the inverted rack and gear the actuating lever adjustable on said gear, substantially as described.

JOSEPH W. OLIVER.

Witnesses:

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