

(No Model.)

2 Sheets—Sheet 1.

T. J. RUCH.

SLATE DRESSING OR PLANING MACHINE.

No. 508,579.

Patented Nov. 14, 1893.

Fig. 1.

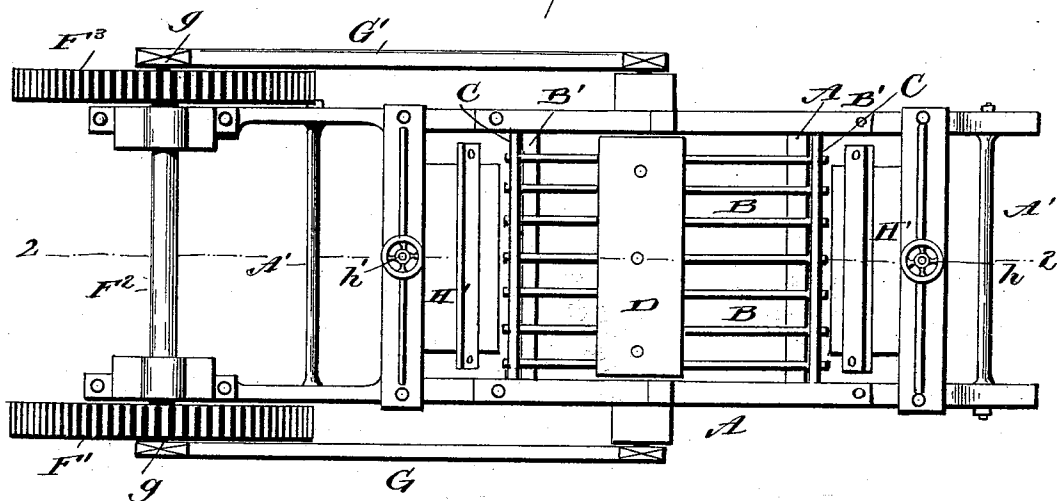


Fig. 2.

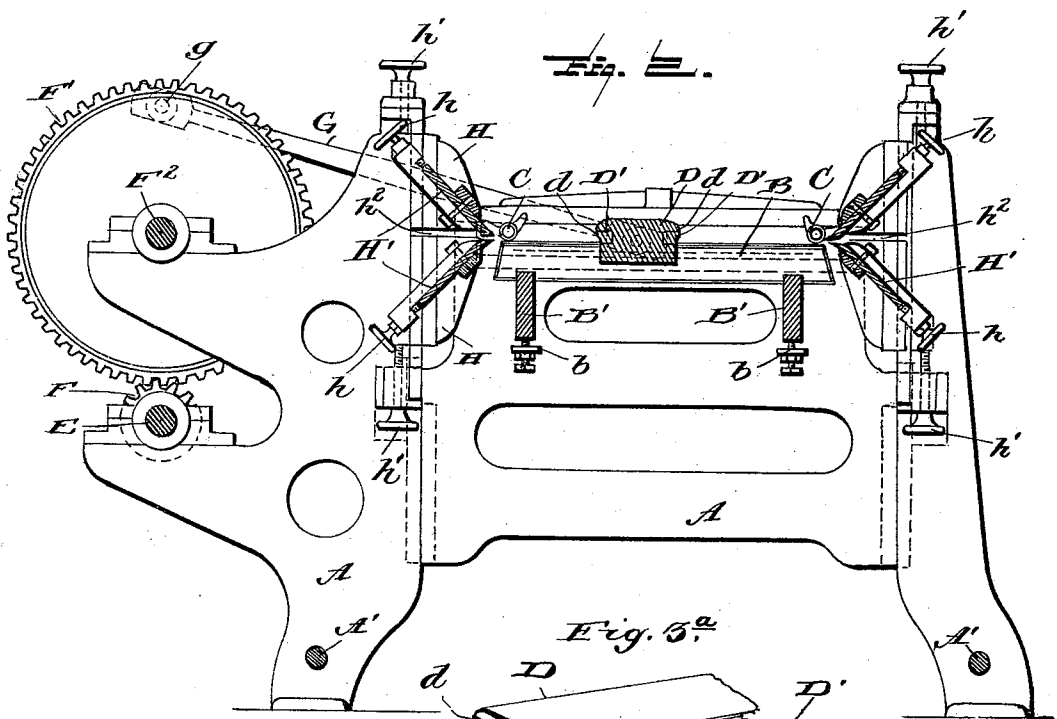


Fig. 3.



Witnesses

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Theo. J. Ruch,
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(No Model.)

2 Sheets—Sheet 2.

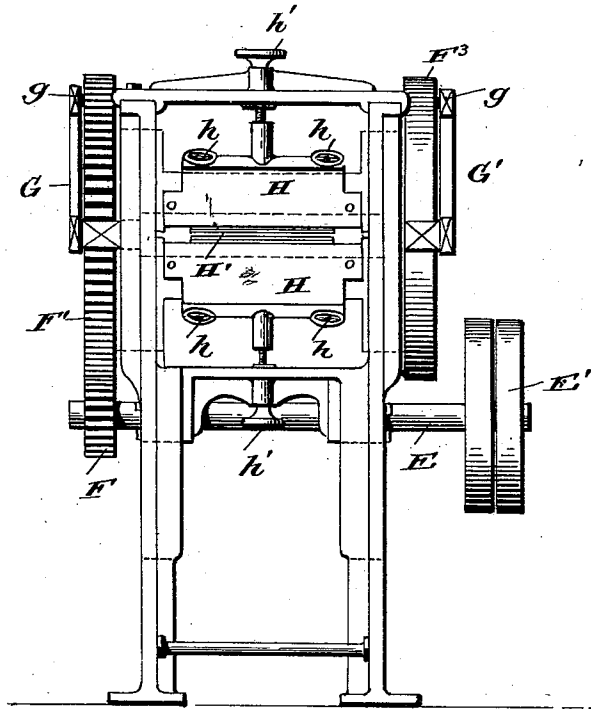
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UNITED STATES PATENT OFFICE.

THEODORE J. RUCH, OF BANGOR, PENNSYLVANIA.

SLATE DRESSING OR PLANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 508,579, dated November 14, 1893.

Application filed June 12, 1893. Serial No. 477,349. (No model.)

To all-whom it may concern:

Be it known that I, THEODORE J. RUCH, a citizen of the United States, residing in the borough of Bangor, in the county of Northampton, State of Pennsylvania, have invented certain new and useful Improvements in Slate Dressing or Planing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in slate dressing or planing machines, of that class in which two sets of knives are employed, and it has for its objects among others to provide an improved machine of this character in which the knives are stationary relative to the slate which is moved to the knives by means of a cross-head or carrier, suitable means being provided for holding the advancing end of the slate down upon the bed and thus preventing its turning up or warping. Provision is made for all the necessary adjustments of the knives and bed to adapt the machine for use upon slates of varying thicknesses and for planing more or less therefrom as may be desired.

30 The machine is simple in its construction, requires little or no attention on the part of the attendant except to feed the slate thereto, and is durable and efficient in its operation.

35 Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

40 Figure 1 is a plan view of my improved machine. Fig. 2 is a vertical longitudinal section through the same on the line 2—2 of Fig. 1. Fig. 3 is an end view. Fig. 3^a is a detail of a portion of the carrier with one of the blocks removed.

45 Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the frame-work of the machine which is designed to support the operating parts. Suitable cross-rods A' serve to brace it.

B is the table or bed upon which the slate is designed to slide. This table or bed is formed of strips or slats set upon edge as shown so as to form a practically open table or bed to permit of ready access to the knives when necessary. It also allows the chips and refuse to fall to the ground or floor through the spaces between the slats. These slats are supported upon the transverse pieces B' which are rendered vertically adjustable by means of the adjusting screws or bolts *b* as shown best in Fig. 2. Near each end of the table or bed I mount a pressure roller C adapted to bear upon the upper face of the advancing end of the slate as it is moved along the upper face of the table or bed and thus keep the slate down flat upon the table and prevent its warping or throwing up, thus insuring better results. These pressure rollers may be mounted in any suitable manner, and when the machine is set ready for operation the bed is so adjusted vertically that the slate will just bear against the roller not sufficiently to create any material pressure but just enough to keep the slate down flat upon the table.

D is the cross-head or carrier mounted to reciprocate over the table or bed and having its opposite faces provided with longitudinal grooves in which are fitted the blocks D' of wood, rubber or any other suitable material which will prevent chipping or injury to the slate; they are each formed with an undercut shoulder *d* under which the edge or end of the slate is designed to be received. This cross-head or carrier is actuated in the following manner:—E is the main power shaft provided with the band pulleys E' and designed to receive motion from any suitable source, not shown. On the other end of this shaft is a small gear wheel or pinion F which in turn meshes with the large gear wheel or pinion F' on the shaft F² suitably journaled parallel with the shaft E as shown. On the other end of the shaft F² is a wheel F³ which may be a fly wheel as seen in Fig. 3 or a pinion as shown in Fig. 1, or a gear wheel or pinion as seen in Fig. 1 may be arranged to mesh with a small gear on the shaft E similar to that shown in Figs. 2 and 3. The wheels F' and F³ are connected with the cross-head or carrier by means of the connecting rods G and G' which are

suitably connected at one end with the cross-head or carrier and at the other to the wrist or crank pins *g* on the said wheels as seen best in Figs. 1 and 2.

- 5 The knives are arranged at opposite ends of the table or bed as seen best in Fig. 2; they are mounted in the frames or holders *H* in each of which is a knife *H'*, the knives in each frame or holder being adjustable independent of the other by adjusting screws *h*, the knives being arranged in inclined positions as seen in Fig. 2 with a space between their adjacent cutting edges as seen in Fig. 2 for the passage of the slate. Each knife is adjustable independent of the other and each frame is mounted to be adjusted vertically either up or down to adapt the knives to thicker or thinner slate by means of the screws *h'* as seen best in Fig. 2 which are suitably mounted in the ends of the frame, the frames or knife-holders being mounted to slide in suitable guides or ways on the main frame *A*. The holders or knife-frames are divided in line with the upper face of the table or bed as seen at *h²* to permit the passage of the slate. The knives are adjusted in their inclined planes to regulate the amount of slate to be removed; they are adjusted so that the slate passes between them, planing from both sides of the slate; or, of course, if only one side is to be planed, the knife upon the side which is not to be operated upon may be adjusted so as to clear the slate as it is moved along the bed.
- 35 With the parts constructed and arranged substantially as above set forth the operation is as follows:—The bed or table having been adjusted to the proper height according to the thickness of the slate to be planed, and the knives accordingly adjusted both vertically and angularly, the machine is set in motion and as the cross-head or carrier reciprocates back and forth a piece of slate is placed first upon one side and then another upon the other side thereof, resting upon the table or bed; the end of the slate is engaged by the block *D'* of the cross-head beneath the shoulder of which it is caught and that end held down, while the other end is kept from rising by the pressure roller; as the cross-head moves forward the slate is pushed between the knives at that end of the bed and

by which it is planed. As the cross-head is about to make its return stroke a piece of slate is placed on the bed upon the opposite side of the cross-head which takes the slate along and forces it between the other knives, between which it passes out of the machine.

It is deemed important that the knives remain stationary and that the cross-head reciprocate as by this means better work is performed and there is no danger of the attendant being injured by the knives as is the case where the knives reciprocate. Furthermore, by the construction shown accurate adjustment of all of the parts is easily attained.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages. The pressure rollers may sometimes be dispensed with.

What I claim as new is—

1. The combination with the table or bed, of the reciprocating cross-head having removable slate-engaging portions upon opposite sides thereof, as set forth.

2. The combination with the table or bed, of the reciprocating cross-head having removable slate-engaging portions seated in recesses in the cross-head and having undercut portion, as and for the purpose specified.

3. The combination with the table or bed, of the reciprocating cross-head having removable slate-engaging portions held in transverse recesses of the cross-head and provided with undercut shoulders, upon opposite sides of the cross-head and beneath which the slate is designed to be held, as and for the purpose specified.

4. The combination with the vertically-adjustable slatted table or bed, of the oppositely inclined knives at opposite ends thereof, means for adjusting said knives vertically and angularly with relation to the table or bed, vertically adjustable holders for said knives, and a cross-head mounted to reciprocate between the knives and force the slate therebetween, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

THEODORE J. RUCH.

Witnesses:

GERSHOM G. BLAKE,
N. W. REICHARD.