

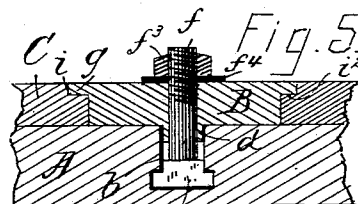
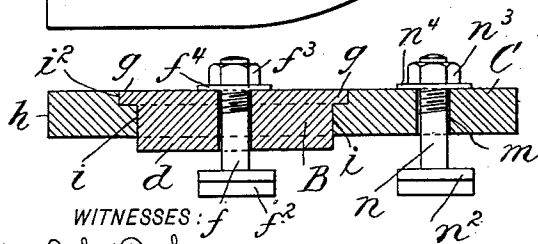
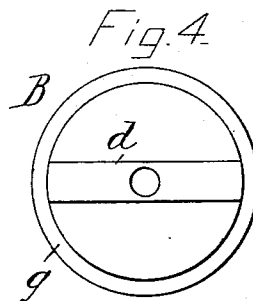
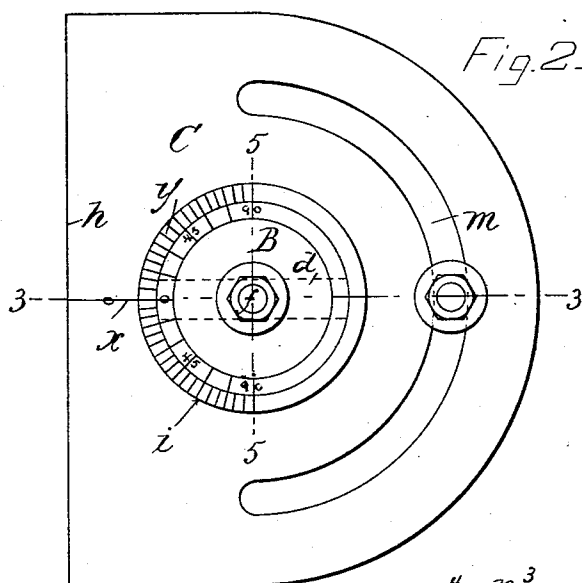
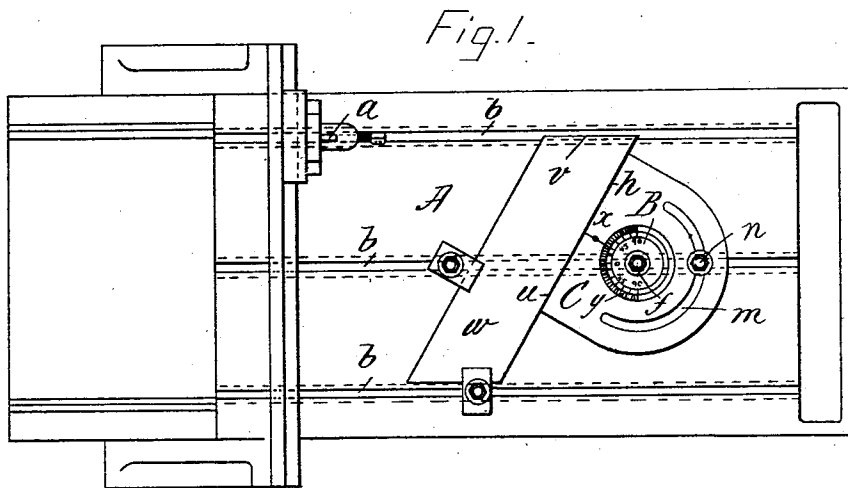
(No Model.)

J. R. WILLARD.

ATTACHMENT FOR METAL PLANING MACHINES.

No. 564,810.

Patented July 28, 1896.



WITNESSES: *f* *i*² *n*²
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UNITED STATES PATENT OFFICE.

JOSEPH R. WILLARD, OF CHICOPEE, MASSACHUSETTS.

ATTACHMENT FOR METAL-PLANING MACHINES.

SPECIFICATION forming part of Letters Patent No. 564,810, dated July 28, 1896.

Application filed March 25, 1896. Serial No. 584,812. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH R. WILLARD, a citizen of the United States, and a resident of Chicopee, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Attachments for Metal-Planing Machines, of which the following is a specification.

The object of this invention is to provide an improved appliance or attachment for a metal-planing machine which will enable a machinist, with the utmost facility, to so mount his work on the planer-bed as to provide that an edge or side thereof may be worked or planed at any required angle to an adjoining edge or side of the work; and the invention consists in parts and appliances in combination, all substantially as will hereinafter fully appear, and be set forth in the claim.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a metal-planing machine, the same being shown sufficiently, as to the details thereof, as to render manifest the applicability and desirability of the present device, which is also seen in plan view thereon. Fig. 2 is a plan view of the improved attachment, shown on a somewhat larger scale. Fig. 3 is a sectional view taken vertically on the line 3 3, Fig. 2. Fig. 4 is a plan view of the central portion of the attachment inverted. Fig. 5 is a vertical sectional view taken on line 5 5, Fig. 2.

Similar characters of reference indicate corresponding parts in all the views.

In the drawings, A represents the bed of the planer as ordinary, and understood as adapted to have the usual traverse under the head, on which the tool *a* is supported in the usual manner. The common form of T-grooves in the bed are indicated at *b b b*.

The attachment which constitutes the subject-matter of the present invention comprises, in part, a central plate or block B of circular form, adapted to rest flat on the bed and having on its underside a depending rib *d* to fit within any of the T-slots in the bed and to be slid to any desired place, and the bolt *f*, having the stepped or T-formed lower end *f*² to engage in the T-groove of the bed, the shank of the bolt projecting up through

the central perforation in the plate and receiving on its upper end the clamping-nut *f*³, together with the washer *f*⁴, whereby the central plate may be fixed as an immovable part of the bed. The central plate, as shown, has the overhanging flange *g* at its upper edge.

The attachment further comprises the plate C, having essentially a straight edge or portion *h* at one end, and preferably of semicircular form at its other end. This plate has a circular hole *i*, about centrally thereof, at the top of which is the annular rabbet or seat *i*², such hole and seat being for the reception of the flanged center plate B. The plate is also provided with the arc-formed slot *m*, preferably semicircular, which is concentric with the circular center-plate; and the bolt *n*, having the T-formed lower end *n*², also designed to engage in one of the slots *b* of the bed, protrudes by its shank upwardly through the said slot, receiving on its upper threaded end the binding-nut *n*³, and also a washer *n*⁴.

The plate C has a line or mark *x* thereon, extended from the edge of the hole *i* at right angles to the aforesaid straight edge *h*, and a marginal portion of the center plate is divided into degree-marks *y*, the graduations here shown being at five-degree intervals, although in the full-sized and actual appliance degrees and fractions thereof may be advantageously indicated. As shown, the "0" mark on the center plate normally registers with the said mark *x* on the outlying plate C, and the graduations extend from this "0" each way around as high as "90" at right angularity thereto.

A manner of use of the appliance will be described in conjunction with Fig. 1, although it is, of course, to be understood that other modes of utilization may be made, as will be obvious to a machinist in possession of the device. So it will be assumed that a piece of work such as represented at *w* is to have its one edge *v* finished or planed truly and at an angle of thirty degrees to the adjoining edge *u*. The center plate is firmly clamped to be, for the time being, as a fixed part of the bed, and the outlying plate C is turned until the median mark *x* thereof registers with the thirty-degree graduation on the center plate and is confined. The work *w* is then affixed on the

bed in the usual way, with its edge *u* against the straight edge of the plate *C*, while the edge to be worked upon preferably projects beyond the corner of the said plate. Then, however
5 rough or untrue the edge *v* of the work may be at the beginning, when operated on in the usual way by the tool as the bed has its traverse the line of the tool cut or operation will always be at the predetermined angle of
10 thirty degrees to the edge at rest against the straight edge of the plate.

Of course the single mark *x* might be made on the center plate and the series of degree-marks placed on the outlying plate, this im-
15 material change constituting no departure from this invention.

The edge of the work to be planed may be either perpendicular or beveled to the top, or of stepped form.

20 Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination with the bed of a metal-planing machine having the usual **T**-grooves, of the circular center plate having the edge 25 flange *g*, and depending rib *d* to fit in one of the bed-grooves, the plate *C* having the circular hole *i* with the seat *i*², the slot *m* concentric with the center plate, and having the straight edge *h*, the one plate having a series 30 of degree-graduations and the other having a single registering-mark, the bolts *f*, *n*, with the **T**-formed ends, which by their shanks project respectively, centrally through the center plate, and through said arc slot, and 35 the confining-nuts *f*³, *n*³, all substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two witnesses.

JOS. R. WILLARD.

Witnesses:

WM. S. BELLOWS,
L. C. BOLEN.