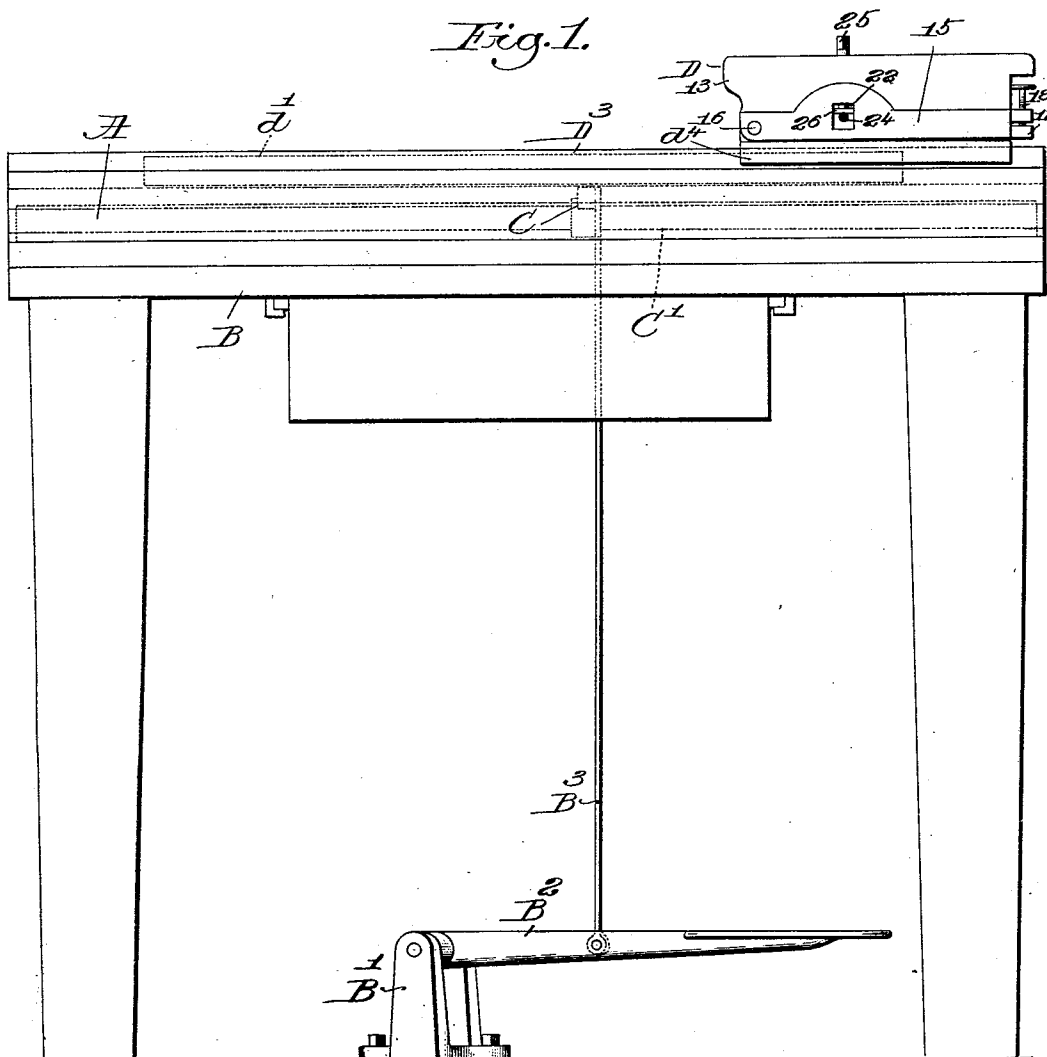
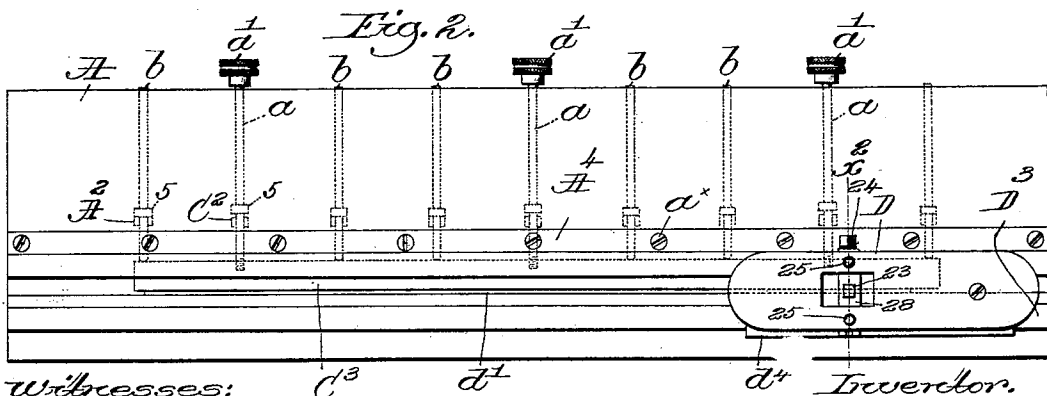


H. C. HANSEN.
RULE PLANING APPARATUS.

APPLICATION FILED MAY 9, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.*Fig. 2.*

Witnesses:
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H. C. Linsford

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by Stanley Ingram attys.

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2 SHEETS—SHEET 2.

Fig. 3.

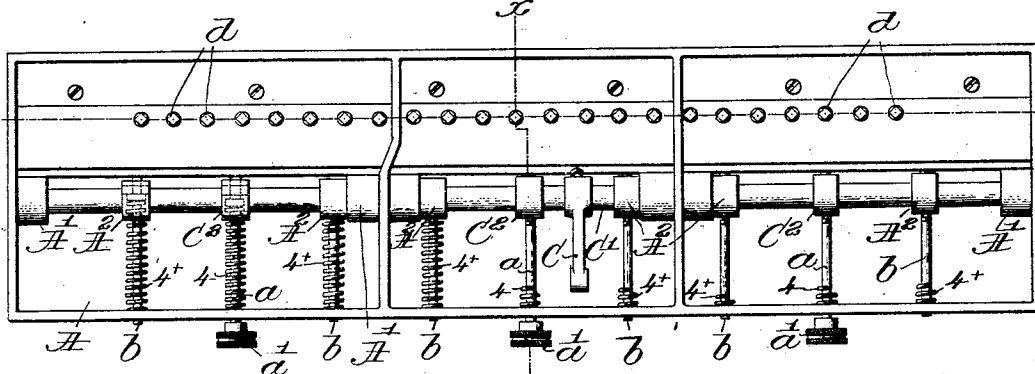


Fig. 4.

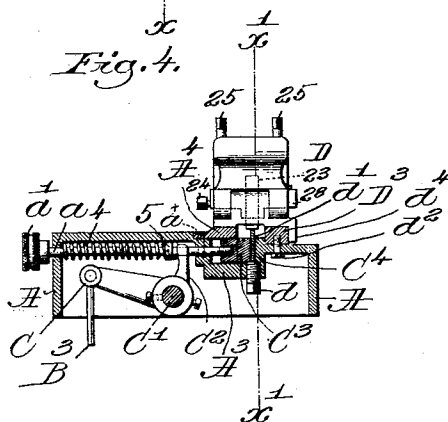


Fig. 4a



Fig. 5.

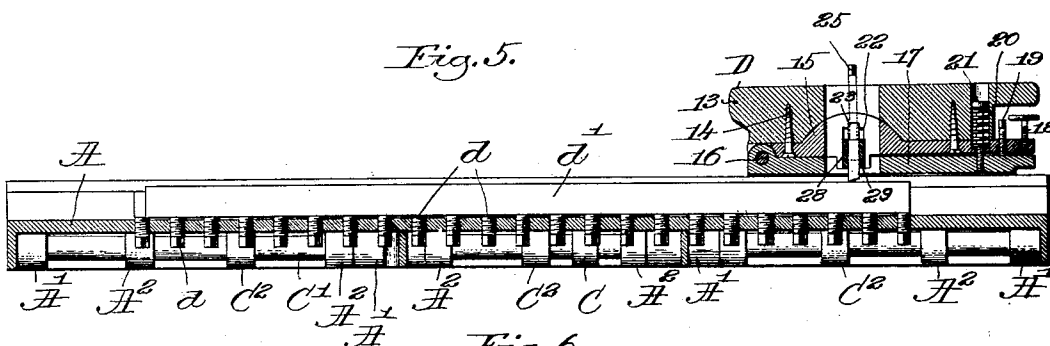
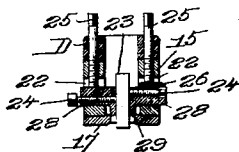


Fig. 6.



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UNITED STATES PATENT OFFICE.

HANS C. HANSEN, OF NEWTON, MASSACHUSETTS.

RULE-PLANING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 745,725, dated December 1, 1903.

Application filed May 9, 1903. Serial No. 156,400. (No model.)

To all whom it may concern:

Be it known that I, HANS C. HANSEN, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Rule-Planing Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to a novel apparatus for planing the edges of brass rules for use by printers in connection with forms of type. The edges of these rules must be exactly parallel, and to effect this result excessive care has to be practiced, and it is very difficult to make the edges exactly parallel in the ways now practiced. In my experiments aiming at the production of an apparatus by which to do this work I have discovered that inaccuracies in the parallelism of the edges of the rules come from inaccuracies in the level of the surface supporting the first edge to be planed while the second edge is being planed. Inaccuracy in parallelism of the edges of the rule in plans now ordinarily practiced may arise from sustaining the planed edge of the rule on a surface which is not in exactly a true horizontal plane and also from the presence of any dust or foreign matter sustaining the under edge of the rule.

In the apparatus to be herein described I have devised a novel supporting-surface for the lower edge of the rule, said surface comprising a series of longitudinally-adjustable supports the inner ends of which directly sustain the lower edge of the rule. These supports may be adjusted so that their ends may stand in exactly the same line, and the combined series of supports sustain the lower edge of the rule at close intervals throughout its length. The rule sustained by the supports is clamped between jaws, one of which is movable toward and from the other, the jaws adapting themselves to the thickness of the rules. The movable jaw is under the control of a manually-controlled device, and I prefer to use two series of springs, one of which acts to insure the clamping of the rule between the jaw members, the other series

serving to maintain a minimum pressure of the jaw on the rule, as will be described. The bed in which the series of rule-supports is mounted is provided with tracks to guide the peculiar plane to be described.

Figure 1 in front elevation represents a rule-planing apparatus illustrating my invention in one of the best forms now known to me. Fig. 2 is a top view thereof. Fig. 3 is an under side view of the bed of the apparatus, some of the springs 4 and 4^x being broken away; Fig. 4, a cross-section in the line *x*, Fig. 3, but with the bed inverted or right side up. Fig. 4^a shows one of the collars C² detached. Fig. 5 is a longitudinal section in about the line *x'*, Fig. 4. Fig. 6 is a cross-section in the line *x''*, Fig. 2.

The bed A, preferably of cast metal, will in practice rest on the top of a table or bench B, and below the bench, on the floor, I secure a stand B', in which is pivoted a manually-controlled device, shown as a treadle or lever B². This treadle is connected at its upper end by a rod B³ with one end of an arm C of a rock-shaft C', mounted in suitable bearings A' of the bed A. This rock-shaft has secured to it a series of collars A² C², each having an upturned arm (see Fig. 4^a) suitably forked to embrace loosely a series of rods *a b*, each rod having at its inner end a screw-thread which enters a screw-threaded hole in the movable jaw C³ of the rule-clamping mechanism, the fixed jaw being represented at C⁴ as depending from or forming part of the bed A.

Each of the rods *a b* is provided with a collar 5, and each rod is extended through a spring 4 or 4^x, one end of which abuts the collar 5 and the other end the inner wall of the flanged part of the bed A. The rods *a* are longer than the rods *b*. The rods *a* extend farther through the web of the bed at the left (see Fig. 4) than do the rods *b*, and the outer ends of rods *a* have heads *a'*. The collars 5 on the rods *a* are located a little farther toward the outer end of the rod viewing Fig. 4 and a little farther from the clamping member C³ than the like collars 5 on the rods *b*. Normally the springs 4 and 4^x on the rods *a* and *b* act to move the clamping member C³

toward the rule to clamp the same in position to be acted upon by the plane D, to be described, and when the clamp engages the rule the free end of the treadle is maintained in its most elevated position.

The free end of the treadle B² may be depressed and cause the arms A² of the rock-shaft to act on the collars 5, connected with the rods b, and move the clamping member C³ away from the member C⁴, such movement being resisted by the spring 4^x, and if the rock-shaft is not turned far enough to cause the arms C² to meet the collars on the rods a the springs 4 will continue to hold the rule under slight pressure. If a rule is to be fully released, the depression of the treadle will be continued until the arms C² also meet the collars connected with the rods a, and thereafter both rods a and b are moved to remove the pressure of both sets of springs 4 and 4^x from the clamp.

It is desirable to prevent the faces of the clamps contacting when a rule is absent from the apparatus. This is effected by the heads a' on the rods a, they acting when a rule is removed to prevent such extent of movement of the clamping member C³ to the right, Fig. 4, as will cause its face to bear against the face of the clamping member C⁴. The jaw C³ rests on the horizontal bottom of a guideway A³, depending from the bed A, and the upper side of the clamp is acted upon by a plate A⁴, secured to the bed by suitable screws a^x, said plate forming part of a track for the plane D. The bottom of the guideway A³ is provided with a series of holes that are tapped to receive a series of supports d, shown as screws having plane-faced ends and provided at their outer ends with heads suitably shaped to be engaged by a wrench or any other usual device for turning a screw. The inner ends of these supports project above the plane of the upper side of the horizontal part of the guideway, so that it is immaterial whether said face is in a true plane or not, as the supports may be adjusted accurately so that their ends will lie in exactly the same plane. These supports sustain the lower edge of the rule d' to be planed, and it will be understood that any chips or dirt or dust getting into the guideway may be readily dusted off from the ends of the supports, and the presence of dust and dirt in a limited quantity that might seriously interfere with the operation of the apparatus were it not for the support will not interfere with the correct action of the apparatus, as said dirt may occupy the spaces between the ends of the supports.

The bed A has secured to it, as shown, by suitable screws d² a track D³, that is embraced by a downturned lip d⁴, forming part of a plane D, to be described. This plane comprises, as shown, a hand portion 13, to which is secured by screws 14 a bottom plate 15, to which is pivoted at 16 a face-plate 17. The

bottom plate 15 has connected with it an adjusting-screw 18, the end of which acts against the free end of the face 17, and a stop-screw 19, which may be adjusted to meet the upper side of the face-plate after the adjustment of the screw 18 with relation to the body of the plane has been effected. The top of the face-plate is borne upwardly against not only the adjusting device, but the stop-screw by means of a spring 20, surrounding a screw 21, entering the face-plate through a hole in the block D. The bottom plate 15 has slots 22 at each side in which are fitted the ends of a bit-holder 28, having a depending hub 29, in which is held in adjusted position a bit 23, the bit being adjustable in the hub by means of suitable screws 24. The lower end of the bit extends through a slot or throat in the face-plate 17. The bit-holder is acted upon to keep it seated to its work by means of screws 25, and I may insert, if desired, between the end of each screw and the bit-holder a shim or block 26.

The plane may be slid forward on the track by hand until the exposed edge of the rule is of the proper smoothness, and one edge having been planed the rule is turned over and the planed edge is sustained on the supports.

The supports shown may be used to advantage as stock-sustaining means in any usual metal planing or finishing apparatus or machine where it is desired to support with the greatest accuracy stock to be planed or finished, said supports avoiding the planing of surfaces to truth to sustain the stock. The bit constitutes a metal-finishing tool.

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

1. In apparatus of the class described, a guideway having a vertical faced clamping member, said guideway having a series of threaded holes, and a series of screws constituting adjustable supports to sustain the stock being acted upon, and a movable clamping member.

2. In apparatus of the class described, a bed, means comprising a series of adjustable supports mounted in alinement on the bed to sustain the stock being acted upon, and means to engage the opposite sides of and clamp the stock above said alined series of supports.

3. In apparatus of the class described, a bed having a longitudinal track, a separable clamp below it to engage the opposite sides of and hold stock to be planed at one edge, means comprising a series of adjustable supports in alinement below the clamp to sustain the lower edge of the stock, and a plane movable on said track and having a bit to act on the upper edge of the stock held in the clamp.

4. In apparatus of the class described, a bed having a longitudinal track, a separable spring-closed clamp below the track to engage the upright sides of and hold stock to be

planed at one edge, means comprising a series
of adjustable supports in alinement below the
clamp to sustain the lower edge of the stock,
a plane movable on said track and having a
5 bit to act on the upper edge of the stock held
in the clamp, and means to open the clamp
for the insertion or removal of stock.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

HANS C. HANSEN.

Witnesses:

GEO. W. GREGORY,

EDITH M. STODDARD.