

(No Model.)

2 Sheets—Sheet 1.

A. POVALL & F. P. HOWE.

MACHINE FOR REMOVING FINS FROM METAL BEAMS.

No. 442,914.

Patented Dec. 16, 1890.

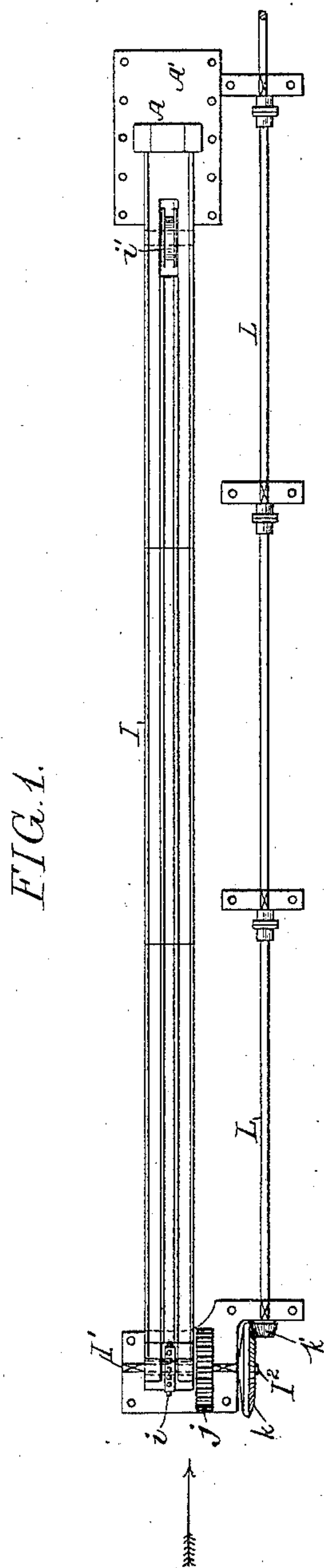


FIG. 1.

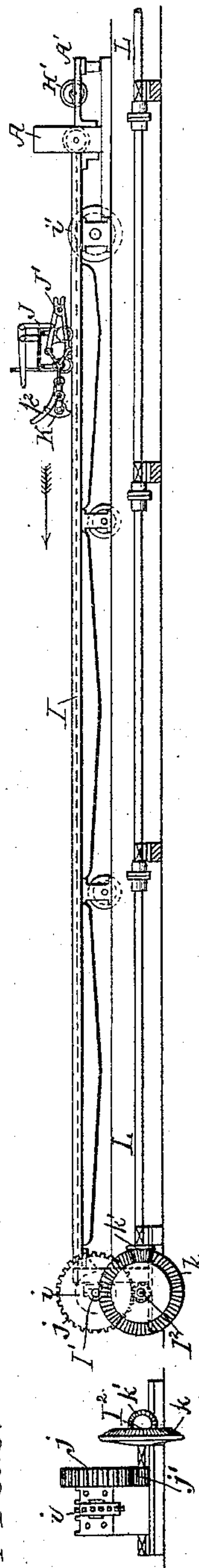


FIG. 2.

FIG. 3.

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by their Attorneys
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(No Model.)

2 Sheets—Sheet 2.

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FIG. 4.

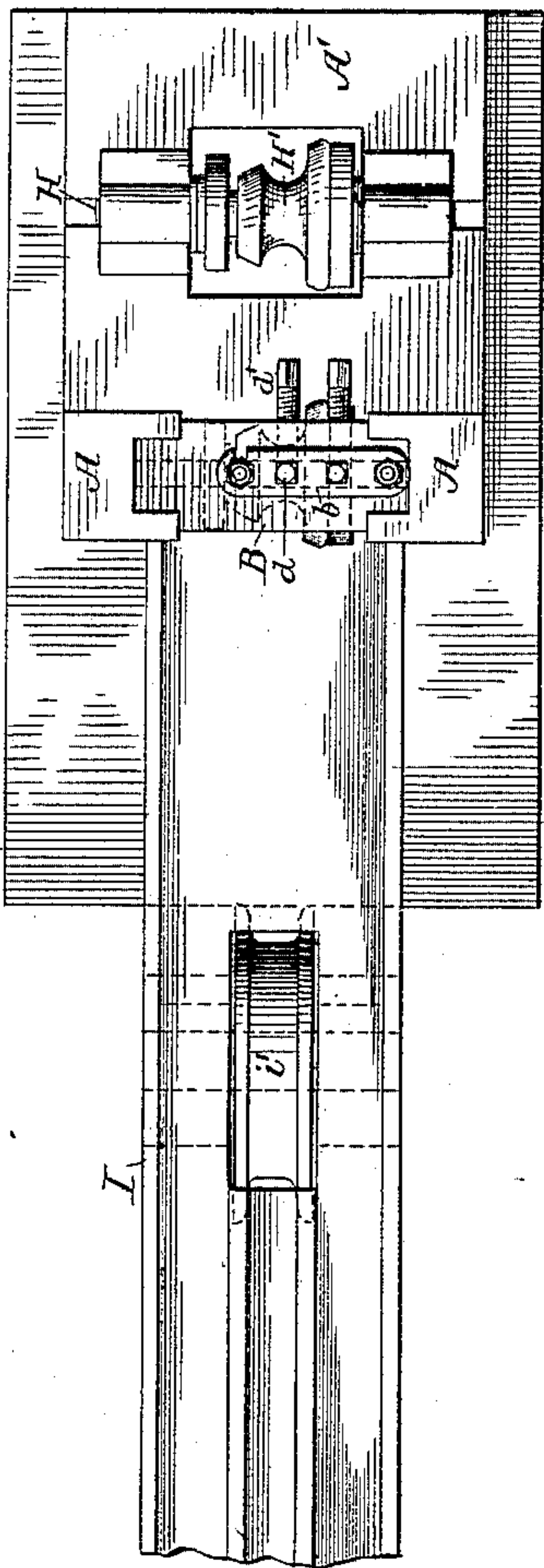


FIG. 6.

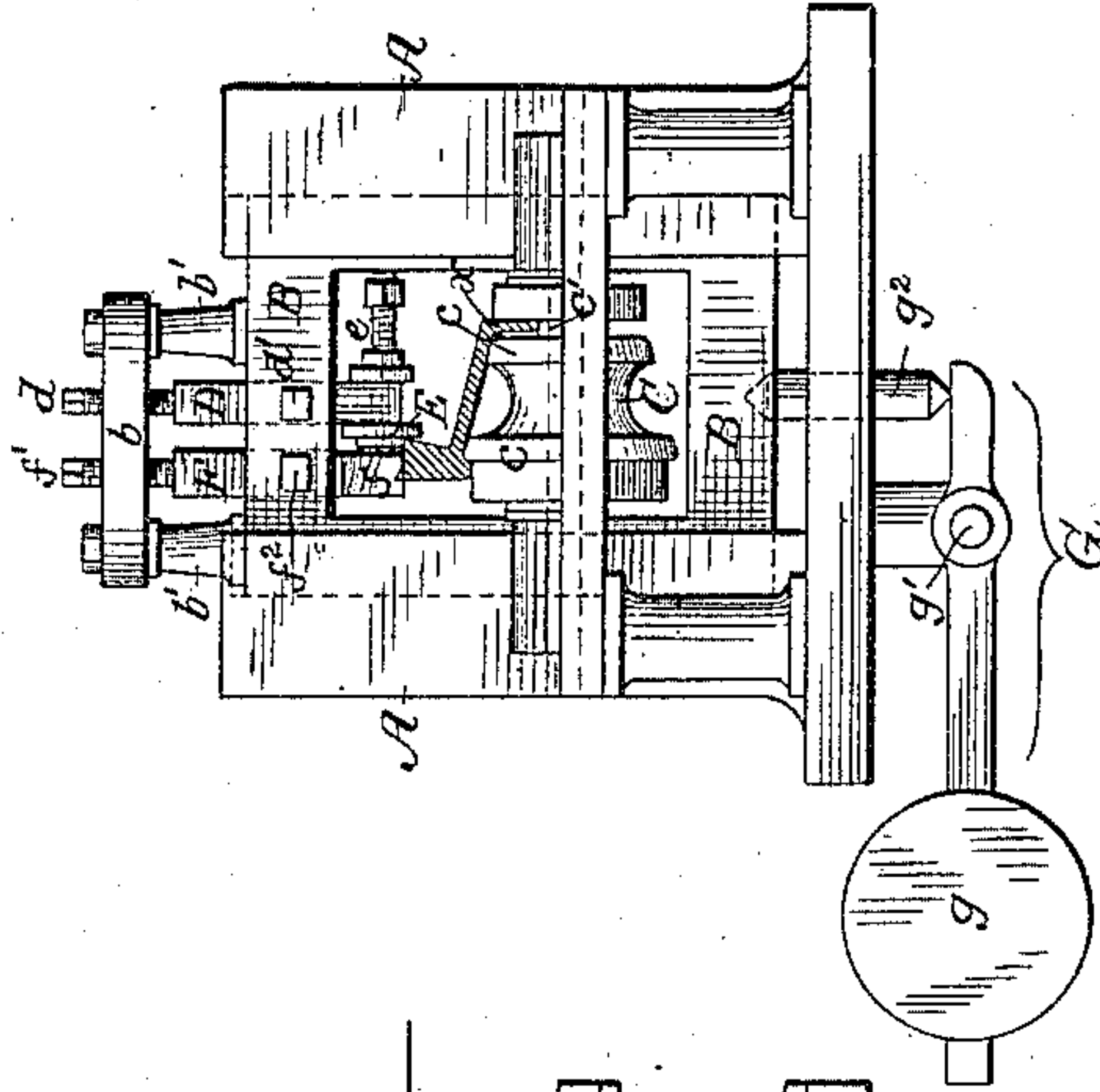
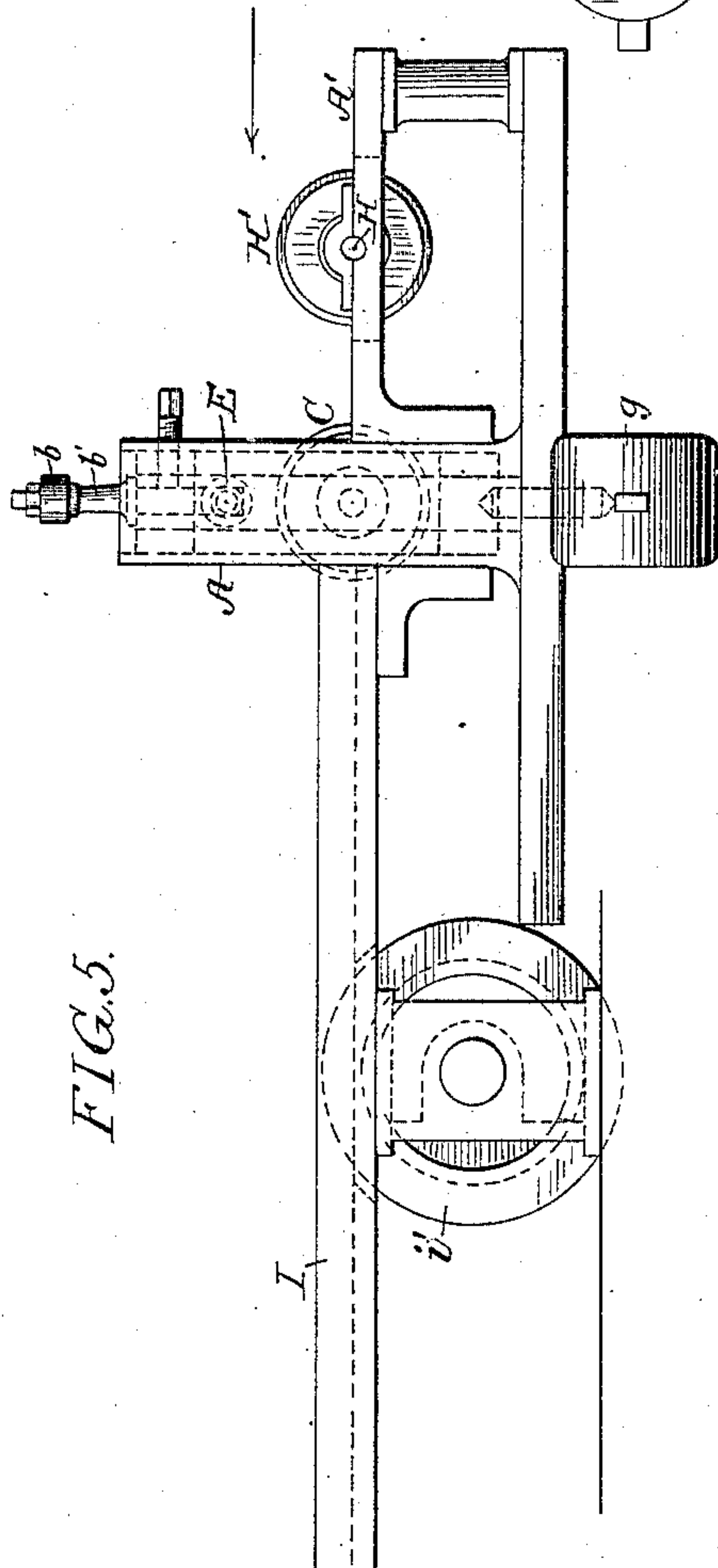


FIG. 5.



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UNITED STATES PATENT OFFICE.

ALFRED POVALL AND FRANK P. HOWE, OF DANVILLE, PENNSYLVANIA.

MACHINE FOR REMOVING FINS FROM METAL BEAMS.

SPECIFICATION forming part of Letters Patent No. 442,914, dated December 16, 1890.

Application filed October 19, 1889. Serial No. 327,540. (No model.)

To all whom it may concern:

Be it known that we, ALFRED POVALL and FRANK P. HOWE, both citizens of the United States, and residents of Danville, Montour county, Pennsylvania, have invented a Machine for Removing the Fins from Metal Beams, of which the following is a specification.

The object of our invention is to construct a machine for removing or planing off the fins on rolled-metal shapes—such, for instance, as the slot-bars used in cable or electric railways. In rolling certain beams or bars—such as those shown in the drawings—it is necessary that the parting-line of the rolls should come at the exposed corner forming one side of the slot, and as this slot must necessarily be accurate any roughness or fin made in attempting to roll the bar with a full or square corner must be removed before the slot-iron can be placed in position.

In the accompanying drawings, Figure 1 is a plan view of our improved machine for removing the fins of rolled-metal shapes. Fig. 2 is a side view. Fig. 3 is an end view looking in the direction of the arrow, Fig. 1. Fig. 4 is an enlarged plan view of the cutter-head portion. Fig. 5 is an enlarged side view of the same; and Fig. 6 is an end view looking in the direction of the arrow, Fig. 5.

A is a housing mounted in any suitable manner and adapted to the slot-rail, and in this housing is a frame B, in which are bearings for the carrying-roller C of the peculiar form shown, which corresponds with the shape of the rolled bar from which the fin is to be removed. In the present instance the roller has two flanges *c c*, recessed at *c'* to admit the foot of the slot-iron *x*.

Carried by a block D is a pressure-roller E, which can be adjusted transversely by a set-screw *e* and can be adjusted vertically by a set-screw *d*, passing through a cross-head *b* on two standards *b'*, as shown in Fig. 6. The block is held in place in the frame by a set-screw *d'*. This roller tends to keep the slot-iron to its seat on the supporting-roller C.

F is a cutting-tool adapted to the frame B, this cutting-tool having a cutting-edge *f*, the shape of which depends upon the character of the fin to be cut. This tool F can be adjusted vertically toward or from the beam or

bar to be cut by means of a set-screw *f'* and can be secured in position after adjustment by a set-screw *f''*. The tool may be mounted in a block adjustable in the frame, if necessary. The frame B is counterbalanced in the present instance by a weight *g* on one arm of a pivoted lever G, which is pivoted at *g'* to a lug on the under side of the housing, and resting between the short arm of the lever G and the under side of the frame B is a pin *g''*, so that the frame is perfectly balanced and can accommodate itself to inequalities of the beam from which the fin is to be removed. Other balancing devices may be used without departing from our invention.

Mounted on the frame A', in front of the housing A, is a shaft H, carrying a supporting-roller H', preferably of a form corresponding with that of the roller C, and in the rear of the housing is a frame I of a length sufficient to allow for the passage of the complete rolled bar. On ways of the frame I is adapted to travel a trolley or carriage J, provided with nippers J', the long arms of which are connected to an anchor-lever K, one prong of which is adapted to engage with an endless chain which passes around sprocket-wheels *i i'* at each end of the frame I. The sprocket-wheel *i* is mounted on a shaft I', which has a gear-wheel *j*, meshing with a pinion *j'* on a shaft I'', which in turn has a bevel-wheel *k*, meshing with a bevel-pinion *k'* on the longitudinal driving-shaft L, as shown in Figs. 1 and 2, so that by operating the lever *k''* on the carriage J the anchor will be thrown into engagement with the chain and the carriage will be moved in the direction of its arrow, the nippers first being clamped to the end of the beam from which the fin is to be removed. As the carriage recedes, the tool *f* removes the fin from the beam, leaving a clear-cut edge. The tool-carrying frame will accommodate itself to any inequalities or crookedness of the beam, so that when the tool is set to cut away the fin it will be impossible for the tool to cut away more or less of the beam than is absolutely necessary to insure an accurate edge for the slot-iron. It will be understood that the fins of any shape may be removed by this machine, the roller C being preferably of a shape to correspond with the shape of the piece from which the fin is to be removed.

We claim as our invention—

1. The combination, in a machine for cutting or planing rolled shapes, of the movable frame with a cutting-tool and guides for the shape carried by said frame, whereby as the shape passes between the guides the frame carrying said guides and the cutting-tool is caused to move to follow the alignment of said shape, substantially as specified.
2. The combination, in a machine for removing the fins from rolled shapes, of the housing with a frame adapted to said housing, said frame carrying the guides and the cutter, substantially as described.
3. The combination, in a machine for removing the fins from rolled shapes, of the housing carrying a frame movable therein, a support conforming to the shape of the bar, with a presser-roller adapted to keep the bar in contact with the support, and a cutter for removing the fin, substantially as described.
4. The combination, in a machine for removing the fins from rolled shapes, of the supporting-roll, the presser-roll, and a cutter with a carriage provided with nippers adapted to engage with the shape and carry it past the cutter, with means, substantially as described, for operating said carriage, all substantially as set forth.

5. The combination of the housings, the carrying-frame, the guides, and cutter mounted therein with a counter-balance for said carrying-frame, substantially as specified.

6. The combination of the housings, the carrying-frame, the rollers, and cutter mounted therein with a pivoted lever carrying a counterbalanced weight for said frame and a pin between the short arm of the lever and the frame, substantially as described.

7. The combination of the housings, the frame, the supporting-roller mounted in said frame, with a presser-roller carried by an adjustable block, and means for adjusting said roller transversely on said block, with a cutting-tool vertically adjustable in said frame, and mechanism for feeding the shape between the rollers and past the cutter, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ALFRED POVALL.
FRANK P. HOWE.

Witnesses:

J. D. HOWERY,
JOHN O. GEISE.