2 Sheets, Sheet 1.

H. B. Smith,

Wood Planing Machine.

No. 50,178. Patented Sep. 26, 1865.

Fig. 2

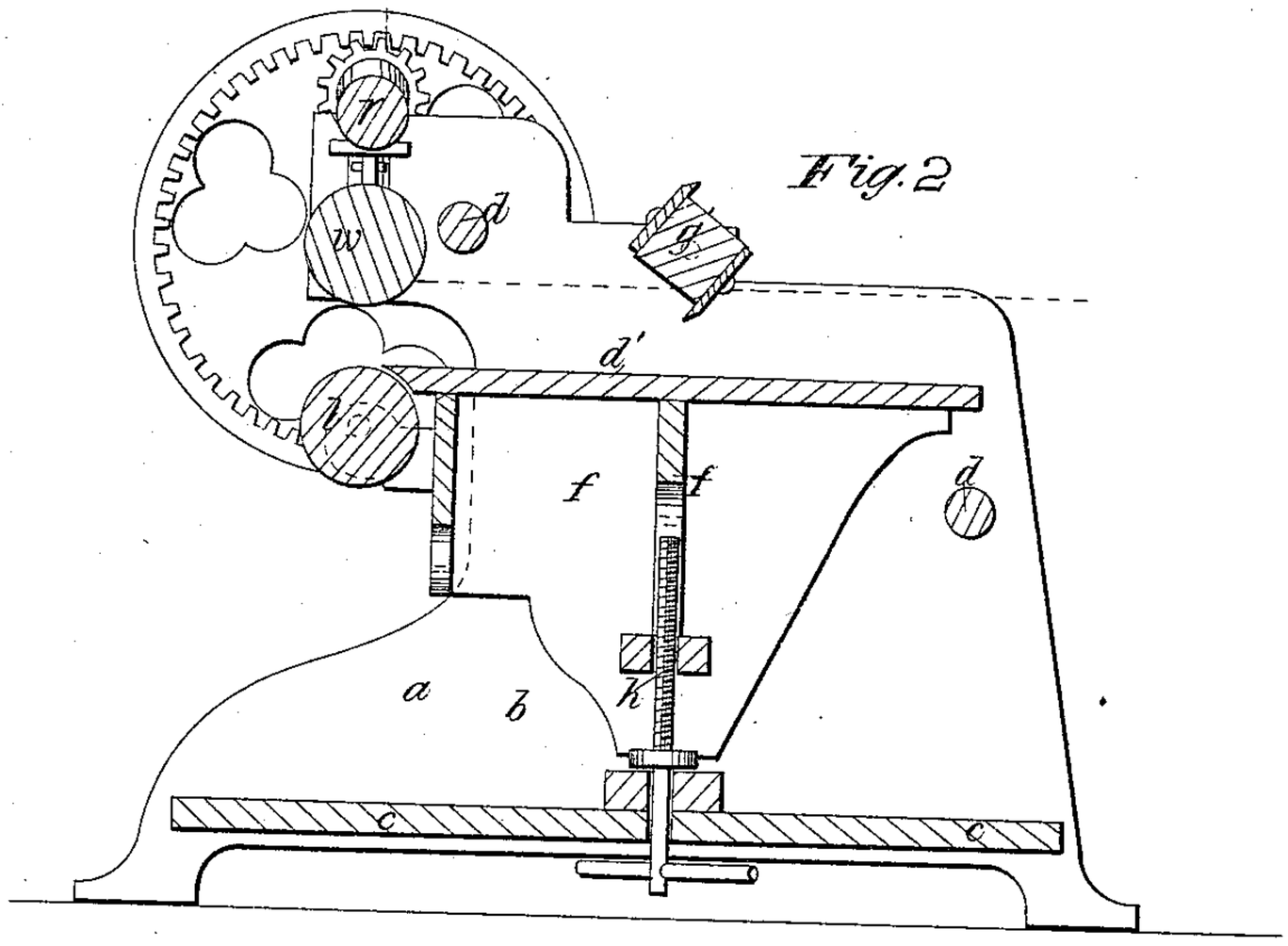
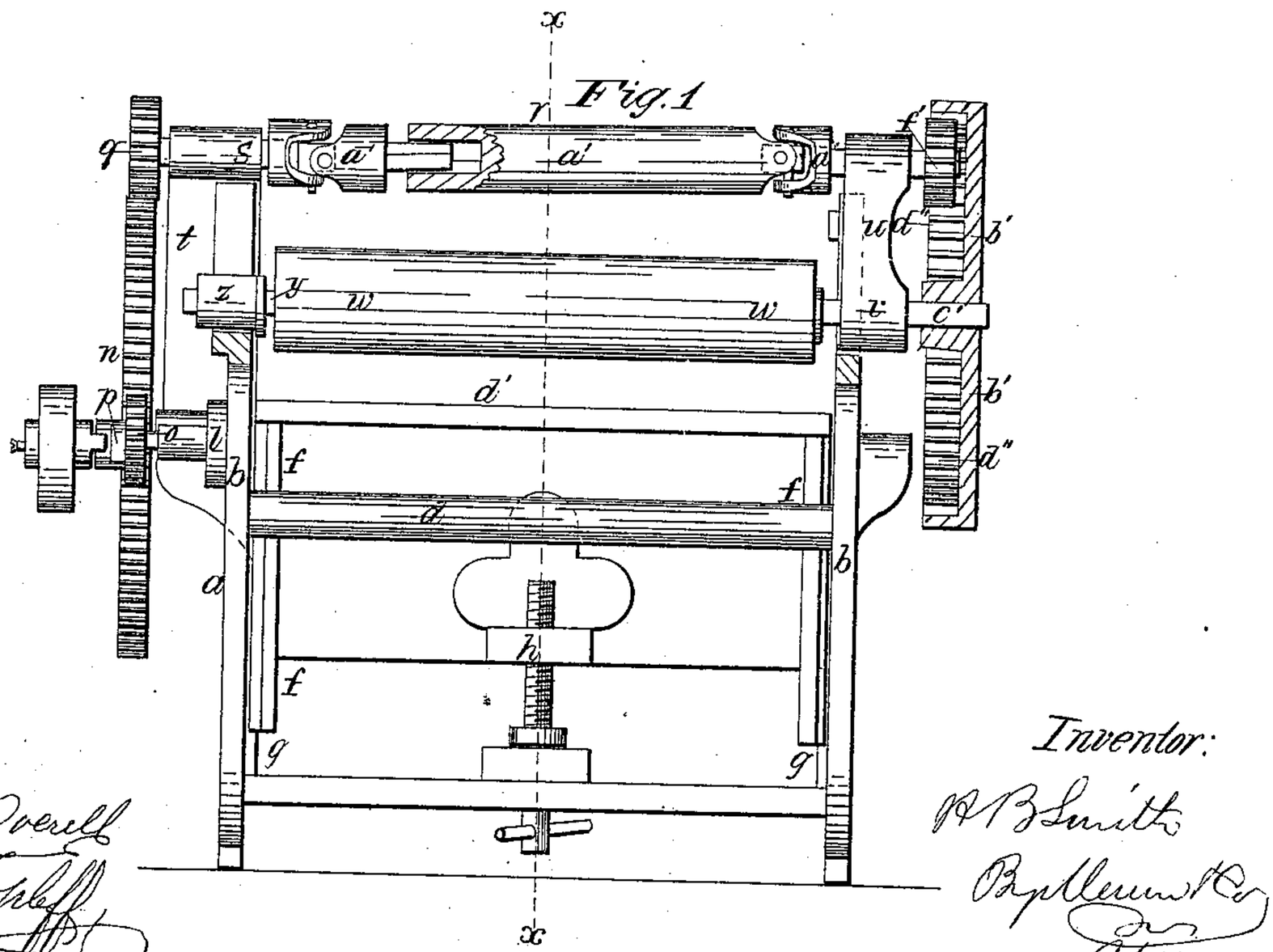


Fig. 1



Witnesses

Wm Dean Overell

E. L. Topliff

Inventor:

H. B. Smith

By Munn & Co

Attys

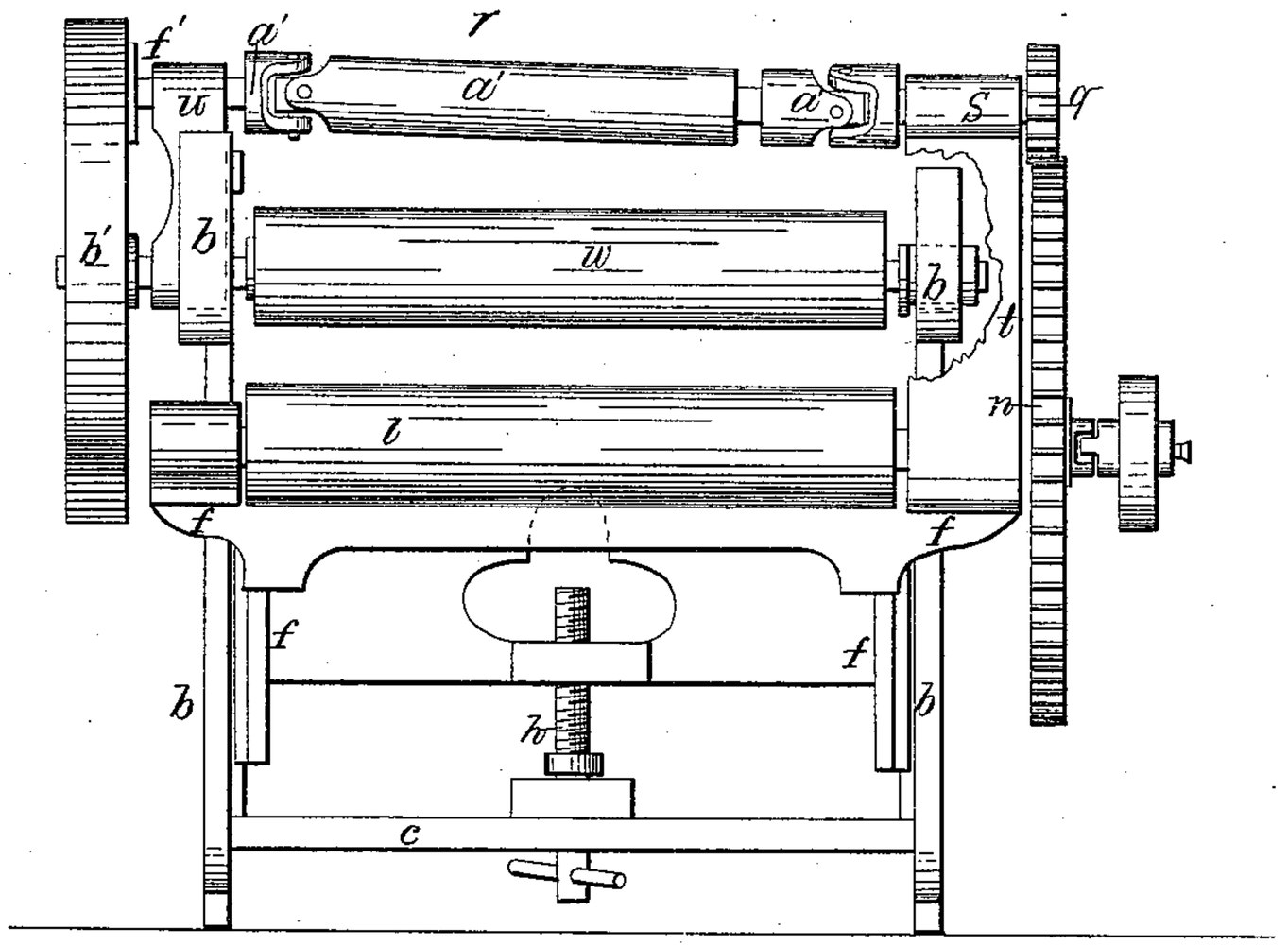
2 Sheets, Sheet 2.

H. B. Smith,

Wood Planing Machine.

No. 50,178. Patented Sep. 26, 1865.

Fig. 3



Witnesses:

Wm. Dean Overell

C. L. Toplff

Inventor:

H. B. Smith

By Munn & Co

Attys

UNITED STATES PATENT OFFICE.

H. B. SMITH, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN PLANING-MACHINES.

Specification forming part of Letters Patent No. **50,178**, dated September 26, 1865.

To all whom it may concern:

Be it known that I, H. B. SMITH, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Arrangement of Feed-Rollers for Planing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The present invention relates more particularly to wood-planing machines, and will be described in connection therewith; it consisting in connecting and arranging the upper and lower feed-rollers of the machine in such a manner that they can be properly adjusted with regard to each other at pleasure, thus increasing or decreasing the opening or space between them, according to the thickness of the board or plank to be planed, without disconnecting or disarranging their connection with the driving power employed.

In accompanying plates of drawings my improvement is illustrated, Figure 1, Plate 1, being a view of one end of a wood-planing machine having my improved arrangement of feed-rollers applied thereto; Fig. 2, a central longitudinal vertical section taken in the plane of the line *x x*, Fig. 1. In Plate 2, Fig. 3 is an end view.

a a in the drawings represent the frame-work of the machine, consisting of parallel upright standard-frames *b b*, secured together at or near their lower ends by a horizontal platform, *c*, and strengthened at suitable points by cross-braces *d d*.

In and between the two standard-frames *b b* the feed-platform *d'* of the machine is arranged in a horizontal position and attached to the upper ends of two vertical frames, *f f*, moving upon and over guides *g g* of the main standards *b b*, as the platform is raised or lowered in position by turning the set-screw *h* to the right or left, as the case may be.

Along one end of the platform *d'*, and extending in a direction across the width of the same, is a horizontal feed-roller, *l*, turning in bearings *m m* at each end of the supporting-frames *f f* of the platform. The top of the roller is in the same plane with that of the upper surface of the feed-platform *d'*, as plainly shown in Fig. 2, Plate 1.

To one end of the feed-roller *l* is secured a large gear-wheel, *n*, receiving motion through a small gear wheel or pinion, *o*, of a shaft, *p*, from the driving-power used.

Interlocking with the top portion of the gear *n* is a smaller gear or pinion, *q*, on one end of a horizontal shaft, *r*, turning in bearings at that end of the upper end, *s*, of the vertical arm *t* attached to or forming a part of the frame to which the feed-platform is secured, and at the other or opposite end in the vertical sliding piece *u* of the main frame-work of the machine, in the lower end, *v*, of which the upper feed-roller, *w*, in the same vertical plane as the feed-roller *l*, has a bearing, and at its other end, *y*, in the upper portion *z* of the main standards *b b*.

The shaft *r*, between its two bearings, is formed in three sections or parts, *a' a' a'*, the contiguous ends of which are secured together by universal joints, whereby the horizontal plane of its two bearings may be changed or inclined at pleasure, without disconnecting or straining the same.

b' b' is a crown-wheel attached to end *c'* of shaft of upper feed-roller *w*, with the teeth *d''* of which engages the pinion or small gear-wheel *f'* of the horizontal shaft *r*, before referred to.

g' is the revolving cutter, made of the ordinary construction and form used in wood-planing machines, and extending across the feed-platform of the same, turning in bearings of the main frame-work, and receiving the proper degree of motion through any suitable arrangement of devices connecting it with the driving-power used.

On the feed-platform the board or plank to be planed is laid, the platform having first been adjusted to the proper height by turning its set-screw to the right or left, as was necessary, and as it passes under and by the revolving cutters moves through and between the feed-rollers *l* and *w* of the machine, by which it is then properly fed along to the revolving cutters as desired, the said feed-rollers receiving motion through the connecting devices before described; but as the platform is raised or lowered by the set-screw, as explained, the

lower feed-roller, which turns within bearing of its supporting-frame, is consequently raised or lowered with it, thus bringing it nearer to or farther from the upper feed-roller, which turns in bearings of the fixed or main frame-work of the machine, the connection, however, between the driving devices of each roller being always preserved through the horizontal universal-jointed shaft *r*, as is evident without further description.

In order to allow the upper roller to adjust itself to what little variations may occur in the surface of the plank or board being planed, it is allowed a vertical movement in one of its bearings, while the other end of the roller plays up and down through the sliding piece *s* of the main standards *b b*.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The use of the horizontal universal-jointed shaft *r*, in connection with the feed-rollers of planing-machines, &c., arranged substantially in the manner described, and for the purpose specified.

The above specification of my invention signed by me this 19th day of June, A. D. 1865.

H. B. SMITH.

Witnesses:

ALBERT W. BROWN,

M. M. LIVINGSTON.