3 Sheets—Sheet 1.

W. WILSON, Jr.

MACHINERY FOR MANUFACTURING SHEET METAL BOXES.

No. 51,667. Patented Dec. 19, 1865.

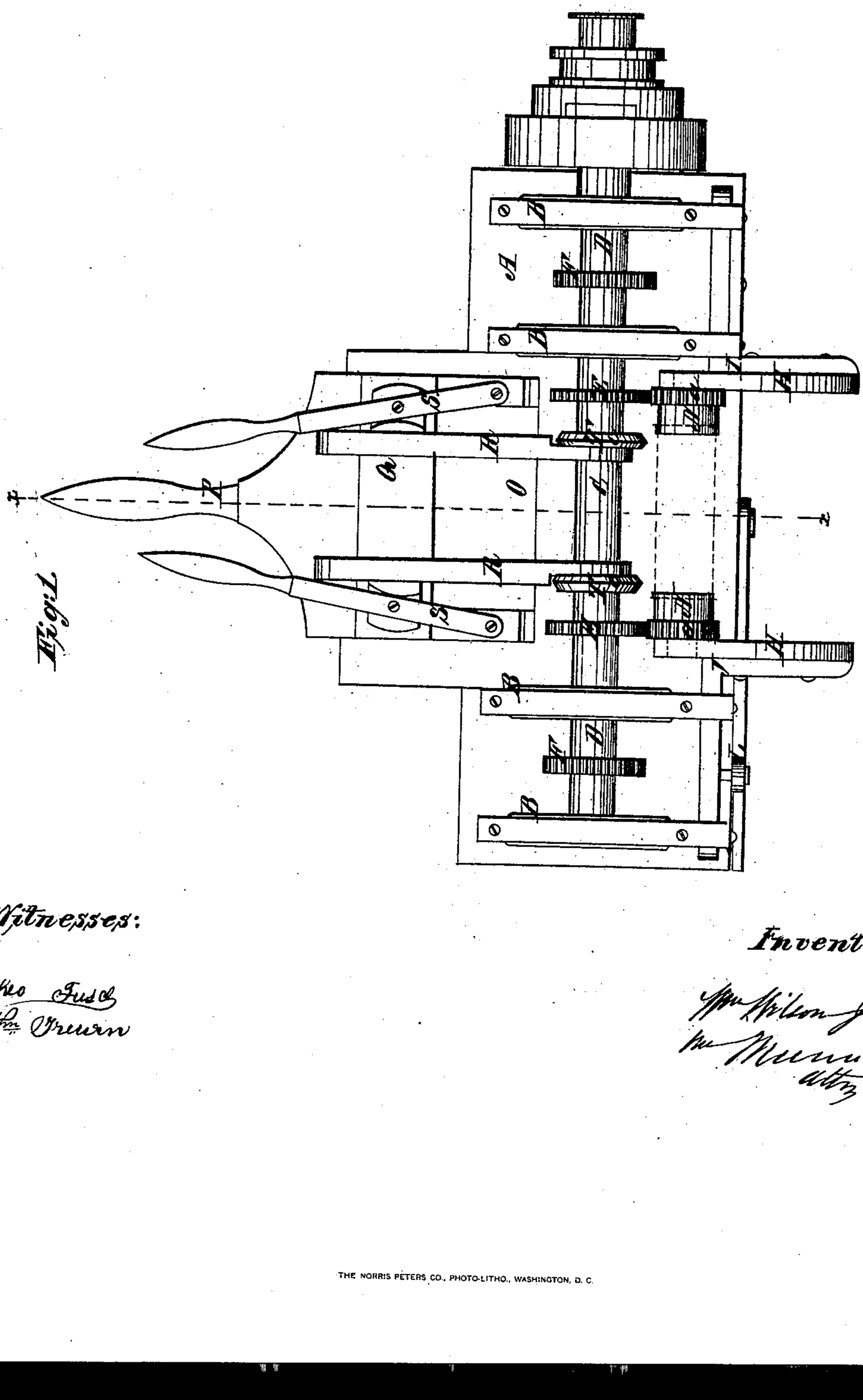

Fig. 1.

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3 Sheets—Sheet 2.

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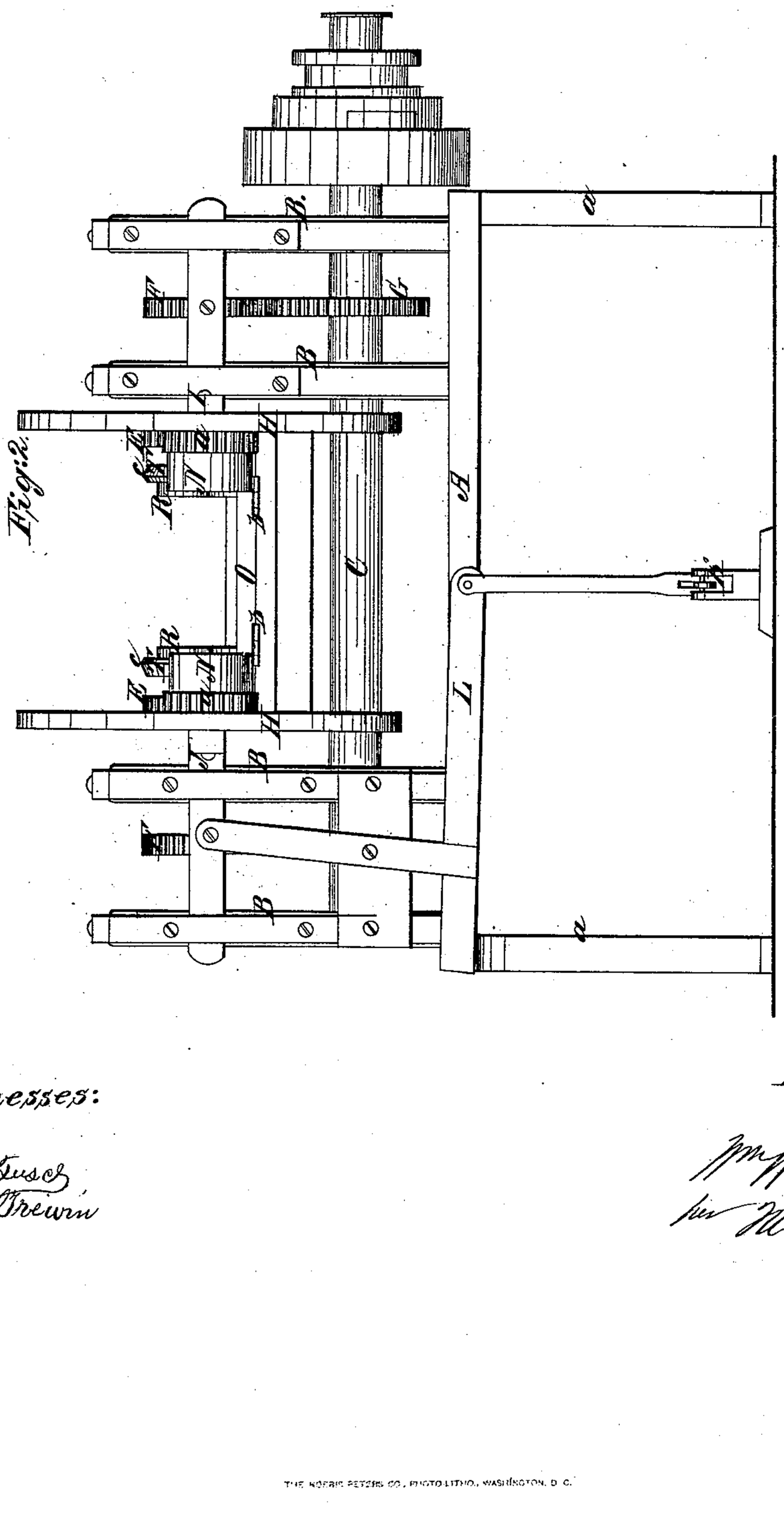
Fig: 2.



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3 Sheets—Sheet 3.

W. WILSON, Jr.

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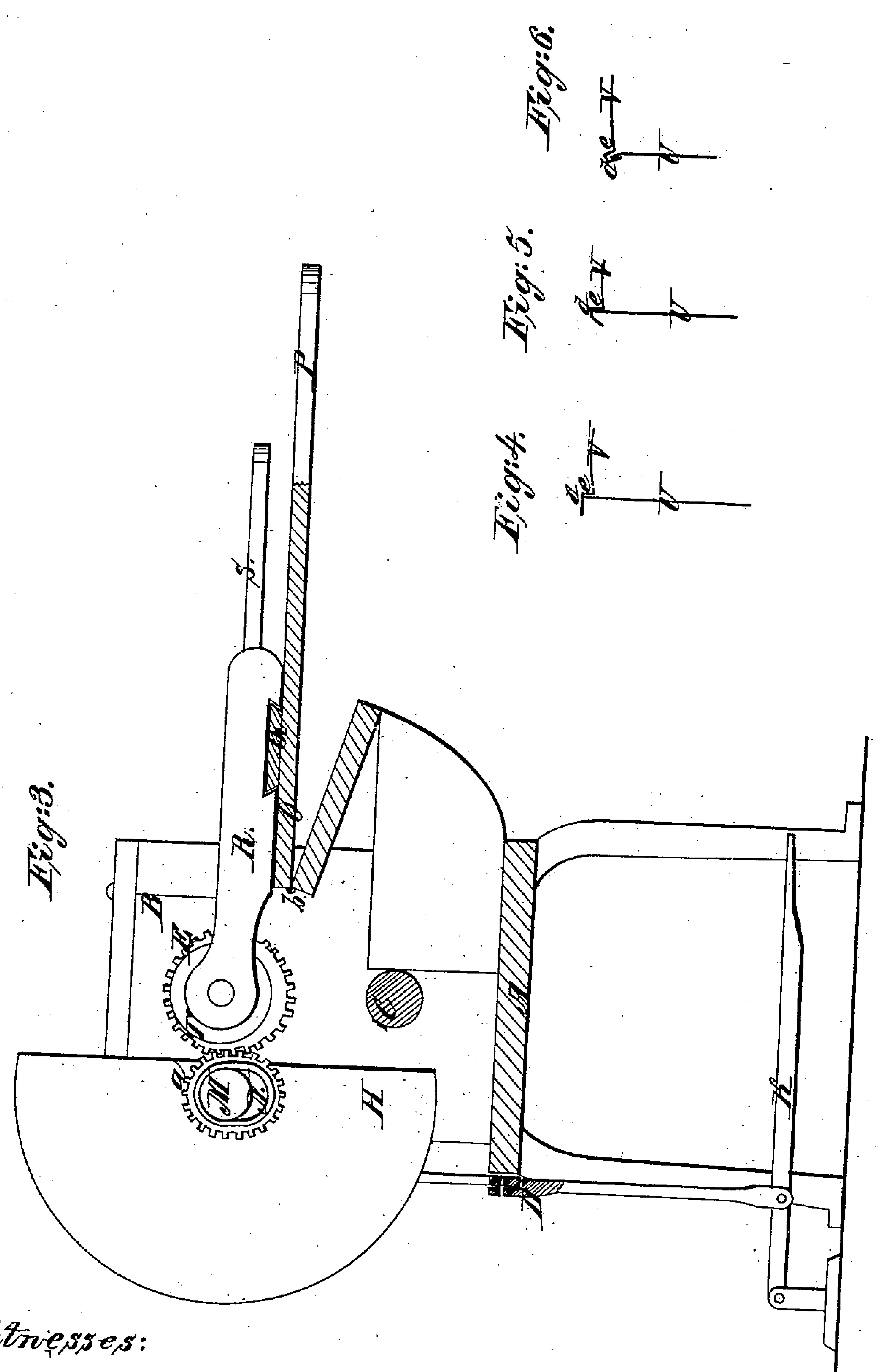

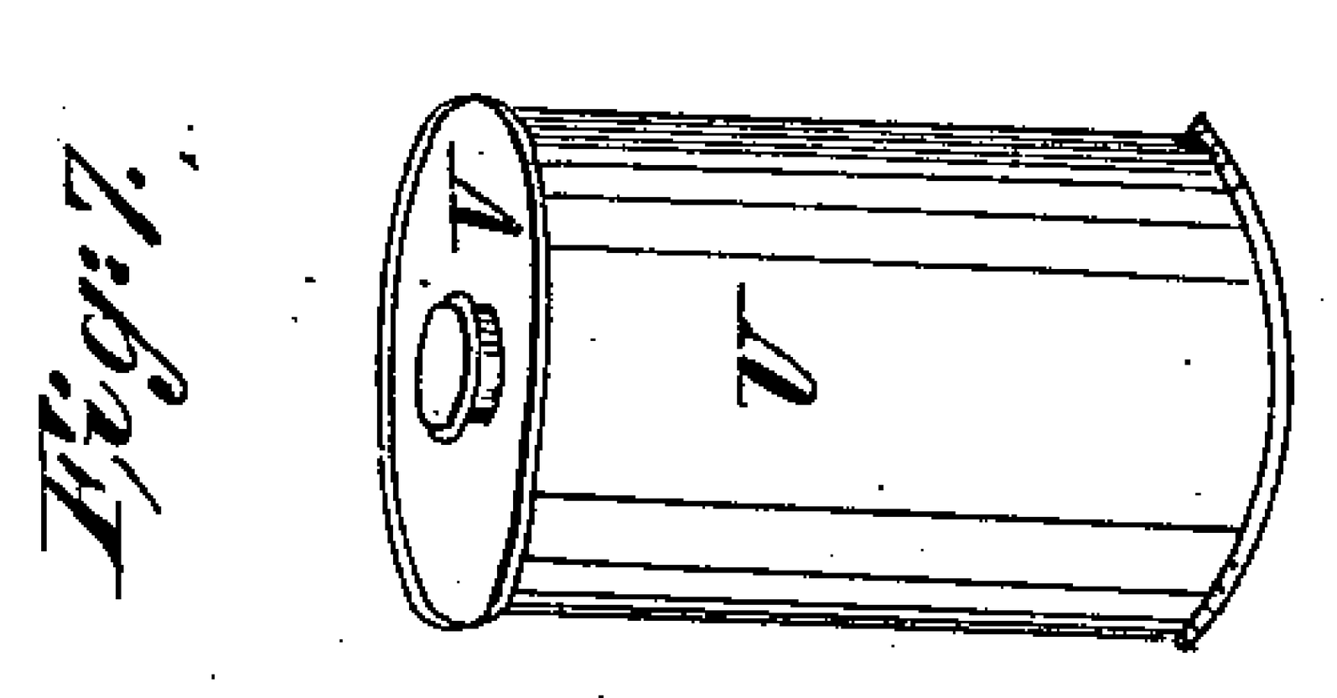

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UNITED STATES PATENT OFFICE.

WM. WILSON, JR., OF WILMINGTON, DELAWARE, ASSIGNOR TO HIMSELF AND CHARLES GREEN, OF SAME PLACE.

IMPROVEMENT IN MACHINERY FOR MANUFACTURING SHEET-METAL BOXES.

Specification forming part of Letters Patent No. **51,667**, dated December 19, 1865.

To all whom it may concern:

Be it known that I, WILLIAM WILSON, Jr., of Wilmington, New Castle county, State of Delaware, have invented a new and Improved Machine for Manufacturing Sheet-Metal Boxes; 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, in which—

Figure 1, Sheet No. 1, is a plan or top view of my invention. Fig. 2, Sheet No. 2, is a rear elevation of the same. Fig. 3, Sheet No. 3, is transverse vertical section of the same, taken in the line *x x*, Fig. 1; Figs. 4, 5, and 6, diagrams showing the joints by which the heads or ends of the box are secured to the body or main portion; Fig. 7, a view of the box constructed according to my invention.

Similar letters of reference* indicate like parts.

This invention relates to a new and improved machine for manufacturing sheet-metal boxes which are of oval or elliptical form in their transverse section; and it consists in a novel means employed for attaching or securing the ends or heads of the boxes in their bodies or main portions, as hereinafter fully shown and described, whereby the work may be expeditiously done, and in a perfect manner.

A represents a horizontal plate supported at a suitable height by legs *a*, and having four vertical frames, B, attached to it, in which the bearings of three shafts, C D D, are placed, the lower shaft, C, extending through the four frames, but the upper two, D D, extending each through two frames only, as shown in Figs. 1 and 2. The upper shafts, D D, are in line with each other and parallel with the lower shaft C, and they extend a short distance beyond the inner frames, B, and have each a toothed wheel, E, keyed on them at their inner ends. There are also keyed on the shafts D D two wheels, F F, which gear into wheels G G on the shaft C, the power being applied to the latter shaft, which drives the two upper ones, D D. (See Fig. 2.)

H H′ represent two plates comprising rather more than a semi-circle in shape. These plates have a vertical position, and one of them, H, is attached to the inner end of a fixed horizontal bar, I, while the other plate, H′, is attached to a horizontal sliding bar, J, which may be operated by means of a foot-treadle, K, and lever-connections L. (See Fig. 2.)

The two plates H H′, at the points coinciding with circles of which the plates form a part, have small cylindrical projections M attached to them, on which oval rims N are placed corresponding in size to the ends of the box to be operated upon. These oval rims are provided with teeth *a* at their exterior, near their outer ends, which teeth, when the machine is in operation, gear into the wheels E E.

O represents a frame provided with a handle, P, and connected at its front edge by hinges *b* with the framing of the machine.

The frame O has a bar, Q, attached to it transversely, and provided with oblique or inclined sides, on which two bars, R R, are fitted and allowed to slide freely, said bars being operated or adjusted by levers S S, as shown in Fig. 1.

The bars R R have each a roller, T, attached to them at their outer ends. These rollers have beveled peripheries, as shown at *c* in Figs. 1 and 2.

The machine is used as follows: The body U of the box is made of elliptical or oval form in its transverse section in the usual manner, and the heads or ends V are cut in a corresponding form and swayed so as to have a lip or flange, *d*, all around its edge, said lip or flange being formed by depressing or forming a groove, *e*, in the ends or heads near their edges. (See Fig. 4.) The heads or ends V are applied or fitted to the ends of the body U of the box, the rims N being fitted in the grooves *e* of the heads or ends V, and the ends are secured in U and between the rims N by adjusting the sliding bar J. The box with its ends or heads being thus firmly clamped together, the shaft C is rotated and motion communicated therefrom to the shafts D D, from which motion is communicated to the box through the medium of the wheels E and the toothed rims N, the latter being allowed to slide on the projections M, so that they may accommodate themselves to the wheels E. While the box is being thus rotated the operator adjusts the frame O so as to bring the rollers T within the line of the

edges of the heads or ends V of the box, and by operating the levers S S the bars R R and rollers T T are moved laterally and made to bend the lips or flanges *d* over the sides of the body U, as shown in Fig. 5. The operator then, by raising the handle P of the frame U, presses the rollers against the bent flanges or lips *d* and closes them tightly over the ends of U, and the work is completed.

Thus by this simple arrangement I am enabled to secure the heads or ends of the box to its body very expeditiously and in a perfect manner.

I claim as new and desire to secure by Letters Patent—

1. The toothed rims N, in connection with the rollers T, attached to sliding bars, which are placed on a hinged or adjustable frame, O, substantially as and for the purpose set forth.

2. The combination of the toothed rims N with the cylindrical projections M, attached to plates H H′, one of which is adjustable, and all arranged, substantially as described, for the purpose of clamping the box properly while being operated upon, and at the same time admitting of the rims N adjusting themselves with the wheels E, into which they gear, substantially as described.

WM. WILSON, JR.

Witnesses:

JOHN WOOD,

ROBERT LEITHEAD.