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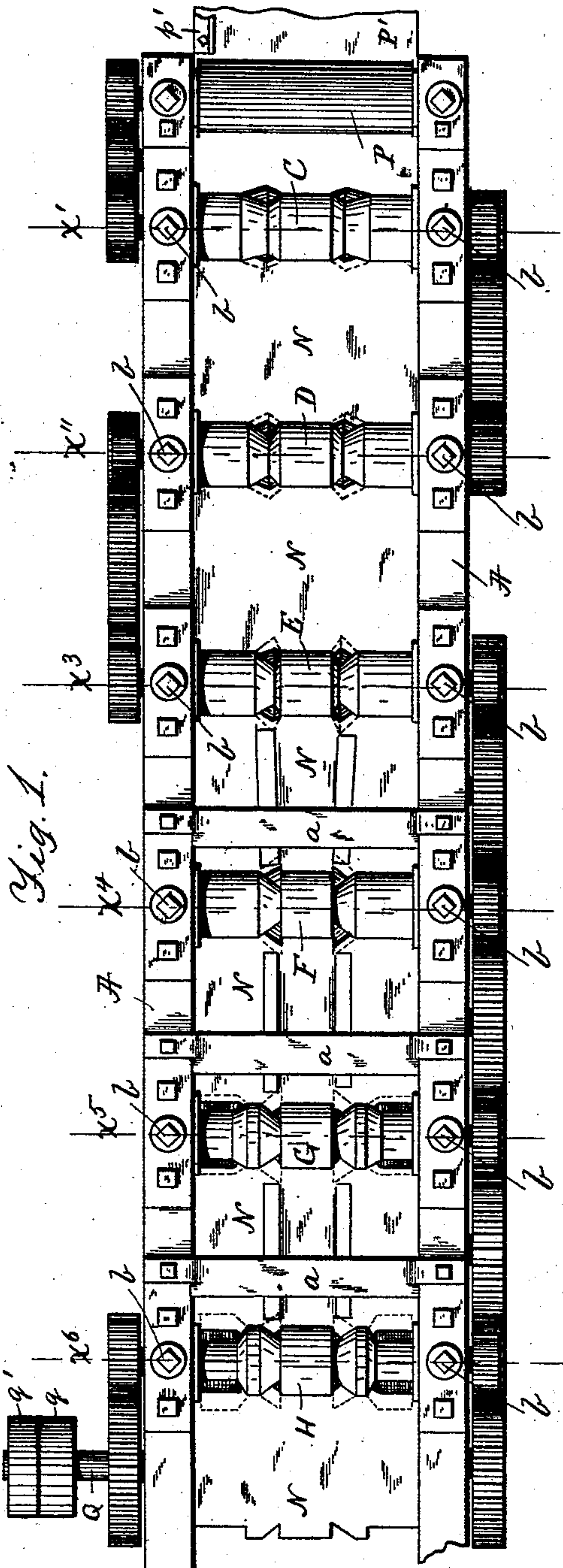
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S. F. HICKS.

MACHINE FOR FORMING SHEET METAL SKYLIGHT BARS.

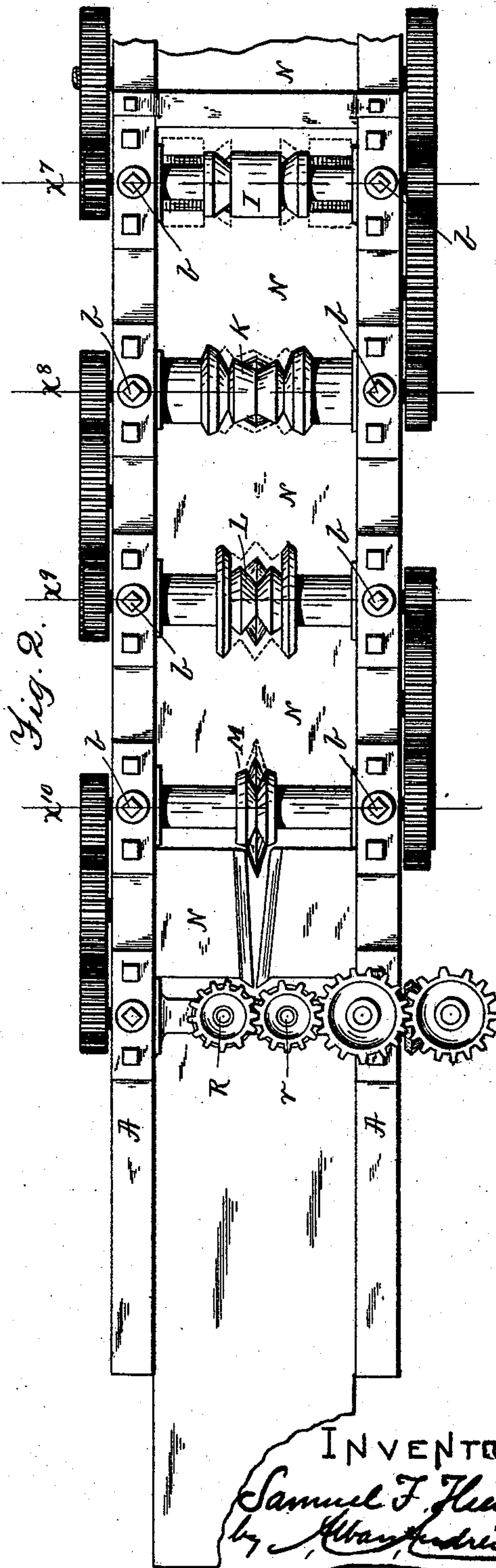
No. 455,621.

Patented July 7, 1891.



WITNESSES

Chas. B. Brooks.  
Ernest J. Day.



INVENTOR

Samuel F. Hicks  
by *Alban Andrieu*

his ATTORNEY

(No Model.)

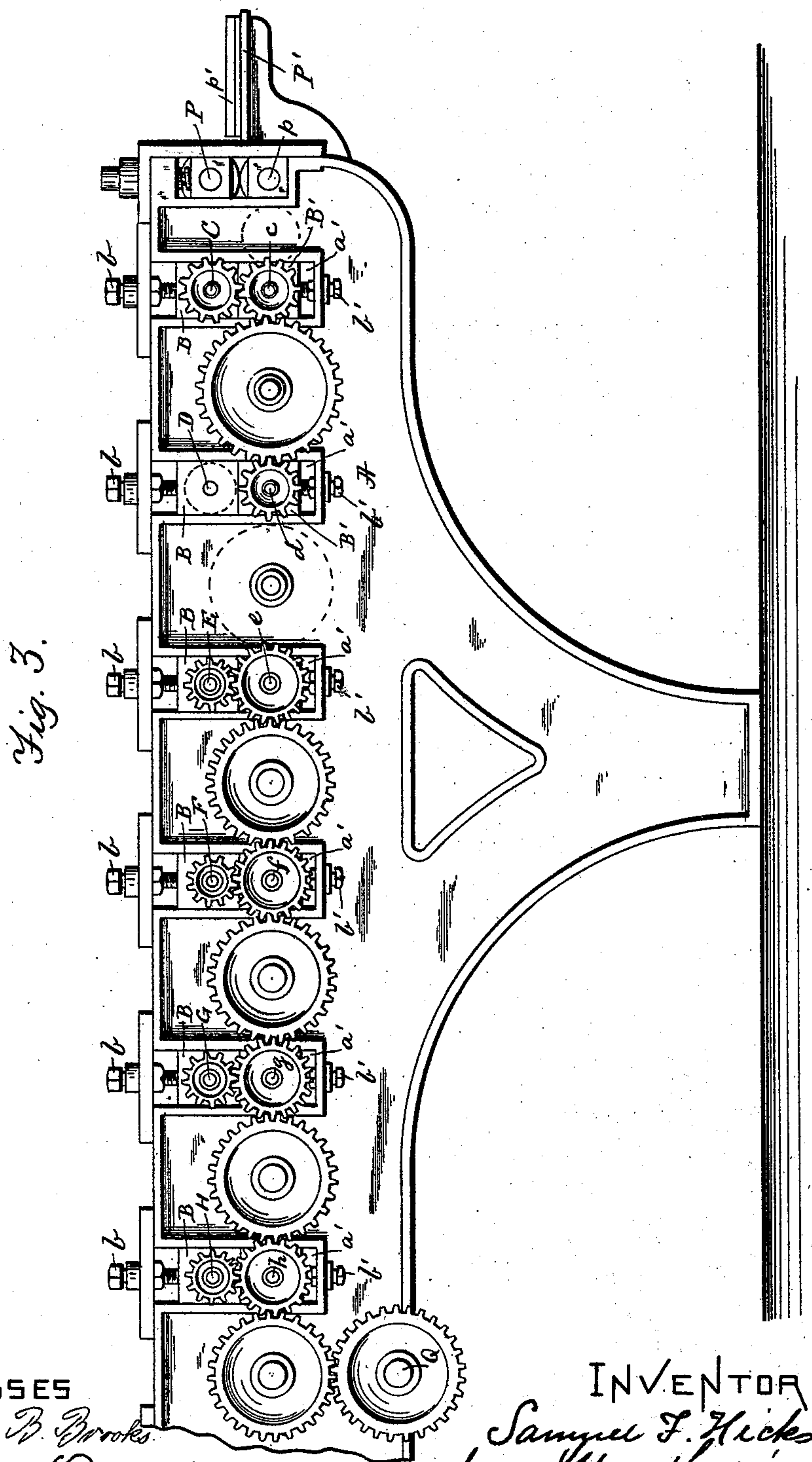
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# MACHINE FOR FORMING SHEET METAL SKYLIGHT BARS.

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Patented July 7, 1891.



WITNESSES

Chas. B. Brooks  
Loring & Gay.

INVENTOR

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(No Model.)

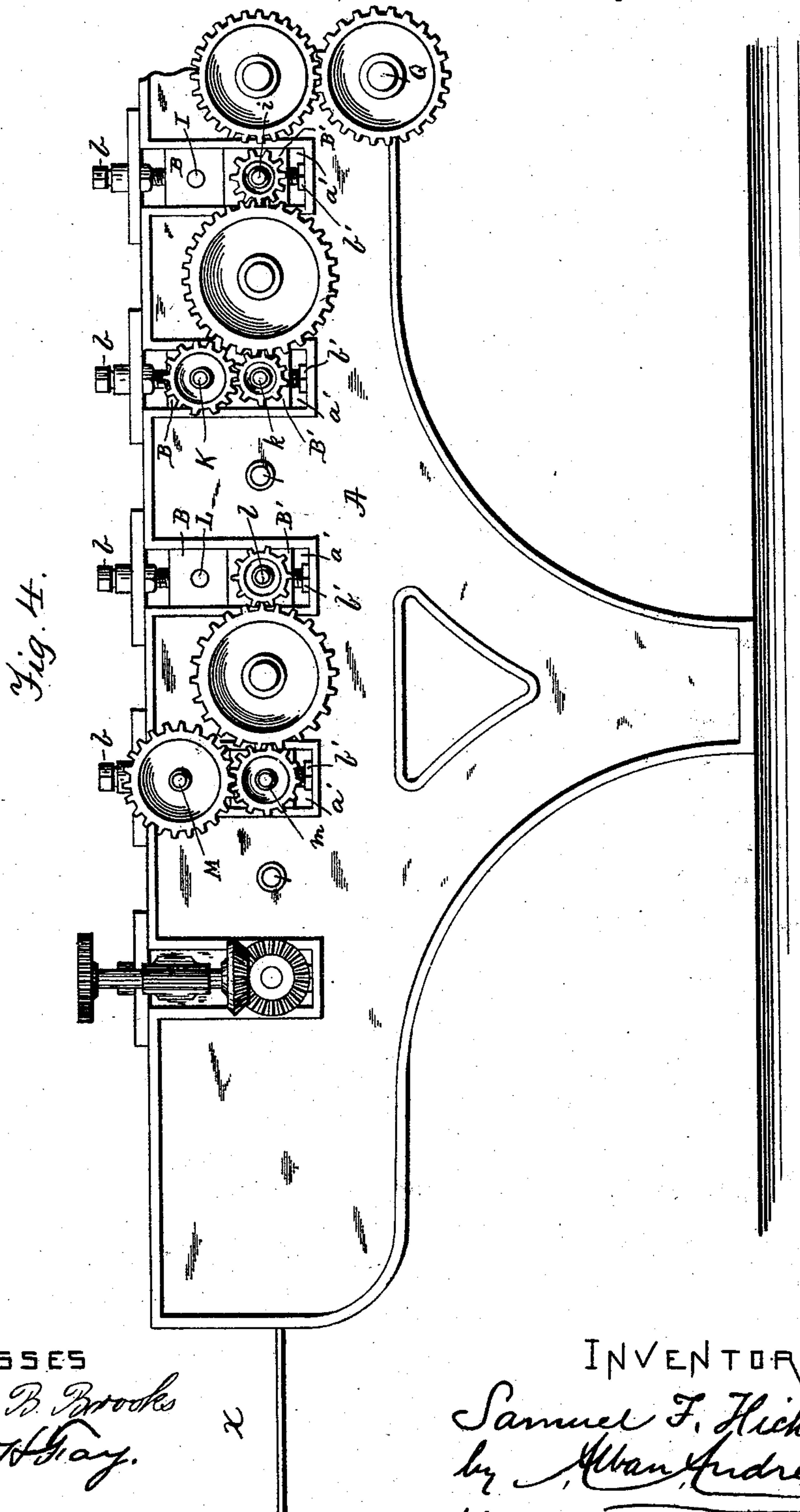
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WITNESSES

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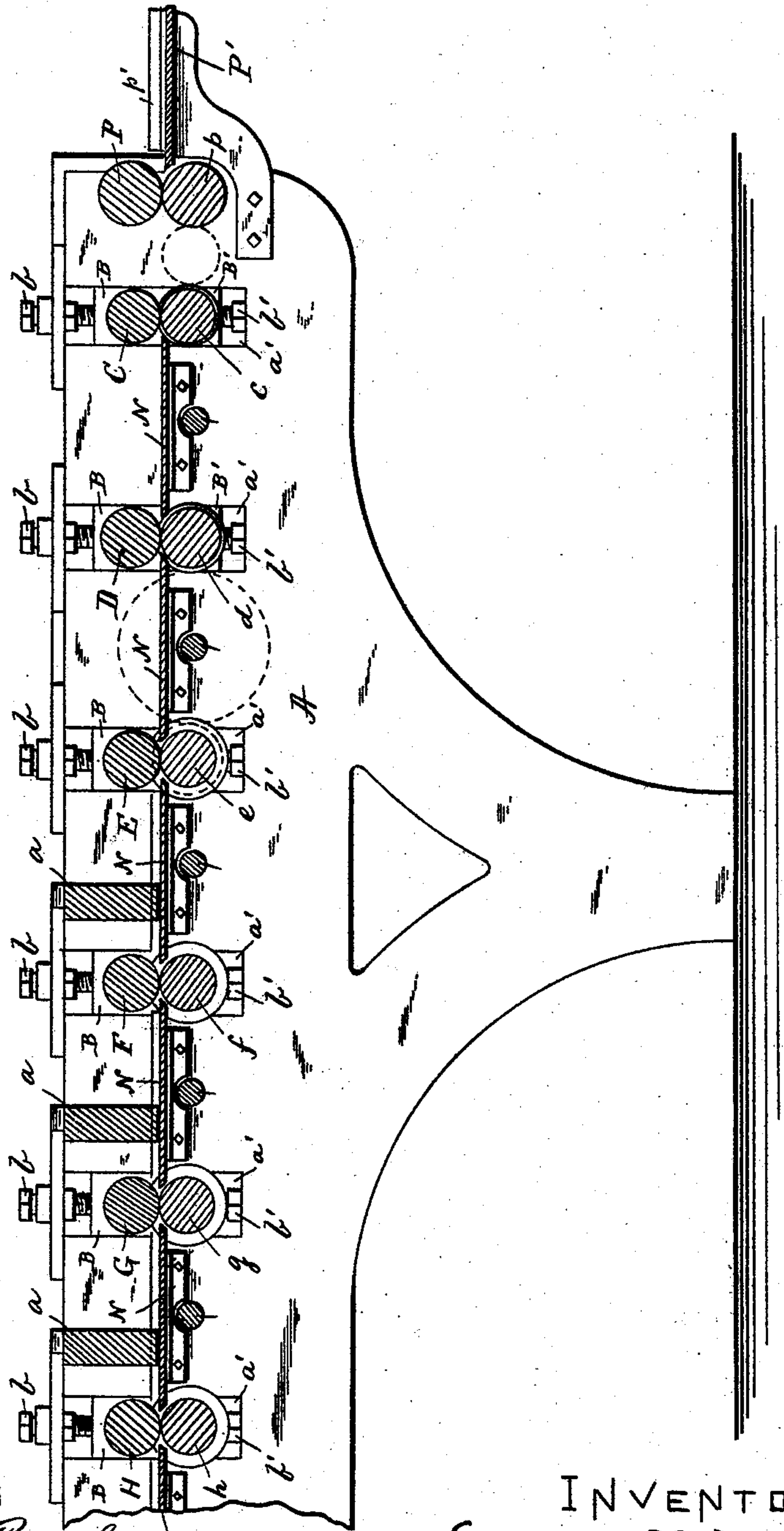
S. F. HICKS.

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Fig. 5.



WITNESSES

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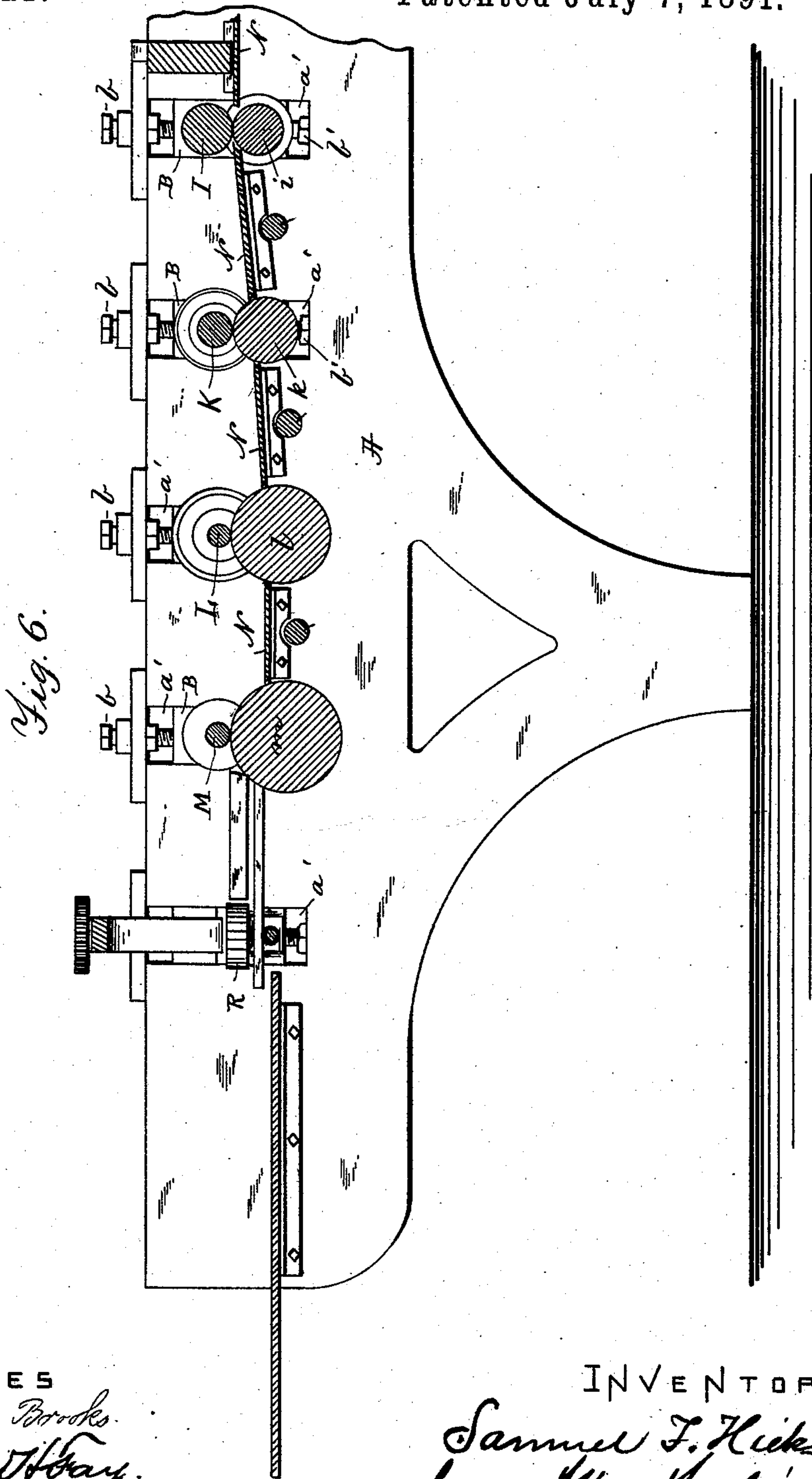
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S. F. HICKS.

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10 Sheets—Sheet 6.

S. F. HICKS.

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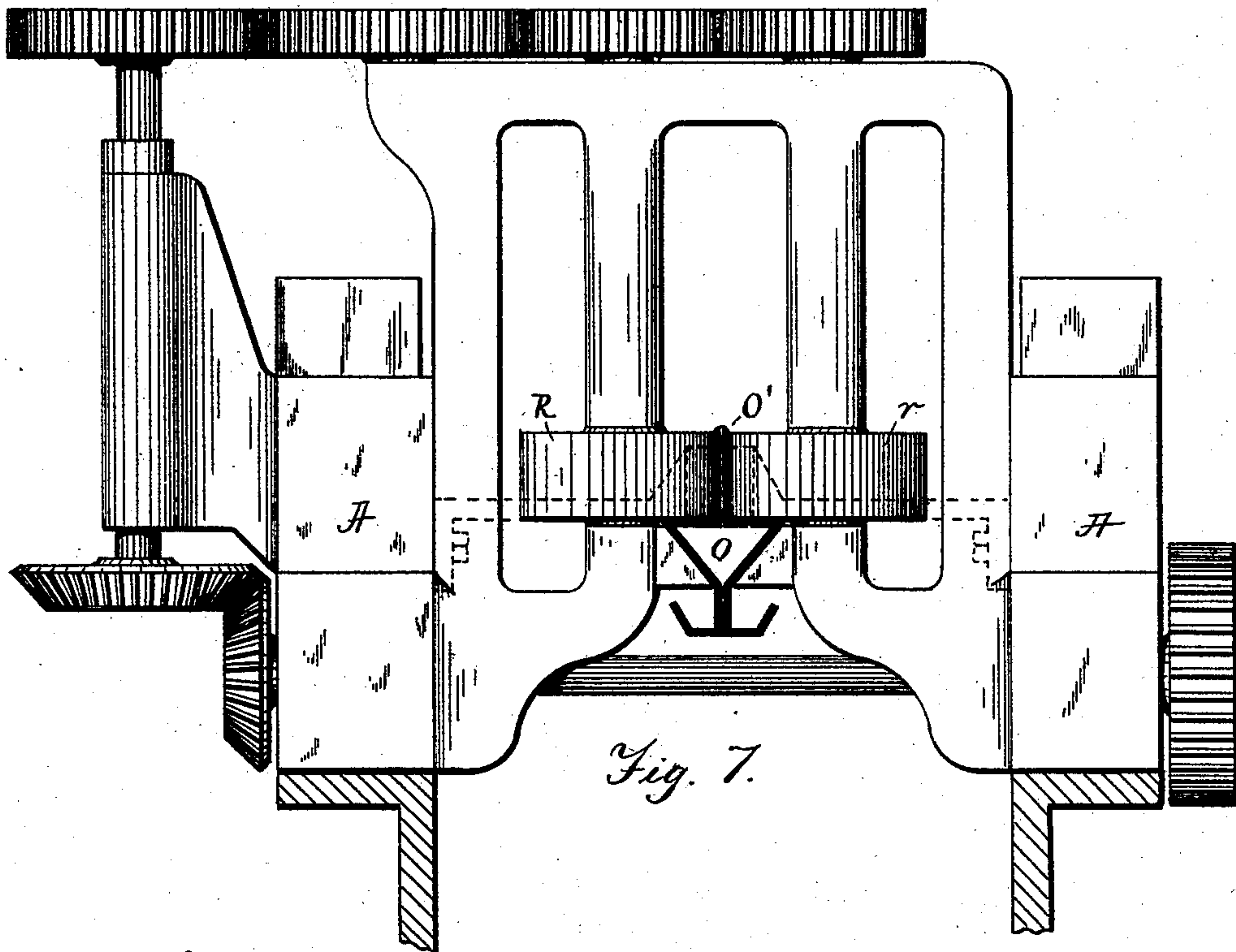


Fig. 7.

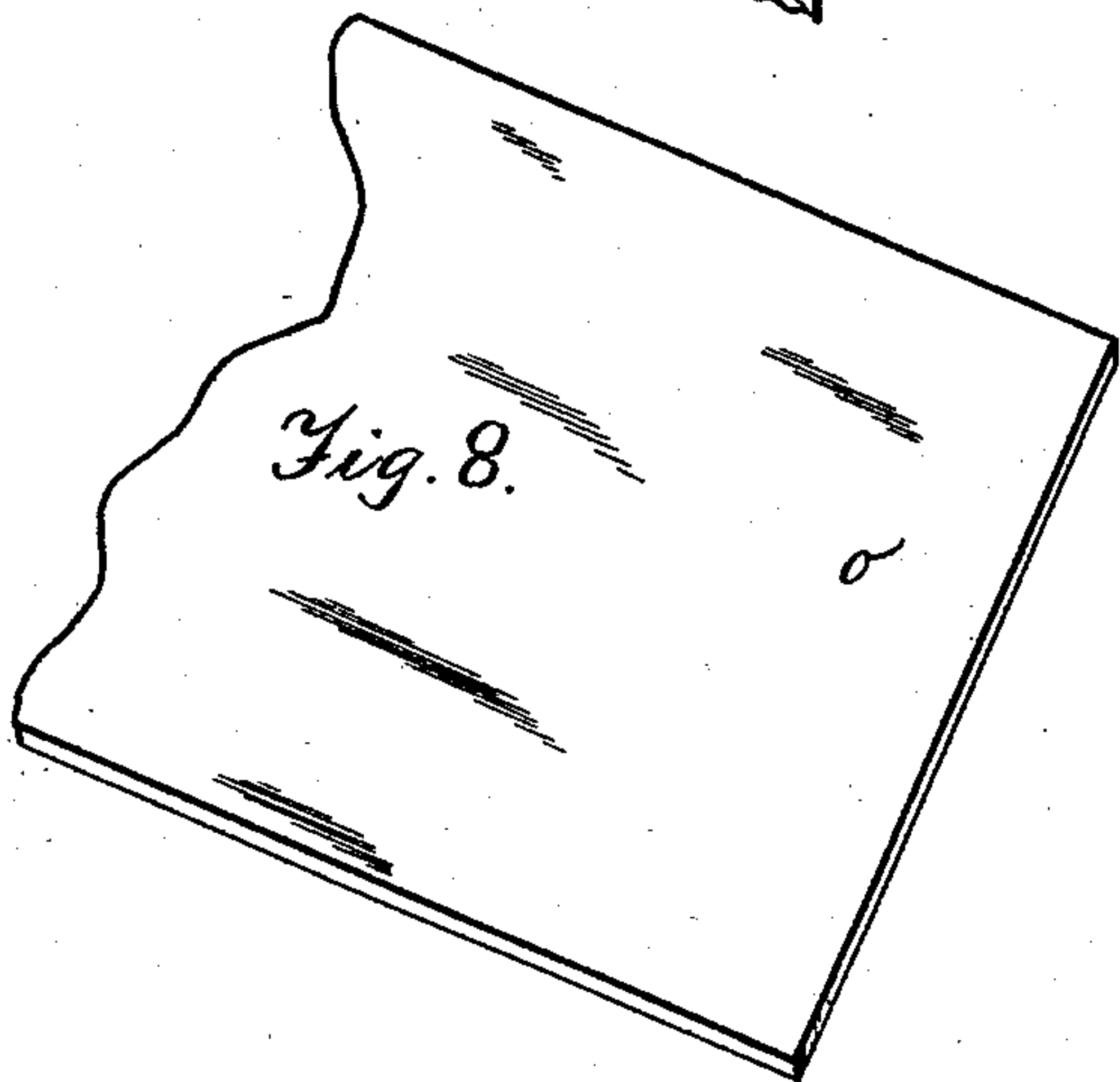


Fig. 8.

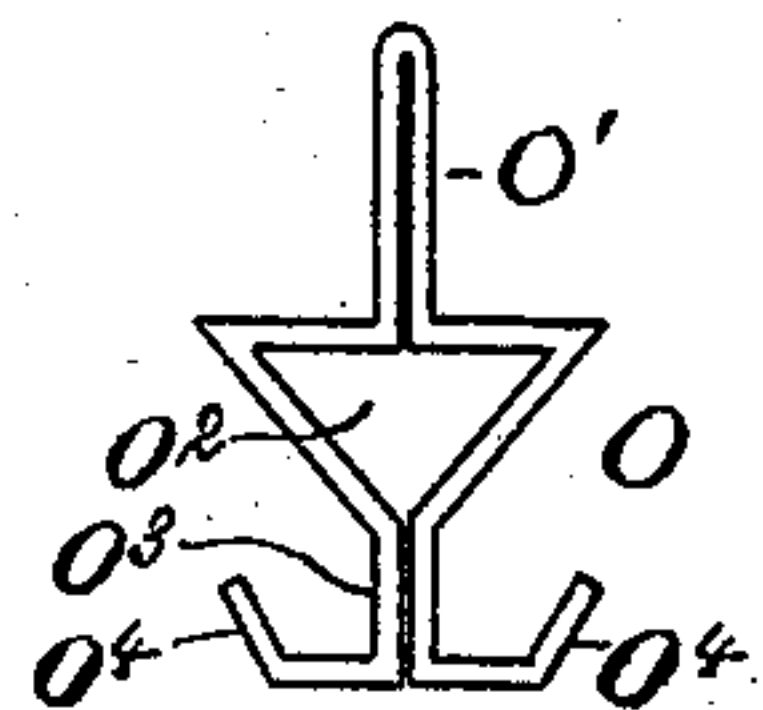


Fig. 9.

WITNESSES

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(No Model.)

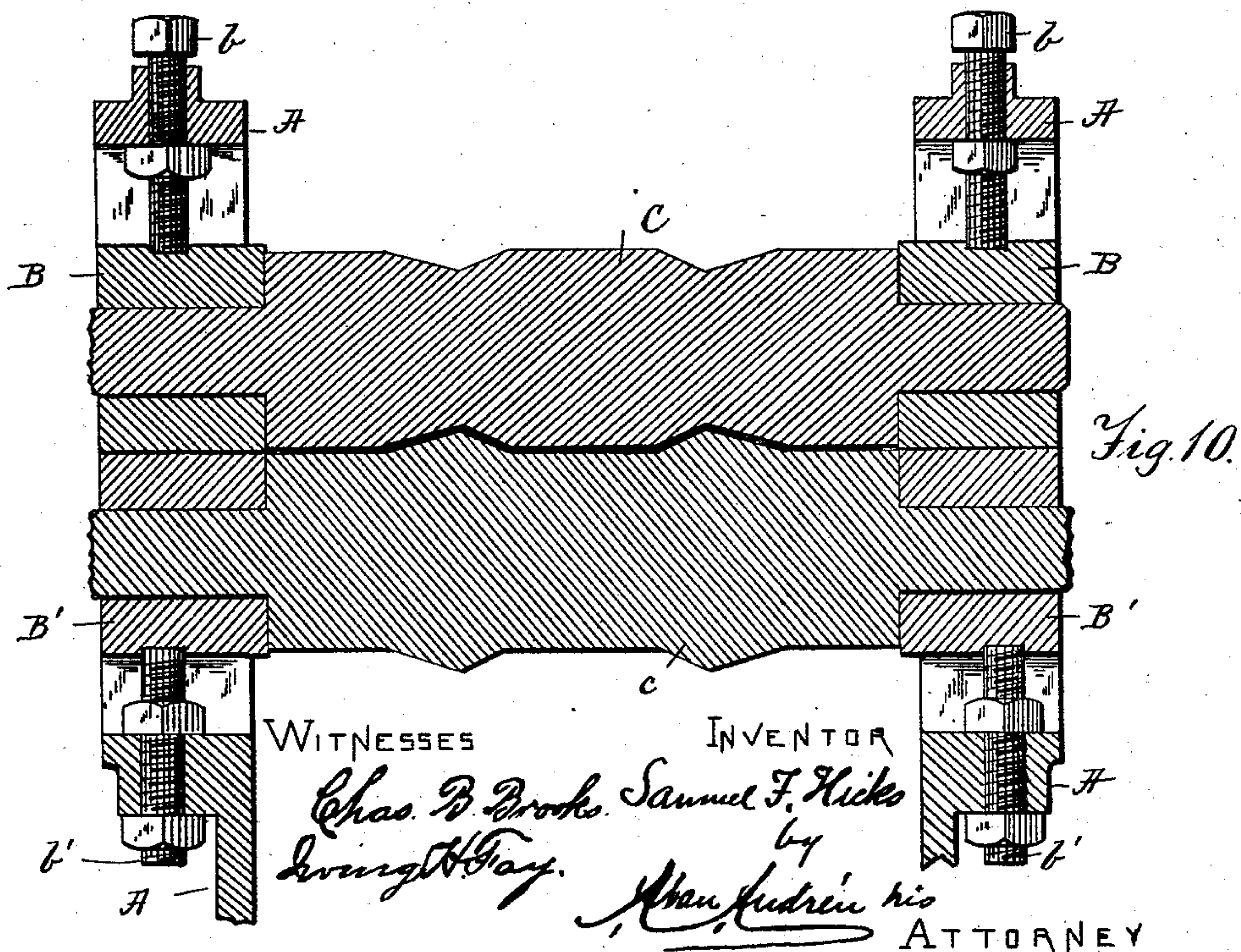
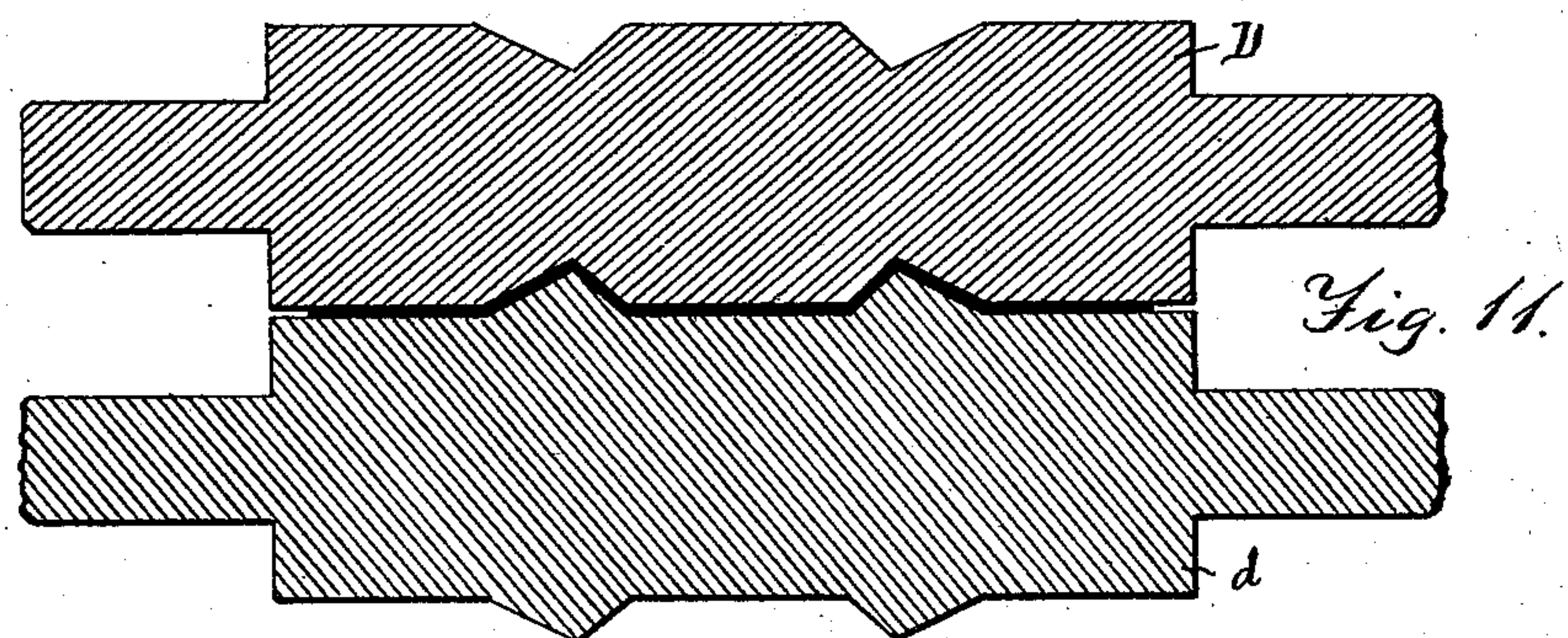
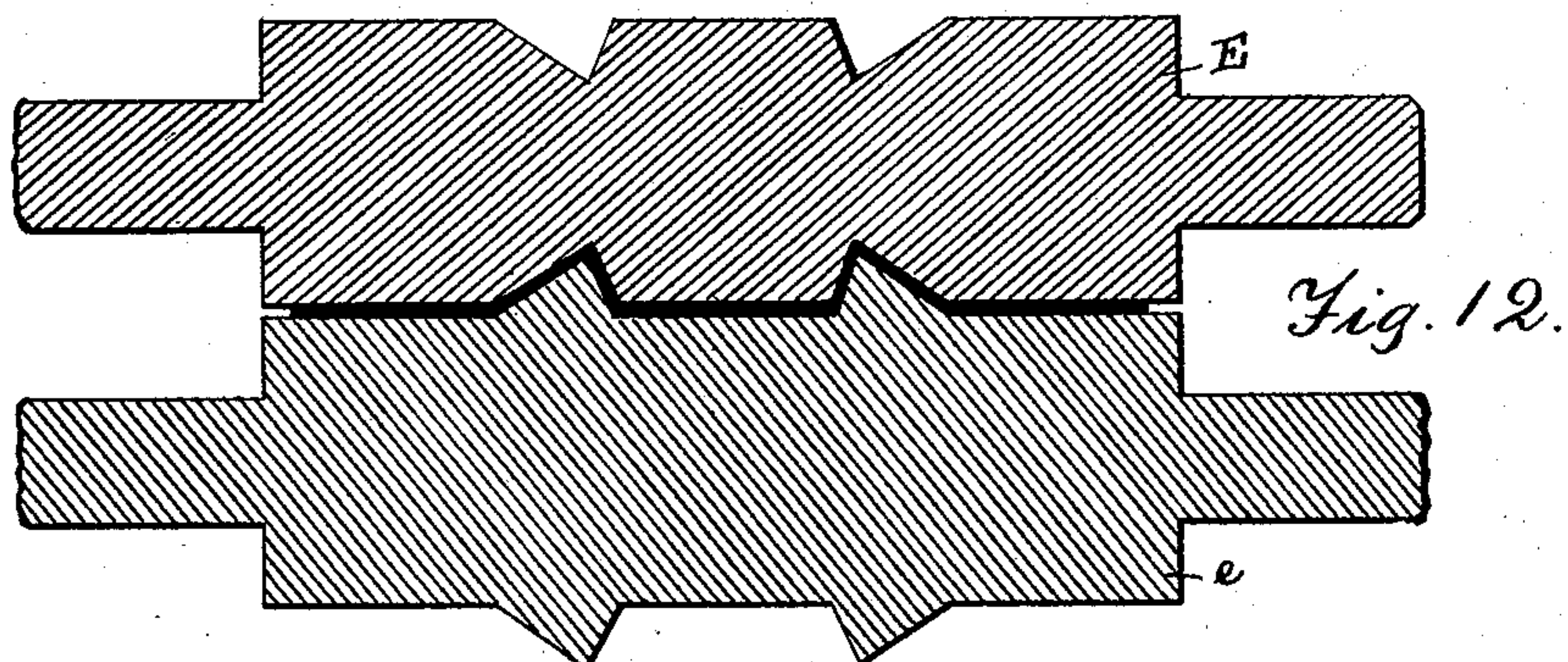
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(No Model.)

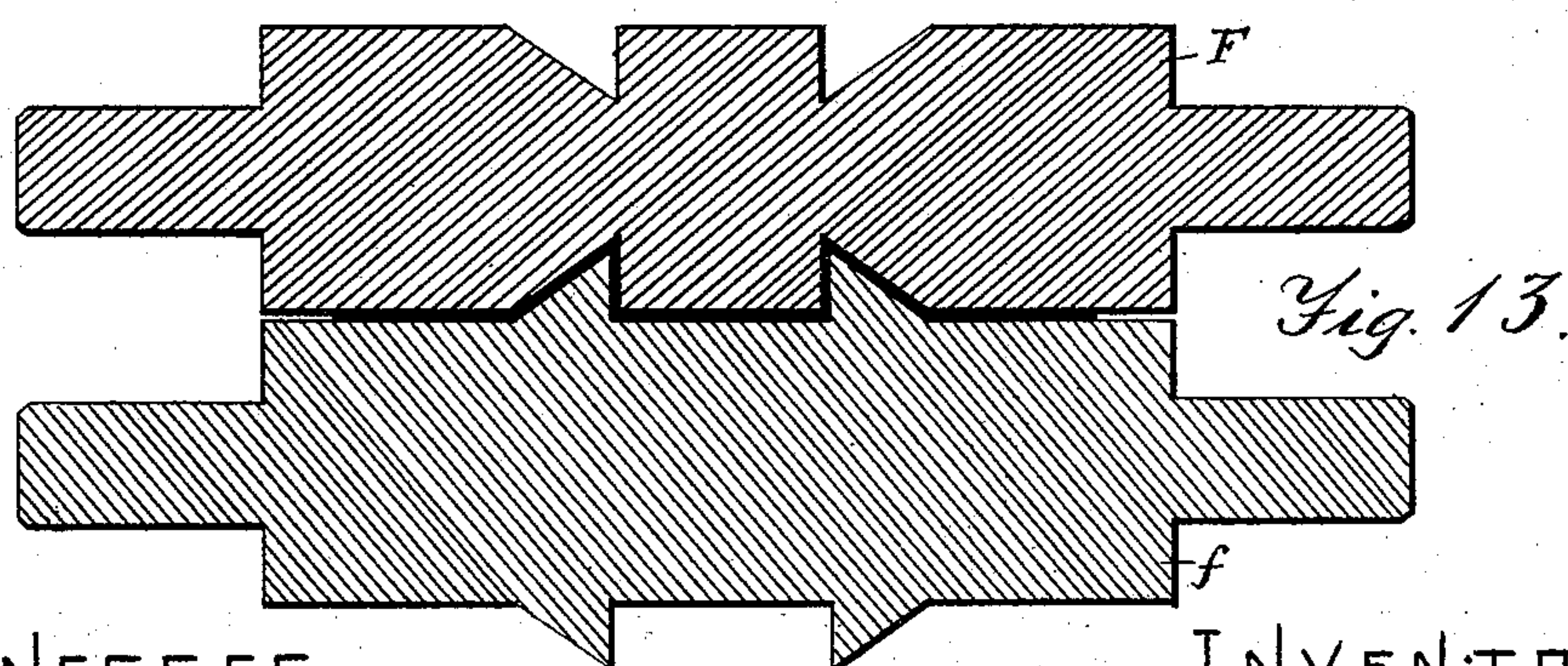
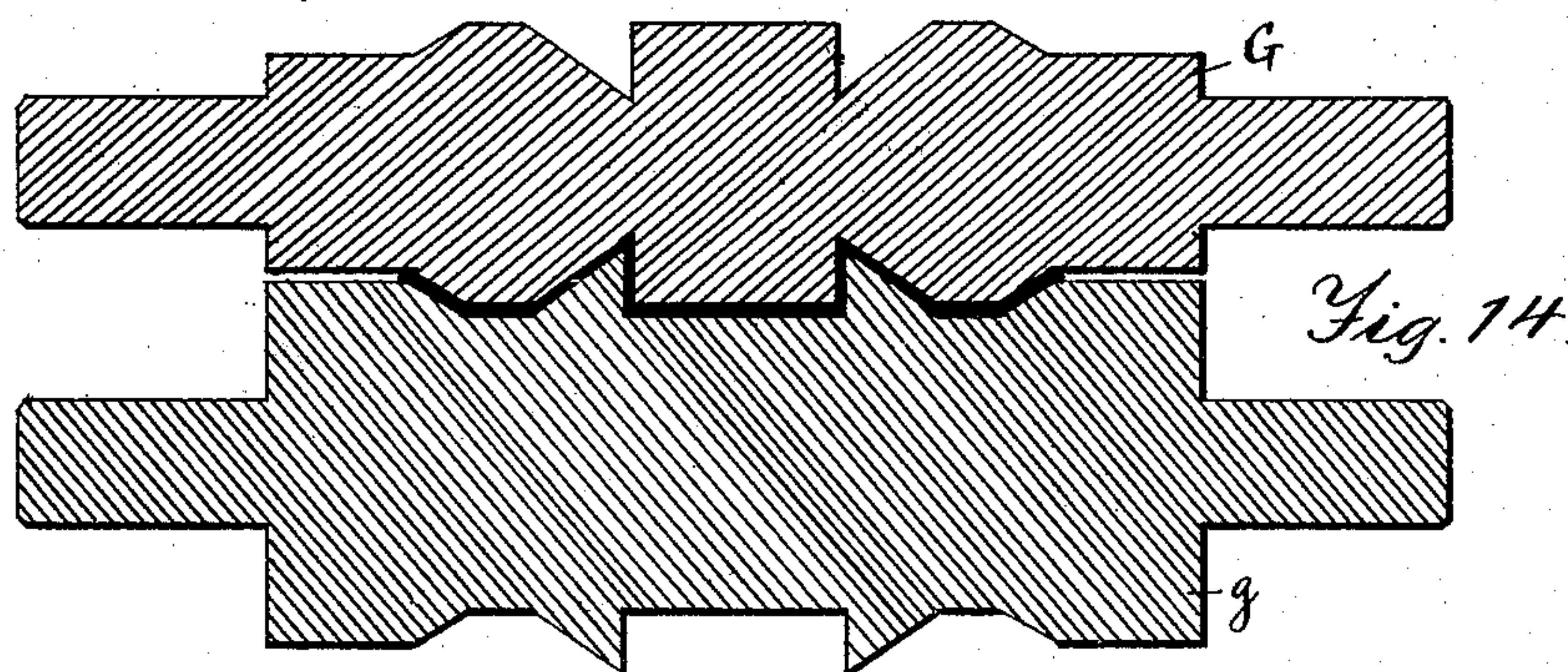
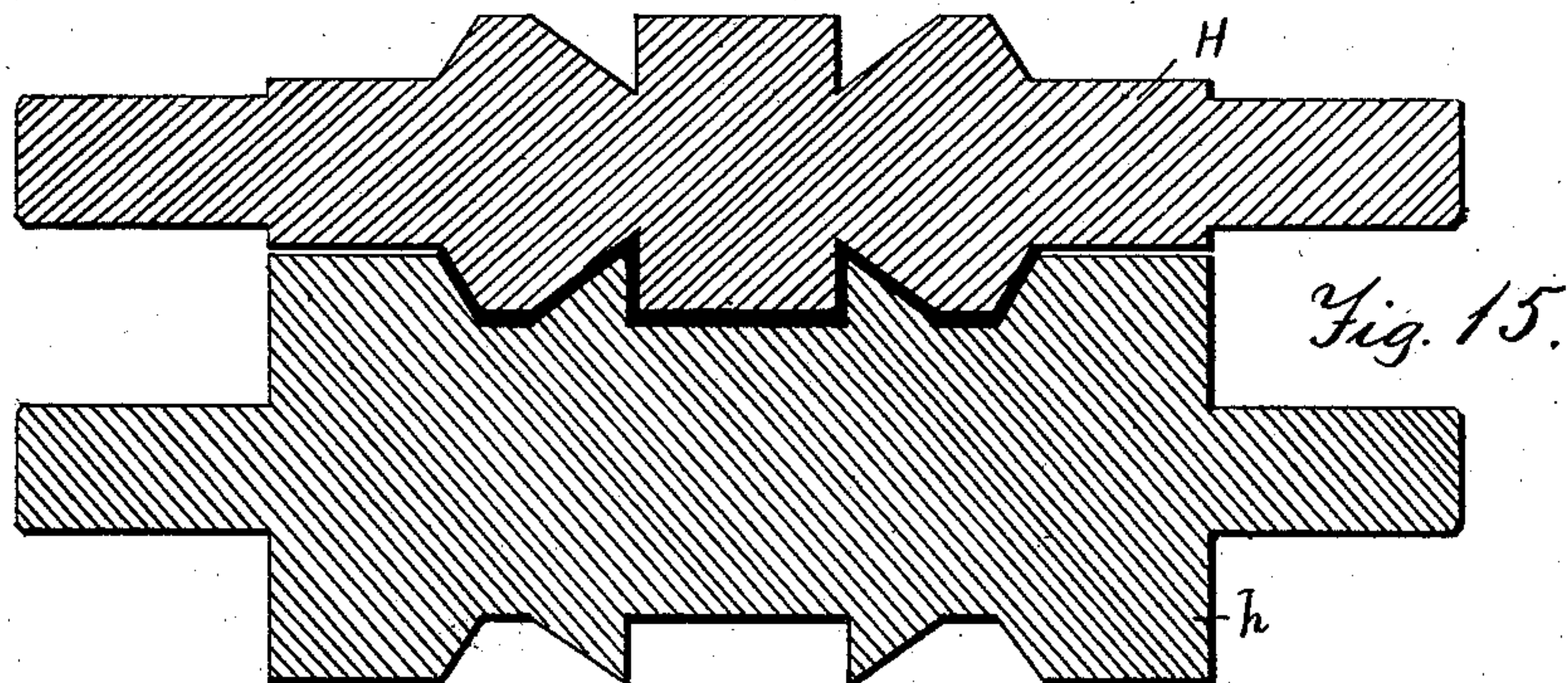
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S. F. HICKS.

MACHINE FOR FORMING SHEET METAL SKYLIGHT BARS.

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WITNESSES

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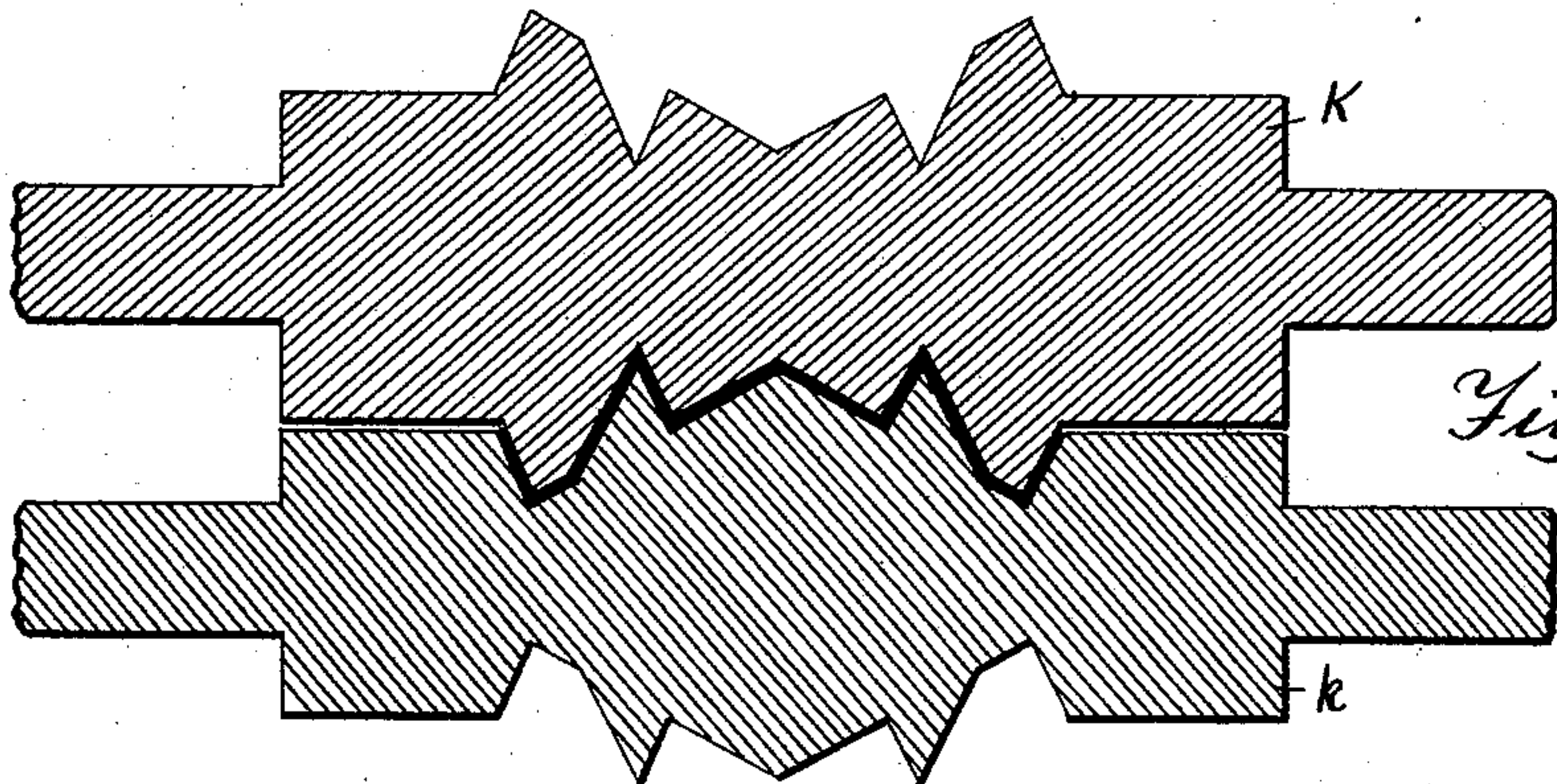
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S. F. HICKS.

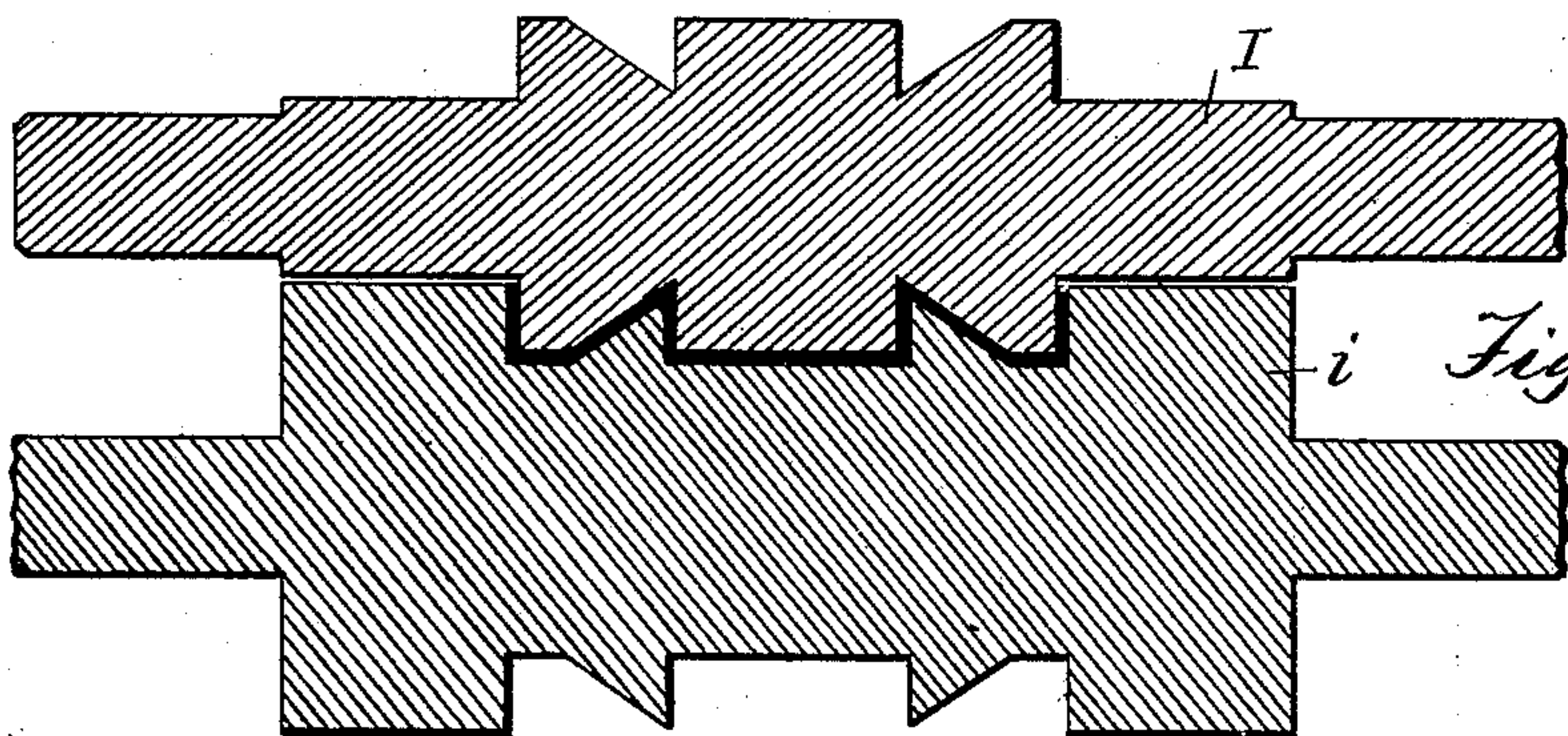
MACHINE FOR FORMING SHEET METAL SKYLIGHT BARS.

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*Fig. 17.*



*Fig. 16.*

WITNESSES

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(No Model.)

10 Sheets—Sheet 10.

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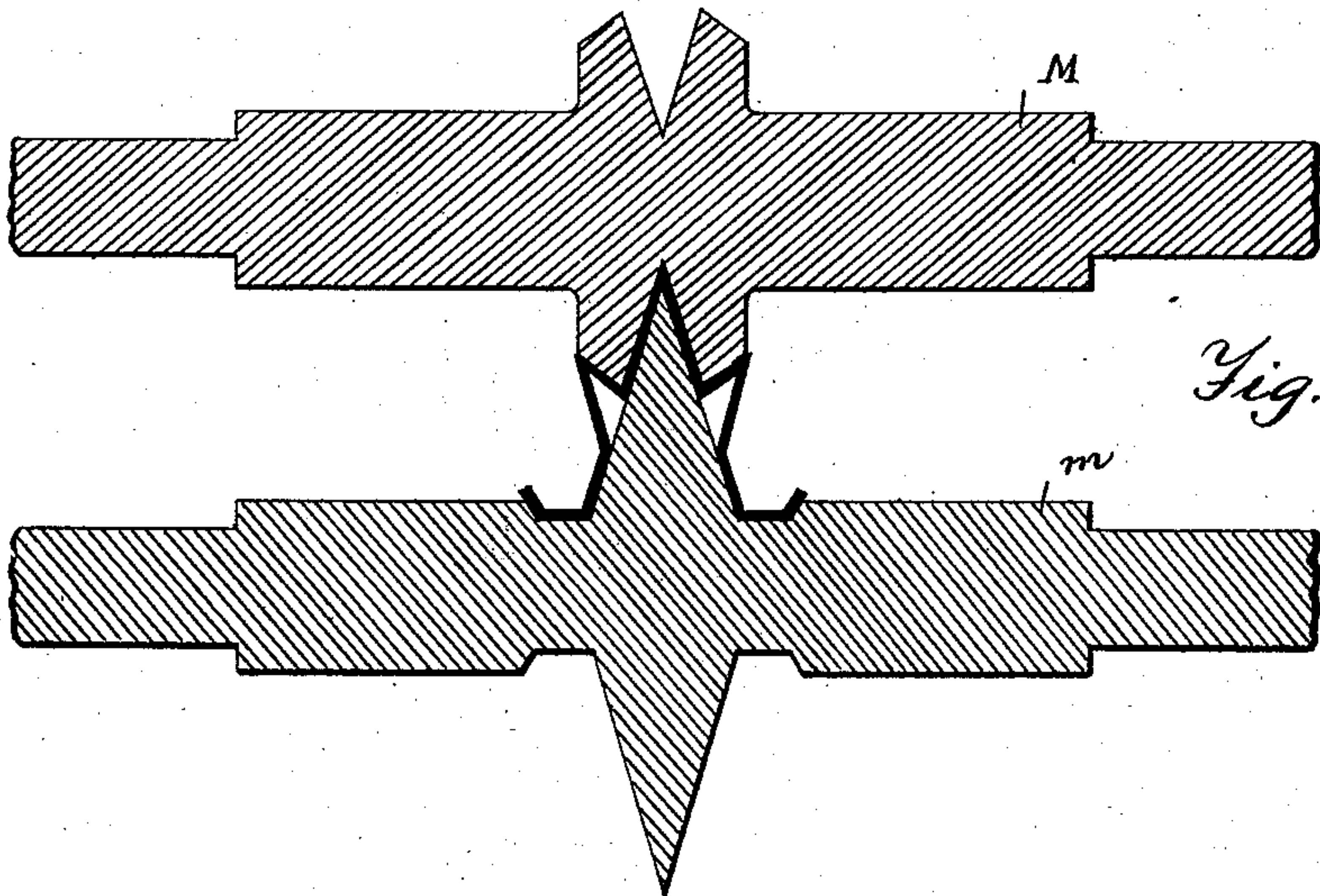


Fig. 19.

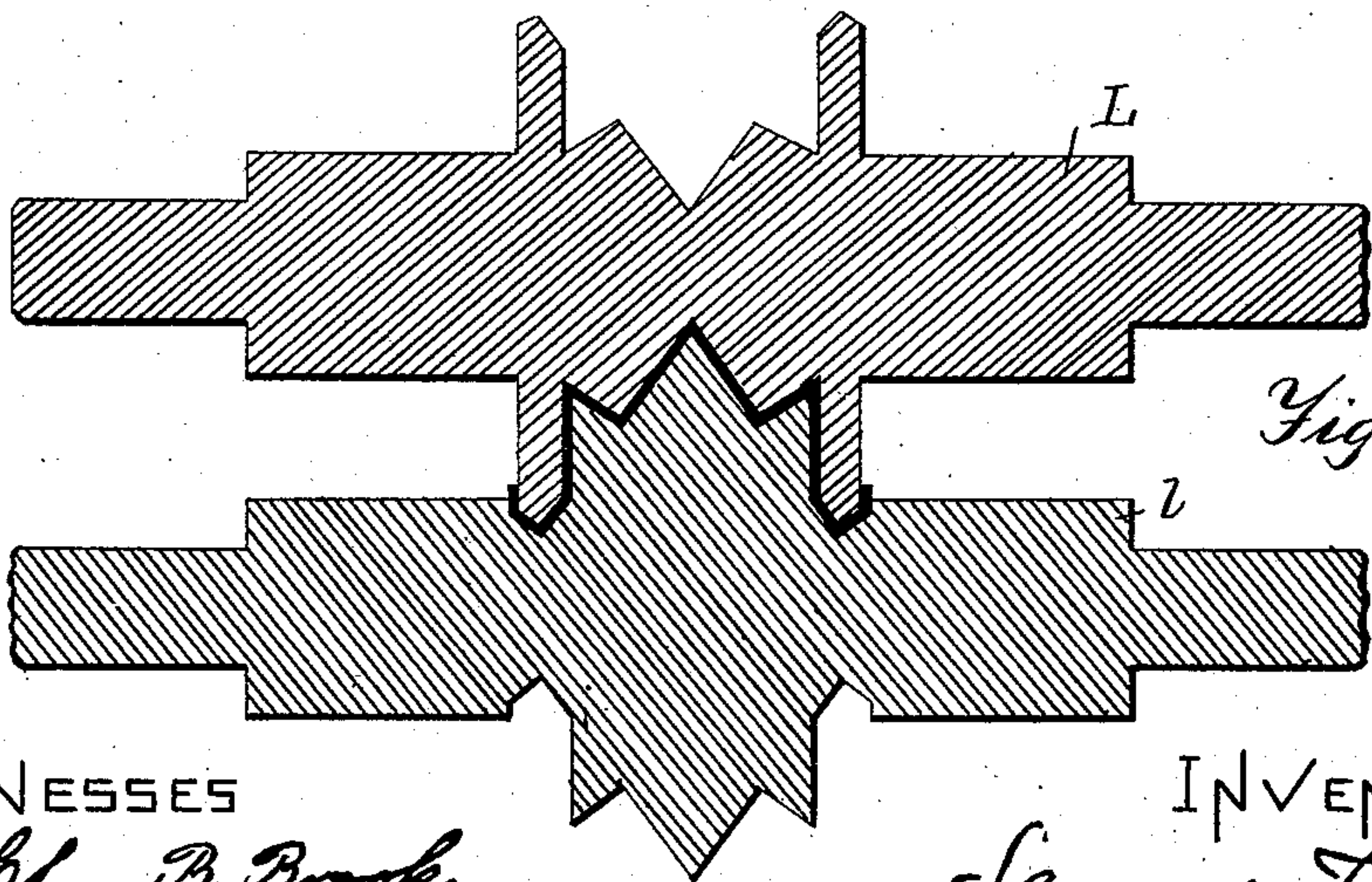


Fig. 18.

WITNESSES

*Chas B. Brooks*  
*Samuel T. Gay.*

INVENTOR

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by *Alban Andrieu*  
his ATTORNEY



# UNITED STATES PATENT OFFICE.

SAMUEL F. HICKS, OF ARLINGTON, MASSACHUSETTS.

## MACHINE FOR FORMING SHEET-METAL SKYLIGHT-BARS.

SPECIFICATION forming part of Letters Patent No. 455,621, dated July 7, 1891.

Application filed February 9, 1891. Serial No. 380,810. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL F. HICKS, a citizen of the United States, and a resident of Arlington, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Sheet-Metal Forming-Machines for Making Skylight-Bars, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in sheet-metal forming-machines for making skylight-bars from sheet metal, and it is carried out as follows, reference being had to the accompanying drawings, wherein—

Figures 1 and 2 represent a plan, Figs. 3 and 4 a side, and Figs. 5 and 6 represent a longitudinal section, of the improved machine. Fig. 7 represents an enlarged end view as seen from X in Fig. 4. Fig. 8 represents a perspective view of the metal plate from which the skylight-bar is made. Fig. 9 represents an end view of the finished skylight-bar; and Figs. 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19 represent cross-sections, respectively, on the lines X' X'' X<sup>3</sup> X<sup>4</sup> X<sup>5</sup> X<sup>6</sup> X<sup>7</sup> X<sup>8</sup> X<sup>9</sup> X<sup>10</sup>, shown in Figs. 1 and 2.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

A A represent the sides or frames of the machine, which are secured together at a proper distance apart by means of stays or bolts *a a a*, as shown. In recesses or cut-away portions *a' a'* in the frames A A are located vertically-adjustable bearings B B', preferably provided with suitable adjusting-screws *b b'*, by means of which the rollers journaled in said bearings are adjusted to and from each other according to the thickness of the sheet metal that is to be shaped between such rollers.

C c, D d, E e, F f, G g, H h, I i, K k, L l, and M m represent a series of rotary shaping-rollers arranged in pairs and journaled in the bearings B B', each such pair of rollers being arranged at a proper distance from the next pair in the series to allow for the proper shaping of the sheet metal as it is being fed forward between such sets of shaping-rollers.

N N are stationary supports arranged between each successive pair of rollers for the purpose of supporting the sheet metal as it is

being fed from one set of rollers to the next one in the series during the shaping operation.

O in Fig. 8 represents the sheet-metal plate from which the skylight-bar is to be made, and O in Fig. 9 represents the finished skylight-bar as it is delivered from the machine after being shaped and formed between the series of rollers above mentioned.

In practice I prefer to arrange in front of the first pair of rollers C c a pair of cylindrical rotary feed-rollers P p, between which the sheet metal is introduced before being passed between the series of shaping-rollers above mentioned; but such feed-rollers may be dispensed with without departing from the essence of my invention.

P' in Figs. 1, 3, and 5 is a work-support or table in front of the rollers P p, upon which the sheet metal is laid and guided to and between the feed and shaping rollers, said table being preferably provided with a rib or ledge p', against which one side of the sheet is being held as it is being introduced between the rollers. Such rib may be made laterally adjustable upon the table P', so as to compensate for variations in the width of the metal sheets that are to be shaped.

Q in Fig. 1 represents the driving-shaft journaled in bearings in the frames A A, which shaft is set in a rotary motion, preferably by means of belt-power applied to a pulley g thereon.

g' is a loose pulley on the shaft Q, as usual. Each pair of rollers in the series is made male and female and the successive pairs of rollers are shaped so as to bend, crease, and shape the metal sheet passed between them until the skylight-bar O is produced, as shown in Fig. 9.

By reference to Fig. 9 it will be observed that the skylight-bar comprises a triangular-shaped body O<sup>2</sup>, a longitudinal rib O<sup>3</sup> depending from the lower side of the triangular-shaped body and comprising parallel walls that terminate in divergent edge flanges O<sup>4</sup>, while the uppermost side of the triangular-shaped body is formed with a longitudinal rib-section O', which likewise comprises parallel walls that lie against each other.

For the purpose of completing the upper rib-section O', I employ in connection with the series of shaping-rollers hereinbefore de-



scribed a pair of rotary rollers R *r*, which follow the last set of shaping-rollers M *m* and are arranged on vertical supports to revolve in a horizontal plane. The periphery of the rollers R *r* are parallel with each other, so that they act upon the walls of the upper rib-section O' and thereby press such walls into close contact with each other for the purpose of completing the skylight-bar. The series of rollers are geared together and to the driving-shaft by suitable gearing similar to ordinary rolling-machines.

With my present invention sheets of any lengths may be quickly and most accurately shaped and skylight-bars formed simply by feeding a sheet of metal between the successive pairs of rollers in the series, and this can be done by less labor and without the need of skilled laborers, as all that is necessary to do is to feed one end of sheet between the first set of rollers in the series, when it will be automatically fed onward and gradually bent, creased, and shaped to the desired figure.

Having thus fully described the nature,

construction, and operation of my invention, I wish to secure by Letters Patent and claim—

In a machine for manufacturing sheet-metal skylight-bars, the combination, with successive sets of revolving male and female shaping-rollers for producing a skylight-bar with a triangular-shaped body and upper and lower rib-sections, of a pair of pressing-rollers having their peripheries arranged parallel with each other and revolving in a plane at right angles to the plane of rotation of the male and female shaping-rollers for the purpose of pressing the walls of the upper rib-sections into contact and thereby placing them parallel with each other, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 3d day of February, A. D. 1891.

SAMUEL F. HICKS.

Witnesses:

EDITH C. HICKS,  
ALICE H. PORTER.