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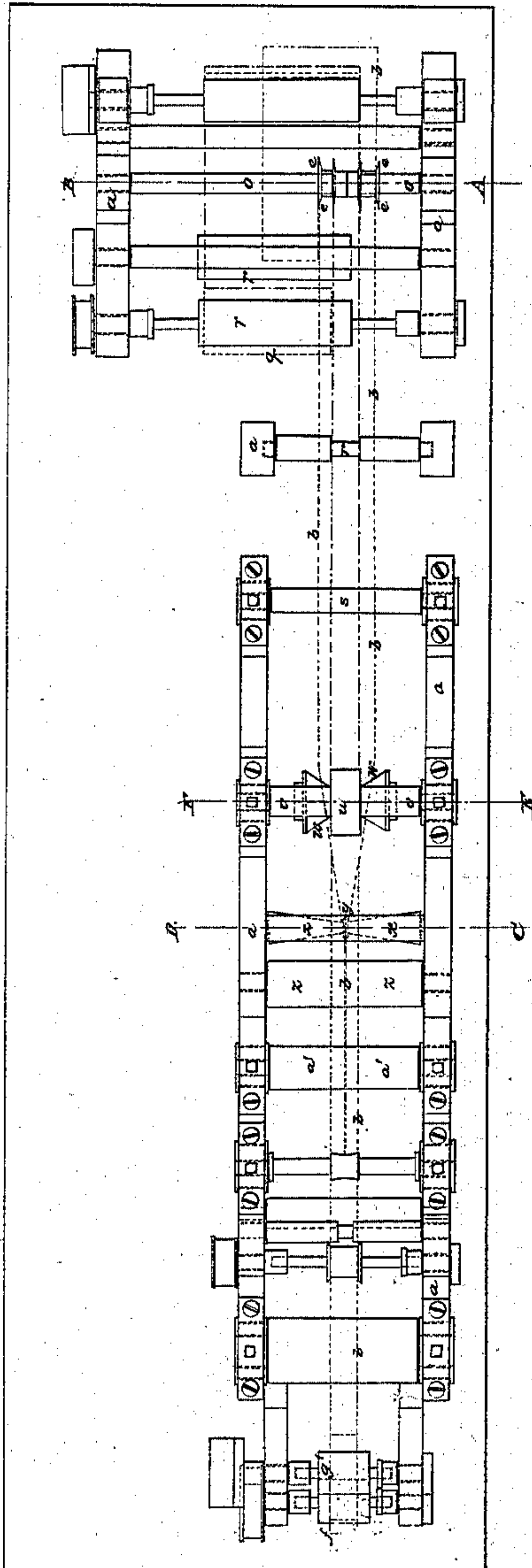
T. J. Mayall,

Belting Machine,

N<sup>o</sup> 26,603.

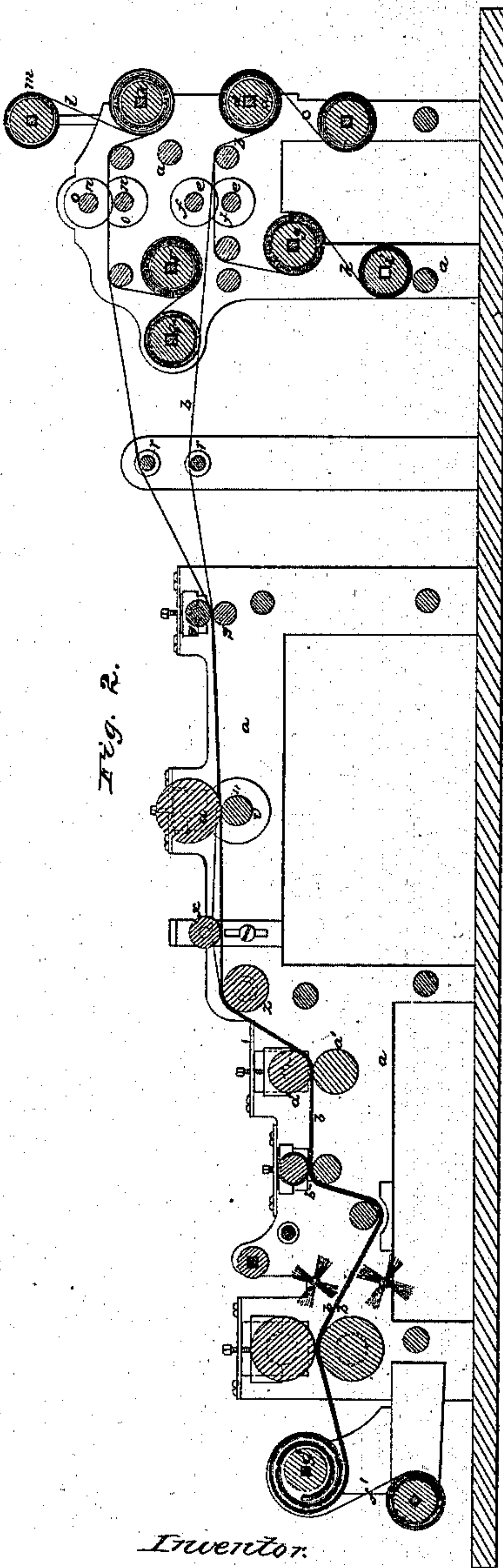
Patented Dec. 27, 1859.

Fig. 1.



Witnesses:  
Joseph Gavett  
Albert W. Gunn

Fig. 2.



Inventor:  
T. J. Mayall

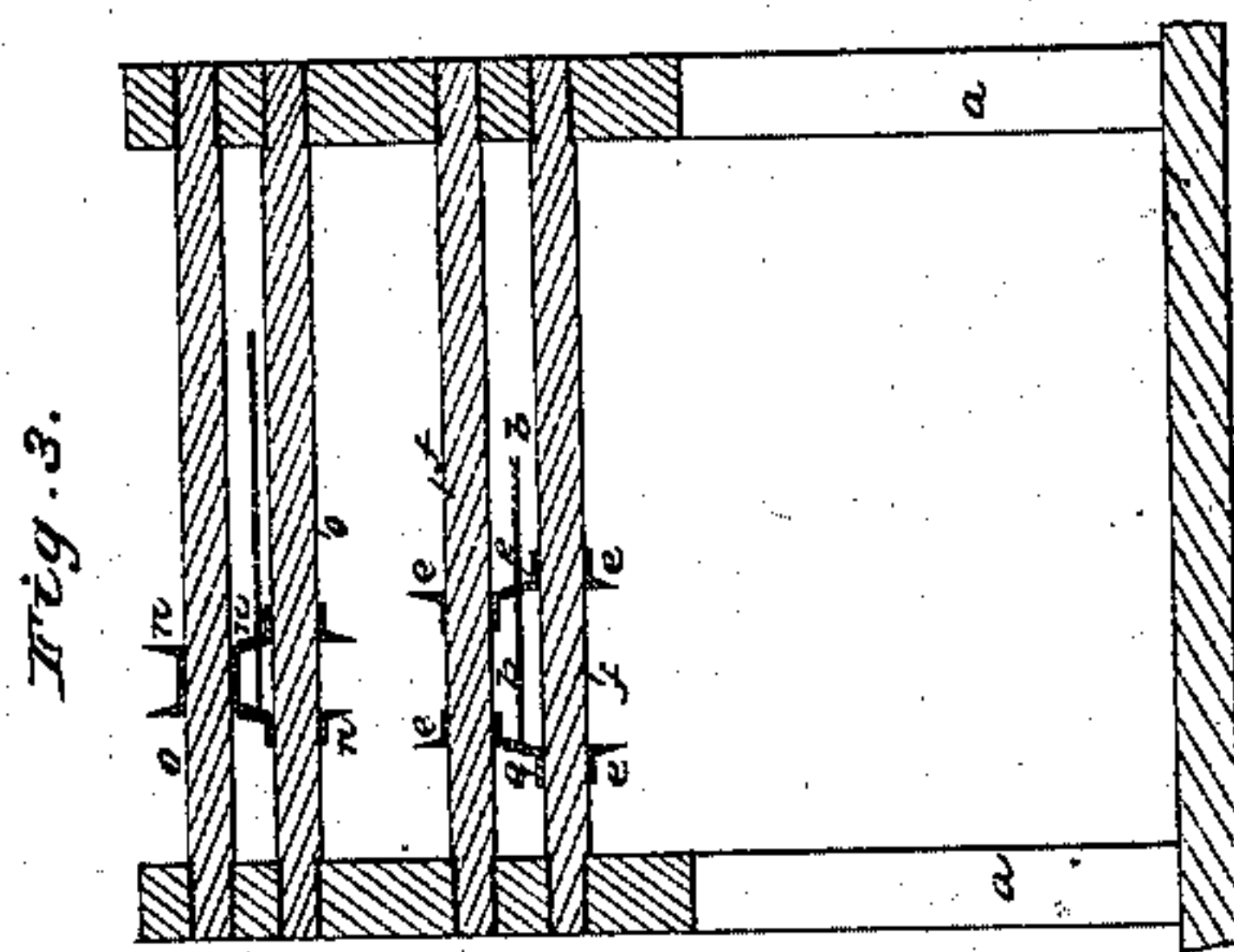
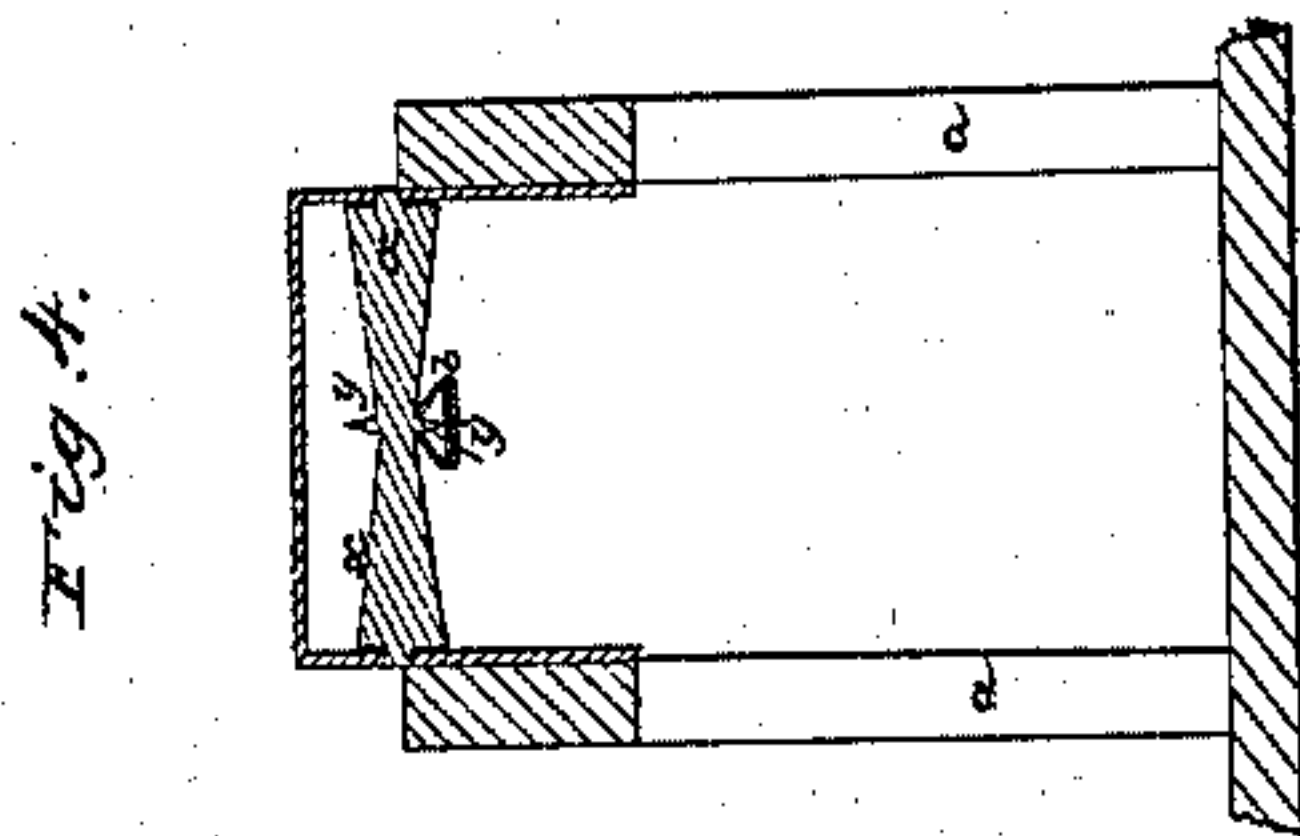
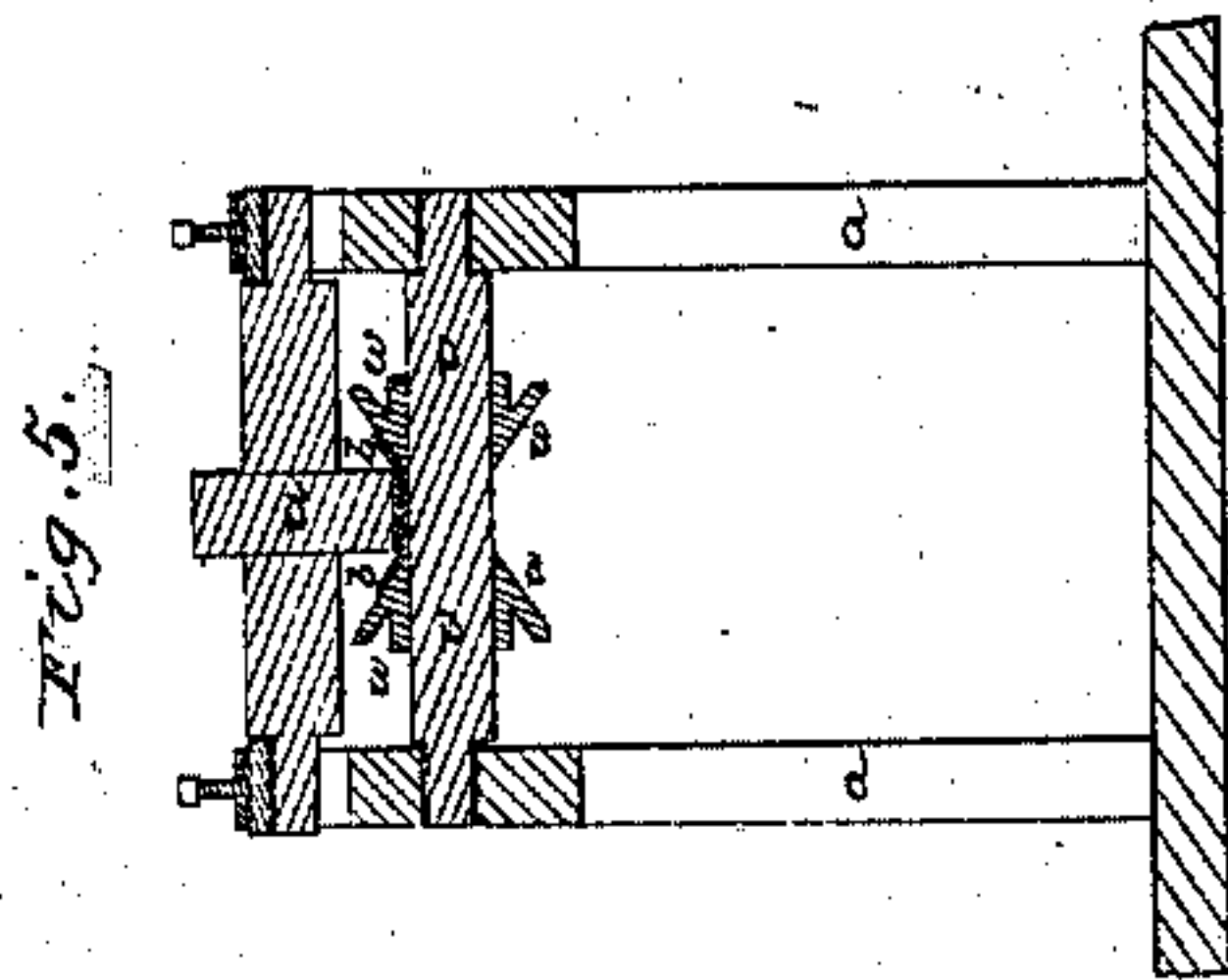


Sheet 2-2 Sheets

*T. J. Mayall,*  
*Belting Machine,*

*N<sup>o</sup> 26,603.*

*Patented Dec. 27, 1859.*



*Witnesses:*  
*Joseph Gault*  
*Albert W. Brown*

*Inventor*  
*T. J. Mayall*



# UNITED STATES PATENT OFFICE.

THOMAS J. MAYALL, OF ROXBURY, MASSACHUSETTS.

## APPARATUS FOR FORMING RUBBER BELTING.

Specification of Letters Patent No. 26,603, dated December 27, 1859.

*To all whom it may concern:*

Be it known that I, THOMAS J. MAYALL, of Roxbury, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Making Rubber or Gutta-Percha Belting or Banding, and that the following description, taken in connection with the accompanying drawings hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements by which my invention may be distinguished from all others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

The figures of the accompanying plate of drawings, represent my improvements.

Figure 1 is a plan or top view of my new machine. Fig. 2 is a central, longitudinal vertical section of the same. Figs. 3, 4, and 5 are transverse vertical sections taken respectively in the plane of the lines A, B, C, D, E, F.

In the manufacture of the ordinary rubber or gutta percha belting or banding by hand, a sheet of rubber or gutta percha is first folded over the fabric that forms the body of the belt, after the inner and outer sheets have been cut to the required widths. But this mode occupies a great deal of time and requires a considerable skill on the part of the operatives. Machines have also been devised for accomplishing this result, but have not, previous to my invention, been successful in producing a perfect belt or band with rapidity and accuracy. By my invention the folding of the outer sheet over the body or inner fabric of the belt or band and the forming of a true and even joint or seam is accomplished accurately and with despatch by my machine, as is also the cutting of the outer and inner sheets into the desired strips for forming belts or bands of any required width.

*a a a* in the drawings, represent the supporting framework of the machine. The sheet of wide rubber or gutta percha that is to form the outside *b b b* of the belt is wound either coated with cement or in a sticky condition on one surface, together with cloth *c c c*, to prevent the adhesion of the surfaces upon a supply roll *d*, as is the case also in making belting by hand, and fed along to two sets of revolving circular cutters *e e, e e*, which cut off from the wide sheet the neces-

sary width to form the outside of the belt, these cutters being susceptible of lateral adjustments on their shafts *f f*, so that any desired width of strip can be cut off. The remaining portion of the wide sheet is wound up as fast as the strip is cut off upon a roller *g* together with a sheet of cloth *h* supplied by a roller *i*.

*h* is a roller upon which is wound the sheet of rubber or gutta percha of which the inner portion or body of the belt, is to be composed, alternating with a sheet of cloth *l* so as to prevent the layers from sticking together, the cloth being supplied from a roll *m* and fed along to two sets of revolving circular cutters *n n—n n*, which cut off the desired width of strip for the body of the belt, being susceptible of lateral adjustment on their shafts *o o*. The remaining portion of this sheet is then wound upon a roll *p* together with cloth *q*. The strips to form the inner and outer portions of the belt, being thus cut off are then fed over the rolls *r r*, the outside strip being the lower, and thence between two rollers *s s*, which unite the two strips and cause them to adhere. The sheet thus formed of the two strips then passes between two rollers *u* and *v*, the lower one *v* having cams *w w*, while the upper one *u* works between the cams upon the upper surface of the belt. By these rollers *u* and *v* the belt is turned up into a gutter shape as shown in Fig. 5 and thence passes to a roller *x*, having two tapering surfaces and a thin circular disk *y*, the tapering surfaces of the roller *x* serving to complete the overlapping or covering of the inner strip by the outer one. The edges are then brought evenly together so as to form a true and even joint and at the same time the belt is formed, by being drawn down, or cramped partly around the periphery of a roller *z*, the belt being passed down in nearly a vertical direction and afterward passing between two pressure rollers *a' a'*. This mode of drawing the belt, brings the edges of the lap or covering to a close, even joint, with the greatest accuracy. The belt being thus completed is then wound with a sheet or strip of flexible metal *f'* between its layers, to give it a smooth surface, upon a receiving roll *g'* upon which it is then vulcanized, which completes the operation.

Having thus described my improvements, I shall state my claim as follows:

What I claim as my invention and desire



to have secured to me by Letters Patent, is—

1. The use of the two rollers *u* and *v* acting together so as to form the belt into a gutter shape, whereby the first step in the process of folding the outside sheet or covering of rubber or gutta percha over the body or inner fabric of the belt or band is effected, as set forth.
2. The roller *x* having two tapering surfaces and a central disk, whereby the overlapping of the covering or outer sheet over the inner fabric is completed, and the edges of the outer sheet or covering brought to a true and even line before being united.
3. Bringing the two edges of the outer

sheet or covering evenly together so as to form a true and perfect joint and complete the formation of the belt or band, by the employment of two or more rollers, arranged in relation to each other, so that the said belt or band shall be drawn partially around the periphery of either or all the said rollers, substantially in the manner as set forth.

4. In combination with the machinery for forming the belt or band I claim the devices for cutting both the outer and inner sheets into strips of any desired width, as described.

THOS. J. MAYALL.

Witnesses:

JOSEPH GAVETT,  
ALBERT W. BROWN.