

(No Model.)

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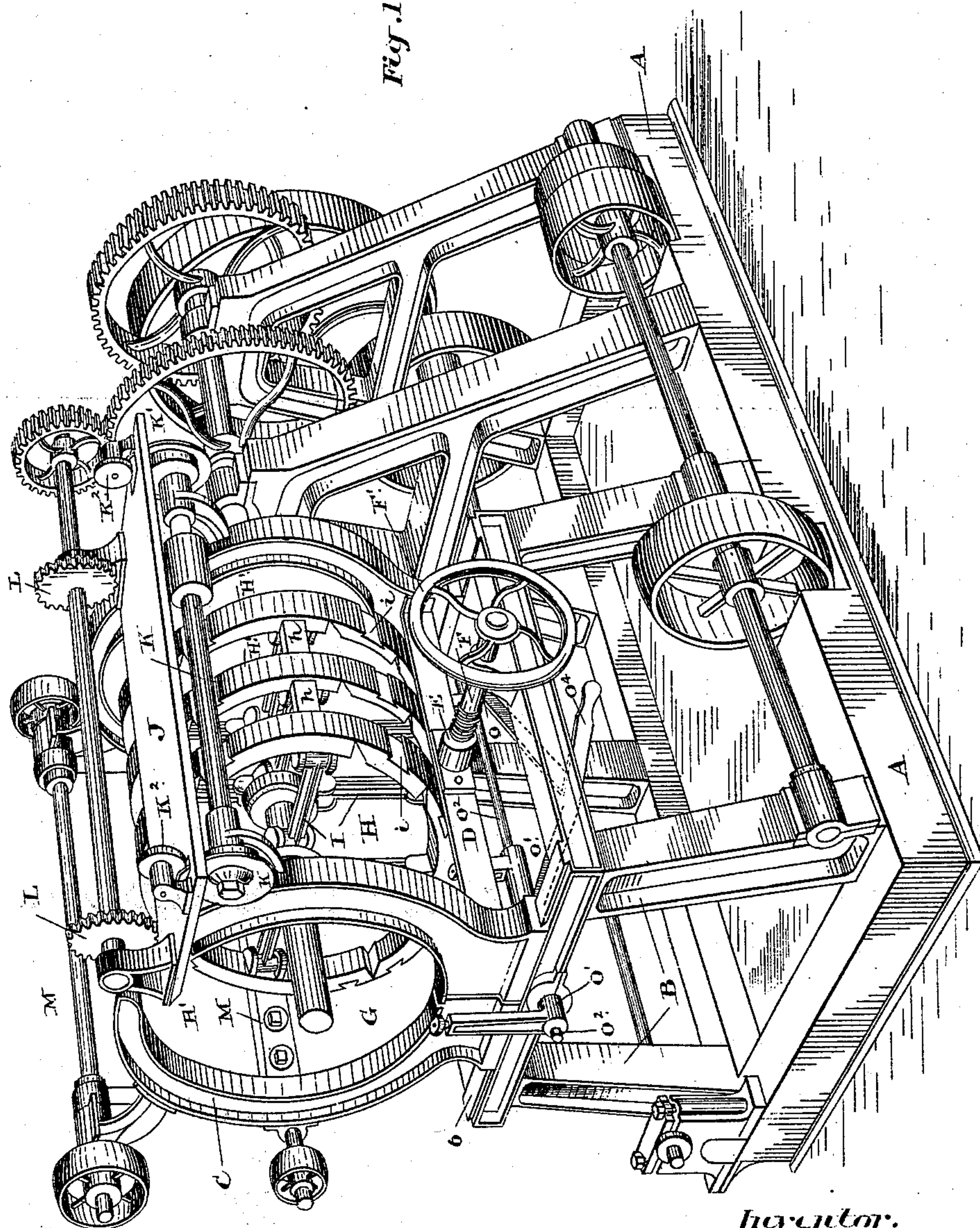
J. MASSIE.

MACHINE FOR MAKING BARRELS.

No. 285,285.

Patented Sept. 18, 1883.

Fig. 1.



Witnesses.

J. B. Fetherstonhaugh  
Lewis Tomlinson

Inventor.

James Massie  
by Donald C. Ridout & Co  
Attys

(No Model.)

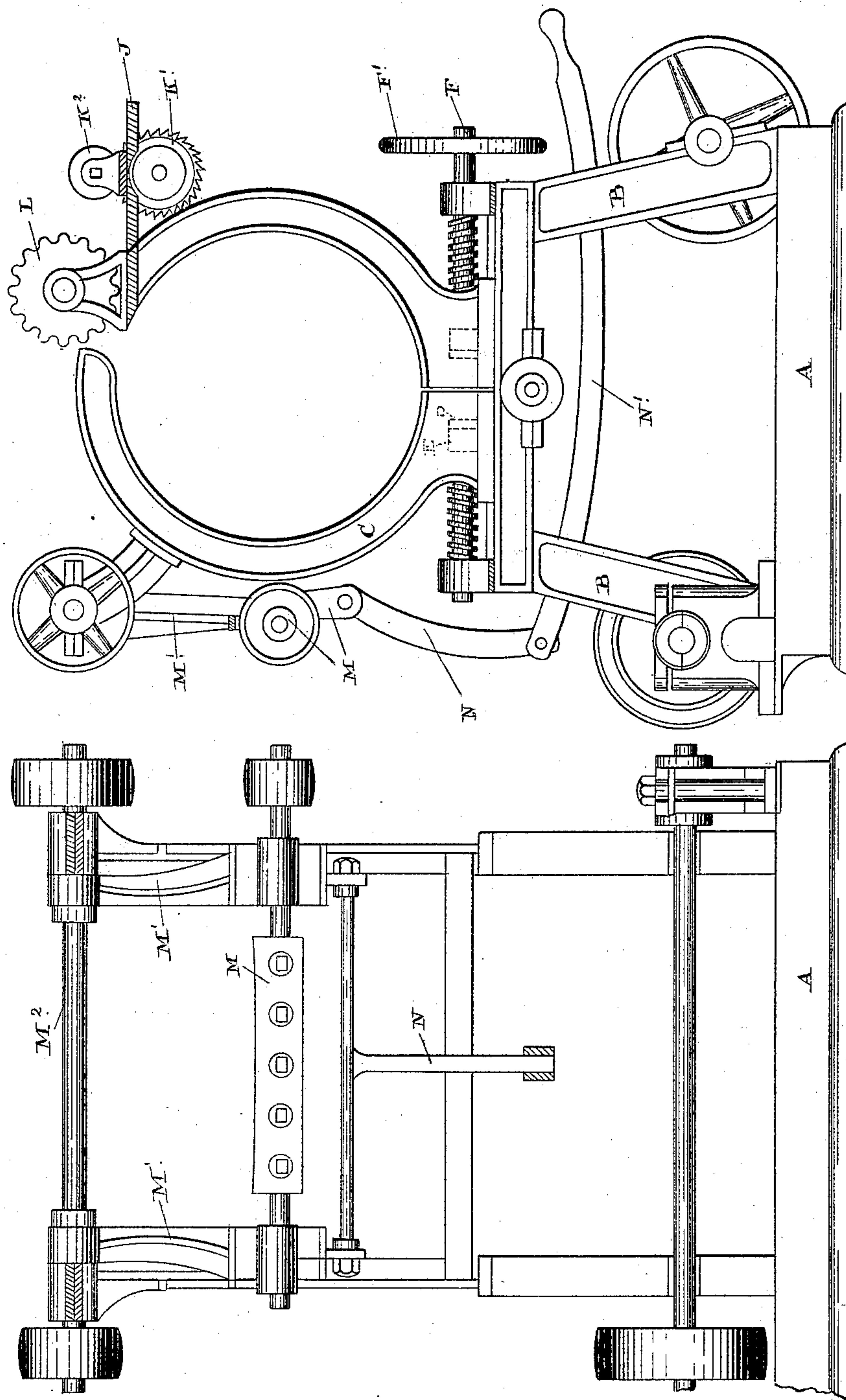
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Witnesses.

J. B. Letherington  
Lewis Toulumson

Inventor

James Massie  
by Donald C. Ridout  
Atty



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Fig. 4.

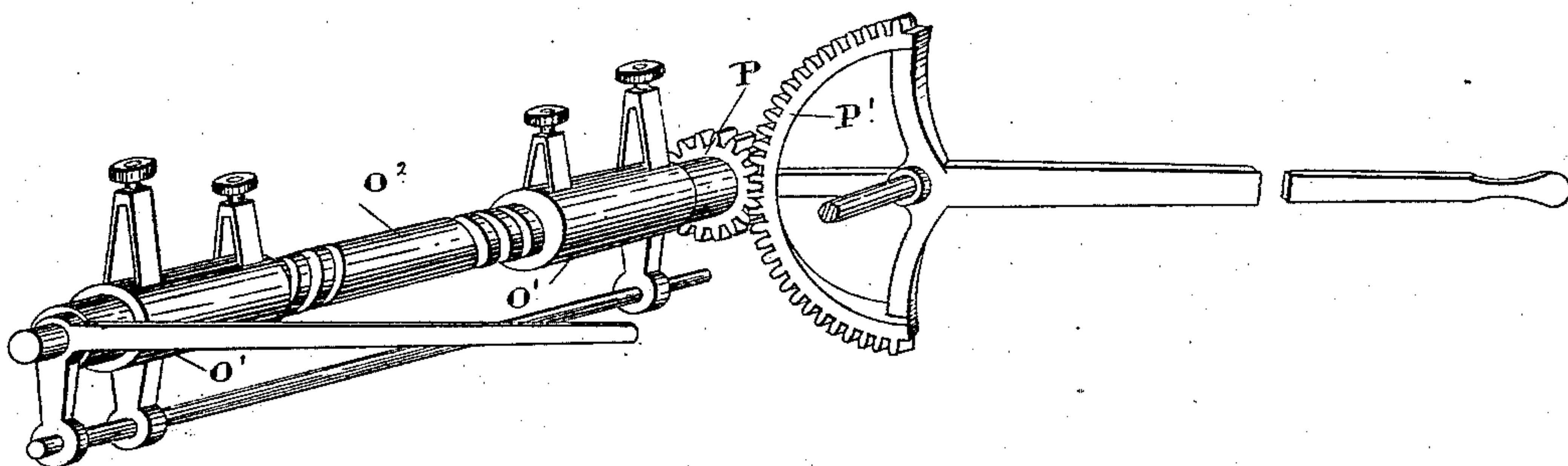


Fig. 5.

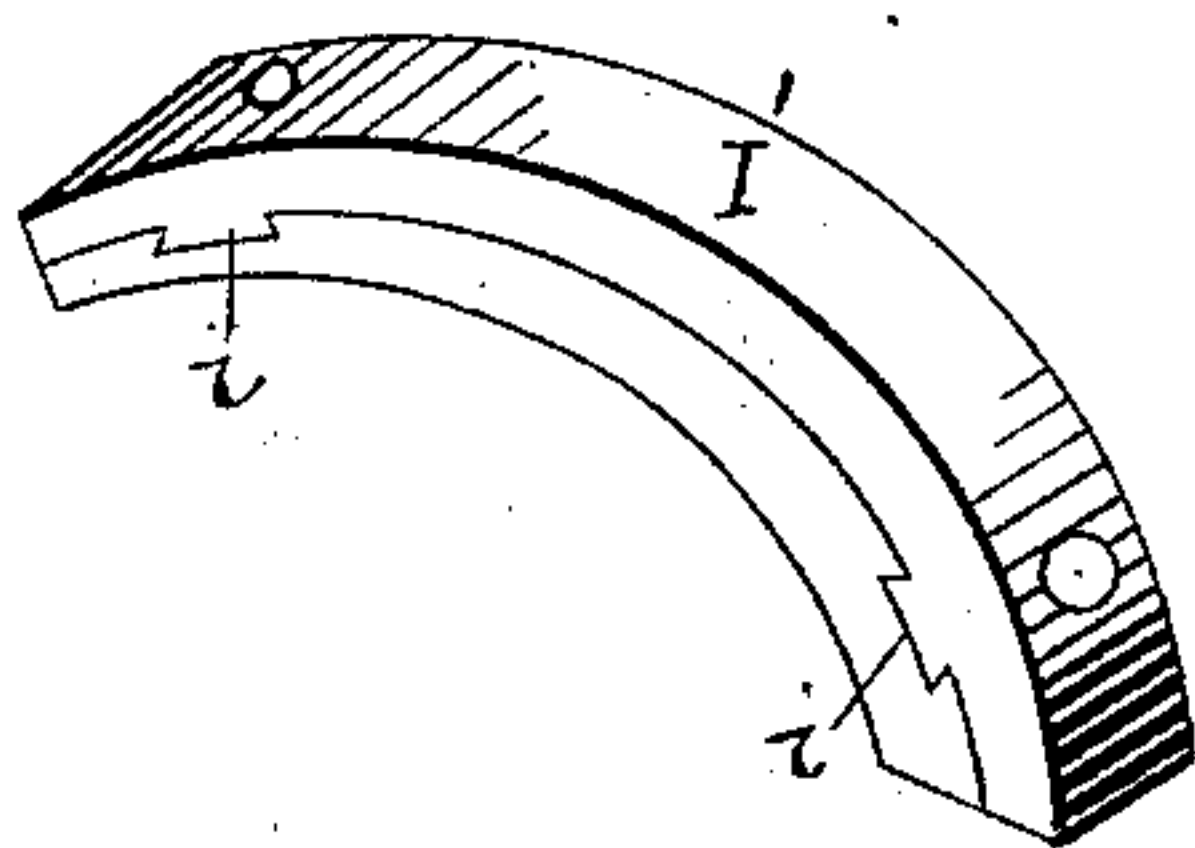
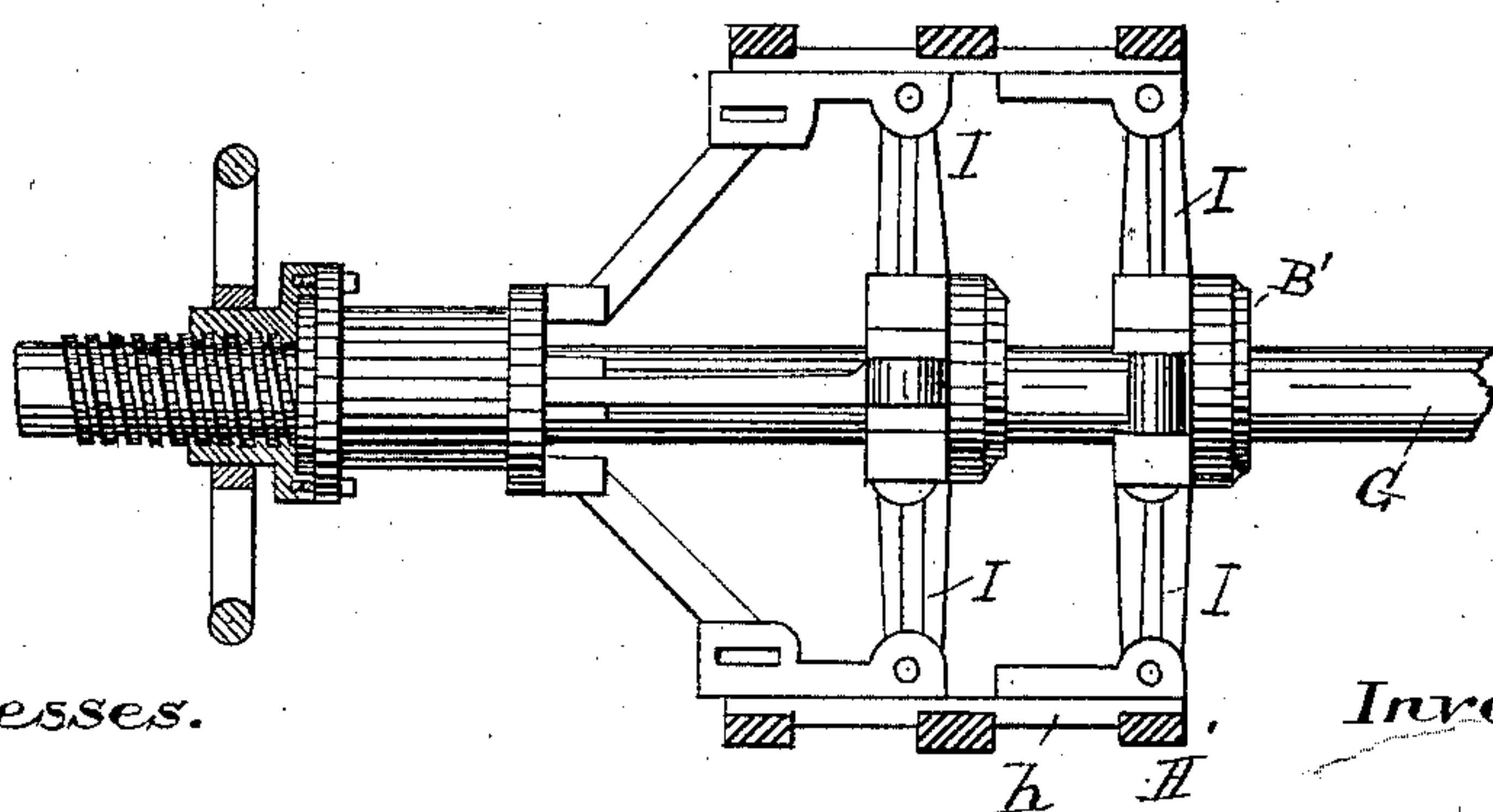


Fig. 6.



Witnesses.

Inventor.

F. B. Fetherstonhaugh

Lewis Tomlinson

James Massie

by Donald C. Ridout & Co

Attys



# UNITED STATES PATENT OFFICE.

JAMES MASSIE, OF TORONTO, ONTARIO, CANADA.

## MACHINE FOR MAKING BARRELS.

SPECIFICATION forming part of Letters Patent No. 285,285, dated September 18, 1883.

Application filed March 1, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES MASSIE, a subject of the Queen of Great Britain, residing at the city of Toronto, in the county of York, in the Province of Ontario, Dominion of Canada, have invented a certain new and useful Machine for Making Barrels, of which the following is a specification.

The object of the invention is to produce a machine which will form the barrel, finish its ends and exterior surface, and truss and hoop it complete; and it consists, first, in a machine in which the staves are fed in from a table onto a revolving former, cut-off saws, crozing and chamfering knives being provided to finish the ends of each stave as it is fed into the revolving former, the staves being held against the former by ring-shaped frames situated at each end of the former, the frame being divided into two parts, so that their diameter may be increased or decreased, as required, to accommodate the size of the barrel being formed, and also in order that the frame may be opened up, so as to permit the withdrawal of the barrel when finished; secondly, in making the former of rings connected together, but divided into segments, each segment connected to a sleeve fitted onto a central shaft or spindle in such a manner that the longitudinal movement of the machine shall cause the collapse of the barrel-former, enlarging-pieces being provided for each segment, so arranged that the diameter of the barrel-former may be increased by the addition of the enlarging-pieces or decreased by their removal, with the view of enabling different-sized barrels to be made in the same machine; thirdly, in arranging, in connection with the revolving former, a revolving planer-knife, with knives carried on a swinging frame, and having its spindle parallel with the axis of the barrel-former, the said knives being arranged to plane off the exterior surface of the staves when arranged around the revolving former; fourthly, in providing adjustable pressure-bars operated by screw or lever pressure in such a manner that the barrel may be trussed before being removed from its former.

Figure 1 is a perspective view of the machine complete. Fig. 2 is an end view with the barrel-former removed. Fig. 3 is a back view of a portion of the machine, showing the planer-

knife. Fig. 4 exhibits an alternative form of trussing mechanism. Fig. 5 is a perspective view, showing a segment of the barrel-former with an enlarging-piece fixed to it. Fig. 6 is a detail view of the collapsible frame.

In the drawings, like letters of reference designate corresponding parts in each figure.

A is the bed-plate of the machine, upon which the main frame B is bolted or otherwise fastened in position.

C are ring-shaped frames situated at each end of the barrel-former and supported in dovetailed guides *b*, formed on the top of the frame B, as shown.

It will be noticed that the ring-shaped frames C are divided in the center, (see Fig. 2,) and that the division between the two halves at the top of the frame is wide enough to permit the free admission of the staves into the frame. It will be further noticed that the corresponding halves of the ring-shaped frames opposite to each other are connected together by cross-bars D, a cross-bar being provided for each pair of halves.

At or about the center of the cross-bars D, I provide the nuts E, the nut attached to one bar having a right-hand thread cut into it, while the nut on the other bar has a left-hand thread. The two nuts, being opposite to each other, are connected together by the spindle F, which has right and left hand screws cut upon it to correspond with and fit into the respective right and left hand nuts E. This spindle is provided with a suitable hand-wheel, F', situated at a convenient point to be handled by the operator of the machine, who, by turning the spindle, can cause the halves of the frame to approach toward or recede from each other, as may be required, during the operation of the machine.

G is the main spindle or shaft of the machine, arranged to support the barrel-former H, which is composed of a series of rings, H', joined together by connecting-pieces *h*, each ring being divided into segments supported from the shaft or spindle G by the arms I. These arms are connected to sleeves fixed to the spindle G, which sleeves are arranged to move longitudinally upon the said spindle in such a manner that every motion shall cause the rings to collapse or expand.

The arms I on each sleeve are arranged in



pairs, the two members of each pair being connected to opposite segments, and the pairs are so constructed and arranged that one pair of arms moves before the other pair, so that two  
5 opposite segments are first drawn inward and then the other two, by which means they do not interfere with each other when the cylinder is collapsing.

As a collapsing former is already known in  
10 barrel-making machines, I need not further describe this operation, as the only peculiarity in my former is that it is composed of rings, instead of being a plain cylinder, and that each ring is provided with an enlarging-piece,  
15 I'. (See Fig. 5.) This enlarging-piece is arranged to fit into the dovetailed grooves *i*, formed on the periphery of the rings, and may be bolted or otherwise fastened in position.

J is a table upon which the operator places  
20 each stave separately. Under this table I place a revolving spindle, K, provided at each end with a cut-off saw, and also with a crozing and chamfering knife, K', so arranged that they project through the table J  
25 in proper position to cut off and finish the ends of the staves.

K<sup>2</sup> is a friction-roller placed immediately over the spindle K in such a position that it holds the staves in position as the saws  
30 and crozing and chamfering knives are finishing the ends.

Feeding-rollers L, driven by suitable mechanism, are provided to feed in the staves between the ring-shaped frames C to the barrel-former, which barrel-former, I should mention,  
35 is caused to revolve by suitable mechanism at a speed corresponding with the speed at which the staves are fed in, so that as each stave is fed into the former it is carried away, leaving  
40 a space for the next one to enter.

In order to minimize the friction on the staves as they are carried round by the former, friction-rollers may be placed in the interior of the ring-shaped frame C.

45 When the required number of staves to complete the barrel has been fed into the former, the revolving planer-knife M may be brought against the outside surface of the staves, which, as they are carried round by the revolving  
50 former, have their outside surfaces completely finished.

The planer-knife M, as will be seen, is carried on the swinging frame M', suspended from the revolving spindle M<sup>2</sup>.

An arm, N, extending from the swinging  
55 frame M', and connected to a hand-lever, N', enables the operator to bring the planer-knife into action or throw it out, as required, suitable catches being arranged upon the hand-lever N', so that it can be held in any desired  
60 position.

In Fig. 1 I show one plan for operating the pressure-bars employed for trussing the barrel. In this figure the trussing-bars O are attached to or form part of the sleeves O', which  
65 sleeves are carried on the spindle O<sup>2</sup>. The sleeves O' at one end of the machine are connected to the sleeves at the opposite end by pivot-bars O<sup>3</sup>, which are connected to a hand-lever, O<sup>4</sup>, extending out at the side of the machine within reach of the operator. As this  
70 plan of operating the pressure-bars may not be found sufficiently powerful to force on the hoops of large barrels, I show in Fig. 4 a more powerful arrangement of mechanism. In this  
75 figure the spindle O<sup>2</sup> has a right and left hand screw cut upon it, and the sleeves O' have corresponding threads cut inside them to fit onto the spindle, as indicated. On one end of this  
80 spindle I key or otherwise fasten a spur-pinion, P, and provide to mesh with the said pinion a toothed quadrant, P', which quadrant is pivoted at a suitable point in the frame of the machine, and has a handle extending out to  
85 the side of the machine within reach of the operator, who, by moving the spindle up or down, will cause the sleeves O' to move upon the spindle and cause the pressure-bars O to accomplish their purpose.

What I claim as my invention is—

1. In combination with the frames C, as described, and means F for adjusting them, the saws K', and spindle K, journaled in brackets, which form a part of the said frames C, the table J, having recesses through which  
95 the saws operate, and the former, as set forth.

2. In combination with the frames C, as described, and the means F for adjusting them, a cylindrical former composed of rings made in segments, pivoted arms I, connecting such  
100 segments to a sleeve on the shaft G, and means, substantially as shown, for collapsing the former by the movement of said sleeve, as set forth.

Toronto, February 14, 1883.

JAMES MASSIE.

Witnesses:

C. CLINTON BALDWIN,  
F. BARNARD FETHERSTONHAUGH.