2 Sheets--Sheet 1.

J. Y. CHAPMAN.

Machine for Making Barrels.

No. 163,740. Patented May 25, 1875.

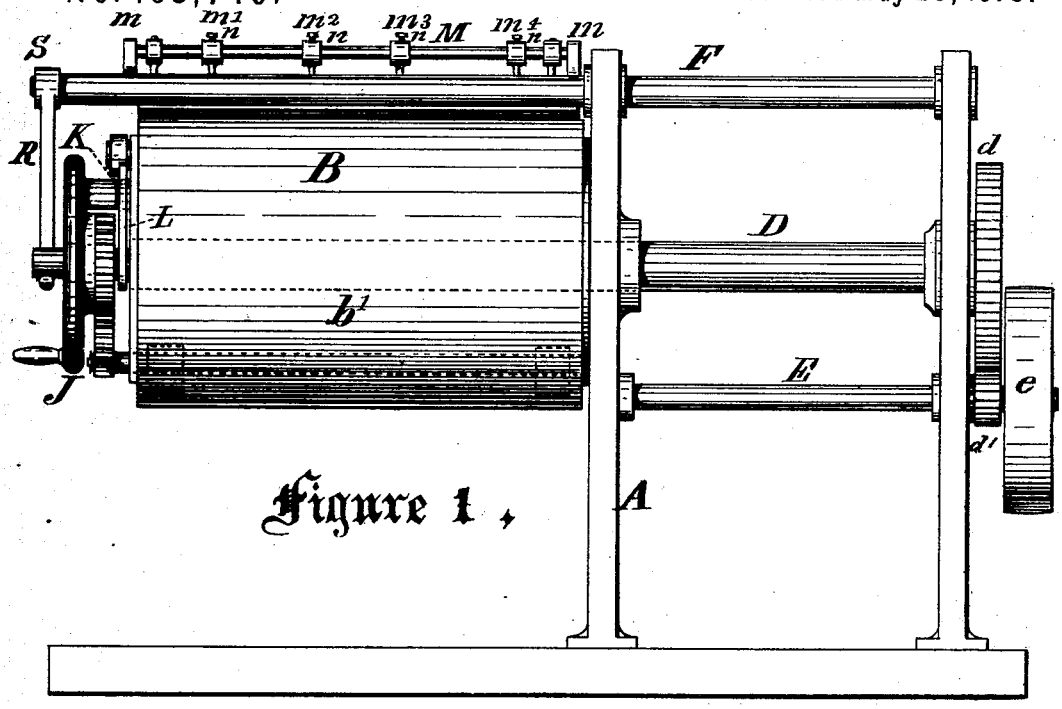


Figure 1.

Figure 2.

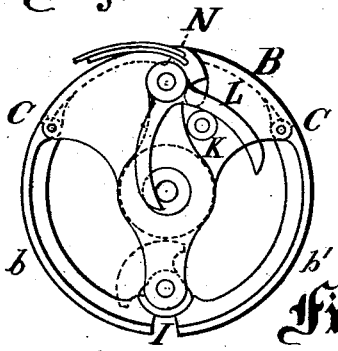


Figure 3.

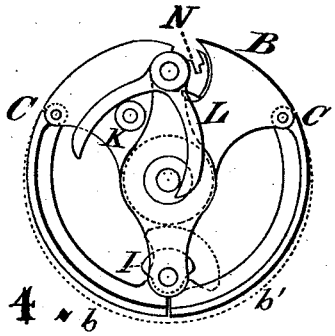
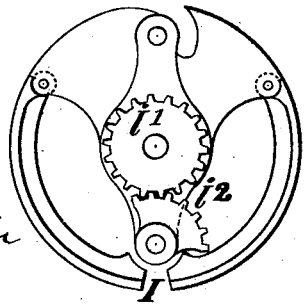


Figure 4.



Witnesses,
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John Y. Chapman
By James Sawyer
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2 Sheets--Sheet 2.

J. Y. CHAPMAN.

Machine for Making Barrels.

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Figure 5.

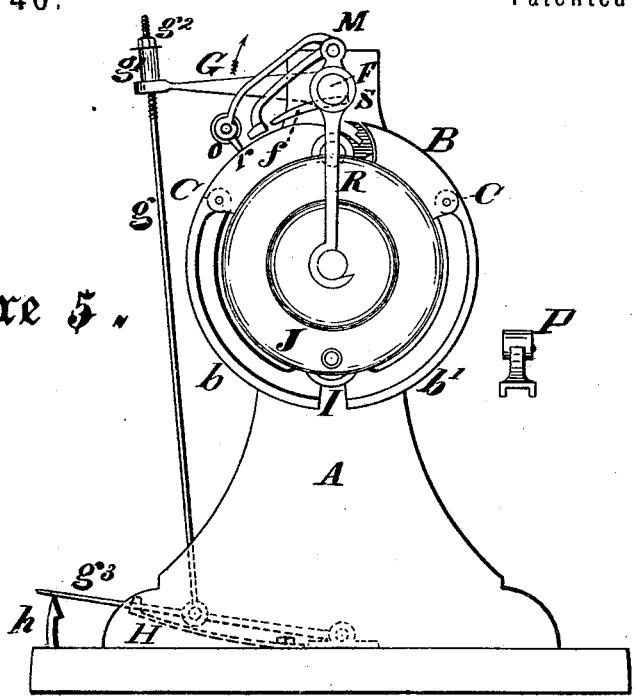
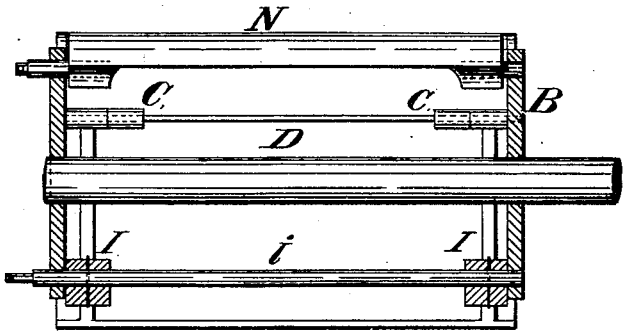


Figure 6.



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UNITED STATES PATENT OFFICE.

JOHN Y. CHAPMAN, OF BUFFALO, NEW YORK.

IMPROVEMENT IN MACHINES FOR MAKING BARRELS.

Specification forming part of Letters Patent No. **163,740**, dated May 25, 1875; application filed July 22, 1874.

To all whom it may concern:

Be it known that I, JOHN Y. CHAPMAN, of the city of Buffalo, in Erie county, and State of New York, have invented certain new and useful Improvements in Machines for Making Barrels, of which the following is a specification:

My invention relates to that class of machines employed in the manufacture of barrels, cheese-boxes, or other packages from thin sheets of wood or other suitable material, which are bent to the form required, and fastened where the ends come together or lap past each other.

The first part of my invention consists in a holding or griping device; a cam for giving it the necessary movements for holding and releasing the end of the stock after it is formed into a barrel or tube, and before it is withdrawn from the cylinder or drum; a wheel or crank for operating the said cam and griper; and, also, the mechanism for expanding and contracting the cylinder upon which the material is formed, the whole being combined and arranged for joint operation, so that the griper will receive the end of the sheet or stock, and hold it until it is wound around the cylinder and the two ends nailed or otherwise fastened together, and then release it before it is withdrawn therefrom, and so that the cylinder will be expanded or contracted at the proper time.

The second part of my invention consists in combining therewith one or more adjustable guides, for keeping the hoops in place while being wound around the barrel or cylinder preparatory to being fastened thereto.

Figure 1 is a side elevation; Fig. 2, a front end view of the cylinder, representing the griper in position for holding the material to be bent or formed around it; Fig. 3, a similar view, showing the position of the griper after the material to be bent has been released. Fig. 4 is also an end view of the cylinder, representing the gearing for operating the cams, for expanding and contracting the same. Fig. 5 represents an end view of the machine complete; Fig. 6, a vertical longitudinal section through the cylinder and cams for expanding and contracting the same.

In the said drawings, A represents the frame of the machine; B, the cylinder, composed of the three parts B, b, and b'. b b' are hinged so as to swing at the joint C, which is keyed fast to the shaft D, which receives its motion from the spur and pinion d d', driving-shaft E, and pulley e. F represents a shaft, to which the pressure-bar f is attached, and is operated by the arm G, (shown in Fig. 5,) rod g, rubber spring g^1, nut g^2, and foot-step g^3. H is a spring (shown in dotted lines) for holding said foot-step up, and h a catch for holding it down when required. I represents the cams for moving the hinged parts b b', for the purpose of expanding or contracting the diameter of the cylinder, Fig. 2 showing their position when it is expanded, and Fig. 3 their position when it is contracted.

The object is to form a perfect circle when expanded, upon which the barrel may be formed, and to afford the means for readily contracting the diameter, so that the body or cylindrical part of the barrel, when formed and finished, may be easily taken off.

The cams I are fastened to the shaft i, as shown in Fig. 6, which is operated, together with the cams, by means of the gearing i^1 i^2 (shown in Fig. 4) and wheel J (in Fig. 5.) The griper N receives its movement from the friction-roller K, which is attached to the wheel J, as shown in Fig. 1, and the cams L. (Shown in Figs. 1, 2, and 3.) The position of the friction-roller K within the cam L, when the griper is thrown forward to take hold of the material, is shown by Fig. 2, and when thrown back, so as to slip off or let go of the material, by Fig. 3. M represents a round bar, jointed to the shaft F, so as to swing at m m. m^1, m^2, m^3, and m^4 are the adjustable arms, for guiding the hoops while being put on. P, in Fig. 5, shows a perspective view of one of said arms separate from the machine. They may be moved, and fastened to any part of the bar M by the set-screws n n n n. O represents the guide-pieces, between which the sheets of material pass while being rolled on the cylinder. They are made thin at the points r, so as to pass between the slips as they are fed on said cylinder. R is an arm, made to swing from the end S of the shaft F. It is formed so as to hook over the outer end of the shaft

D, for the purpose of preventing the springing of F and D when pressure is applied by the pressure-bar F while forming a barrel.

The operation of the machine is as follows: The ends of the material to be formed are inserted into the griper N, as shown in Fig. 2. The cylinder is then made to revolve one revolution, and then stopped by means of a clutch or other equivalent means. The material is now closely wound around the drum or cylinder, the necessary pressure to hold it close while being formed around it having been given by the step g^3, pressure-bar f, and its operating mechanism, as hereinbefore mentioned, after which the material, which is now in the form of a cylinder, is nailed or otherwise riveted where the ends meet or lap. The hoops are now put on, and when complete the griper N is forced back, and the cylinder contracted in diameter, so that the now finished body of the barrel, ready for the heading, can easily be taken off, the shrinking of the cylinder and operating the griper being performed by turning the arm R up out of the way, and moving or turning the wheel J, which operates the cams L and I, as hereinbefore mentioned.

I claim as my invention—

1. The griper N, cam L, wheel J, gearing i^1 i^2, cams I, and parts b b', all combined and arranged for joint operation, substantially as and for the purposes set forth.

2. The adjustable guide-arms m^1 m^2 m^3 m^4 and guide-pieces O, substantially as described.

JOHN Y. CHAPMAN.

Witnesses:

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AMOS W. SANGSTER.