2 Sheets—Sheet 1.

J. D. McEACHERN.

Barrel-Making Machines.

No. 209,349. Patented Oct. 29, 1878.

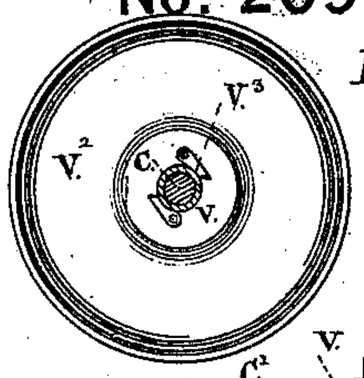

Fig. 10.

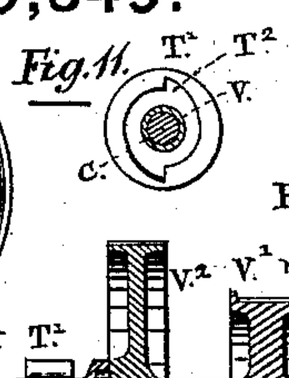

Fig. 11.

Fig. 1.

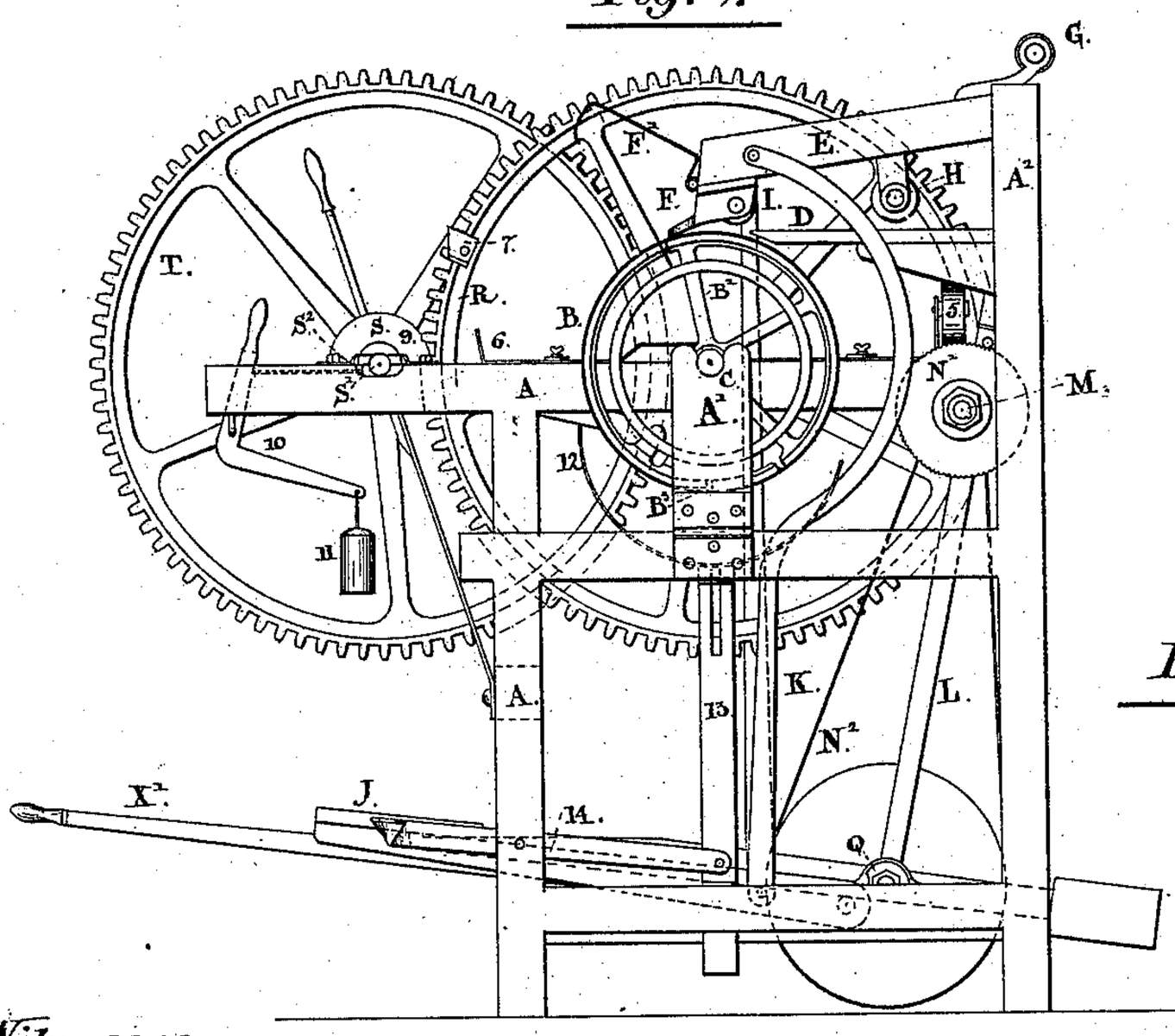

Fig. 2.

Witnesses.

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2 Sheets—Sheet 2.

J. D. McEACHERN.
Barrel-Making Machines.

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Fig. 3.

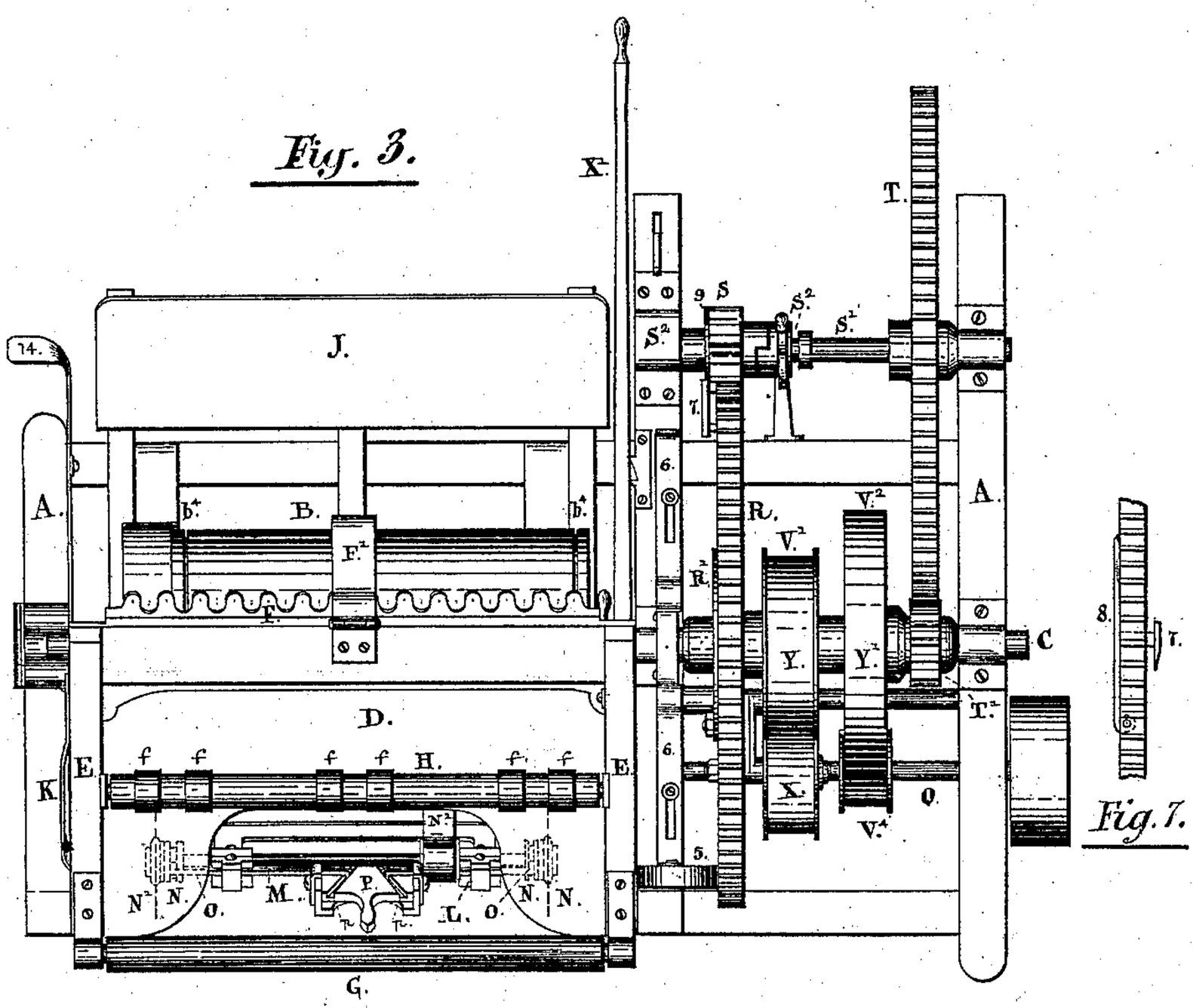

Fig. 7.

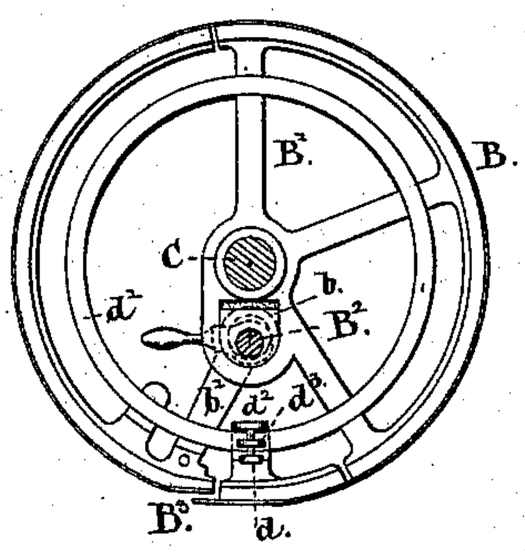

Fig. 4.

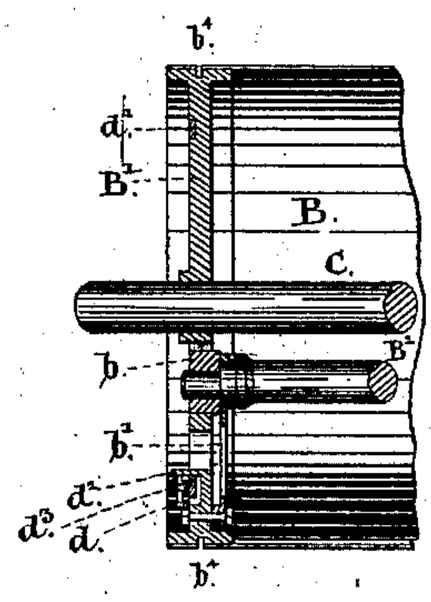

Fig. 5.

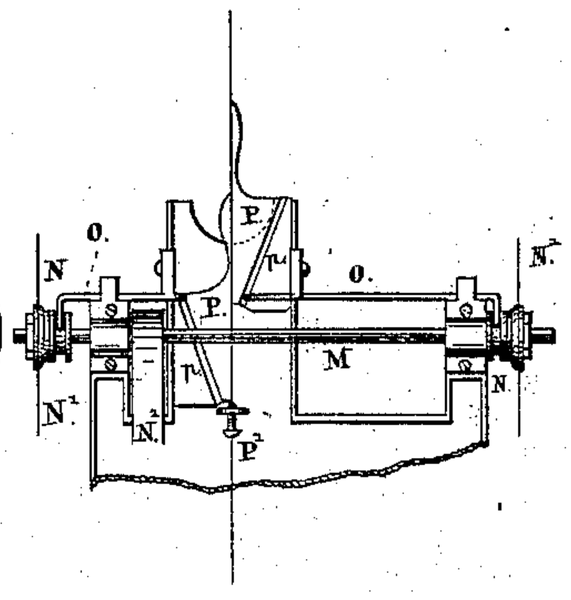

Fig. 6.

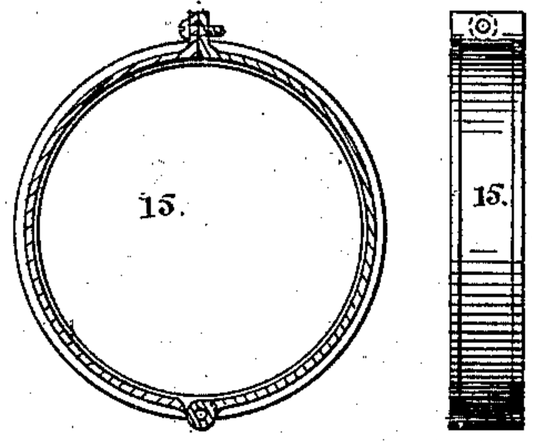

Fig. 8.

Fig. 9.

Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN D. McEACHERN, OF HARRISTON, ASSIGNOR TO SAMUEL WALLACE, OF SEAFORTH, ONTARIO, CANADA.

IMPROVEMENT IN BARREL-MAKING MACHINES.

Specification forming part of Letters Patent No. **209,349,** dated October 29, 1878; application filed March 7, 1878.

To all whom it may concern:

Be it known that I, JOHN D. McEACHERN, of the village of Harriston, in the county of Wellington, Province of Ontario, Canada, have invented certain new and useful Improvements in Barrel-Making Machinery, of which the following is a specification:

The object of my invention is to provide an efficient machine for the rapid manufacture of barrels and cheese-boxes, made out of veneer; and consists of a hollow cylinder driven by peculiarly-arranged gearing, and carried within a frame provided with circular saws and other mechanism necessary to form and produce the aforesaid barrels with the least amount of manual labor, substantially as hereinafter described.

In the drawings, Figure 1 is a sectional side view; Fig. 2, an end view; Fig. 3, a plan of a machine embodying my improvements. Figs. 4, 5, 6, 7, 8, 9, 10, and 11 are details of the working parts.

A is the frame, made of wood or any other suitable material. B is a hollow sheet-metal cylinder, hereinafter more particularly described.

C is the shaft or axle of the cylinder, carried in the bearings C^1, C^2, and C^3. This latter bearing is upon the hinged support A^i, which folds down in order to allow the barrel, when formed upon the cylinder B, to be withdrawn therefrom, as hereinafter described. When the machine is specially made for the manufacture of cheese-boxes the cylinder B is much shorter than shown in drawing, in which case the support A^1 is dispensed with.

D is a table upon which the sheets of veneer are placed and guided into the machine. E E are arms hinged to the uprights A^2, and supporting the pressure-bar F and rollers G, H, and I. J is a treadle for the purpose of operating the arms E E, to which it is connected by the rods K K. L is a swinging saw-frame, attached to and placed within the frame A, as shown. M is a double-ended saw-mandrel. N N are sleeves for holding the saws N^1 N^1. These sleeves slide upon the mandrel M, but are prevented from revolving thereon by feather-keys. P is a sliding block, held within a saw-frame, as shown, and having angular grooves *p p* cut in its face. Into these grooves the inner ends of the rod O O fit. Consequently, as the other ends of these rods fit into grooves cut in the sleeves N N, the said sleeves, which hold the saws N^1 N^1, may be brought closer together or pushed farther apart by simply moving the sliding block P up or down within its frame, as may be understood by reference to drawing, from which it will also be noticed that the set-screws P′ can be so adjusted that by stopping the block P the saws N^1 N^1 are prevented from going farther apart than may at the time be desired, while the weight of the block P is sufficient to force them apart until the said block butts against the set-screw. By this arrangement the distance between the two saws is easily regulated either when the machine is in motion or at rest. The saw-mandrel M is driven by the belt N^2, which connects the said mandrel to the main driving-shaft Q, as shown.

R is a large spur-wheel, loose upon the axle or shaft C, but held to the face-plate R′ by the nut and bolt *r*, as shown. This face-plate is keyed to the shaft or axle C. The spur-wheel R gears into the pinion S, which is loose upon the shaft S^1, but may be connected thereto by the clutch S^2.

T is a spur-wheel, the same size as R, but keyed to the shaft S^1. This spur-wheel gears into the spur-pinion T^1, which is keyed or otherwise fastened to the sleeve V, which revolves upon the axle C. V^1 is a pulley keyed to the sleeve V. V^2 is a larger pulley, loose upon the same sleeve, but fitted with dogs V^3, which engage with the pinion T^1, causing the said sleeve to revolve. Y is the belt connecting the pulley V^1 to the main shaft Q, and Y′ is the belt connecting the pulley V^2 to the same shaft. X is a belt-tightener, operated by the handle X′, and intended for tightening the belt Y, which would otherwise slip upon the pulley V^1.

From this description, and from reference to the drawing, it will readily be understood that by putting the gearing in motion the cylinder B will revolve, provided the pinion S is clutched to the shaft S^1. When the belt Y is not tightened by X the other belt, which should always be kept tight upon the

pulley V^4, drives the machine as the dogs V^3 catch in the recesses T^2 on the pinion T^1; but when the belt Y is tightened upon the pulley V^1 the sleeve V is made to revolve faster than the pulley V^2, thus clearing itself from the the dogs V^3.

S^3 is an axle-box for holding one end of the shaft S^1. This box is adjustable, so that the pinion S can be thrown out of gear, as hereinafter described.

The cylinder B is made out of one piece of sheet metal, fastened to and supported by the spiders B^1 B^1, placed at each end thereof, as shown.

B^2 is an eccentric-shaft, held by the boxes *b b*. The arms b^1 b^1 connect this shaft to the rim of the spider, which is divided into segments, as shown. By turning the handle of the eccentric-shaft B^2 the segment of the spider to which the arms b^1 b^1 are attached, together with that portion of the cylinder connected thereto, can be expanded from or contracted toward the center of the cylinder, whichever may at the time be desired, in order to open or bring together the edges of the cylinder, which overlap each other at B^3.

d d are set-screws passing through lugs d^3 d^3 on the rings d^1 d^1, which, by acting against the knees d^2 d^2, contract the diameter of the cylinder to a limited extent, for the purpose hereinafter specified.

As the spaces between the two edges which overlap each other at B^3 may not be sufficient for its purpose when the cylinder is thus contracted, packing underneath the boxes *b b* can be removed and the said boxes correspondingly drawn to the center, or vice versa, as the case may be.

Having now pretty fully described the construction and arrangement of the machine, I shall proceed to explain the action and operation thereof.

Having arranged the sheets of veneer at a convenient distance in the rear of the machine, and the operator, standing at that point, places a sheet thereof upon the table D, pushes it under the pressure-bar F till it enters the space at B^3 in the cylinder B, as shown. The handle of the eccentric-shaft B^2 is then turned, and the edges brought together gripe the sheet between them. The machine is now started, and as the cylinder B revolves the sheet of veneer is wrapped around it. When the cylinder B has completed a revolution it is stopped by an automatic arrangement, and the edges of the veneer, which now overlap one another, are nailed by an operator, who stands in front of the machine, the nails being driven by him between the teeth of the pressure-bar, which permits their being driven very near to the edge of the sheet of veneer, and are clinched by coming against the metallic cylinder B. The grain in this piece of veneer runs with the circumference of the cylinder.

Before putting on the outer skin the operator causes the saws N^1 N^1 to move toward each other till they come opposite the grooves b^4 cut in the cylinder, when he presses forward the saw-frame and trims off the rough edges of the inner skin. The grain of the outer skin runs lengthwise, and is put on in segments in the same way as the first, except that the edges butt against each other and each segment is nailed to the inner skin, all the nails being clinched by coming against the metallic cylinder B, which is, as I have said before, made in one piece. The hoops are also put on in the same way by passing underneath the pressure-bar F.

f f f f f f are collars upon the roller H, and are adjustable thereon. These collars are for the purpose of guiding the hoops and keeping them at the proper distance apart.

In order to keep the hoops clear of the veneer upon the table D, I pass them first over the roller G. They then pass beneath the roller H, between the collars *f f f f f f*, and then beneath the pressure-bar F, which is supported by the roller I, resting upon the veneer or whatever may be passing thereunder.

When it is desired to have additional pressure upon the veneer passing beneath the roller I, the operator at the front of the machine presses down the treadle J.

The circular saws N^1 N^1 having been adjusted the proper distance apart upon their mandrel, the operator who feeds in the veneer presses forward the saw-frame L till the said saws, which, of course, at the time are revolving, come in contact with the rugged ends of the veneer, cutting them cleanly off.

When the barrel has been finished it will be found to fit the cylinder B rather tightly; and, in order to loosen it therefrom, I contract the cylinder B by means of the eccentric-shaft, leaving the barrel loose, except the end of the sheet, which is still held between the edges of the veneer nailed together. I then bring down the dog F′, one edge of which is hinged to the pressure-bar F, into the barrel, and, by starting the cylinder B in motion, it soon works itself loose, when the barrel may be withdrawn over that end of the cylinder supported by the hinged support A^1.

I have already mentioned that the cylinder B is stopped automatically, the attachment for this purpose consisting of a small roller, 5, held at the end of the stopping-bar 6, which slides upon the frame A, and is under the command of the operator at the front of the machine.

In order to stop the cylinder B exactly at the point desired, the operator referred to slides the stopping-bar 6 from him till the roller 5 is in front of the rim of spur-wheel R, upon which projects the stop 7. When the stop 7 reaches the roller 5 the latter presses it in, which action causes the hinged bar 8 to project from the other side of the rim of the aforesaid spur-wheel, and when this stop 7 comes in contact with the collar 9 upon the shaft S^1, which, being held, as before mentioned, in the box S^3, is pushed out of its former position, and the spur-pinion being thus thrown out of

gear, the cylinder B stops instantaneously, as desired.

The bent lever 10, with a weight, 11, hung upon it, is arranged, as shown, for the purpose of forcing the box S^3 back into its former position after the catch-bar 8 has passed the collar 9.

The semicircular support 12, held upon the upright 13 and operated by the lever 14, as shown, is for the purpose of supporting the heading when the machine is used for making cheese-boxes.

15 is a ring, made in halves, hinged together at one connection and at the other held by a set-screw, as shown. This ring is bored out taper or cone shape, and is intended for the purpose of contracting the ends of bulge barrels.

The arrangement described for the purpose of contracting and expanding the cylinder B is for the purpose of slightly altering the diameter of the barrels when necessary, in order to accommodate them to the size of the heading, which sometimes varies in diameter.

What I claim as my invention is—

1. The hollow cylinder B, supported upon the shaft C by the divided spiders B^1 B^1, and made from one piece of sheet metal, as described, in combination with the eccentric-shaft B^2, boxes *b b*, and arms b^1 b^1, set-screws *d d*, the lugs d^3 d^3 on the rings d^1 d^1 acting against the knees d^2 d^2, arranged and operated substantially as and for the purpose specified.

2. The stopping-bar 6, with a roller, 5, which acts, as described, upon the stop 7, in combination with the collar 9, substantially as and for the purpose specified.

3. The pulley V^2, provided with the dogs V^3, in combination with the pinion T^1, attached to the sleeve V, and having the recesses T^2, substantially as and for the purpose specified.

4. The sliding block P, having angular grooves *p p* cut in its face, in combination with the rods O O and sleeves N N, substantially as and for the purpose specified.

5. The hinged arms E E, with the pressure-bar F, operated from the treadle J by the rods K, and provided with the rollers G, H, and I, in combination with the cylinder B, arranged substantially as and for the purpose specified.

6. The saws N^1, mounted on the mandrel M of the swinging frame L in such manner that the distance between them may be varied by the sliding block P, in combination with the cylinder B, provided with the grooves b^4.

7. The semicircular support 12, held by the upright 13, in combination with the lever 14, substantially as and for the purpose specified.

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Witnesses:

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