

No. 716,959.

Patented Dec. 30, 1902.

F. D. TAYLOR.

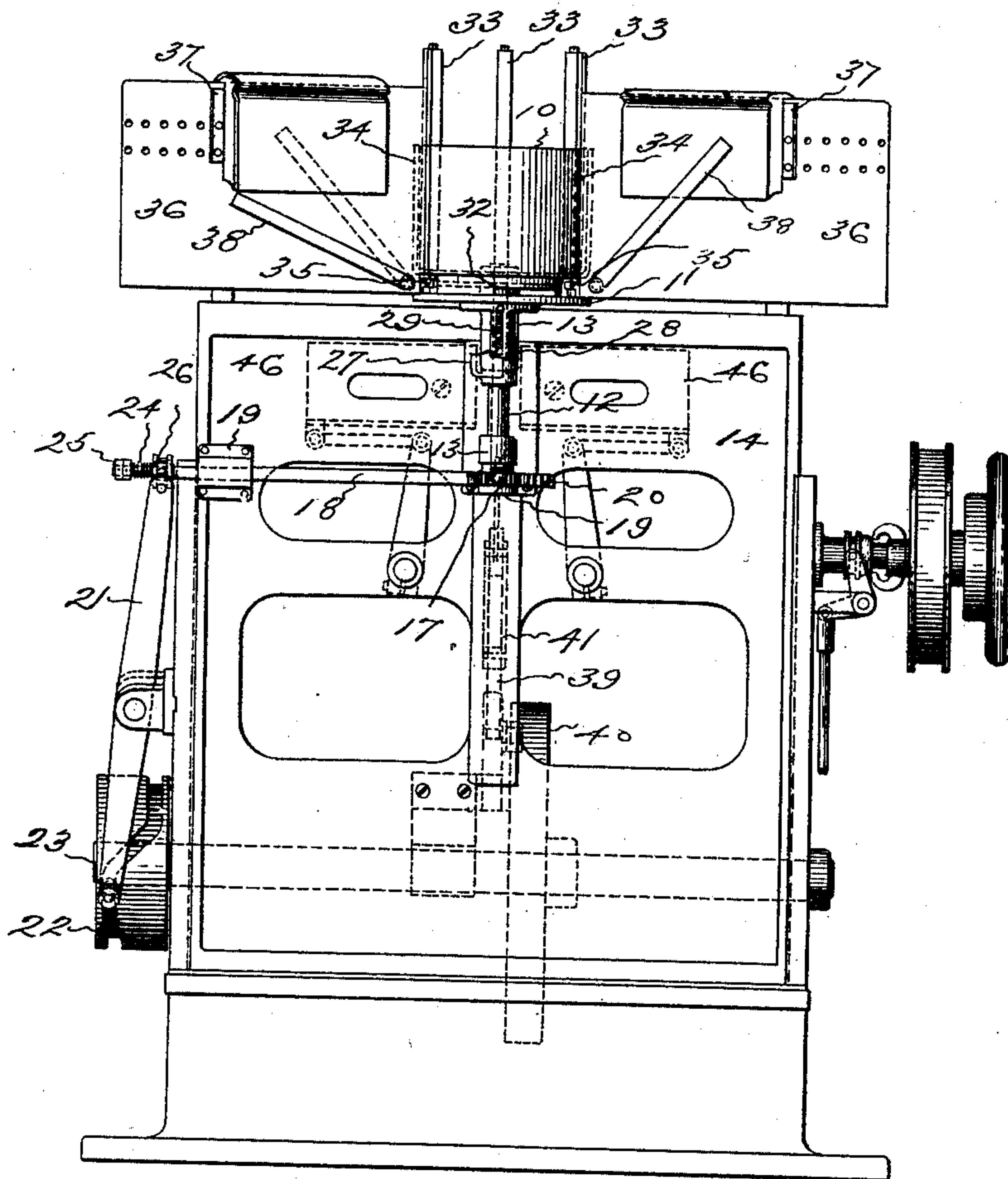
BOOK FEED FOR CASING-IN MACHINES.

(Application filed May 31, 1902.)

(No Model.)

5 Sheets—Sheet 1.

Fig. 1



Witnesses:

V. R. Hokeomb.

C. A. Burdland.

Inventor:

Frederick D. Taylor
Harry R. Williams
atty.

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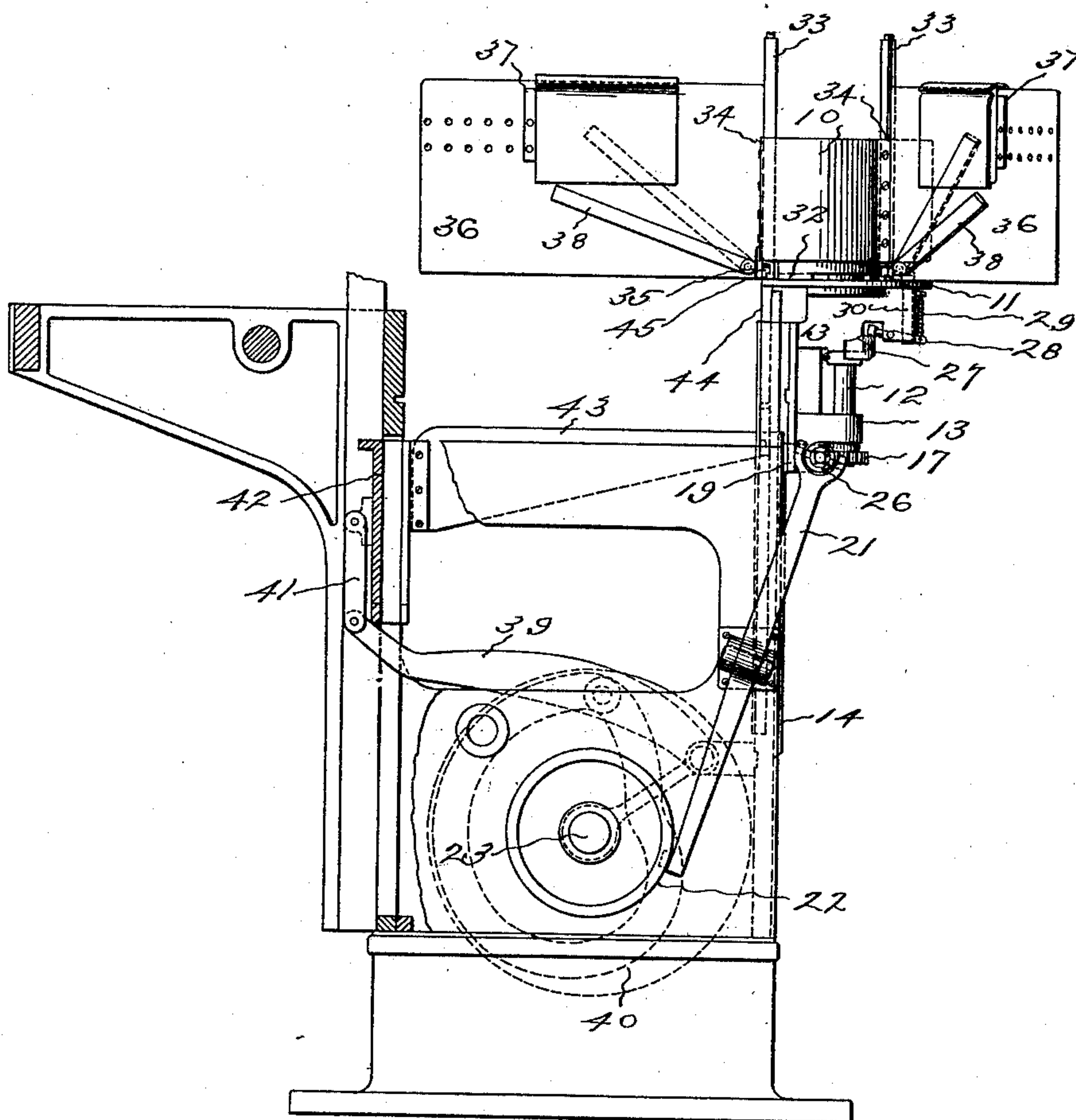
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Fig. 2



Witnesses:
V. R. Holcomb.
C. E. Beckland.

Inventor:
Frederick D. Taylor by
Harry P. Williams
att.

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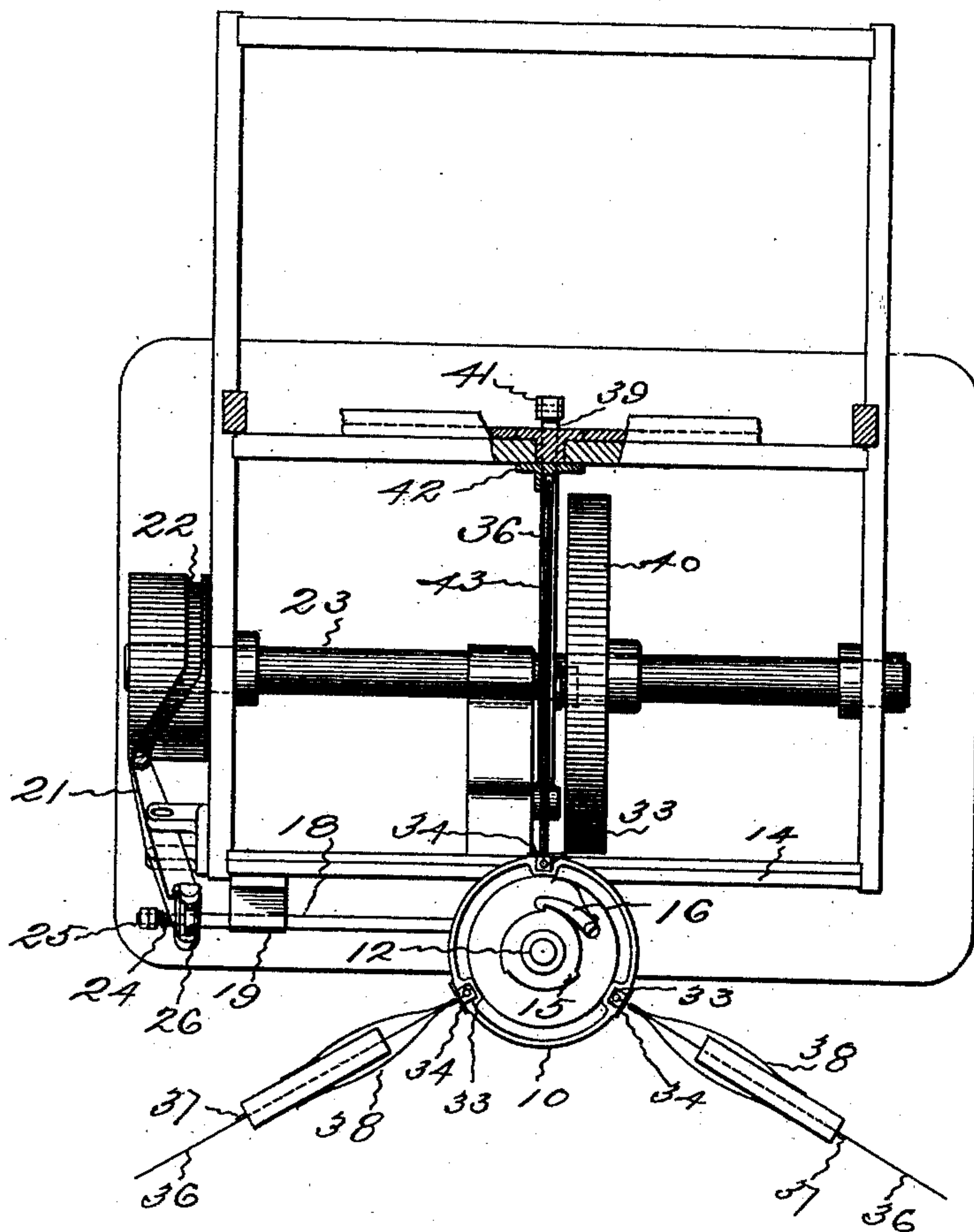
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Fig. 3



Witnesses:

V. R. Holcomb.

C. E. Buckland.

Inventor:

Frederick D. Taylor by
Harry P. Williams
att.

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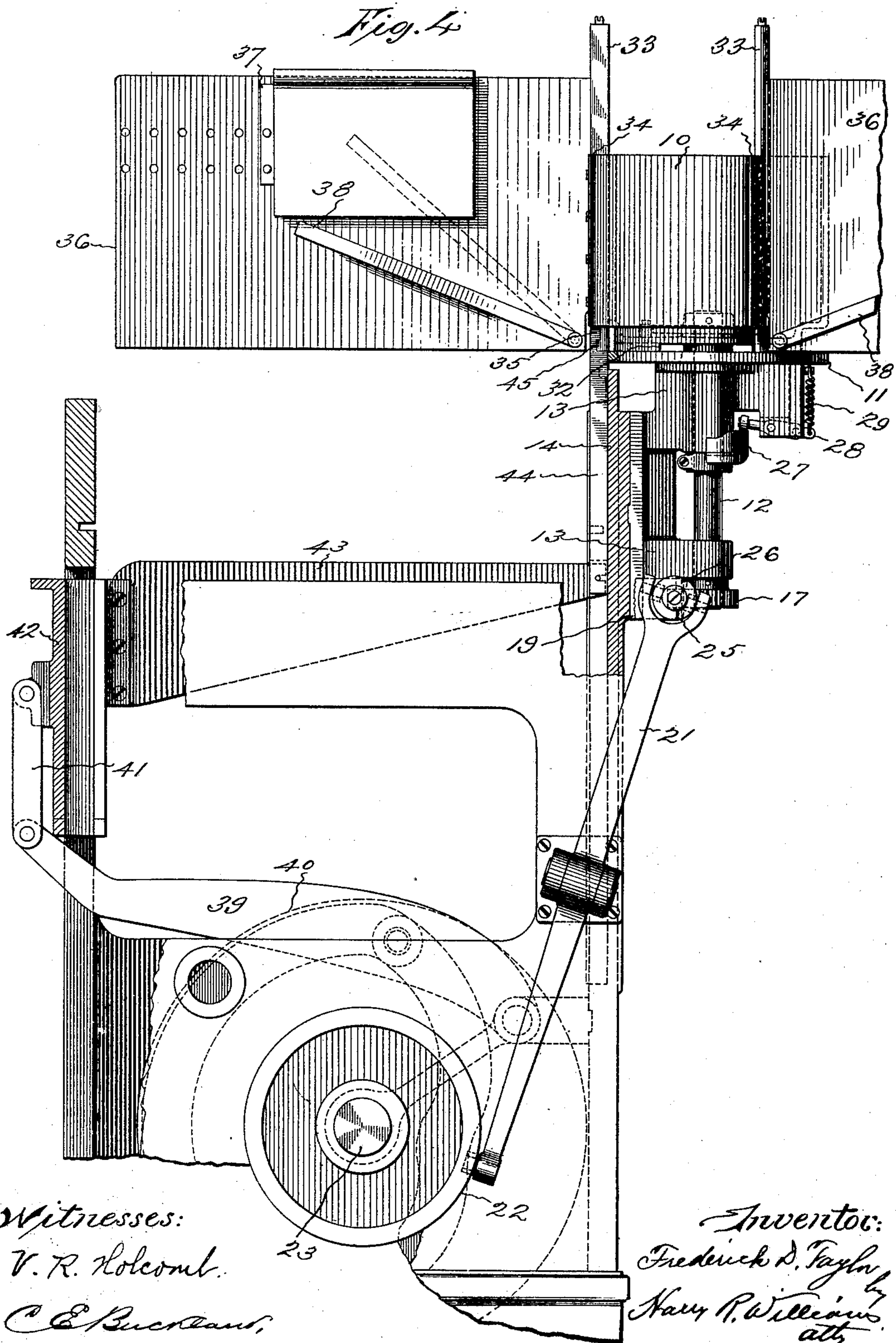
F. D. TAYLOR.

BOOK FEED FOR CASING-IN MACHINES.

(Application filed May 31, 1902.)

(No Model.)

5 Sheets—Sheet 4.



UNITED STATES PATENT OFFICE.

FREDERICK D. TAYLOR, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE SMYTH MANUFACTURING COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

BOOK-FEED FOR CASING-IN MACHINES.

SPECIFICATION forming part of Letters Patent No. 716,959, dated December 30, 1902.

Application filed May 31, 1902. Serial No. 109,649. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK D. TAYLOR, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Book-Feeds for Casing-In Machines, of which the following is a specification.

This invention relates to a book-feed for a machine which pastes the outside leaves of an unbound book and puts such a book into a case and causes the adhesion of the leaves of the case to the pasted leaves of the book.

The object of this invention is the construction of a simple and convenient book-feed which will permit the operations of the machine to be rapidly performed and allow the operators plenty of time for placing the uncased book and removing the bound book.

The invention is illustrated as adapted to the casing-in machine shown in United States Patent No. 690,959, dated January 14, 1902. This adaptation has a cylinder with radiating vertical plates and a cam, lever, rack, pinion, ratchet, and pawl for intermittently rotating the cylinder and carrying each plate in succession from the front of the machine, where an operator adjusts the unbound book on the plate to a position where the plate is engaged by a mechanism and, with the book, is lowered between the opened paste-rolls and then raised between the closed paste-rolls and into the case.

Figure 1 of the accompanying drawings shows a front elevation of so much of one of these machines as is necessary to illustrate the invention. Fig. 2 shows a side elevation. Fig. 3 shows a plan of the same. Fig. 4 shows a side elevation of the new mechanism on larger scale. Fig. 5 shows a front elevation of the same, and Fig. 6 shows a plan of the under side of the plate-cylinder.

The cylinder 10 is rotatably mounted above a plate 11 on the end of a vertical shaft 12, that is supported by brackets 13, attached to the outside of the front frame 14 of the machine. The upper end of the vertical shaft in the cylinder has a ratchet-wheel 15, and attached to the inside of the bottom of the cylinder, so as to engage the ratchet-teeth, is

a hooked spring-pawl 16, Fig. 3. On the lower end of the vertical shaft is a pinion 17. A bar 18, loosely supported by brackets 19, attached to the outside of the front frame, has a rack 20, that meshes with the pinion on the end of the vertical shaft. A lever 21, pivoted on one side near the front of the machine, has its upper end connected with the rack-bar and its lower end engaged with a cam 22 on the cam-shaft 23. A spring 24, held by nuts 25 on the end of the bar, forces a block 26, connected with the upper end of the lever, against a shoulder on the bar, Figs. 4 and 5. The rotation of the cam oscillates the lever, and this reciprocates the rack, which, through the pinion and vertical shaft, rotates the ratchet-wheel backward until the pawl engages a tooth and then rotates the ratchet-wheel forward with the pawl engaged with a tooth, so that the cylinder is given an intermittent rotary movement. On the vertical shaft is a cam 27. A lever 28, pivotally supported by a projection from the upper vertical shaft-bracket, has one end held engaged with the cam on the vertical shaft by a spring 29, Fig. 4. This lever adjacent to the spring is connected with the lower end of a stop-bolt 30, the upper end of which is arranged to pass through an opening 31 in the plate 11 beneath the cylinder, so that it may engage stop-shoulders 32 on the bottom of the cylinder, Fig. 5. The stop-cam oscillates the lever, so the stop-bolt is pulled down when it is time for the cylinder to be rotated, and the spring oscillates the lever, so the stop-bolt is lifted into the path of a stop-shoulder in order to stop the cylinder in the correct position. The main cam is so shaped that the rack-lever will move a little more than is necessary to give the cylinder the exact movement, the spring connection between the end of the lever and the rack-bar compressing slightly when the stop-bolt holds the cylinder and the lever continues its movement, so that the cylinder will be held firmly against the stop-bolt.

Bars 33 are held by plates 34 in vertical slots in the side wall of the cylinder, so that they may be moved vertically. The lower ends of these bars normally rest upon the top of the plate 11, and near the lower end each

bar has a horizontal mortise 35, Fig. 5. In an outwardly-opening slot in each bar the end of a thin radial plate 36 is fastened. These plates are adapted to receive the books, gage-stops 37 being provided to determine the positions of the books on the plates and holding-fingers 38 being pivoted to the sides of the plates, so that they may be placed against the books, as indicated by the dotted lines in Figs. 2, 4, and 5 of the drawings, to prevent the outside leaves of the books from opening out when the plate is lowered and from curling open when tipped or pasted on and to prevent sticking of deckle edge leaves. As the fingers are pivotally attached to the plates when the book is raised, the pasting mechanisms push the fingers down out of the way to the positions illustrated by the full lines in Figs. 2, 4, and 5.

A lever 39, having one end pivoted to the inside of the front frame of the machine and oscillated by a cam 40 on the cam-shaft, is connected by a link 41 with a vertically-movable slide 42, attached to which is a forwardly-extending arm 43, the same as shown and described in the patent, No. 690,959, previously referred. The front end of the arm 43 is attached to a bar 44, that is movable vertically in a mortise in the inside of the front frame of the machine, Fig. 4. The upper end of this bar has a mortise 45 in such a location that when the bar is raised through an opening in the plate 11, on which the bars 33 normally rest, the mortise is adapted to receive the lower end of one of the vertically-movable plate-bars carried by the cylinder, Fig. 4. The elevating-cam is timed to raise the lever and arm with the bar upwardly into such position that when the cylinder is rotated the lower end of a plate-bar enters the mortise in the upper end of the elevating-bar, and the stop-bolt and shoulder are timed to stop the cylinder with the bars thus engaged and forming practically a single piece. After this engagement has been completed, the elevating-cam lowers the arm and the engaged bars, with the attached plate and the book which the plate supports. After the book has been lowered and the paste-boxes 46, Fig. 1, have been brought together by such mechanisms as are shown in the prior patent the cam raises the arm and bars and carries the book up between the paste-boxes. When the book has been lifted way up, the stop-catch is drawn down and the cylinder given a partial rotation, carrying the book which has been pasted and thrust into its case around to one side, where that book may be removed and the following plate, with another unbound book, is carried into the position where the bars are locked, so as to be lowered and raised by the next movement of the elevating mechanism.

An operator places an unbound book upon the plate that projects forwardly from the cylinder, and when the cam and lever and rack and pinion cause the ratchet and pawl

to rotate the cylinder that plate, with the unbound book, is turned toward the back over the opening between the paste-boxes, and the plate-bar is engaged with the elevating-bar. When the parts are in these positions, the stop-bolt is drawn up and engages a stop-shoulder, so that the cylinder will hold in exact position. The elevating-cam then causes the arm and engaged elevating and plate bars to lower and raise the plate, with the unbound book between the paste-boxes. As the plate is being lowered and raised in the machine an unbound book is placed upon the plate which is projecting toward the front. After the plate and book have been raised the cylinder is released and rotated, so that the plate, with the last-placed unbound book, is carried over the paste-boxes, and the pasted book is carried toward the front. While an unbound book is being lowered and raised, the bound book is removed from the plate that has turned to the front and another unbound book is adjusted on the plate that is to be turned toward the back. The machine may be run rapidly, and yet the operators have sufficient time to remove the bound book and properly adjust an unbound book while a book is being bound.

I claim as my invention—

1. A book-feed for a casing-in machine consisting of rotatable plates, mechanism for intermittently rotating the plates and mechanism for individually in succession lowering and raising the plates parallel with the axis of rotation, substantially as specified.

2. A book-feed for a casing-in machine consisting of rotatable plates, mechanism for intermittently rotating the plates, a stop mechanism for retaining the plates in exact position, and mechanism for individually in succession lowering and raising the plates parallel with the axis of rotation, substantially as specified.

3. A book-feed for a casing-in machine consisting of rotatable plates, a ratchet and pawl for intermittently rotating the plates, mechanism for operating the ratchet and pawl, and mechanism for individually in succession lowering and raising the plates parallel with the axis of rotation, substantially as specified.

4. A book-feed for a casing-in machine consisting of rotatable plates, a ratchet and pawl for intermittently rotating the plates, mechanism for operating the ratchet and pawl, a stop mechanism for retaining the plates in exact position, and mechanism for individually in succession lowering and raising the plates parallel with the axis of rotation when they are held against rotation, substantially as specified.

5. A book-feed for a casing-in machine consisting of a rotatable cylinder, plates movably held by the cylinder, mechanism for intermittently rotating the cylinder, mechanism for lowering and raising the plates parallel with the axis of the cylinder, and means whereby each plate successively is engaged

with the lowering and raising mechanisms, substantially as specified.

6. A book-feed for a casing-in machine consisting of a rotatable cylinder, plates movably held by the cylinder, mechanism for intermittently rotating the cylinder, mechanism for lowering and raising the plates parallel with the axis of the cylinder, means whereby each plate successively is engaged with the lowering and raising mechanism, and a stop mechanism for retaining the cylinder when a plate is engaged with the lowering and raising mechanism, substantially as specified.

7. A book-feed for a casing-in machine consisting of a rotatable cylinder, plates movably held by the cylinder, a ratchet and pawl for rotating the cylinder, a rack and pinion for operating the ratchet and pawl, a cam and lever for reciprocating the rack, a yielding connection between the lever and the rack, and mechanism for lowering and raising the plates successively, substantially as specified.

8. A book-feed for a casing-in machine consisting of a rotatable cylinder, plates movably held by the cylinder, a ratchet and pawl for rotating the cylinder, a rack and pinion for operating the ratchet and pawl, a cam and lever for reciprocating the rack, a lever and stop-bolt for retaining the cylinder, a cam movable with the pinion for operating the lever and stop-bolt, and mechanism for lowering and raising the plates successively, substantially as specified.

9. A book-feed for a casing-in machine consisting of a rotatable cylinder, mechanism for intermittently rotating the cylinder, bars movably held by the cylinder, plates attached to the bars, an elevating-bar movably held by

the frame, mechanism for lowering and raising the elevating-bar, and means for supporting the lower ends of the plate-bars and guiding them successively into engagement with the upper end of the elevating-bar, substantially as specified.

10. A book-feed for a casing-in machine consisting of a rotatable cylinder, bars movably held by the cylinder, plates attached to the bars, a ratchet and pawl for intermittently rotating the cylinder, a rack and pinion for rotating the ratchet and pawl, a cam and lever for reciprocating the rack, a yielding connection between the lever and the rack, a lever and stop-bolt adapted to retain the cylinder against rotation, a cam movable with the pinion for operating the lever and stop-bolt, an elevating-bar movably held by the frame, a lever and a cam for lowering and raising the elevating-bar, and means whereby the upper end of the elevating-bar is engaged by the lower end of each plate-bar successively, substantially as specified.

11. A book-feed for a casing-in machine consisting of rotatable plates, mechanism for intermittently rotating the plates, mechanism for lowering and raising the plates individually in succession, and spring-fingers pivotally connected to and movable with the plates, substantially as specified.

12. A book-feed for a casing-in machine consisting of a vertically-movable book-supporting plate, mechanism for lowering and raising the plate, and a spring-leaf-holding arm pivoted to each side of and movable with the plate, substantially as specified.

FREDERICK D. TAYLOR.

Witnesses:

GEO. C. KIMBALL,
H. R. WILLIAMS.