

No. 868,491.

PATENTED OCT. 15, 1907.

H. SCHNELLER & F. J. HENKE.

LOOSE LEAF BINDER.

APPLICATION FILED MAR. 7, 1906.

FIG. 3

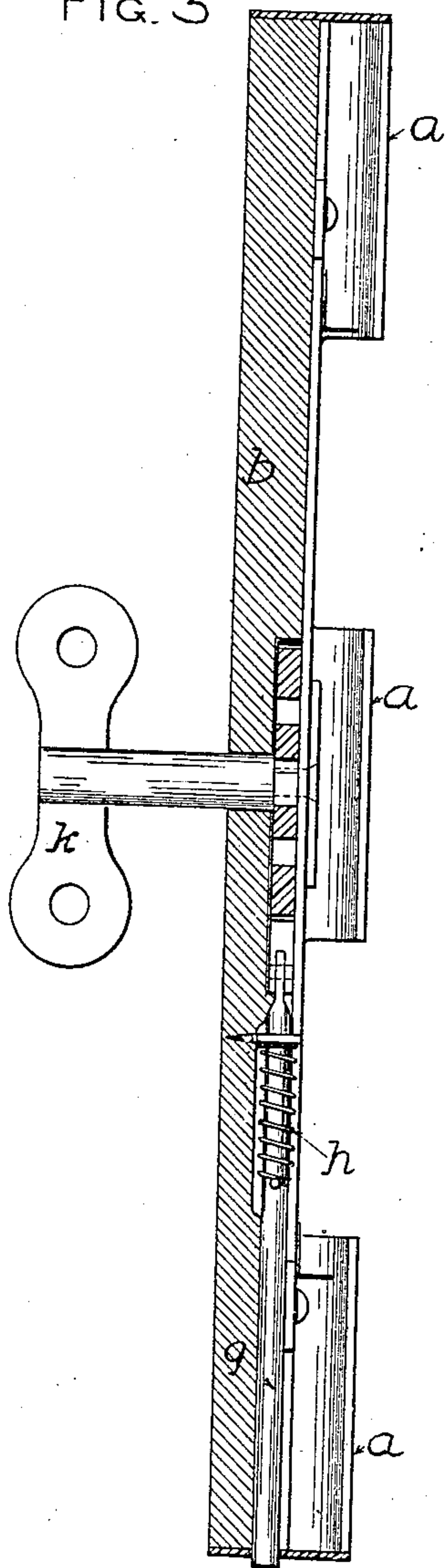


FIG. 1

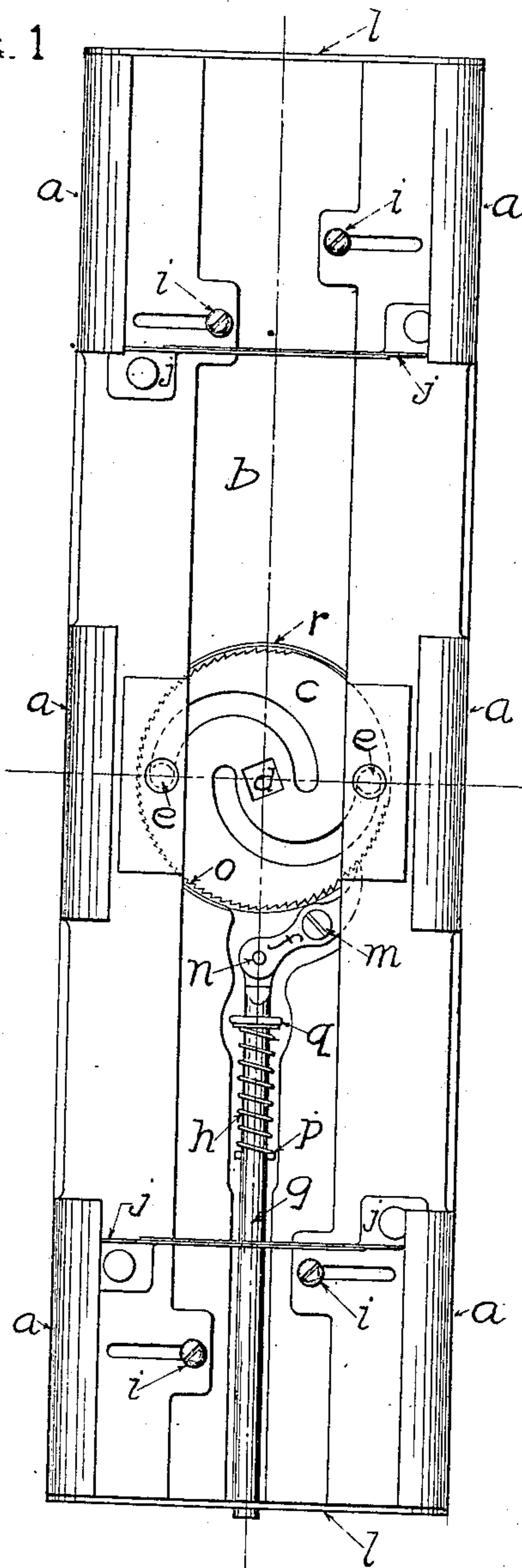


FIG. 4

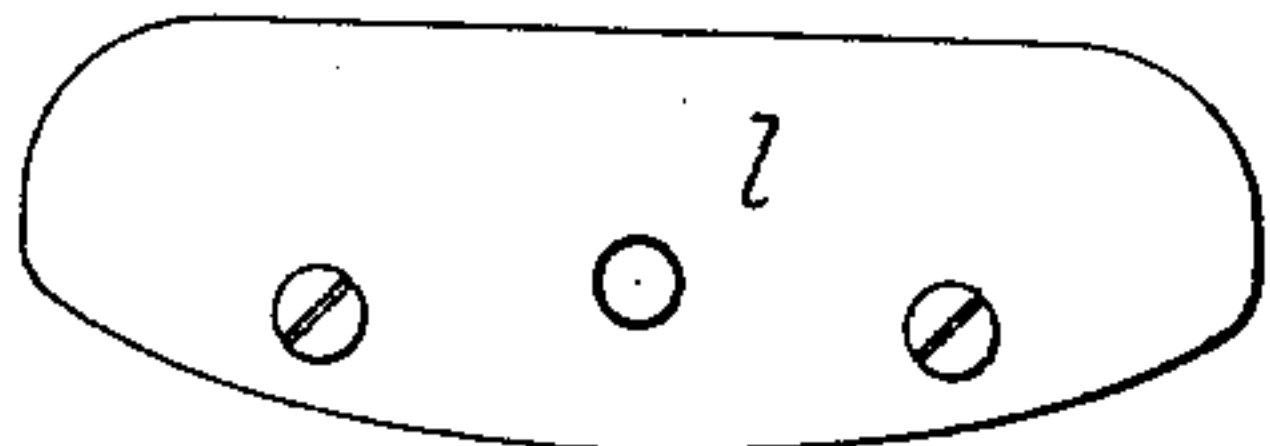
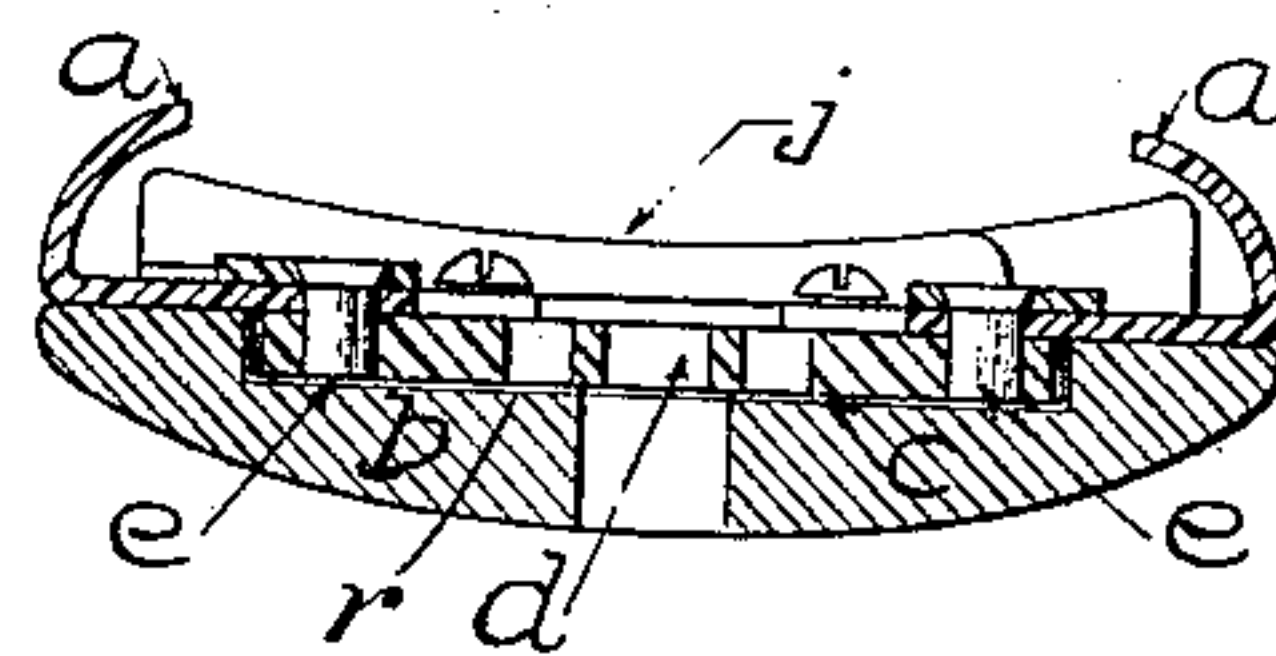


FIG. 2



WITNESSES.

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UNITED STATES PATENT OFFICE.

HENRY SCHNELLER, OF PEARL RIVER, NEW YORK; AND FREDERICK J. HENKE, OF WEST HOBOKEN, NEW JERSEY, SAID SCHNELLER ASSIGNOR TO SAID HENKE.

LOOSE-LEAF BINDER.

No. 868,491.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed March 7, 1906. Serial No. 304,805.

To all whom it may concern:

Be it known that we, HENRY SCHNELLER, of Pearl River, county of Rockland, and State of New York, and FREDERICK J. HENKE, of 585 Central Avenue, West Hoboken, New Jersey, citizens of the United States, have invented a new and useful Loose-Leaf Binder, of which the following is a specification.

Our invention embodies an entirely new device for binding paper and books, making it possible to remove the contents in part, or entirely, after having been used, and thereafter inserting new leaves or material, at the same time giving the book a round back and concave face, and preventing the contents from coming into contact with the mechanism, and without puncturing them. We obtain these results by the mechanism illustrated in the accompanying drawing.

Figure 1 is a full front view of the parts which compose the binder proper, the key being removed, with the eccentric wheel opened to its fullest extent, in a binder embodying our invention. Fig. 2 is a transverse section about the center of Fig. 1. Fig. 3 is a sectional view on a plane parallel with the clamps with key inserted. Fig. 4 is a full view of end guard plate removed from the binder.

The wood back of binder "b", and guard plates "l", constitute the frame of the binder. The contents are held in place by the jaws of clamps "a", which are opened and closed by the eccentric motion caused by the eccentric wheel "c", the latter being connected with clamps "a", by pins "e".

The movement of the eccentric wheel "c" is regulated by key "k", which has the form of a teat wrench, and when opening and closing the binder, is inserted through the back of binder into slot "d". When the clamps "a" are closed on the contents, and key "k" removed from the slot "d", it is impossible for the contents to become loosened. The resisting power of the eccentric wheel "c", becomes permanent, as the wheel is a lock in itself when the pins "e" are in the center. When the pins "e" are not in the center, the wheel "c" is held in check by pawl "f", the latter being connected with bar "g", wheel parts "f", and "g", are connected by pin "n". The pawl "f", is fastened to the back of binder "b" by screw "m". The resisting power of pawl "f" on ratchet "o" is withdrawn by pressing bar "g" inward, at the same time turning key "k" to the left, which action allows the jaws of clamps "a" to open the space required. This is regulated by withdrawing the pressure of the hand from bar "g", and which action causes pawl "f" to spring back to ratchet "o". We obtain this pressure of pawl "f" on ratchet "o", when pressing bar "g" inward, through the agency of spring "h", fastened to bar "g" by pin "p" and connected with staple "q" which is driven

into wood back of binder "b". Pins "n" and "p" serve to hold bar "g" in place.

The bars "j" which are riveted to the clamps at the larger ends, and which move with the clamps when opening and closing the binder, have the object of giving the front of contents a concave face. The position of the paper or contents when resting on these bars, gives the jaws of clamps "a", a direct pressure towards the center of the binder. If these bars were omitted from the binder, which the accompanying drawing represents, the paper in the middle could be pressed out when binder was opened in the middle. The bars "j", therefore do away with the necessity of having prongs, and perforated paper to suit the prongs. It will be seen that the small ends of bars "j", draw towards the center as the binder is opened. The screws "i" are fastened in wood back of binder, and hold clamps "a" in position at both ends of binder. The clamps are connected with screws "i", by means of a slot in clamps "a". The action of the clamps "a", by means of these slots connected with the screws "i", enables the clamps to respond to the action of the eccentric wheel "c", when the binder is being opened or closed, and also enables the clamps to keep in perfect position, regardless of the speed which may be used in opening or closing the binder.

The entire mechanism used for operating the movement of clamps "a", is placed in the wood back of binder "b". The ratchet "o" is prevented from coming into contact with the wood back, by a steel strip "r" encircling the eccentric wheel, allowing the small space required, for pawl "f" to connect with ratchet "o". The invention illustrated in the accompanying drawing will expand from one and one-half inches, to two and one-half inches.

Therefore we claim,

1. The combination with a wood back or base, of two clamps slotted near their ends, and each having three jaws with their clamping edges presented beyond the inner face thereof, a double eccentric wheel located in a groove in the center of wood back, and connected with the clamps by a pivot through and from each clamp, a key made separate from the eccentric wheel, and a bar riveted to the end jaw of each clamp, tapering towards the center in concave form to shape the contents and bring pressure of clamping jaws directly to the center of same when closing, substantially as herein described.

2. The combination with a wood back or base, of the clamps slotted near their ends, moving on wood back and each having three jaws, and a double eccentric wheel located in a groove in the center of wood back, and connected with the clamps by a pivot through each clamp, and a bar riveted to the end jaw of each clamp to shape the contents in concave form, bringing pressure of clamps to the center of same, and a regulating bar "g" located in wood back, parallel with the clamps, a pawl "f" made separate from the regulating bar and connected with the same by a pin "n", and fastened to the wood back by

screw "m" to hold the eccentric wheel in check, after it draws the clamps together operated by the key, substantially as herein described.

3. The combination with a wood back or case "b", having guard plates "l" at each end, of the clamps with jaws "a" having bars "j" riveted thereto, and a double eccentric wheel "c", with ratchet teeth traversing part of its outer edge, located in the center of wood back, and connected with clamps by a pivot through and from each clamp, a steel strip "r" protecting side of groove in wood back from the ratchet on wheel, the screws "i" connected with the back and passing through slots at ends of each clamp, a regulating bar "g" located in wood back, a pawl

"f" made separate from the regulating bar and connected thereto by a pin "n" and fastened to the wood back by screw "m", a staple holding the regulating bar in place, a resisting spring attached to the regulating bar by a pin "p", and a key made separate to connect with the eccentric wheel when opening and closing the clamps, substantially as herein described. 15

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Witnesses:

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