

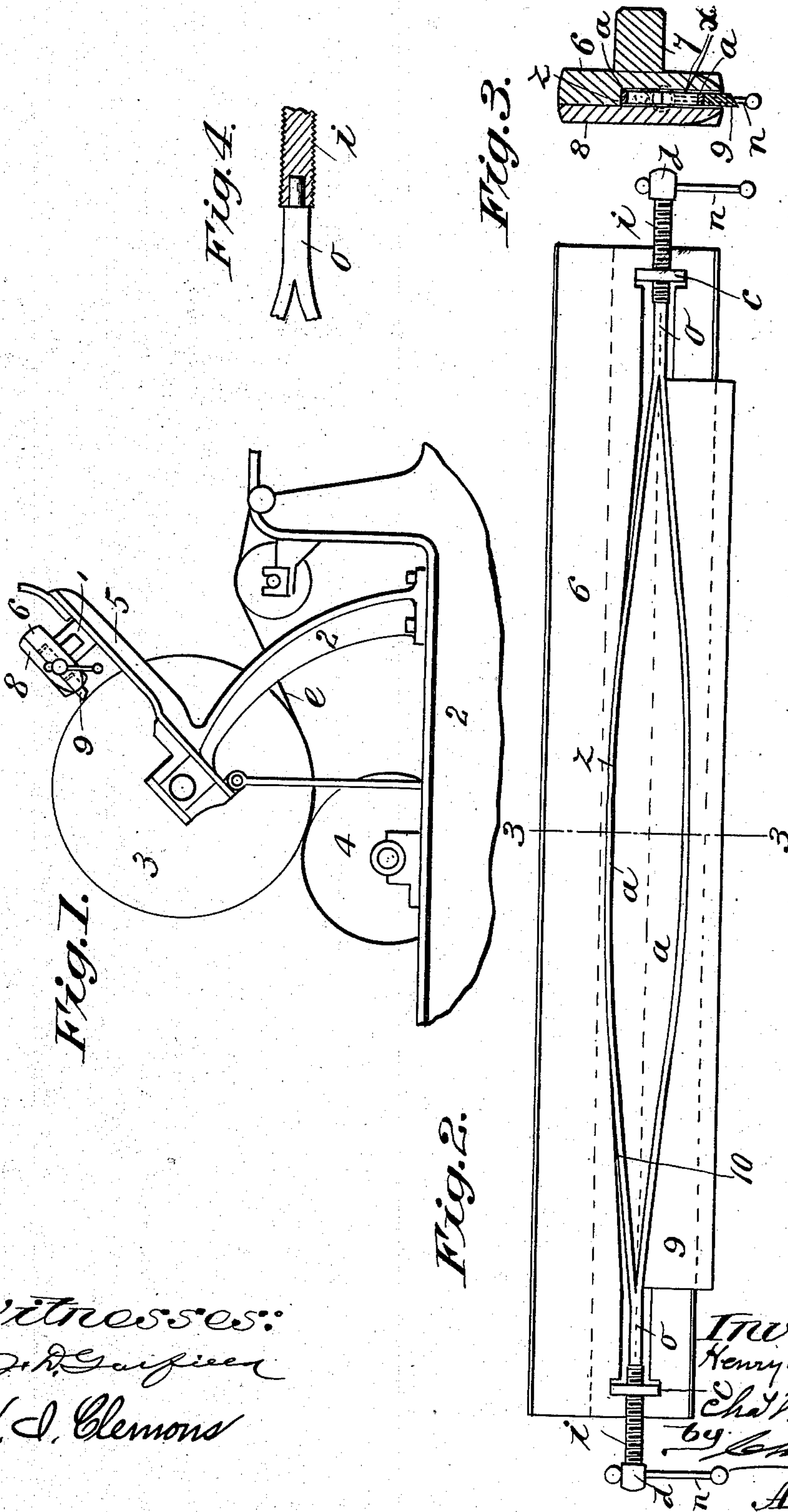
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H. C. WILLMOTT & C. W. LOVETT.
GUARD BOARD AND CLEANER FOR COUCH ROLLS.

(Application filed Mar. 17, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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GUARD-BOARD AND CLEANER FOR COUCH-ROLLS.

SPECIFICATION forming part of Letters Patent No. 714,548, dated November 25, 1902.

Application filed March 17, 1902. Serial No. 98,594. (No model.)

To all whom it may concern:

Be it known that we, HENRY C. WILLMOTT and CHARLES W. LOVETT, citizens of the United States of America, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Guard-Boards and Cleaner Devices for the Couch-Rolls of Paper-Machines, of which the following is a specification.

10 This invention relates to paper-machines, and particularly to improvements in the guard-board and cleaner for the couch-rolls thereof, the object being to provide improved devices for adjusting said cleaner to the desired position against the surface of the upper one of said rolls and for holding it yieldingly in contact therewith and for varying the pressure of the cleaner against said upper roll, and particularly for imparting a greater pressure against that part of the guard-board intermediate of its ends, whereby the usual increased wear of the borders of the felt jacket on the upper roll is avoided; and the invention consists in providing improved means for holding said cleaner in position over said last-named roll and for regulating and maintaining the pressure thereagainst, as above set forth.

30 In the drawings forming part of this application, Figure 1 is a side elevation of a part of a paper-machine frame on which the couch-rolls are supported, illustrating said rolls in end view and the line of movement of the woven-wire apron carrying the paper-stock and showing in end view improved guard or cleaner board holding devices containing our improvements. Fig. 2 is a side elevation of said cleaning devices with the front board removed, showing the relative positions of the guard and cleaner board and the devices for adjusting said last-named board. Fig. 3 is a transverse sectional view on line 3-3, Fig. 2. Fig. 4 is a side view of the extremities of the cleaner-board-adjusting devices and a longitudinal section of one of the actuating-screws engaging the same.

45 Referring to the drawings, 2 indicates a part of the frame of a paper-machine on which the couch-rolls 3 and 4 thereof are supported for the usual rotary movement while the woven-wire apron *e*, bearing the usual thin coat

of paper-stock, moves through the machine. One or more fixed and upwardly-inclined arms 5 are provided on a part or parts of said frame. The said cleaner devices are supported on said arm or arms 5 in the position shown in Fig. 1, the projection 7 thereon engaging said arms and being rigidly secured thereto in any suitable manner, whereby the guard or cleaner board 9 is properly held for operation, as below described. The several parts of the device which contribute to the support and operation of said guard or cleaner board 9 comprise the back board 6, which in cross-section has the conformation shown in Fig. 3, whereby a recess *x* is formed in the inner face of said board, in which are located the guard or cleaner board 9 and an elliptically-shaped spring, as shown, the upper and lower leaves of which are indicated by *a a*, said spring being located in the upper edge of said guard-board and the upper border or wall of said recess *x*. A board 8, having substantially the same length and width as the back board 6, is secured along its upper edge and ends to the back board, whereby the spring is protected and inclosed and a support provided for both sides of the guard-board, the latter having a free vertical movement between the contiguous edges of the back board and the board 8. It is desirable that the guard-board 9 and the spring be protected, as herein described, for otherwise if these parts are not thoroughly cleaned they eventually become incrustated with pulp, especially in the crevices and corners between the parts, thus obstructing the free movement of the board. Said spring consists of two strips or leaves *a a*, preferably of suitably-tempered steel, to the end that they shall be capable of forcible separating movements between an overhanging ledge or part *z* on the board 6 and the upper border of said guard or cleaner board 9, as shown in Fig. 2, whereby said last-named board is given a movement outwardly within the recess between the front and back boards of the device, as shown in Fig. 3. To each of the united extremities of said strips *a a* is welded or otherwise fixed a cylindrical shaft *o*, (see Fig. 4,) having a reduced extremity. A screw *i*, having a socket in its inner end to receive the said reduced extremity of the shaft

o, is suitably supported in each end of the device, as shown in Fig. 2, for rotation by a hand-bar *n* through the head *d* thereof. In each end of the cleaner device is formed a recess to receive a nut *c*, which is there fixed in any convenient manner to prevent the rotation thereof, and said nuts are fitted to receive the said screws *i*, whereby the socketed ends of the latter may be screwed into engagement with the reduced extremities of said shafts *o o*. Thus means are provided whereby said cleaner-board 9 by screwing either one or both of said screws *i* is moved forcibly against the shaft extremities *o* of said spring and the portion thereof intermediate of its extremities is caused to be expanded between said part *z* of the board 6 and said guard or cleaner board 9, thereby forcing the latter outwardly to such degree as may be required against the surface of the couch-roll 3, thereby effecting the cleaning of the latter as may be desired. It is obvious that by unscrewing said screws *i* the spring parts *a a* within the cleaning device will retract and permit the board 9 to recede from the surface of said couch-roll.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

30 1. Guard-board and cleaner devices for the couch-rolls of paper-machines comprising a case consisting of two outer parts between which is a recess for receiving the guard and cleaner board, and a spring extending between the extremities of said case, and means at said extremities for operating said spring whereby said cleaner-board is moved outwardly therefrom or permitted to recede thereinto.

40 2. Guard-board and cleaner devices for the

couch-rolls of paper-machines comprising a case consisting of two outer parts between which is a recess for receiving the guard and cleaner board, the cleaner-board, and spring devices in said recess acting to move said board outwardly, actuated outside of said case.

3. Guard-board and cleaner devices for the couch-rolls of paper-machines comprising a case consisting of two outer parts between which is a recess for receiving the guard and cleaner board, an expansible and retractable spring within said case engaging the back board thereof and the inner border of said cleaner-board, and means for applying endwise pressure to said spring to expand the middle portion thereof against the cleaner-board, to move the latter outwardly.

4. In a device of the class described, a case consisting of two outer parts between which is a recess containing the movable guard and cleaner board, an elliptic spring intermediate of said case and board, nuts fixed in and near the ends of said case, and screws passing through said nuts and engaging the extremities of said spring whereby the same is expanded and permitted to retract.

5. Guard-board and cleaner devices for the couch-rolls of paper-machines comprising a case having a recess therein for receiving the guard and cleaner board; the cleaner-board, and spring devices located in said recess and acting against the board to move the latter outwardly, and means for positively adjusting the board toward the couch-roll.

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