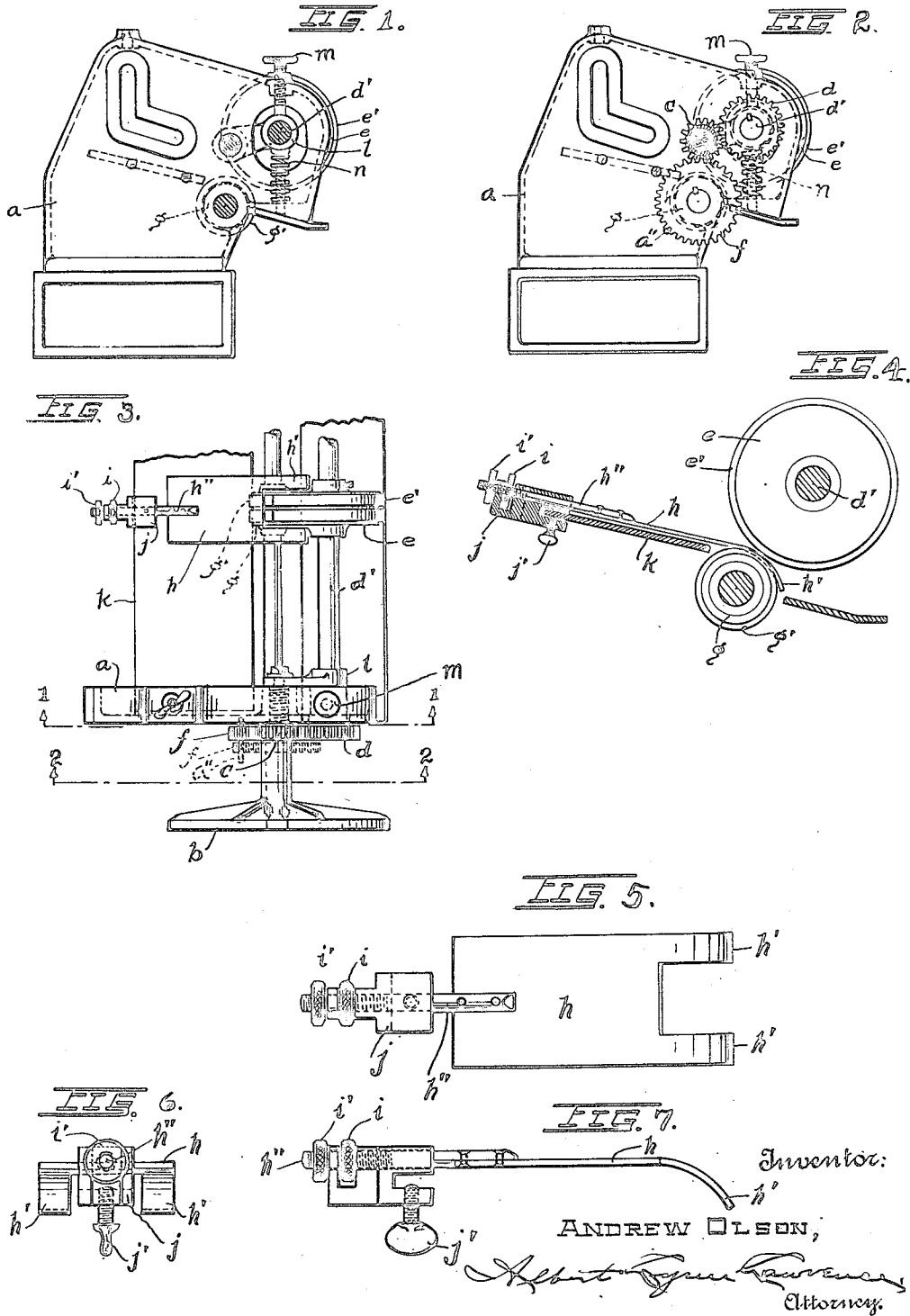


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SHEET FEEDING MECHANISM.
APPLICATION FILED JULY 3, 1920.

1,426,904.

Patented Aug. 22, 1922.



UNITED STATES PATENT OFFICE.

ANDREW OLSON, OF CLEVELAND, OHIO, ASSIGNOR TO THE CLEVELAND FOLDING MACHINE COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

SHEET-FEEDING MECHANISM.

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Specification of Letters Patent. Patented Aug. 22, 1922.

Application filed July 3, 1920. Serial No. 393,878.

To all whom it may concern:

Be it known that I, ANDREW OLSON, a citizen of the United States of America, residing at Cleveland, in the county of 5 Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Sheet-Feeding Mechanism, of which the following is a specification.

My invention relates to improvements in 10 sheet-feeding mechanism and more particularly to the means for effecting the relative adjustment of coacting feeding rolls and the regulation of their action upon the sheets.

My improvements are applicable to that 15 class of sheet-feeding mechanism wherein two resiliently faced rolls react upon the sheets successively to advance them, one at a time, to a folding machine, printing press, or the like. In employing the term "rolls," 20 however, I do not wish to be understood as necessarily intending members which rotate together or in opposition, since commonly I prefer to lock one member or make the same stationary and advance the sheets by 25 the rotation of the opposing member.

More specifically, my improvements contemplate the mounting of one of such co-acting rolls pivotally by means of terminal brackets adjacent to the opposing roll and 30 providing an adjustment therefor comprising a spring and opposing screw mechanism, whereby the position of the adjustable roll may be accurately regulated. I have also associated with the lowermost roll an 35 adjustable guard adapted to expose more or less of the periphery of said roll and thereby modify its action upon the sheets as they successively pass between the rolls to be fed forward.

40 The particular features of my improved mechanism may best be explained by referring to the accompanying drawings, wherein:

Figure 1 is a view of the mechanism in 45 side elevation; the shafts being in section on line 1-1, Fig. 3.

Fig. 2 is a similar view showing the driving gears for said shafts sectioned on line 2-2, Fig. 3.

50 Fig. 3 is a plan view of the sheet-feeding mechanism which is broken away in its upper portion.

Fig. 4 is a sectional view, somewhat diagrammatic in character and upon an en-

larged scale, to show the relation of the 55 feeding rolls and the adjustable guard member.

Fig. 5 is a plan view; Fig. 6 an end view and Fig. 7 a side elevation of the adjustable guard member with its attaching and 60 adjusting screws.

Throughout the several figures of the drawings I have employed the same character of reference to indicate similar parts.

The supporting table for the sheets and 65 the receiving or delivery table, which are adjuncts to my improved sheet-feeding mechanism, are not shown in the drawings, as they are unessential to explaining my present improvements. However, these will 70 be associated with the mechanism of Figs. 1, 2 and 3, respectively positioned upon the left and right sides thereof.

The frame *a* is provided with a driving disc *b* mounted on the same shaft with the 75 intermediate gear *c* of the driving train. The upper gear *d* is keyed upon the shaft which mounts the upper roll *e* of the paired feeding rolls, while the lower gear *f* is splined or otherwise connected with the 80 shaft which mounts the lower roll *g*. With these gears in mesh, it will be seen that the upper roll *e* will be rotated in a counter-clockwise direction for advancing the sheets 85 of paper from left to right, while the lower roll *g* may be similarly rotated, thus tending to retard all but the uppermost sheet of a stack. However, except with thin or glazed stock, the lowermost roll preferably 90 is not rotated, and the gear *f* is moved out 95 of mesh to the dotted line position shown in Fig. 3, so that the roll *g* may be locked against rotation by pin *a''*.

It will be understood that these rolls respectively are faced with bands *e'*, *g'* of soft 95 rubber, so that the paper will be fed approximately at the speed of the upper roll, which is in engagement with the uppermost sheet of paper stock. When the lower roll is withheld from rotation, its soft rubber face 100 acts merely as a pad over which the paper is passed, but modified in its action by the adjustable guard member, as occasion may require.

This guard member comprises a bifurcated plate *h* having curved forward fingers *h'* approximating the curvature of the lower roll *g* and adjustably inserted in the appli- 105

5 ance to extend upon either side thereof, as shown in Fig. 3. This plate is carried by a stem h'' which is terminally threaded to receive the thumb nuts i, i' ; said stem extending through the base block j to permit a locking longitudinal adjustment. The base block, in turn, is provided with an attaching screw j' adapted to secure the guard member removably upon the plate k 10 extending transversely between the side frames of the machine.

15 The shaft d' , which mounts the upper roll e of the pair of feeding rolls or members, is mounted in terminal brackets l between the adjusting screws m and their opposing springs n , duplicated at either side of the machine. Accordingly, a very close adjustment is obtainable for the feeding rolls, to suit the conditions of operation from time 20 to time or from job to job. Thus the particular thickness and characteristics of the paper stock may be accommodated in the improved feeding mechanism of my invention.

25 Moreover, the slightly retarding action of the lower member or roll g , whether rotated reversely, or held stationary, may be varied to a nicety by adjusting the guard plate to expose or cover more or less of the rubber surface of said roll. By employing this guard plate, either alone or in association with the particular adjustment of the feeding rolls, a paper-feeding mechanism of the class herein disclosed is rendered 30 much more efficient than the ordinary paired feeding rolls of the art can be made in their 35 operation.

40 Having now described the preferred embodiment of my invention, I claim as new and desire to secure by Letters Patent, together with such modifications as may be

made by one ordinarily skilled in the art, the following:

1. The combination in a sheet-feeding mechanism, with paired feeding members; 45 one of which is rotated for individually advancing the sheets, of an adjustable guard associated with the non-rotated member, and means for adjusting said guard to expose more or less of the operative face 50 of said member and modify its action, substantially as set forth.

2. In a sheet-feeding mechanism, the combination with upper and lower feeding rolls coacting to advance the sheets one 55 at a time, of a guard associated with the lower roll in position to modify its action with respect to the sheets, and means for adjusting said guard with respect to the roll to expose operatively more or less of 60 the surface of the roll, substantially as set forth.

3. In a sheet-feeding mechanism, the combination with reversely-acting upper and lower feeding rolls, of a guard member 65 extending rearwardly and at either side of the lower roll in position to modify its action with respect to the sheets, and screw-actuated means for adjusting said member to expose operatively more or less of the 70 surface of the roll, substantially as set forth.

4. In a sheet-feeding mechanism, the combination with reversely acting upper and lower feeding members, of a guard partially covering one of said members and 7 extending at either side thereof, and means for adjusting said guard to modify its action upon the sheets, substantially as set forth.

In testimony whereof I do now affix my signature.

ANDREW OLSON.