No. 769,294. PATENTED SEPT. 6, 1904.

C. J. BELLAMY.

FEEDING MECHANISM.

APPLICATION FILED DEC. 15, 1903.

NO MODEL. 3 SHEETS—SHEET 1

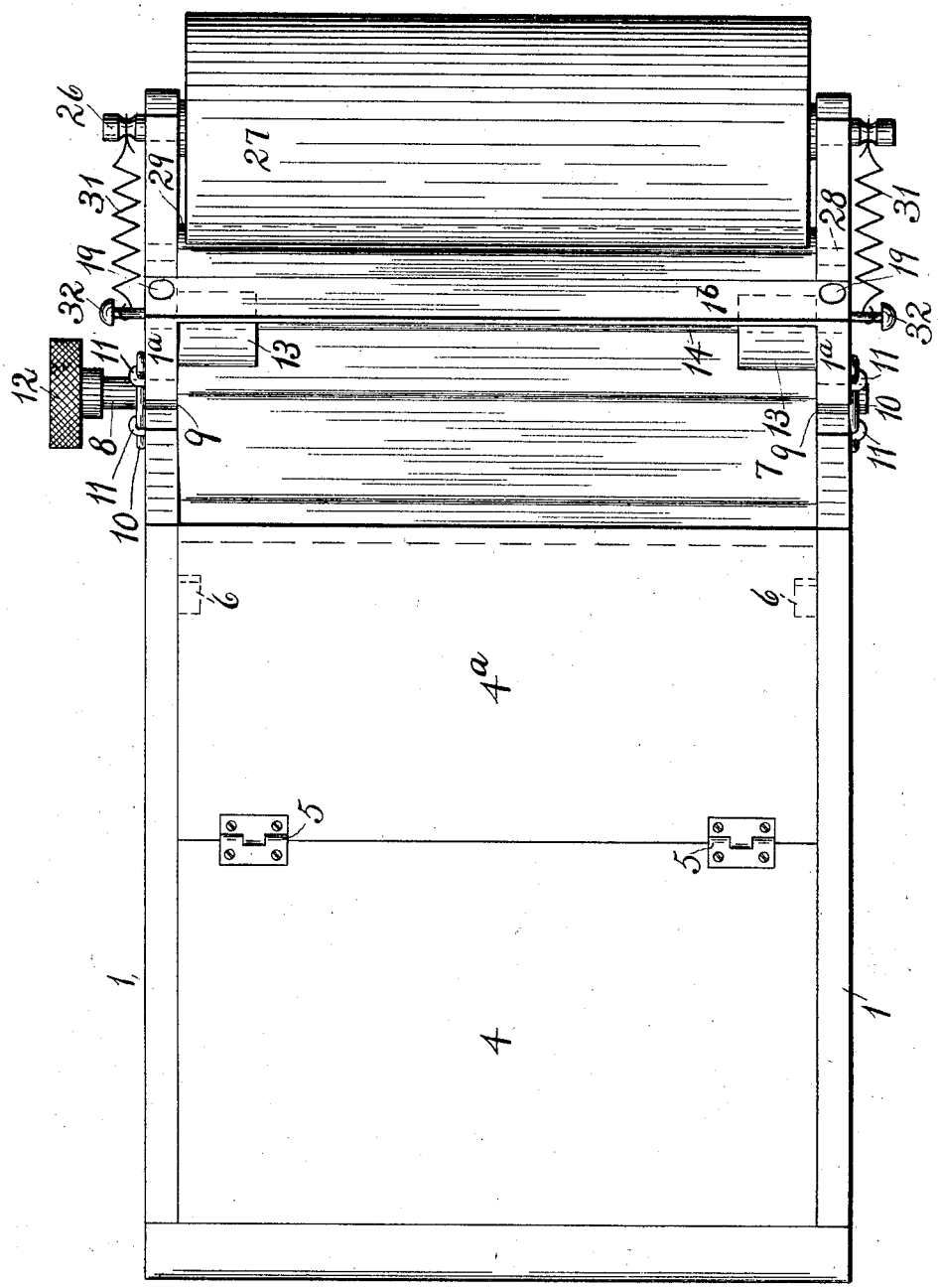


FIG. 1.

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NO MODEL. 3 SHEETS—SHEET 2.

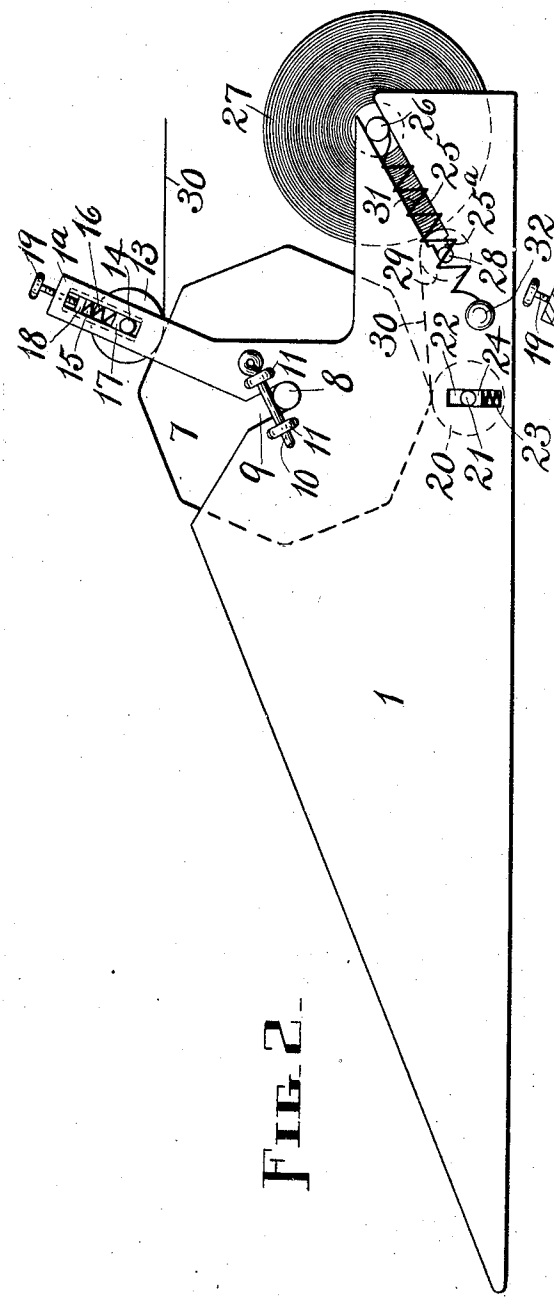


FIG. 2.

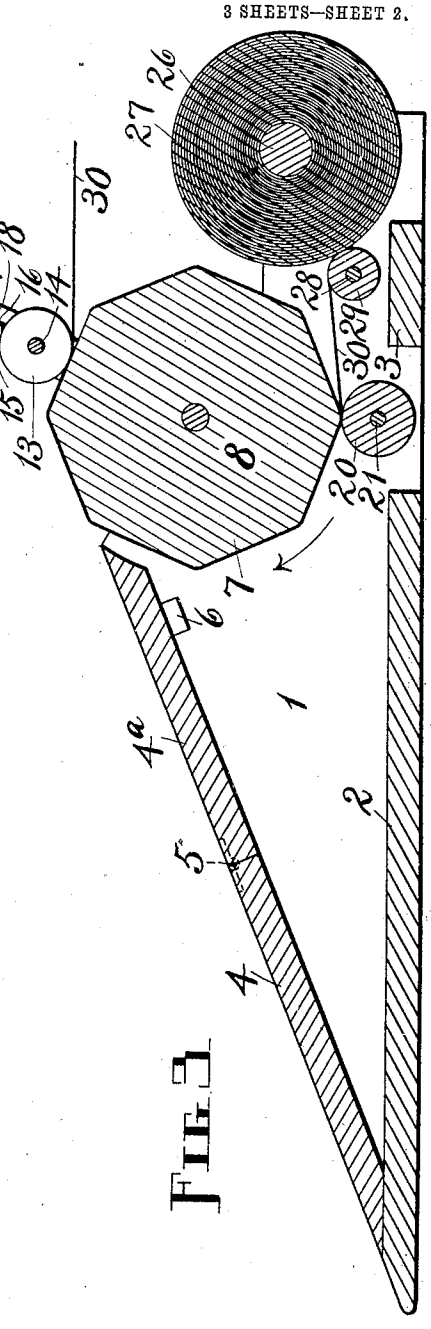


FIG. 3.

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NO MODEL. 3 SHEETS—SHEET 3.

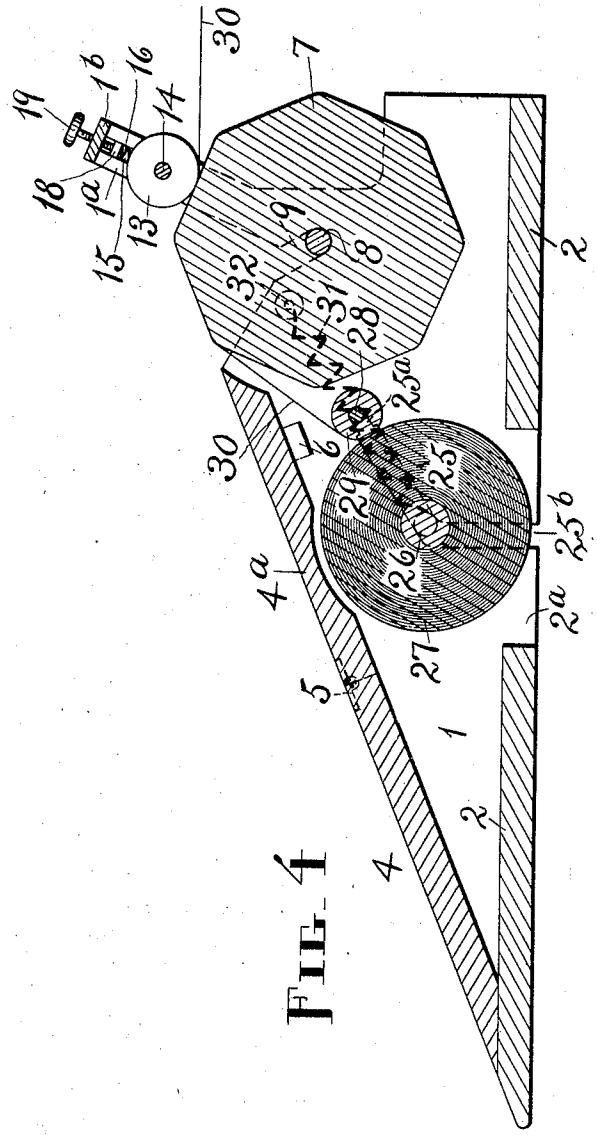


FIG. 4

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UNITED STATES PATENT OFFICE.

CHARLES J. BELLAMY, OF SPRINGFIELD, MASSACHUSETTS.

FEEDING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 769,294, dated September 6, 1904.

Application filed December 15, 1903. Serial No. 185,294. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. BELLAMY, a citizen of the United States, residing at Springfield, in the county of Hampden and Commonwealth of Massachusetts, have invented a new and useful Feeding Mechanism, of which the following is a specification.

My invention relates to improvements in mechanism adapted to handle paper, preferably from a roll, for use with a hand writing-board or otherwise, as desired; and it consists of a rotary platen having a plurality of writing planes and of certain other peculiarly constructed and arranged members, as hereinafter set forth; and the objects of my improvement are, first, to provide a paper-actuating member which also constitutes a suitable writing-platen serving in place of a fixed writing bed; second, to afford automatic means for controlling such platen and the paper thereon; third, to guard against blotting or blurring the writing done on the platen; fourth, to furnish a suitable tension appliance for a roll of paper and the paper itself after it leaves the roll, and, fifth, to provide a comparatively simple and inexpensive, compact, practicable, and efficient device which possesses the advantages above noted.

I attain these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a hand writing-board embodying a preferred form of my invention; Fig. 2, a right-hand side view of said board; Fig. 3, a central longitudinal vertical section through the same, and Fig. 4 a similar sectional view showing a modified arrangement of some of the members. In the last three views the course of the paper is shown.

Similar reference characters refer to similar parts throughout the several views.

A single-strip roll of paper is described as being used in connection with this device; but it is to be understood that when a duplicate of the written matter is required a double-strip roll may be employed. Furthermore, the roll or paper-supply may be suspended at some convenient place remote from the frame instead of being mounted directly thereon or therein, if desired; but the tension appliance shown or some equivalent means for producing tension will generally be required in any event.

Two of the essential features of this invention reside in the many-sided platen and in the tension appliance for the paper-supply roll and paper.

Although I have shown and will describe efficient means for controlling the platen, I do not wish to be restricted to the same, because it is obvious that other means may be found to do this work in a satisfactory manner. It is also apparent that various changes in the construction and arrangement of the frame and other parts besides the aforesaid controlling means may be made without violating the spirit of my invention. As a notable example of a change in arrangement, the supply-roll and its tension-rod may be moved from a position back of the platen to a position in front of the same, in which case the position of the lower controlling-roller in the present construction would be changed or the roller itself dispensed with altogether.

Any suitable form or style of frame, as above intimated, may be provided; but that in the drawings consists of side pieces 1 1, connected by a floor-piece 2 and a cross-piece 3, and of a hand-rest 4. The hand-rest 4 is preferably divided laterally to form a lid 4^a, hinged at 5 to the fixed portion of said rest. Lugs 6 on the inside faces of the side pieces 1 afford rests for the rear end of the lid 4^a when in its normal position. The object of making the rest in two pieces, as described, is for the purpose of giving access by opening the lid to the interior front portion of the device, so that the paper may be readily adjusted on the platen 7 or to enable said platen to be removed when necessary for any purpose.

The roller or platen 7 consists in the present instance of an eight-sided block having trunnions or a shaft 8 journaled in the bottoms of slots 9 in the side pieces 1, pins 10 passing through eyes 11, projecting from the outer faces of said side pieces, being used to hold said shaft in place in said slots. By preference the ridges between adjacent faces or sides of the platen 7 are rounded, as shown;

but such ridges may be left angular, if desired, thus making a true polygon or octagon of the platen. The platen 7 may have more or less than eight sides. Whichever side of the platen happens to be adjacent to and in substantially the same plane with the hand-rest 4 becomes for the time being the real writing-bed of the device. A knob 12 on one of the exposed ends of the shaft 8 affords a ready means for rotating the platen 7. In order to remove the platen from the frame, it is simply necessary to witdraw the pins 10 and open the lid 4^a.

As a means of control for the platen 7 and for the further purpose of providing means for actuating the paper, I may employ rollers adapted to simultaneously engage one side and one ridge, respectively, of said platen, such rollers being preferably spring-pressed against the same. In order to prevent blotting or blurring the writing, one of the controlling and actuating means may consist of marginal rollers 13 13; but I do not wish to be restricted to marginal rollers, since a single long roller may be substituted therefor in some cases and may constitute the only means of control. If a long roller be employed in place of the marginal rollers, it may be converted into a blotting-roller by covering it with blotting-paper. The rollers 13 are carried by a shaft 14, journaled in slots 15 in arms 1^a, extending upward from the side pieces 1 and connected by a cross-bar 1^b. These marginal rollers are arranged to bear only on the platen 7 near its ends or on the margins of an interposed strip or sheet of paper outside of the field of writing. The marginal rollers are pressed against the platen by means of springs 16 in the slots 15, such springs being interposed between blocks 17 and 18, slidingly mounted in the arms 1^a. The blocks 17 bear directly upon the shaft 14, while the blocks 18 are forced by the springs 16 against the ends of adjusting-screws 19, threaded through openings in the upper ends of said arms. By adjusting the screws 19 up or down the force exerted by the springs 16 upon the shaft 14 is decreased or increased accordingly, and in this way the requisite degree of frictional contact between the rollers 13 and the platen is obtained and any irregularity compensated for. A long roller 20 has its trunnions or shaft 21 journaled in slots 22 in the side pieces 1, and springs 23 in said slots force said roller against said platen. The springs 23 are introduced between blocks 24 and the bases of the slots 22, said blocks being slidingly mounted in said slots and bearing against the shaft 21. The parts are so arranged that when the marginal rollers 13 bear against the center of one side of the platen the roller 20 bears against one of the ridges and when the marginal rollers bear upon a ridge the long roller bears against the center of one of the sides. By this arrangement the desired control of the platen and paper is obtained and only the minimum amount of power is required to rotate the platen, as would not be the case if all of said rollers simultaneously bore against the centers of two of the faces of the same.

I do not seek in this application to claim broadly the marginal rollers with a rotary platen, having done so in a previous application; but I do desire to claim the marginal rollers arranged in resiliently-frictional contact with a platen having a plurality of planes.

Oblique slots 25 are provided in the side pieces 1 for the trunnions or shaft 26 of a paper-supply roll 27, and such slots are narrowed at their lower terminals, as shown at 25^a, to afford bearings for the trunnions or shaft 28 of a tension member 29, which may be either a rod or a roller. The roll 27 is drawn into contact with the tension-roller 29 and so remains as the roll decreases in size by the unwinding of the paper 30 through the medium of springs 31, extending between the outer ends of the shaft 26, and pins 32, projecting from the outer faces of the side pieces 1. By releasing the shaft 26 from the springs 31 said shaft, with the paper thereon, if any, may be readily removed from the slots 25, also the shaft 28, with its roller 29, as will be readily seen. It will not, however, generally be necessary to remove the roller 29 from its normal position unless it become necessary to enlarge the space back of the roller 20, so as to enable the operator to more readily insert the end of the strip or web 30 from the roll 27 into the bite of said roller and the platen. It is to be understood that the tension member 29 is so positioned as to divert the course of the web 30 on its way from the roll 27 to the platen 7. The tension member may or may not revolve. Of course weights might be substituted for the springs 31 or gravity depended on to retain the paper-roll in constant contact with the tension member, in which last event the roll holder or shaft 26 must be heavy enough and the bearings for the same steep enough to insure a sufficiently forceful downward tendency of such roll-holder at all times. It may be noted, too, in passing that any suitable roll-holder may be employed.

In operation the web 30 after passing upward between the roller 29 and the roll 27 and partly around the former extends forward between the platen and the roller 20, thence around the front half of said platen, and finally rearward between the platen and the marginal rollers 13. The hand of the operator rests upon the parts 4 and 4^a; but the writing is done on the adjacent exposed side of the platen. After that portion of the paper which rests upon the aforesaid exposed side of the platen has been written upon the platen is rotated in the direction of the arrow in Fig. 3 to bring another side into service and a fresh portion of the paper beneath the pen or pencil of the operator, and so on

indefinitely, the written matter being torn off behind the rollers 13 from time to time as required. The rollers 13 and 20 assist not only in actuating the paper, but in controlling the platen—that is, in holding it steady during the process of writing. The rollers 13 also obviate the liability of blotting the written matter when ink is used, as has already been fully explained.

During the operation of the mechanism the roller 29 is to all intents and purposes fixedly journaled—that is to say, it does not slide in its bearings. Hence the point where the paper leaves said roller always occupies the same relative position to the bite of the platen and roller 20, with the exception of whatever slight variation there may be owing to the irregular outline of the platen and the consequent up-and-down movement of the roller 20. The springs 31 provide the necessary tension for the roll 27 and, with the roller 29, afford the desired degree of tension for the web 30.

The modified arrangement shown in Fig. 4 consists simply in changing the positions of the slots 25 so that the roll 27 and the member 29 can be located in front of the platen instead of behind it. Each pin 32 for one of the springs 31 in this case is placed higher than before and in advance of its former position. The slot 25 in each side piece 1 turns downward at its forward end and opens through the bottom of said side piece, as shown at 25^b, to provide convenient means for removing and replacing the shaft 26, an opening 2^a being provided in the floor 2 for the passage of the supply-roll. The cross-piece 3 and the roller 20, with its appurtenances, are omitted from the modified construction, although the roller might be retained, if desired; otherwise the parts are the same as has already been fully explained. The web 30 after leaving the roll 27 and passing partly around the tension-roll 29 extends upward and rearward directly onto that side of the platen 7 which is serving as the actual writing-bed, and then its course is the same as before, as is the operation of so much of the mechanism as is here retained.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In feeding mechanism, the combination with a suitable frame and a paper-actuating roller journaled therein or thereon, the perimeter of said roller presenting a plurality of planes adapted for writing-surfaces, of a hand-support, the parts being so arranged as to enable the operator resting his hand on said support to write upon the paper supported and actuated by said roller over its alternately-exposed plane surfaces.

2. In feeding mechanism, the combination with a suitable frame and a roller journaled therein or thereon, the perimeter of said roller presenting a plurality of planes, of other rollers arranged in resiliently frictional contact with the side margins only of paper interposed between them and said first-mentioned roller.

3. In feeding mechanism, the combination with a suitable frame and a roller journaled therein or thereon, the perimeter of said roller presenting a plurality of planes, of other rollers arranged in resiliently frictional contact with end portions only of said first-mentioned roller, and means to vary the pressure of said last-mentioned rollers on the first-mentioned roller.

4. In feeding mechanism, the combination with a suitable frame and paper-actuating rollers mounted therein or thereon, the perimeter of one of which presents a plurality of planes, of a tension member, and a paper-supply-roll holder mounted in movable bearings in said frame and it or the roll thereon in resiliently frictional contact with said tension member, the latter being mounted in said frame and arranged to divert the paper, as drawn from the supply-roll by the actuating-rollers, out of its direct course from the line of contact between the tension member and roll.

5. In feeding mechanism, the combination with a suitable frame and a paper-actuating roller journaled therein or thereon, the perimeter of said roller presenting a plurality of planes, of other rollers in resiliently frictional contact with the first-mentioned roller and so arranged as to bear simultaneously on the center of one of said planes and on a ridge between two of such planes.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES J. BELLAMY.

Witnesses:
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A. L. STEVENS.