

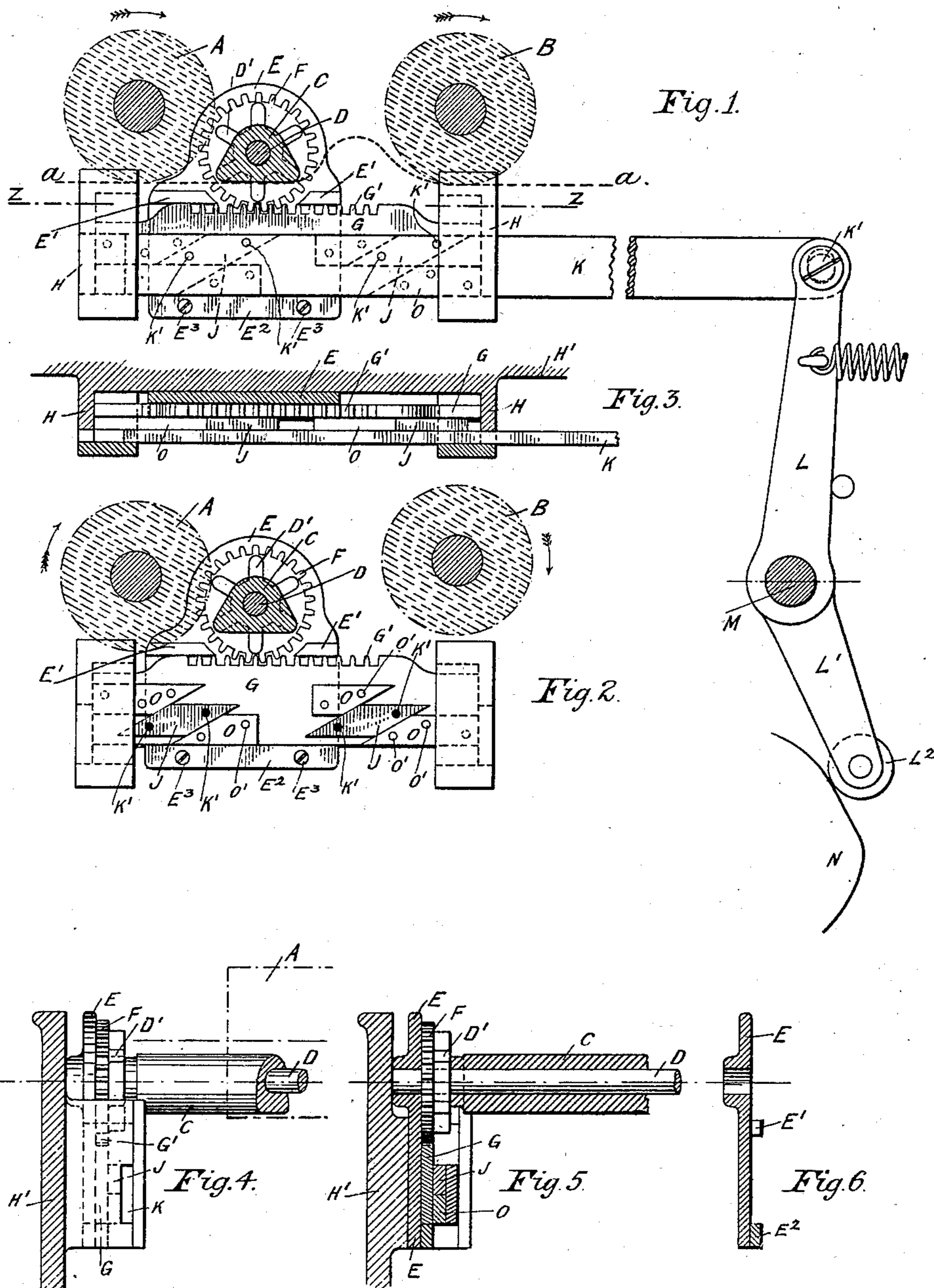
No. 665,951.

Patented Jan. 15, 1901.

W. BRIDGEWATER.
PAPER FEEDING MACHINE.

(Application filed Apr. 12, 1900.)

(No Model.)



Witnesses.

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PAPER-FEEDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 665,951, dated January 15, 1901.

Application filed April 12, 1900. Serial No. 12,585. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BRIDGEWATER, a subject of the Queen of England, and a resident of No. 10 Great Central street, Leicester, in the county of Leicester, England, have invented certain Improvements in Paper-Feeding Machines, of which the following is a specification.

This invention relates to machines designed to successively feed sheets of paper one at a time to printing, folding, ruling, and like machines, the object of the invention being to make the arching or buckling of one sheet at a time more certain. To carry out the invention, therefore, an adjustable bar is placed along the front of and parallel to an arching or buckling roller or equivalent, the said bar being adjustable as to distance from said arching or buckling roller, so as to regulate the arch or buckle required to be formed in the top sheet according to the class or texture of paper operated upon. The said bar is caused to rest upon the top sheet of the pile of paper during the arching or buckling operation and is then raised to leave the sheet of paper free to be carried by the feeding appliance to the tapes or other devices for carrying it off.

The present invention is illustrated in the accompanying drawings, in which—

Figures 1 and 2 are sectional elevations through the front part of a feeding-machine, showing this invention applied thereto. Fig. 3 is a plan taken on the line Z Z of Fig. 1. Fig. 4 is an end elevation, and Fig. 5 a sectional elevation, of the mechanism comprised in this invention. Fig. 6 is a vertical central section of one of the brackets for carrying the bar before mentioned.

Similar reference characters will be employed to designate corresponding parts, and it will be understood that the mechanism for one side only of the machine is shown in the drawings, duplicate mechanism being required, (right and left hand.)

In Figs. 1 and 2 are shown two parallel rollers A and B, both of which during the operation of the machine are sequentially raised clear of the top sheet or revolved in contact therewith by mechanism outside the scope of this invention and therefore not illustrated in the drawings nor described in this specification, but fully described in my Patent No.

645,162, dated March 13, 1900. Placed between the said rollers A and B and parallel therewith is a bar C capable of adjustment in relation to the arching or buckling roller B to regulate the amount of arch or buckle formed successively in each top sheet by the said roller B.

To operate upon or feed forward each top sheet, the bar C rests upon the top sheet of the pile of paper, while the roller B is revolved in the direction of the arrows (see Figs. 1 and 2) in contact with the said top sheet, and the roller A is stationary and may also rest upon the top sheet of the pile or be held clear thereof, and when the arch or buckle has been formed the bar C is raised by mechanism hereinafter described and illustrated, and the roller A is revolved in contact with the top sheet to feed the latter forward, during which operation the roller B may be raised clear of the sheet or revolved on the latter in conjunction with the feed-roller A.

A feeding-machine comprising features such as described may be of any convenient width, with the rollers A and B and the bar C reaching approximately across the full width thereof, the rollers A and B being in length somewhat less than the width of the machine, the spindle of said rollers, however, being of sufficient length to be carried in the side frames of the machine. The said bar C is carried loosely upon a spindle D, the ends of the latter being received into and carried by right and left brackets E, one at each side of the machine. The said brackets E are provided with projections E' E', which rest upon the tops of bars G, by which they are supported, and plates E² are secured by screws to the bottom of said brackets E.

On each end of the spindle D is fixed a toothed wheel F to gear with the rack-teeth G', formed in the upper edges of the bars G, the ends of the latter abutting against projections H H, formed on the side frames of the machine. It will be seen, therefore, that by turning the spindle D by means of the finger-lugs D' on either of the spur-wheels F (or a handle, not shown, which may be fixed on either end of the said spindle D) the bar C may be horizontally adjusted in parallel relation to the roller B for the purpose hereinbefore mentioned.

The bar C is raised clear of the top sheet between each arching or buckling operation or lowered upon it, as required, to assist in forming the arch or buckle by means of slides J J, secured to rods K, which are attached by pins K' to levers L, fixed on the shaft M. One of the levers L has an extension L', as shown in Fig. 1, and a roller or runner L² on the said extension L' rides upon a cam N, which presses outward, as required, the roller or runner L², and consequently moves forward the rods K and slides J J thereon. Springs serve to insure the withdrawal of the levers L, rods K, and slides J J to again lower the bar C upon the pile. The said slides J J engage the inclines of the plates O O, fixed by the screws O' O' to bars G. It will be readily seen, therefore, that as the cam N or equivalent presses outward the roller or runner L² the rods K will be moved forward, causing the slides J J to engage the inclines of the plates O O, thereby raising the bars G, brackets E, and the bar C, as before mentioned.

A single sheet of paper *a a* is represented by the dotted line in Fig. 1 and clearly shows the arch or buckle between the bar C and roller B, only the one sheet being shown, so that a confusion of lines is prevented.

What I claim is—

1. In a paper-feeding machine in combination with the arching or buckling roll B, a bar C loosely carried on a spindle D wheels F, F, on said spindle, rack-bars G, G, provided

with teeth G' with which the teeth of the wheels F, F, engage so that the bar C may be adjusted horizontally in relation to the roll B according to the texture of the paper under operation, substantially as described.

2. In a paper-feeding machine in combination with the arching or buckling roll B, a bar C loosely carried on a spindle D, supporting-brackets E E, for said spindle and projections E' E' on said brackets resting on the top of rack-bars G, G, and plates E², under the said rack-bars G, G, substantially as described.

3. In a paper-feeding machine in combination with the arching or buckling roll B, a bar C, mechanism for horizontally adjusting the bar C in relation to the roll B, and rack-bars G, G, for supporting the bar C, said rack-bars being given a vertical movement by means of reciprocating rods engaging inclined plates fixed on said rack-bars G, G, substantially as described.

4. The combination of the roll B, bar C, spindle D, wheels F, F, rack-bars G, G, inclined plates O, O, slides J, J, rods K, K, and levers L, L, operated in the manner substantially as described.

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

WILLIAM BRIDGEWATER.

Witnesses:

A. J. DAVIS,

THOMAS S. SHOULER.