

No. 694,749.

Patented Mar. 4, 1902.

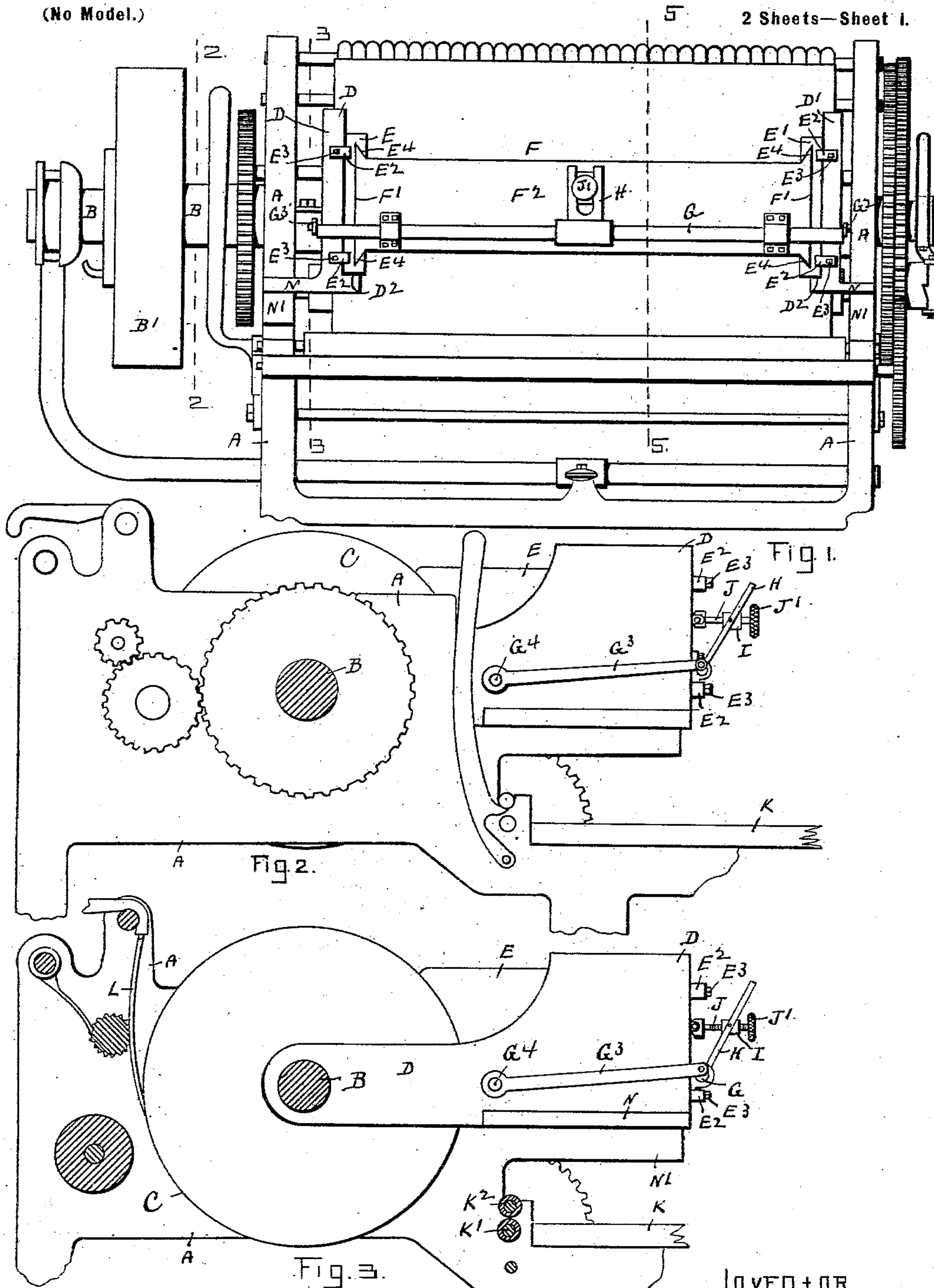
C. W. HOBBS.

MACHINE FOR APPLYING ADHESIVE MATERIAL TO PAPER.

(Application filed Apr. 11, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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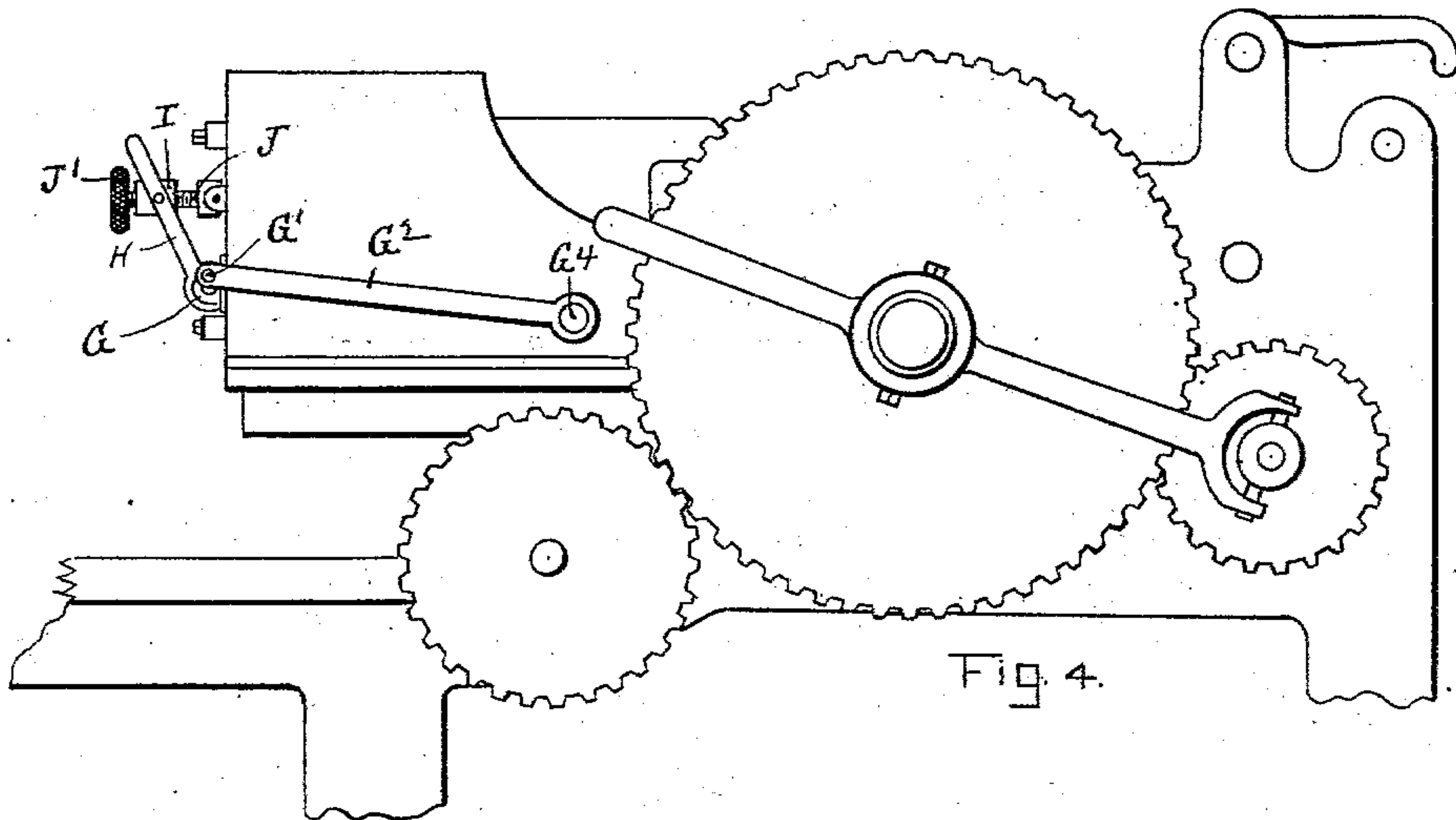


Fig. 4.

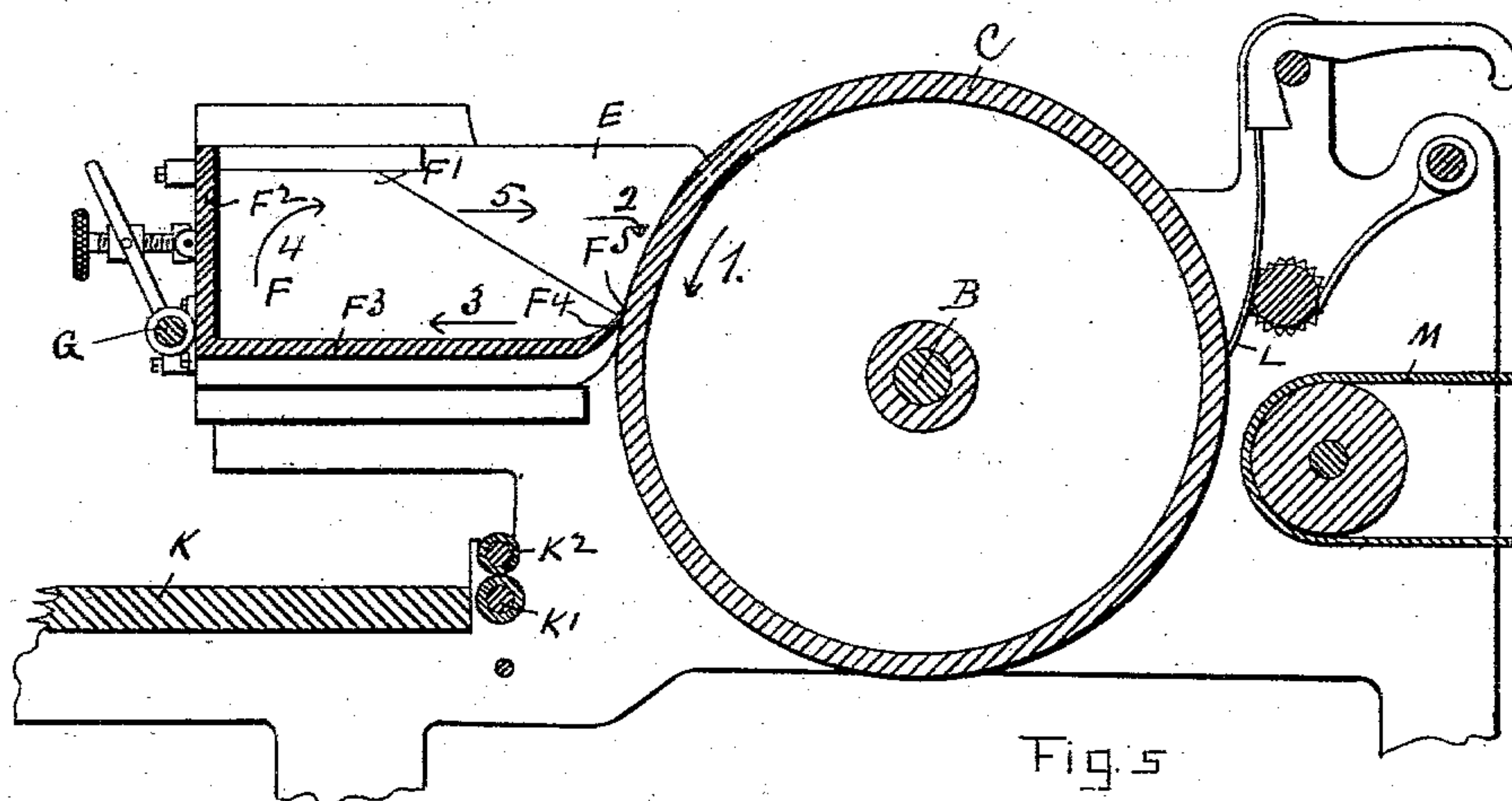


Fig. 5.

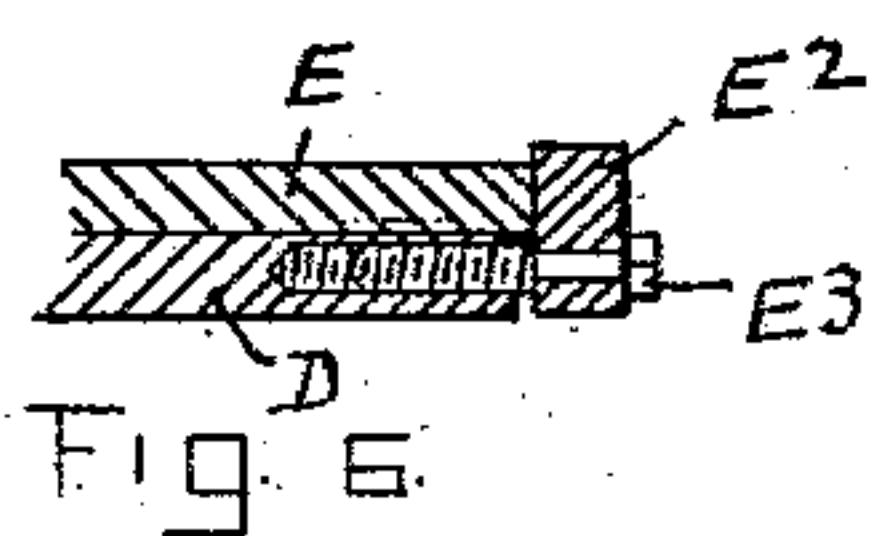


Fig. 6.

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# UNITED STATES PATENT OFFICE.

CLARENCE W. HOBBS, OF WORCESTER, MASSACHUSETTS.

## MACHINE FOR APPLYING ADHESIVE MATERIAL TO PAPER.

SPECIFICATION forming part of Letters Patent No. 694,749, dated March 4, 1902.

Application filed April 11, 1898. Serial No. 677,138. (No model.)

*To all whom it may concern:*

Be it known that I, CLARENCE W. HOBBS, a citizen of the United States, and a resident of Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Machines for Applying Adhesive Material to Paper, of which the following is a specification, accompanied by drawings forming a part of the same.

My invention relates to that class of machines for applying adhesive material to paper which comprise a gumming-roll running in contact with adhesive material held in a gum-box and also in contact with the surface of the paper to be gummed; and my invention relates particularly to the construction and arrangement of the gum-box; and it consists in providing improved means for adjusting the gum-box relatively to the gumming-roll and in certain features of construction in the gum-box, as hereinafter described, and pointed out in the annexed claims.

Figure 1 of the drawings represents the front side of the gum-box of a machine for gumming or pasting paper. Fig. 2 is an end view of the same with the driving-wheel removed on line 2 2, Fig. 1. Fig. 3 is a vertical sectional view on line 3 3, Fig. 1. Fig. 4 represents an end view of the gum-box opposite that represented in Fig. 2. Fig. 5 is a vertical sectional view on line 5 5, Fig. 1; and Fig. 6 is a view in detail of one of the adjusting-screws by which the sides of the gum-box are adjusted toward or away from the gumming-roll.

Similar characters refer to similar parts in the different figures.

Referring to the drawings, A denotes a portion of the framework of the machine, in which a shaft B is journaled, carrying a gumming-roll C and driven by a belt-pulley B'. The framework A supports the vertical side plates D D', provided with shoulders D<sup>2</sup>, which support the plates E E', forming the ends of the gum-box and capable of sliding on the shoulders D<sup>2</sup> toward or away from the gumming-roll C. Each of the plates E E' is provided with lugs E<sup>2</sup>, overlapping the front edges of the plates D D' and carrying adjustable screws E<sup>3</sup>, which are journaled in the lugs E<sup>2</sup> and enter screw-threaded holes in the edges of the plates D D', thereby providing means for the

adjustment of the plates E E' along the shoulders D<sup>2</sup> toward or away from the gumming-roll C. The ends of the plates E E' are curved concentrically with the gumming-roll C and are adapted to fit its periphery, which is turned to a true cylindrical surface.

The inner side of each of the plates E E' is provided with ways E<sup>4</sup> to receive the ends F' of a trough F. The ends F' are connected by the vertical plate F<sup>2</sup>, forming the front side of the gum-box, and the horizontal plate F<sup>3</sup>, forming the bottom of the gum-box. The ends F' are closely fitted to the plates E E', so as to prevent the admission of gum or paste between them. The horizontal plate F<sup>3</sup> forms the bottom of the gum-box and is turned upwardly at F<sup>4</sup> and brought to a thin edge F<sup>5</sup>, which is parallel with the axis of the gumming-roll C.

The trough F is adjustable in the ways E<sup>4</sup>, in order to vary the space between the edge F<sup>5</sup> and the periphery of the gumming-roll, by means of an adjusting device consisting of a shaft G, journaled in boxes attached to the plate F<sup>2</sup> and provided at its opposite ends with crank-pins G', entering holes in the ends of the links G<sup>2</sup> G<sup>3</sup>, which are pivoted at their opposite ends upon studs G<sup>4</sup>, projecting from the outside of the plates D D'. Attached to the shaft G is a bifurcated lever H, having a pivotal connection with a nut I, held upon a screw-threaded spindle J, provided with a hand-wheel J' and having a swiveled connection with the plate F<sup>2</sup>. By rotating the screw-threaded spindle J the nut I is moved longitudinally thereon, thereby rocking the shaft G and by means of the crank-pins G', held in the links G<sup>2</sup> G<sup>3</sup>, causing the trough F to slide toward or away from the gumming-roll C and regulating the space between the periphery of the gumming-roll C and the edge F<sup>5</sup> of the bottom of the gum-box.

The gumming-roll C is rotated in the direction of the arrow 1, Fig. 5, carrying a portion of the gum held in the gum-box through the space between the gumming-roll and the edge F<sup>5</sup> of the gum-box. The plate F<sup>3</sup>, forming the bottom of the gum-box, is turned upwardly at F<sup>4</sup> in order to bring the scraping edge F<sup>5</sup> of the gum-box at some distance above the bottom of the gum-box and present an inclined surface, so that any sediment or impurities



in the gum which are caught by the edge  $F^5$  will slide down the inclined surface  $F^4$  and become deposited upon the bottom of the gum-box. The edge  $F^5$  is brought into contact with the periphery of the gumming-roll C above the center of the roll, so that the upturned edge of the trough-bottom will lie in the plane approximately tangential to the curvature of the gumming-roll. The gumming-roll C forms one side of the gum-box, and the gum or paste held in the box lies in contact with the periphery of the gumming-roll and as the gumming-roll C rotates in the direction of the arrow 1 the gum or paste in the gum-box will be moved by its contact with the roll C in a slowly-moving current in the direction of the arrows 2, 3, 4, and 5, and the impurities which are presented to the edge  $F^5$  of the gum-box will fall down the inclined surface  $F^4$  and remain upon the plate  $F^3$ , forming the bottom of the gum-box.

The upturned edge  $F^4$  of the bottom of the gum-box not only provides an inclined surface, but forms an obtuse angle with the bottom of the box adjacent to the gumming-roll, so that the flow of gum as it is scraped from the periphery of the roll will flow across the obtuse angle and over the bottom of the gum-box, thereby preventing an accumulation of sediment.

K denotes a table upon which paper is fed to the machine, and  $K'$   $K^2$  denote a pair of feed-rolls for feeding the paper forward from the table K, the lower feed-roll  $K'$  being positively driven, and the upper feed-roll  $K^2$  rests upon the roll  $K'$ . From the feed-rolls  $K'$   $K^2$  the sheets of paper pass beneath and in contact with the under side of the gumming-roll C and are detached therefrom by a series of wire fingers L, which separate the gummed paper from the roll. The paper from the gumming-roll C then passes over and is delivered upon a moving endless belt M. Those parts of the machine which are concerned in moving the paper and carrying it in contact with the gumming-wheel are now in use, and it is therefore unnecessary to describe them in detail.

The plates D D' are provided at their lower edges with the outwardly-turned flanges N N', which rest upon brackets N' N', projecting from the frame A, and the rear ends of the plates D D' are journaled upon the shaft B of the gumming-roll, thereby holding the plates D D' from longitudinal movement and allowing the entire gum-box to be swung over the top of the gumming-roll for cleaning or other purposes. The plates D D' therefore constitute a swinging frame, which supports the gum-box and is hinged concentrically with the gumming-roll C, so that it can be swung over the roll C without changing the adjustment of the gum-box relatively to the gumming-roll, thereby allowing the gum-box to be raised to allow access to the feeding-rolls  $K'$   $K^2$  for the purpose of bringing the gum-box into a vertical position in order to clear

its interior and be returned to its normal position without affecting its relative position to the gumming-roll.

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

1. The combination with a gum-box for holding adhesive material and open on one side, of a gumming-roll fitting the open side of said gum-box, whereby the gumming material is held in contact with said roll with the bottom of said box provided with an upwardly-turned edge in contact with the periphery of said roll and above its center, said upturned edge forming an obtuse angle with the bottom of the box, whereby a current is established within the gum-box and the sediment is deposited on the bottom of the box substantially as described.

2. The combination with a gum-box for holding adhesive material and open on one side, of a gumming-roll fitting the open side of said gum-box, whereby the gumming material is held in contact with said roll, with the bottom of said box provided with an upwardly-turned edge in contact with the periphery of said roll and above its center, said upturned edge forming an obtuse angle with the bottom of the box, whereby a current is established within the gum-box and the sediment is deposited on the bottom of the box and means for adjusting said upturned edge relatively to the periphery of said roll, substantially as described.

3. The combination with a gumming-roll of a gum-box comprising ends  $F'$  connected by a vertical plate  $F^2$  forming the front side of the gum-box, said gumming-roll forming the opposite side of the gum-box and a horizontal plate  $F^3$  forming the bottom of the gum-box having an upturned edge in contact with the periphery of the gumming-roll and above its center and means for adjusting said bottom plate relatively to said roll independently of the ends of the gum-box, substantially as described.

4. In the gum-box of a machine for applying adhesive material to paper, of the class described comprising a rotating gumming-roll, the combination of plates forming the ends of the box, and having curved edges adapted to fit the periphery of the gumming-roll, a trough comprising a vertical front plate, a horizontal bottom plate, and connecting end plates, said trough having a sliding motion independently of said box ends, and means for adjusting said trough relatively to the gumming-roll, substantially as described.

5. The combination in a gum-box of plates D, D' provided with shoulders  $D^2$ , plates E, E' resting upon said shoulders and forming the end of the gum-box, means for adjusting the plates E, E' relatively to the plates D, D', ways on the inner sides of the plates E, E', a trough F sliding in said ways and means for adjusting said trough in said ways, substantially as described.

6. The combination with a rotating gum-



ming-roll of plates D, D', plates E, E' supported by said plates D, D', a trough F supported by said plates E, E' and adjustable therein, said trough presenting an edge F<sup>5</sup> to 5 said roll, a shaft journaled in said trough and provided with crank-pins at its ends, links connecting said crank-pins with fixed studs, a radial arm, carried by said rocking shaft, and means for adjusting the position of said radial arm and rocking said shaft, whereby 10 said trough is adjusted relatively to said roll, substantially as described.

7. The combination with a rotating gumming-roll of a frame hinged concentrically

with said roll and a gum-box held in said 15 frame and adjustable therein relatively to said gumming-roll, substantially as described.

8. The combination with a rotating gumming-roll of a frame hinged concentrically with said roll, a gum-box supported in said 20 frame, means for supporting said frame with the gum-box in operative relation to said roll and means for adjusting said gum-box within said frame, substantially as described.

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Witnesses:

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