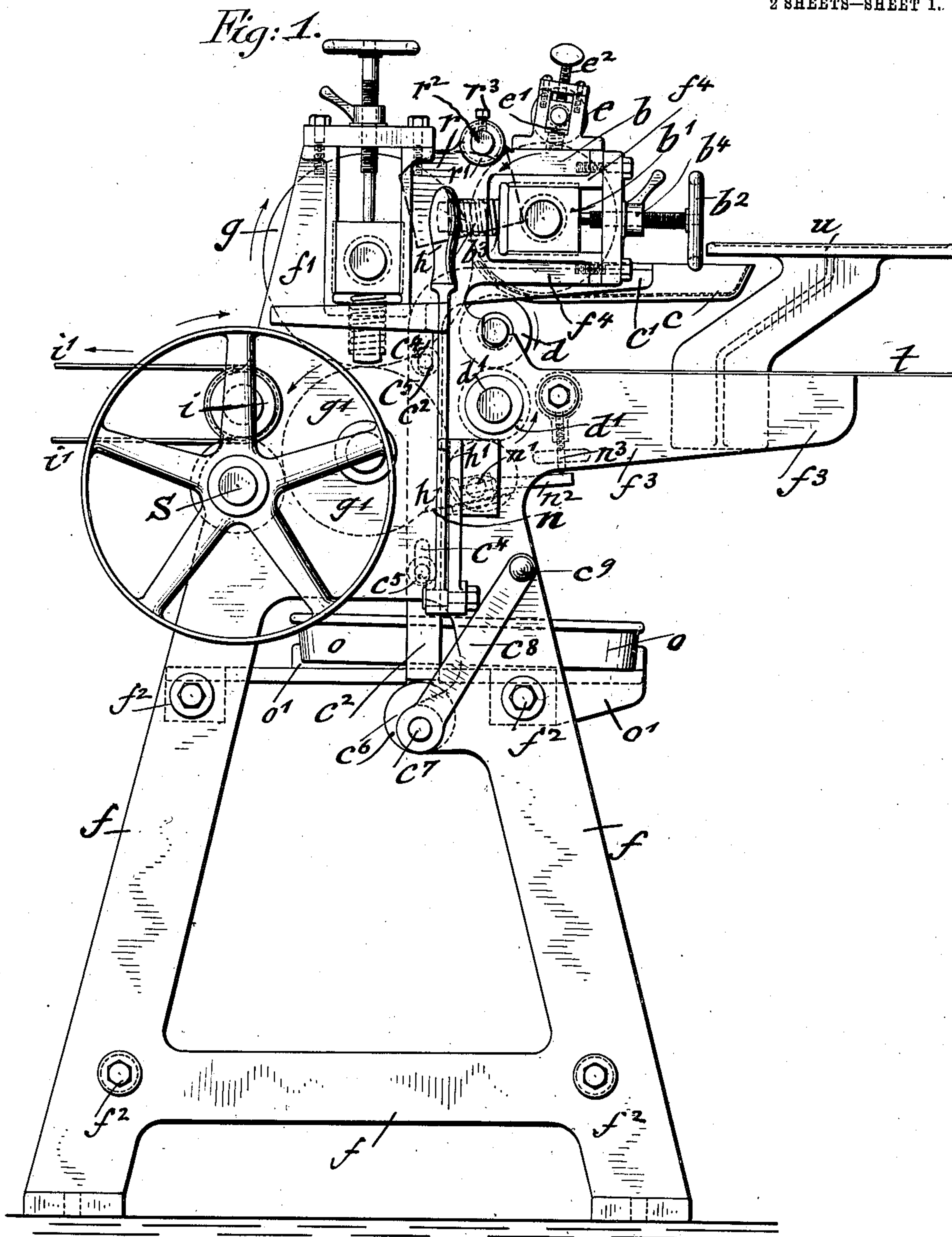


No. 877,186.

PATENTED JAN. 21, 1908.

A. J. FORD.  
COATING MACHINE.  
APPLICATION FILED AUG. 27, 1907.

2 SHEETS—SHEET 1.



WITNESSES

*Henry J. Subbier*  
*Samuel Fisk*

INVENTOR

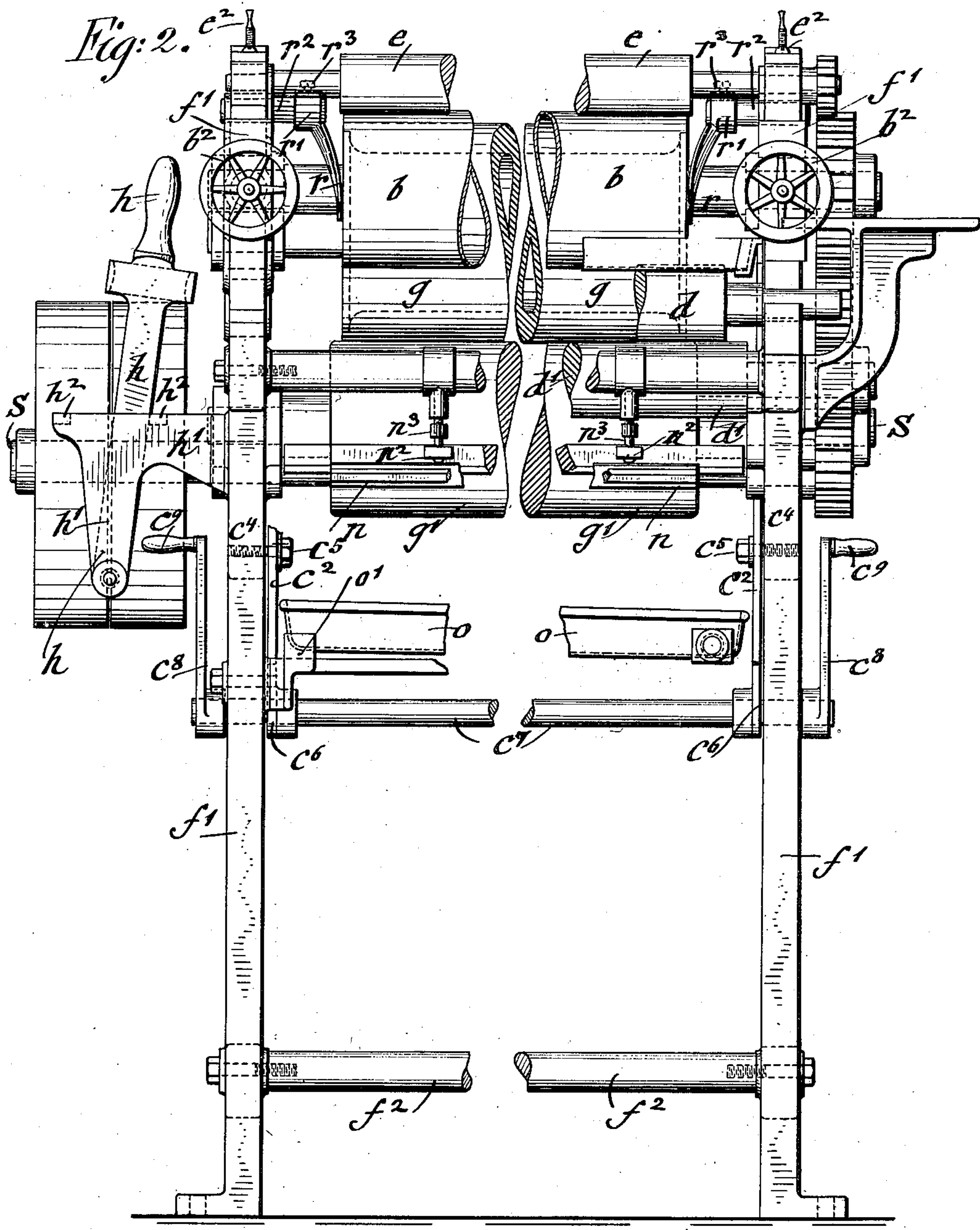
*Albert J. Ford*  
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2 SHEETS—SHEET 2.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

ALBERT J. FORD, OF NEW YORK, N. Y., ASSIGNOR TO THE FUCHS & LANG MF'G. CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## COATING-MACHINE.

No. 877,186.

Specification of Letters Patent.

Patented Jan. 21, 1908.

Application filed August 27, 1907. Serial No. 390,298.

*To all whom it may concern:*

Be it known that I, ALBERT J. FORD, a citizen of the United States, residing in New York, in the borough of Manhattan, county and State of New York, have invented certain new and useful Improvements in Coating-Machines, of which the following is a specification.

This invention relates to an improved coating machine, by which metallic sheets, card board or any other stiff sheets are coated with paste, paints, varnishes, lacquers or colors in a uniform and effective manner.

The object of the invention is to provide an improved construction of raising and lowering mechanism for the color-fountain used in such machines, whereby said fountain may be properly adjusted with respect to the fountain-roll and easily removed for cleaning.

With this end in view the invention consists in the novel construction to be hereinafter described and claimed.

In the accompanying drawings, Figure 1 represents a side-elevation of my improved coating-machine, and Fig. 2 is an end-elevation of the same, with some of the parts broken off and other parts removed for the sake of clearness.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, *f* represents the supporting-frame of my improved coating-machine. The supporting-frame consists of two upright side-standards *f*<sup>1</sup> which are firmly connected with each other by transverse braces *f*<sup>2</sup>. The side-standards *f*<sup>1</sup> are provided at their sides with horizontal brackets *f*<sup>3</sup> on which a feed-table *t* is supported. At the upper part of the side-standards *f*<sup>1</sup> parallel horizontal brackets *f*<sup>4</sup>, above the feed-table, are arranged, in which are supported bearings for the shaft of the fountain-roll *b*, which extends with its lower part into a color-fountain *c* which is supported on horizontal arms *c*<sup>1</sup> that are arranged at the upper ends of downwardly-extending arms *c*<sup>2</sup> which are guided by means of slots *c*<sup>4</sup> on headed screws *c*<sup>5</sup> of the side-standards. The lower ends of the downwardly-extending guide-arms *c*<sup>2</sup> form contact with eccentric cams *c*<sup>6</sup> that are keyed on a transverse shaft *c*<sup>7</sup>, which is provided at both ends with crank-arms *c*<sup>8</sup> provided with handles *c*<sup>9</sup>, by which the arms *c*<sup>2</sup> and bracket-arms *c*<sup>1</sup> can

be raised or lowered for the length of the guide-slots *c*<sup>4</sup>, so as to place thereby the color-fountain *c* in normal position below the fountain-roll *b*, or in a position somewhat below the same so as to permit the convenient removal of the color-fountain for cleaning. Below the color-fountain, at the inner end of the same, is arranged a pair of feed-rolls *d*, *d*<sup>1</sup>, of which the lower one receives motion by a transmitting gear from the driving-shaft *s*, while the upper feed-roll *d* moves in contact therewith. The shaft of the lower feed-roll *d*<sup>1</sup> is supported in bearings of the table-supporting brackets *f*<sup>3</sup>, while the shaft of the upper loose feed-roll is supported in recesses at the upper part of said brackets so as to be readily removed whenever it is desired to lower the supporting bracket-arms of the color-fountain preparatory to the removal of the latter. The raising of the supporting-brackets of the color-fountain is accomplished by the cams *c*<sup>6</sup>, while the lowering of the same is accomplished by gravity when the crank-shaft *c*<sup>7</sup> is turned so as to bring the lower portions of the cams *c*<sup>6</sup> below the arms *c*<sup>2</sup>.

The bearings *b*<sup>1</sup> of the fountain-roll *b* are guided in the supporting-ways of the same and adjusted by hand-screws *b*<sup>2</sup> against the tension of cushioning-springs *b*<sup>3</sup>, which are arranged at the opposite sides of the bearings *b*<sup>1</sup>. When the fountain-roll is properly adjusted, it is securely held in position by a jam-nut *b*<sup>4</sup> provided with a hand-lever for setting the same. At the upper part of the fountain-roll *b* is arranged a color-regulating roll *e*, the shaft of which is supported in bearings which are capable of adjustment towards the fountain-roll, by set screws *e*<sup>2</sup> against the tension of suitable cushioning-springs *e*<sup>1</sup>, the bearings being located in guides as the top-part of the horizontal brackets *f*<sup>4</sup>. Positive rotary motion is imparted to the regulating-roll *e*, by a suitable transmitting gear, so that by the pressure exerted by the regulating roll on the fountain-roll, the taking up of the color from the color-fountain *c* is regulated and a uniform layer of color supplied to the transfer-roll *g* with which the fountain-roll *b* forms contact. The transfer-roll is supported in cushioned, adjustable bearings of the side-standards *f*<sup>1</sup>, in the same manner as the fountain-roll, and forms contact with the presser-roll *g*<sup>1</sup>. Motion is transmitted to the presser-roll, transfer-roll, fountain-roll, regu-



lating-roll and the feed-rolls for the sheet, from the driving-shaft S by a train of gear-wheels which is arranged on one side-standard, while at the opposite side-standard the driving-shaft is provided with a fast and loose pulley and a belt-shifting lever  $h$ , supported on a stationary bracket-arm  $h^1$  attached to the side-standard, the belt-shifting lever being pivoted to the lower end of said bracket-arm and supported and held by stops  $h^2$  on the same in one or the other direction, according as the belt is shifted on the fast or loose pulley. The power-shaft S also drives by suitable gearing the drive-pulley  $i$  of a delivery-belt  $i^1$ , so that the sheet, which is fed by the attendant to the feed-rolls  $d, d^1$ , passes through the presser-roll  $g^1$  and the upper transfer-roll on to the delivery-belt, receiving a layer of color during its passage through between the rolls  $g^1, g$ . The feed-table  $t$  and the contact points of the feed-rolls  $d, d^1$  and rolls  $g, g^1$  and the upper part of the delivery-belt  $i$  are approximately on the same level, so that the sheet is passed through the different rolls without being bent or buckled.

The presser-roll  $g^1$  is provided with a doctor-blade  $n$ , which is supported on a transverse shaft  $n^1$  that turns in bearings of the supporting-frame, and provided with outwardly-extending levers  $n^2$ , the ends of which are engaged by adjustable set-screws  $n^3$  provided with hand-wheels, said set-screws being guided in interiorly-threaded sockets that are attached by clips to one of the transverse brace-rods of the supporting-frame  $f$ . Below the presser-roll  $g^1$  and the doctor-blade  $n$  is arranged in suitable supports  $o^1$  attached to the side-standards  $f^1$ , a drip-pan  $o$ , to which a slight sidewise inclination is given so that the drip collected therein can be drawn off through a spout beneath the pan.

At both ends of the fountain roll  $b$  and transfer-roll  $g$  are arranged, sidewise of the angular space formed between these rolls and above the contact point of the same, color-retaining plates  $r$ , which are applied by sleeve-shaped hubs at their upper ends to short stud-shafts  $r^2$  which are supported in suitable bearings of the side-standards  $f^1$  and by which the plates  $r$  are supported in proper position

for preventing the flow of color over the flat end-faces of the rolls  $b$  and  $g$ . The plates  $r$  are held in position by set-screws  $r^3$  which pass through the hubs  $r^2$ . At one side of the machine, adjacent to the feed-table, is arranged a horizontal color-table  $u$  on which the cans of color are supported, so as to supply the color from time to time to the color-fountain.

The operation of my improved coating-machine is the same as that of the coating-machines in general use. After the color-fountain is placed in position, below the fountain-roll, and the loose feed-roll placed in position above the lower feed-roll and the regulating-roll adjusted to the upper part of the fountain-roll, the machine is started and one sheet after the other fed through the same so as to receive the color from the transfer-roll in the usual manner. Owing to the arrangement of the color-regulating roll above the fountain-roll, the supply of color to the transfer-roll is regulated and thereby a uniform layer of coating transferred to the sheets.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

In a coating-machine, the combination, with the supporting-frame comprising upright side-standards, and the fountain-roll, of upright bracket-arms provided with slots and with laterally-extending upper portions, screws on said side-standards passing through said slots and by which said bracket-arms are guided vertically, a fountain supported on the laterally-extending upper portions of said bracket-arms, a transverse shaft journaled in the supporting-frame below said bracket-arms, cams on said shaft engaging the lower ends of said arms, and means whereby said shaft may be manually operated.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

ALBERT J. FORD.

Witnesses:

PAUL GOEPEL,  
HENRY J. SUHRBIER.