

No. 785,485.

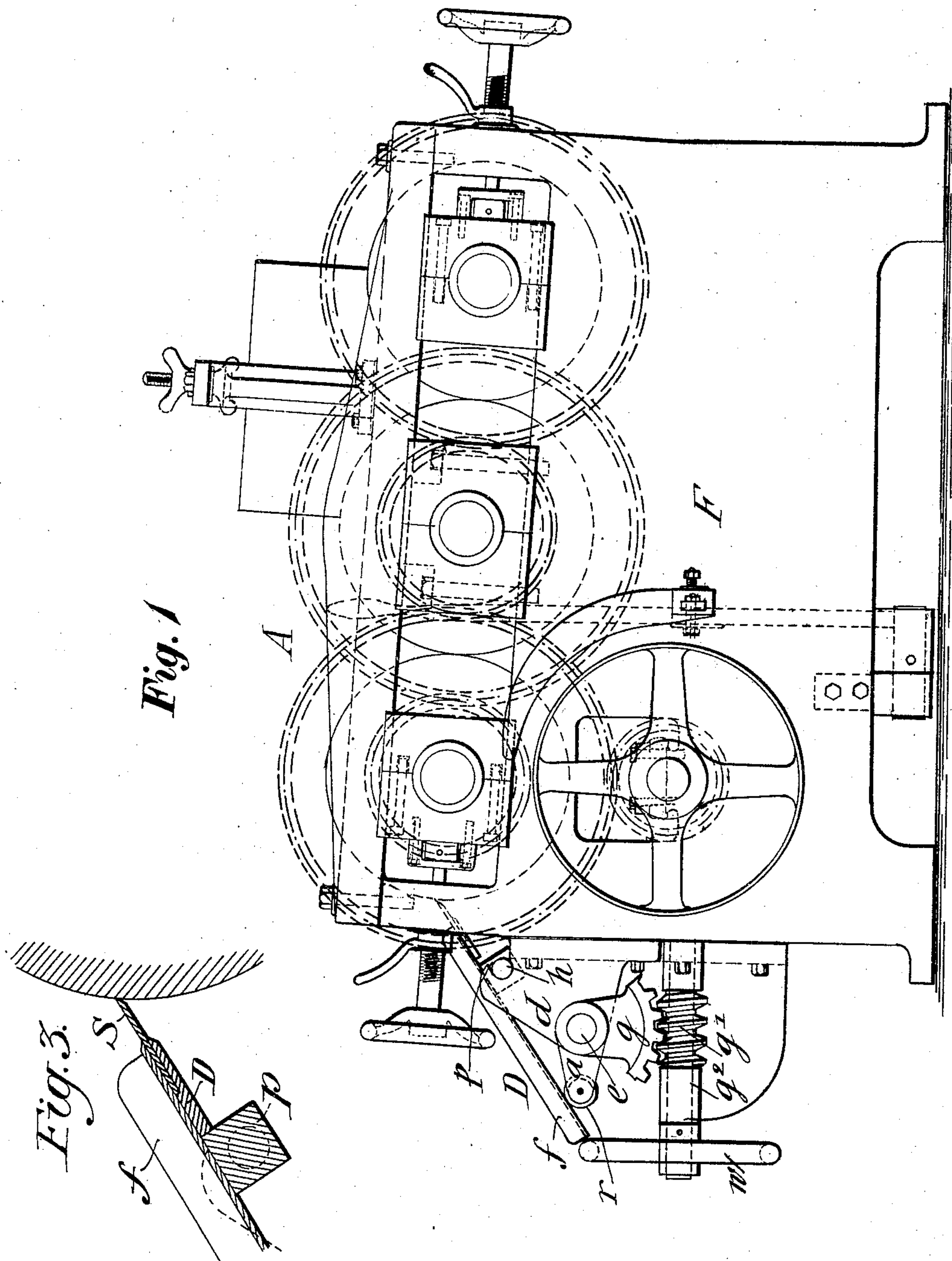
PATENTED MAR. 21, 1905.

A. J. FORD.

ROLLER GRINDING MILL.

APPLICATION FILED OCT. 12, 1904.

2 SHEETS—SHEET 1.



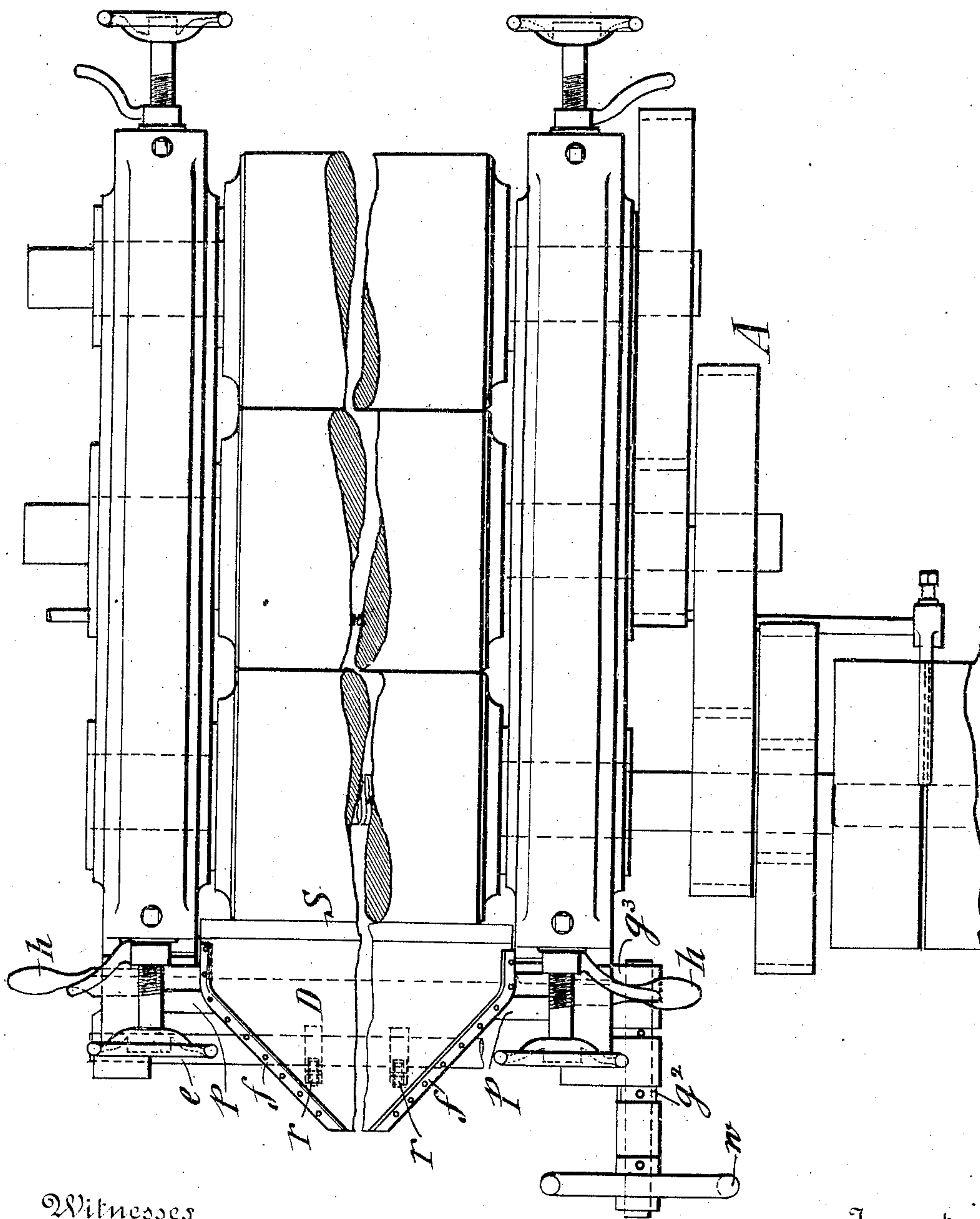
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2 SHEETS—SHEET 2.

Fig. 2



Witnesses
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UNITED STATES PATENT OFFICE.

ALBERT J. FORD, OF NEW YORK, N. Y., ASSIGNOR TO THE FUCHST LANG MFG. CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

ROLLER GRINDING-MILL.

SPECIFICATION forming part of Letters Patent No. 785,485, dated March 21, 1905.

Application filed October 12, 1904. Serial No. 228,171.

To all whom it may concern.

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

This invention relates to improvements in mills which are employed for grinding and mixing the colors used in the manufacture of printing and lithographing inks and other materials, said improvements being designed with a view of facilitating the adjustment of the scraping-knife by which the color is removed from the end roller and conducted to a suitable receptacle.

The object of this invention is to arrange the scraper in such a manner that the adjustment can be made in a very accurate manner while the grinding-mill is in motion; and for this purpose the invention consists of a roller grinding-mill in which the scraper for removing the color from the end roller is carried by a delivery-plate pivoted at its upper end to the frame supporting the grinding-machine and adjusted at its lower end by means of elbow-levers provided with antifriction-rollers, the shaft to which said levers are pivoted being actuated by an adjusting worm-gear, so as to properly adjust the delivery-plate, and thereby hold the scraper in close contact with the delivery-roller of the machine.

The invention consists, further, of certain details of construction and combinations of parts, which will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved roller grinding-mill. Fig. 2 is a plan view of the same; and Fig. 3 is a detail section through the delivery-plate at right angles to the scraper edge, showing the connection between the delivery-plate and scraper, said figure being drawn on a larger scale.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A designates a roller grinding-mill for grinding and mixing colors for printing and lithographic inks, &c.,

said mill being of the usual well-known construction. The rollers are supported in journal-bearings in the supporting-frame of the machine, the journal-bearings for the shafts of the end rollers being capable of adjustment by means of set-screws and jam-nuts passing through the ends of the supporting-frame, so that they are rotated in close contact with the intermediate roller. The color to be ground and mixed is fed to the roller at the right-hand end of the mill and passed through between the rollers to the front end roller and there delivered to an inclined scraper S, inserted in a socket in the delivery-plate D, as shown in Fig. 3. The upper end of said scraper is held in contact with the circumference of the end roller, and the delivery-plate D is provided with inclined flanges *f* for guiding the color delivered by the end roller to a suitable receptacle. (Not shown.) The delivery-plate D is supported by suitable lugs on a transverse pivot-shaft *p*, that is supported in recesses at the upper ends of supporting-brackets *d*, attached to the ends of the standards of the supporting-frame F of the machine, the pivot-shafts *p* being provided at their outer ends with handles *h* for permitting the lifting of the delivery-plate and scraper from the supporting-brackets for cleaning the same. In the supporting-brackets *d* is also supported a transverse shaft *e*, on which are mounted below the delivery-plate two crank-arms *a*, carrying antifriction-rollers *r* at their outer ends, on which the lower end of the delivery-plate D is supported. To one end of the shaft *e* is attached a worm-segment *g*, which is placed in mesh with a worm *g'* on a short hand-shaft *g''*, that turns in bearings of a bracket *g'''*, attached to one of the supporting-standards of the machine, as shown clearly in Fig. 1. By turning the hand-wheel *w* in one or the opposite direction the crank-arms *a*, with their antifriction-rollers *r*, are raised, and thereby the delivery-plate D swung on its pivots, so that the edge of the scraper is placed in close contact with the delivery-roller. When the edge of the scraper or the roller wears off, the scraper fails to contact with the delivery-roller and a slight ad-

justment of the hand - wheel is necessary, which produces, by means of the worm transmission and crank-arms, a slight lifting action on the lower end of the delivery-plate, so that
5 the scraper is again placed in close contact with the delivery-roller. When the scraper has been used for some time, so as to be materially shortened, it is reset in the socket at the under side of the upper end of the de-
10 livery-plate, in which case the supporting crank-arms *a* are lowered, so as to provide for the extension of the scraper toward the roller. By means of the worm-gear adjustment of the delivery-plate the scraper can be
15 adjusted with great facility to a nicety relatively to the surface of the delivery-roller, so that a perfect and reliable delivery of the color onto the delivery-plate is obtained.

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

1. In a roller grinding-mill, the combination, with the delivery-roller, of an inclined delivery-plate pivoted near its upper end in proximity thereto, a shaft extending beneath
25 said delivery-plate and provided with crank-arms operable to abut against the lower end

portion thereof in order to pivotally adjust the same upon the rocking of said shaft, and means for actuating said shaft.

2. In a roller grinding-mill, the combination, with the delivery-roller, of a delivery-plate provided with pivots near its upper end, a scraper secured to the upper end of said delivery-plate, supporting-brackets for supporting the shaft of the latter, a transverse shaft
35 supported in bearings in said brackets, crank-arms mounted on said shaft and provided with antifriction-rollers bearing on the lower end of the delivery-plate, a worm-segment on said shaft, a worm-shaft provided with a worm en-
40 gaging with the worm-segment, and a hand-wheel at the outer end of said worm-shaft for operating the worm-gear so as to adjust the scraper relatively to the surface of the delivery-roller. 45

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.