

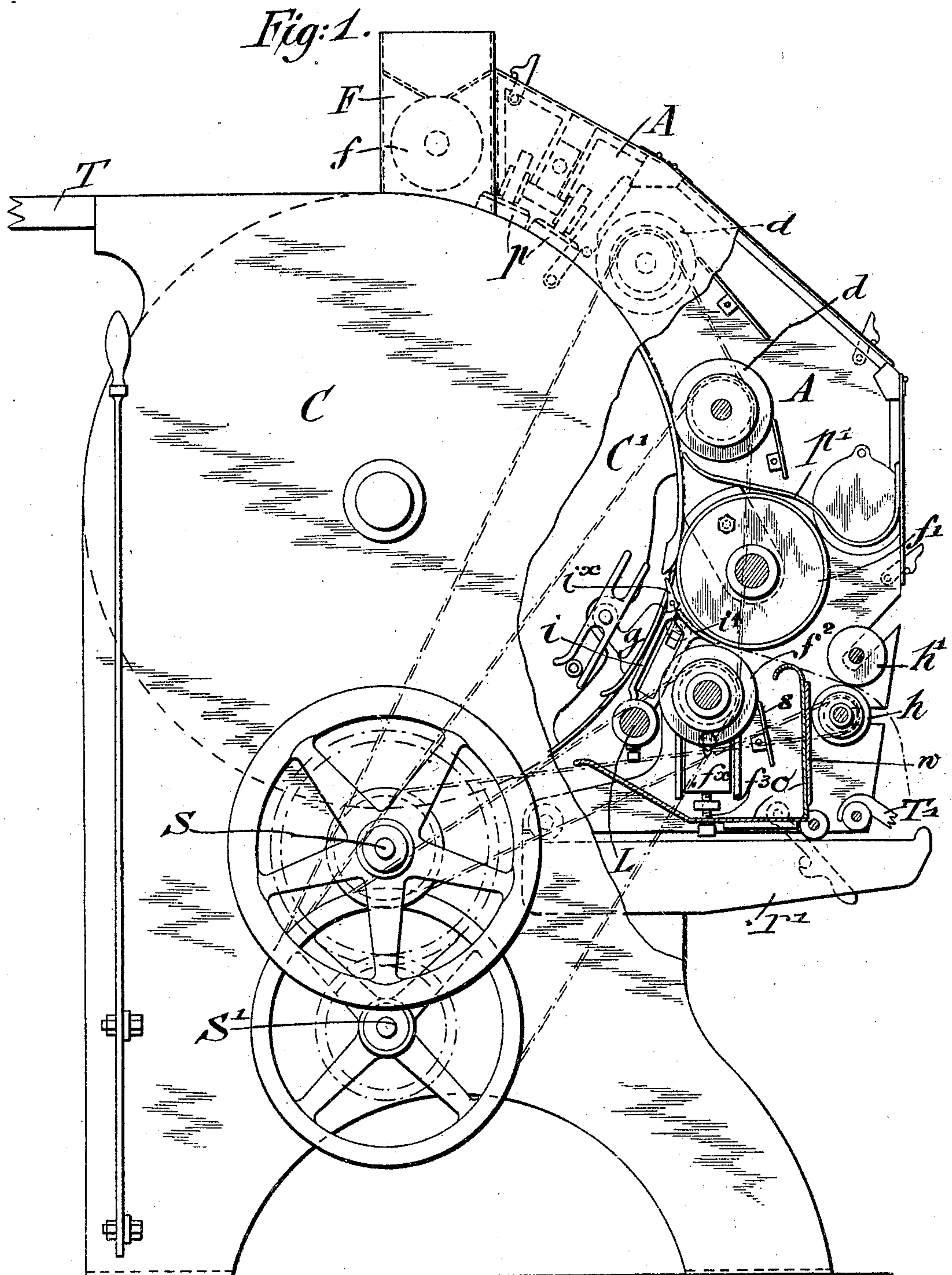
No. 835,883.

PATENTED NOV. 13, 1906.

M. FRITSCHÉ.  
COMBINED BRONZING AND DUST REMOVING MACHINE.

APPLICATION FILED JULY 12, 1906.

2 SHEETS--SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 2.

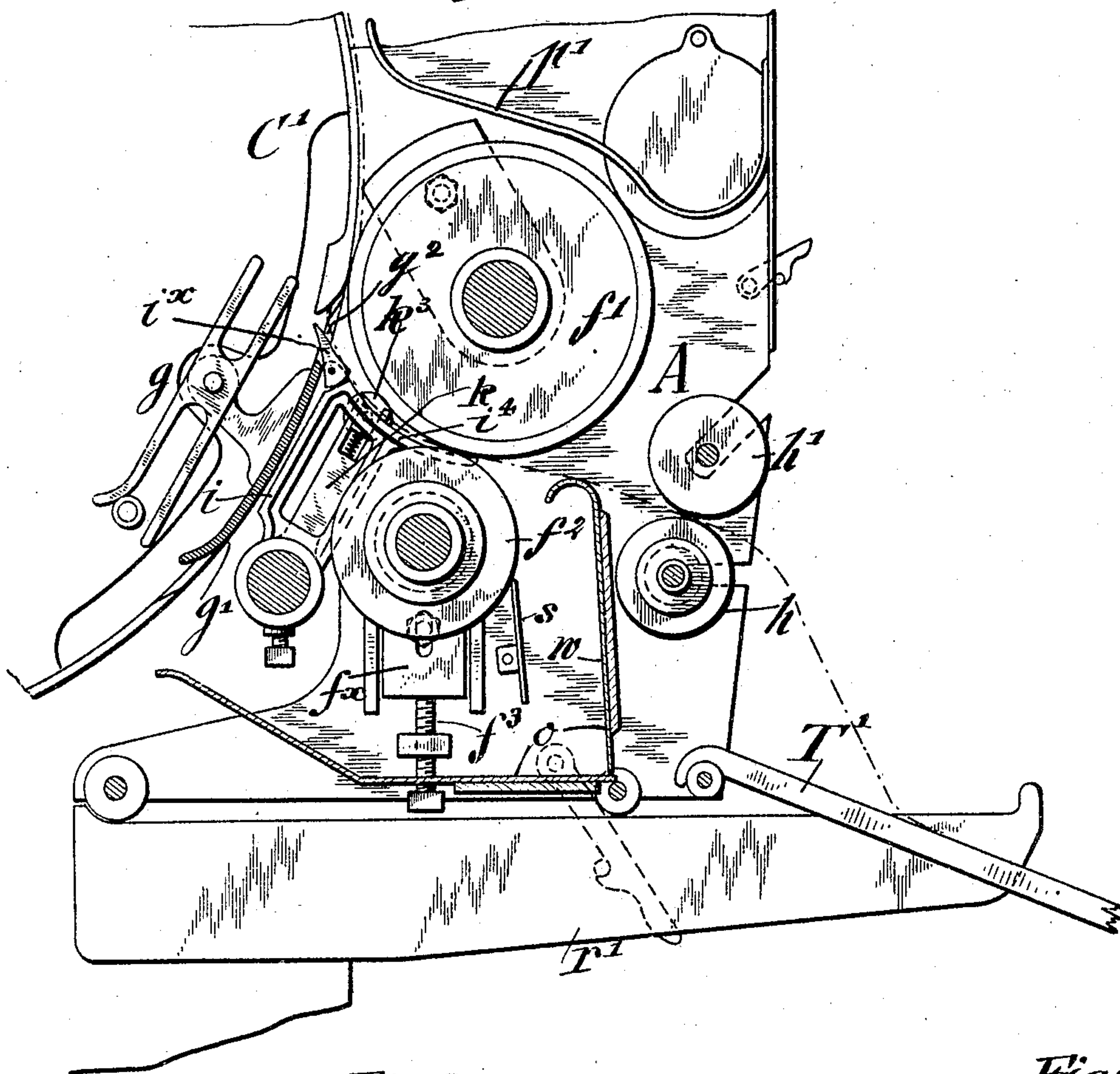


Fig. 3.

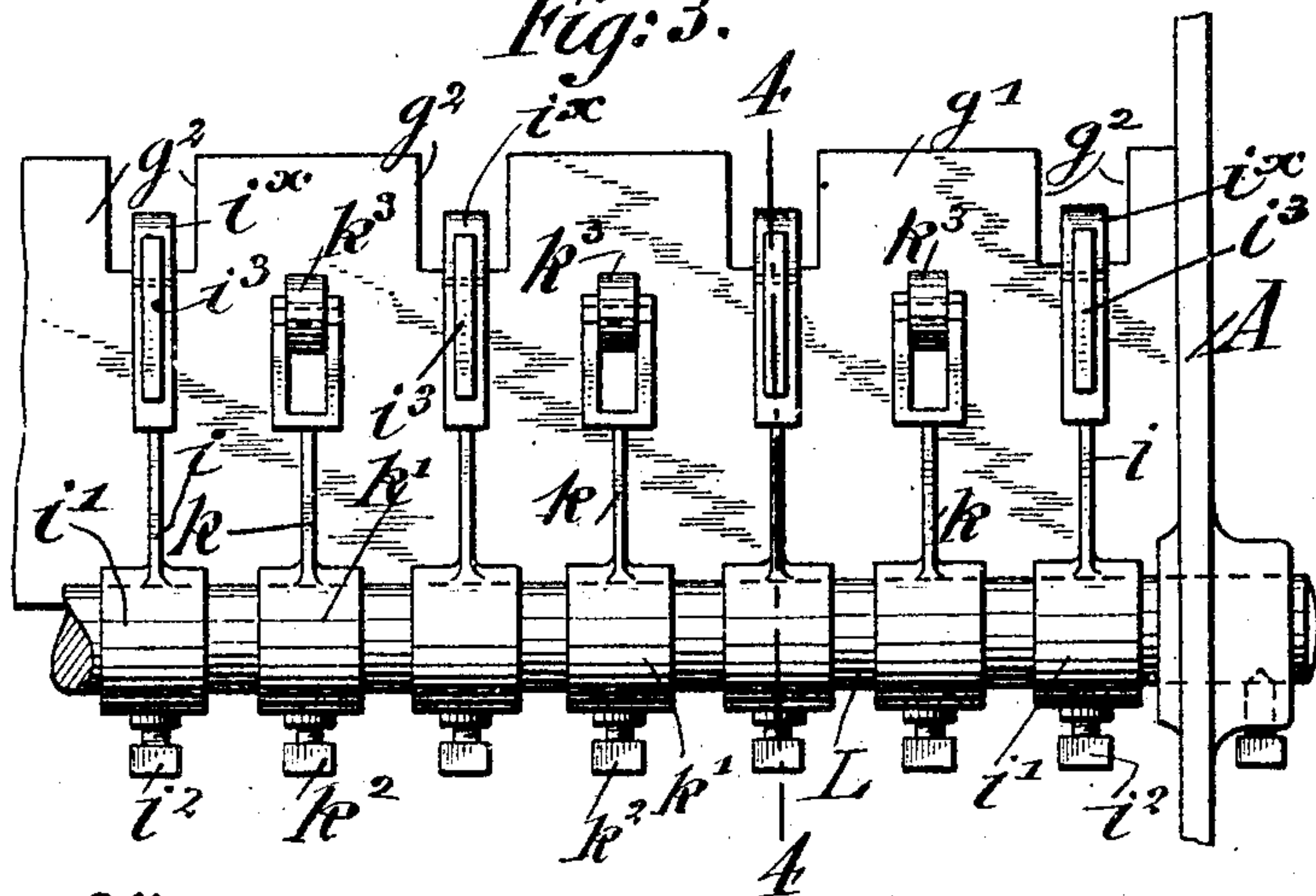
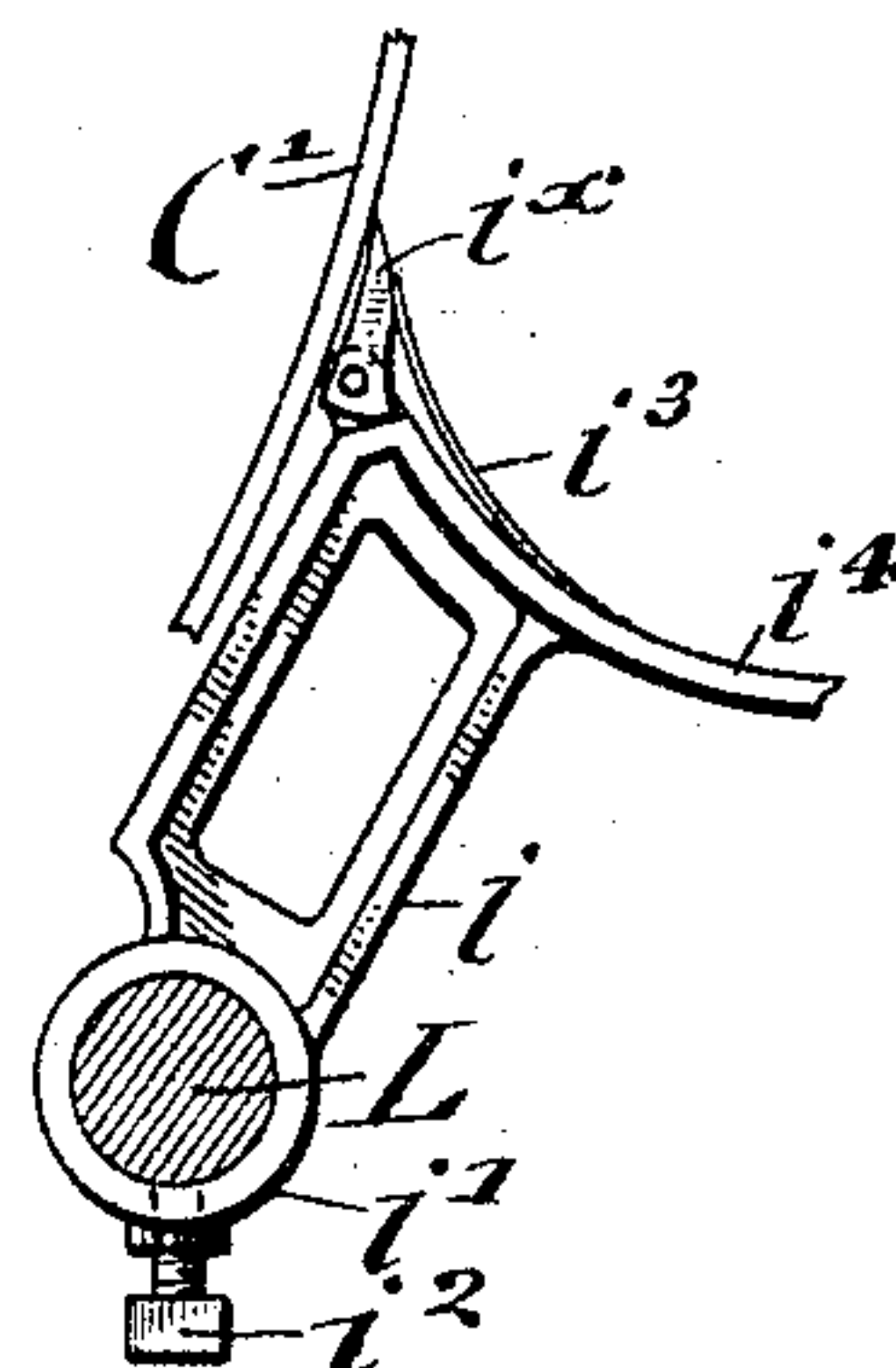


Fig. 4.



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# UNITED STATES PATENT OFFICE.

MAX FRITSCHÉ, OF HOBOKEN, NEW JERSEY.

## COMBINED BRONZING AND DUST-REMOVING MACHINE.

No. 835,883.

Specification of Letters Patent.

Patented Nov. 13, 1906.

Application filed July 12, 1906. Serial No. 325,961.

*To all whom it may concern:*

Be it known that I, MAX FRITSCHÉ, a citizen of the United States, residing in Hoboken, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in a Combined Bronzing and Dust-Removing Machine, of which the following is a specification.

This invention relates to a combined bronzing and dust-removing machine.

The object of the invention is to provide a bronzing-machine which is provided, in addition to the devices which dust the sheet after its passage beneath the bronze-supply roller and while it is still carried by the sheet-carrying cylinder, with mechanism for effecting a thorough dusting of the sheet upon its under surface in such a manner that the bronzing of the sheet and the dusting of the same upon both sides take place in what is practically one operation.

The invention also aims to provide an improved sheet-dusting mechanism and an improved means for delivering the sheet to such dusting mechanism.

With these ends in view the invention consists in the novel features and combinations of parts to be hereinafter described and finally pointed out in the claims.

In the accompanying drawings, in which the same reference characters denote the same parts throughout the several views, Figure 1 is a side elevation of a bronzing-machine constructed in accordance with the invention. Fig. 2 is an enlarged side elevation, partly in section, of the stripping and dusting mechanism. Fig. 3 is a rear elevation of the stripping-fingers embodied in the machine, the rollers for holding the sheet in contact with the drawing-roller being also shown; and Fig. 4 is a vertical transverse section on line 4 4, Fig. 3.

Referring to the drawings, C denotes the casing of the bronzing-machine, the main part of said machine being constructed and operated in the usual manner. The bronze-fountain F is arranged at the top of the machine above the sheet-carrying cylinder C', and the bronze-supply roller f is rotatable in the fountain F, as indicated in dotted lines in Fig. 1. The sheet-carrying cylinder C' is mounted in the usual manner and is rotated from a main driving-shaft S by any suitable transmission.

T denotes the feed-board.

The machine carries at the side opposite the feed-board T a casing A, which extends downwardly from the bronze-fountain F along one side of the sheet-carrying cylinder C' and is supported, by means of rollers, as indicated, upon brackets r', which extend laterally from the casing of the machine, as shown in Figs. 1 and 2. In the upper part of the casing A are arranged the dusting devices which are usually embodied in a machine of this character. These devices in the embodiment illustrated consist of rotary pads p adjacent the bronze-fountain and dusting-rollers d d'. These pads and dusting-rollers are driven from a shaft S', arranged below the driving-shaft S, by means of any suitable transmission, such as that indicated in dotted lines in Fig. 1.

Below the lower dusting-roller d, which is arranged at one side of the sheet-carrying cylinder C', is placed a bottom or partition p', which is suitably supported in the casing A and serves to receive the dust from the dusting-rollers and pads, the dust being removed from said partition through a suitable closure arranged in the side of the casing A.

The sheet-carrying cylinder C' is provided upon its periphery with a gripping device g, which is opened and closed at the proper time by any suitable means, such as is usual in bronzing-machines. This gripping device is constituted by a plate g', which is located in the periphery of the sheet-carrying cylinder and pivotally supported, as shown in Figs. 1 and 2, in such a manner as to be rocked upon its pivot when it reaches a predetermined point in the rotation of said cylinder, and thereby grasp or release the sheet, as the case may be. The gripping-plate g' extends parallel to the axis of the sheet-carrying cylinder, and is provided at its upper edge with a series of equidistantly-spaced recesses g<sup>2</sup>, as shown in Fig. 3, for a purpose to be hereinafter explained. The gripper g is so operated as to close upon the sheet when the latter is fed inwardly to the same upon the feed-table, the gripping-plate g' of said gripper being pivotally rocked, so as to grasp the sheet between the edge of said plate and the adjacent edge of the sheet-carrying cylinder. Said gripper then holds the sheet upon the sheet-carrying cylinder until the former has passed beneath the bronze-supply roller



and dusting devices heretofore mentioned, but automatically releases the sheet after the forward edge of the same has passed slightly below the lower dusting-roller  $d$ .

At the point where the gripper  $g$  releases the sheet there is provided a drawing-roller  $f'$ , which is supported in bearings in the casing A and contacts with the sheet-carrying cylinder C', so as to receive rotary motion from the latter. Below the drawing-roller  $f'$  is arranged a smaller roller  $f^2$ , which is preferably constructed of disks of muslin and adapted to dust the under side of the sheet after the same has been dusted upon its other side by the pads and dusting-rollers previously described, as will be hereinafter pointed out. The dusting-roller  $f^2$  is mounted in vertically-adjustable bearings  $f^x$ , so as to be adjustable toward and away from the drawing-roller  $f'$ , said bearings being adjustable upwardly or downwardly by means of a vertically-disposed set-screw  $f^3$  engaging the same at their lower parts. The dusting-roller  $f^2$  is driven in a direction opposite to that of the drawing-roller  $f'$  by means of a belt operated from the shaft S', as indicated in Fig. 1.

The devices for stripping the sheet from the sheet-carrying cylinder and deflecting the same between the drawing-roller  $f'$  and the dusting-roller  $f^2$  are mounted upon a shaft L, which extends transversely of the machine in advance of the dusting-roller  $f^2$ . These devices consist of spring-actuated fingers  $i^x$ , which are mounted in turn on the shaft L, being clamped upon said shaft by means of sleeves  $i'$ , formed at the lower ends of said brackets and embracing said shaft. These sleeves are held in position on the shaft by means of screws  $i^2$ , as shown in Fig. 3. The stripping-fingers  $i^x$  are pivoted to the brackets  $i$  at the forward upper corners of the same and are forced into contact with the sheet-carrying cylinder, as shown in Fig. 4, by means of leaf-springs  $i^3$ . Said fingers are arranged to register with the recesses  $g^2$  in the upper edges of the gripping-plate  $g'$  of the gripper  $g$ , and when during the rotation of the sheet-carrying cylinder said recesses are opposite said stripping-fingers the latter are forced into said recesses by the springs  $i^3$ , as shown in Fig. 1. The upper ends of the finger-carrying brackets  $i$  are provided with curved deflecting-arms  $i^4$  in the manner shown in Figs. 2 and 4 in order to deflect the sheet between the rollers  $f' f^2$  after the same has passed the stripping-fingers.

The shaft L has fixed thereto a number of arms  $k$ , which alternate with the brackets  $i$ . Said arms are secured to said shaft by means of sleeves  $k'$  and set-screws  $k^2$ , similar to those of the finger-carrying brackets. The upper end portions of the arms  $k$  are bifurcated, as shown in Fig. 3, and each has journaled therein a smaller roller  $k^3$ , which is pressed by a spring into contact with the

drawing-roller  $f'$  at the lower portion of the same, as best shown in Fig. 2. The sheet in passing between the rollers  $f' f^2$  is held in contact with the former by means of these spring-pressed friction-rollers.

Journalled in the rear portion of the casing A adjacent the dusting-roller  $f'$  is a delivery-roller  $h$ , which is driven from the main driving-shaft S by a belt-and-pulley transmission, as shown in Fig. 1. A second delivery-roller  $h'$  to cooperate with the roller  $h$  is arranged in the casing A immediately above the roller  $h$  and forms contact with said roller, so as to be frictionally rotated thereby. Both rollers  $h h'$  are journalled in slots in the casing A in the manner indicated in Figs. 1 and 2, so as to be easily removable when it is desired. These rollers serve to receive the sheet after its passage between the rollers  $f' f^2$  and to conduct the same downwardly upon the delivery-board T' of the machine, which board is preferably suspended on tie-rods of the casing A.

A scraper  $s$  is arranged to remove the dust from the lower dusting-roller  $f^2$ , and in order to receive the dust from said roller a dust-receptacle  $o$  is provided. This receptacle is arranged beneath the roller  $f^2$ . The rear wall  $w$  of the receptacle  $o$  is arranged between the rollers  $f^2$  and  $h$ , as shown in Fig. 2, and the upper end of said wall is bent in the manner shown in said figure in order to support the sheet in its outward passage between the delivery-rollers. By this construction the egress of dust from the receptacle  $o$  is prevented. The casing A may be easily removed from the machine by releasing the hooks or other devices by which it is secured to the same.

The operation of the improved machine is as follows: During the rotation of the sheet-carrying cylinder C' the sheets are grasped by the gripper  $g$  as said sheets are fed inwardly toward the bronze-fountain and carried by said cylinder beneath the bronze-supply roller and the various dusting devices contained in the upper portion of the casing A. When the forward end of the sheet has passed downwardly beyond the drawing-roller  $f'$ , the spring-actuated stripping-fingers  $i^x$  enter the recesses in the gripping-plate  $g'$  and prevent the sheet from being carried farther by said cylinder. The gripping device  $g$  is simultaneously released by its releasing mechanism, so that the sheet may pass between the stripping-fingers  $i^x$  and the drawing-roller  $f'$ , the rotation of said roller by contact with the sheet-carrying cylinder and the constant contact of the small spring-pressed friction-rollers  $k^3$  upon the sheet producing the deflection of the sheet between the rollers  $f' f^2$ . The deflecting-arms  $i^4$  at the upper ends of the finger-carrying brackets also assist in deflecting the sheet between said rollers. The sheet while being



fed between the rollers  $f' f^2$  is thoroughly dusted upon its under surface by the dusting-roller  $f^3$ , the dusting of the sheet upon its opposite surface having been previously effected. The sheet passes from the rollers  $f' f^2$  over the end wall  $w$  of the dust-receptacle  $o$  and thence between the delivery-rollers  $h h'$ , after which it passes downwardly onto the delivery-table  $T$ . The sheet is thus effectively dusted upon both sides when it is received by said table. During the further movement of the sheet-carrying cylinder  $C'$  the stripping-fingers  $i^x$  are automatically reset for action upon the next sheet to be bronzed and dusted, said operation being effected by said cylinder in passing said fingers. Thus during every rotation of the cylinder a sheet may be bronzed and then successively dusted upon both surfaces.

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

1. The combination, with the sheet-carrying cylinder, and the gripper carried thereby, of a drawing-roller rotatable in contact with said cylinder, a dusting-roller, devices for stripping the sheet from said cylinder at the same time that said gripper is released and deflecting the sheet between said rollers, and

means to hold the sheet in contact with said drawing-roller.

2. In a bronzing-machine, the combination, with the sheet-carrying cylinder, and the gripper carried thereby, of means to dust the sheet upon its upper surface, a drawing-roller rotatable in contact with said sheet-carrying cylinder, a dusting-roller to coöperate with said drawing-roller, a shaft in proximity to the periphery of said sheet-carrying cylinder, means carried by said shaft to hold the sheet in contact with said drawing-roller, and stripping mechanism.

3. In a bronzing-machine, the combination, of a drawing-roller rotatable in contact with the sheet-carrying cylinder, a dusting-roller, a shaft extending in proximity to the sheet-carrying cylinder, stripping-fingers carried by said shaft and arranged to deflect the sheet between said rollers, and rollers carried by said shaft and arranged to hold the sheet in contact with said drawing-roller.

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

MAX FRITSCHÉ.

Witnesses:

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