

No. 702,551.

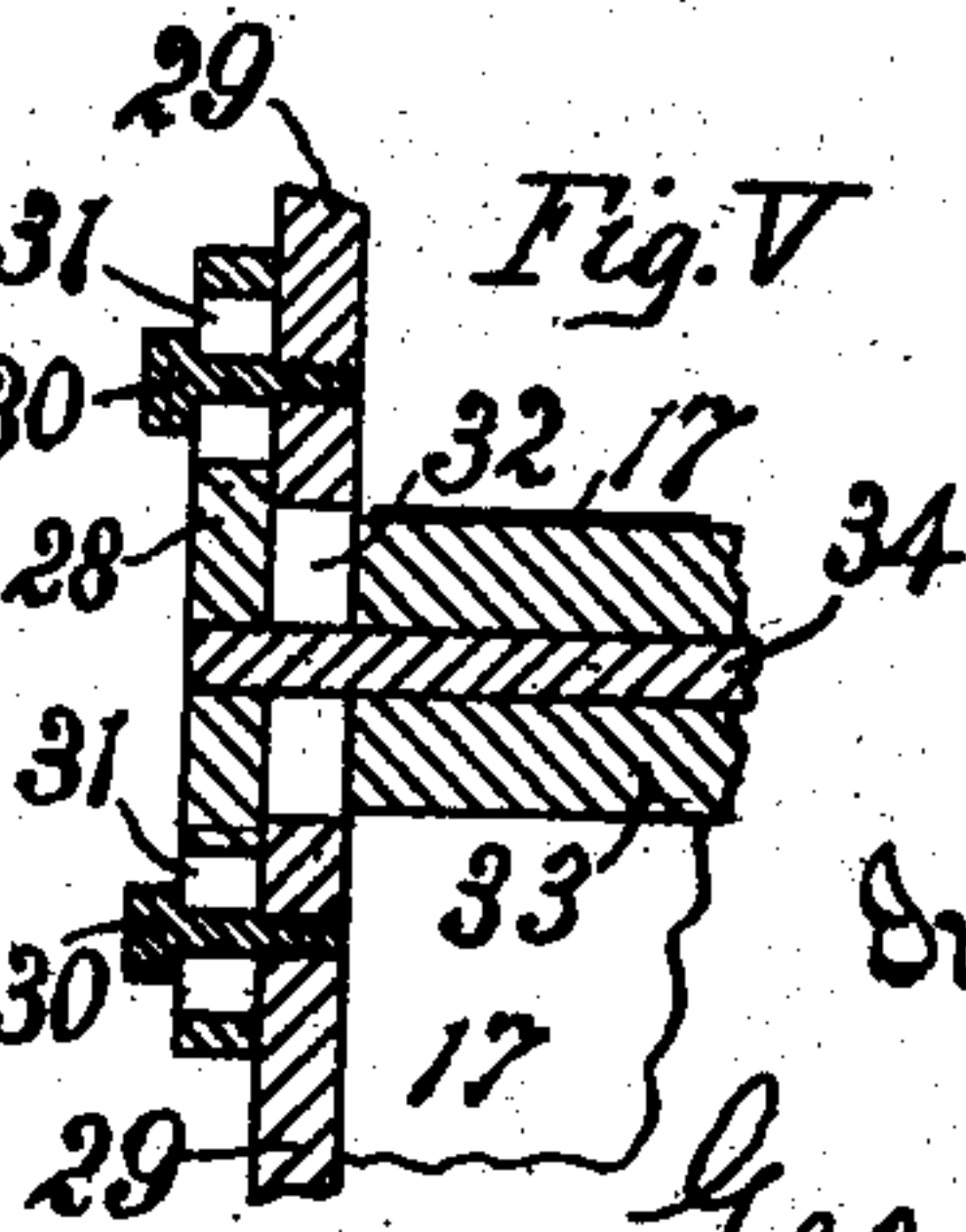
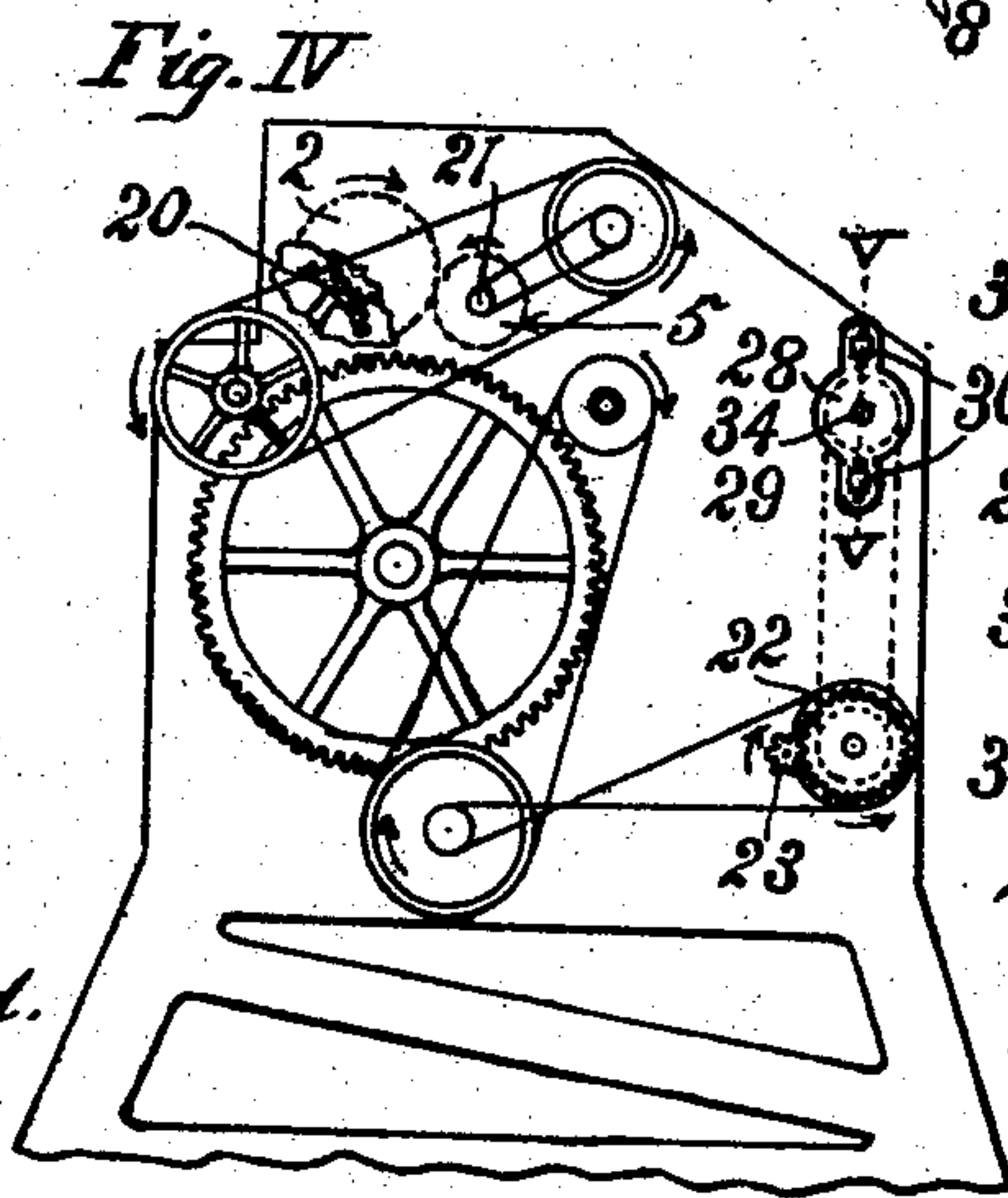
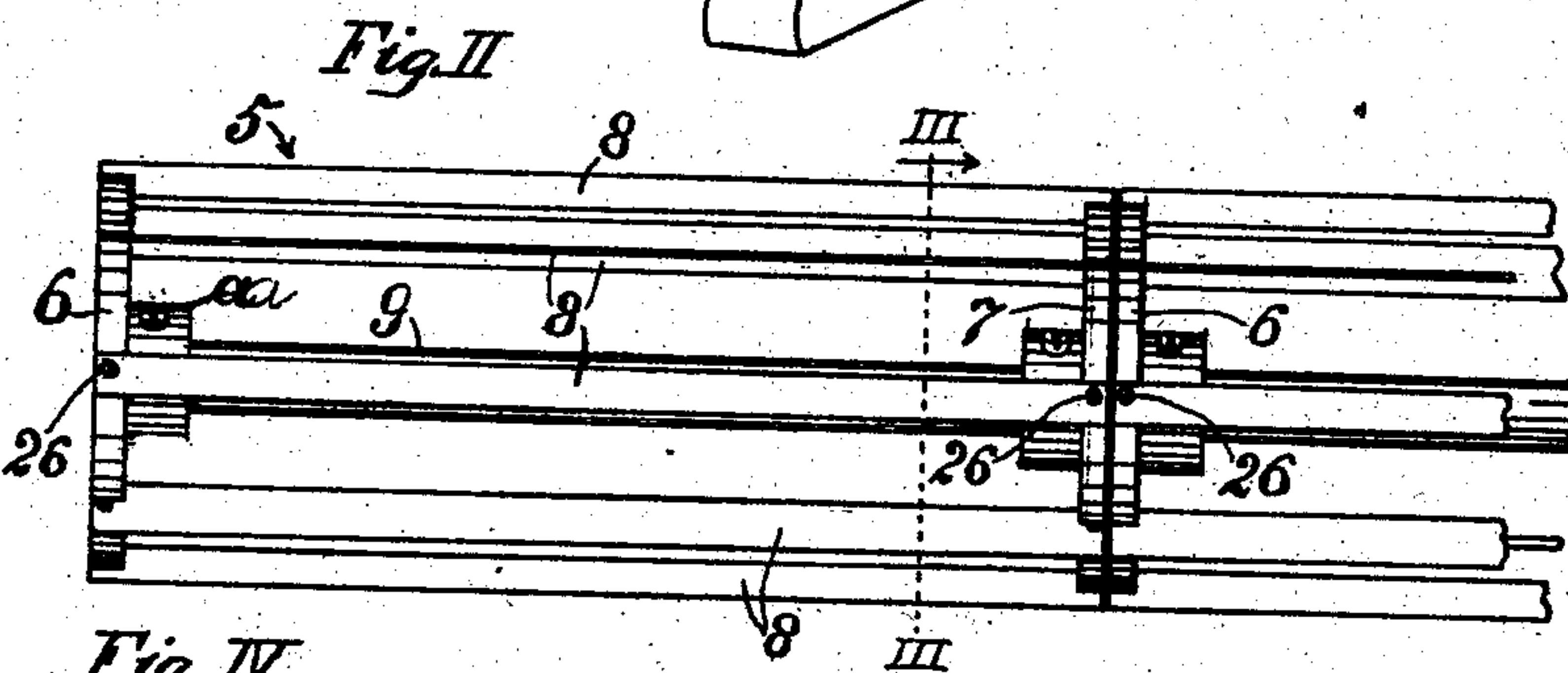
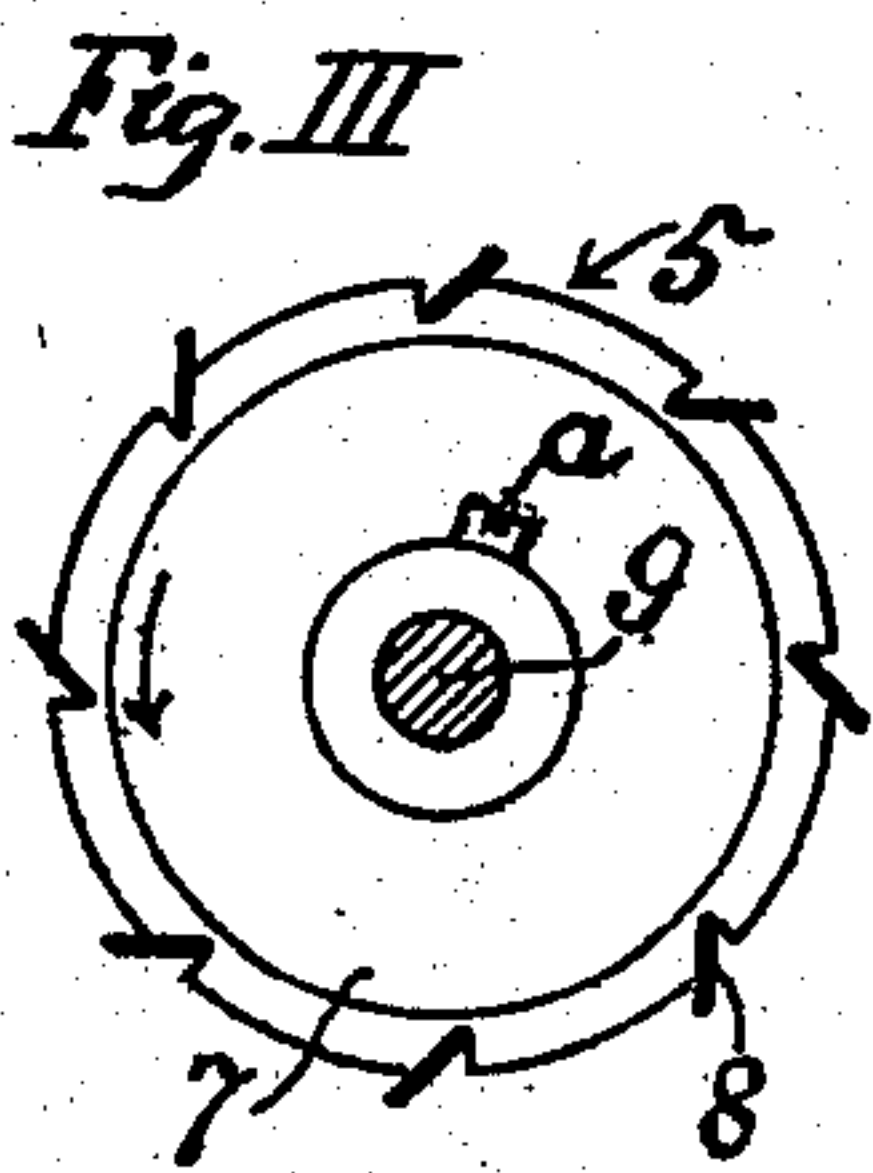
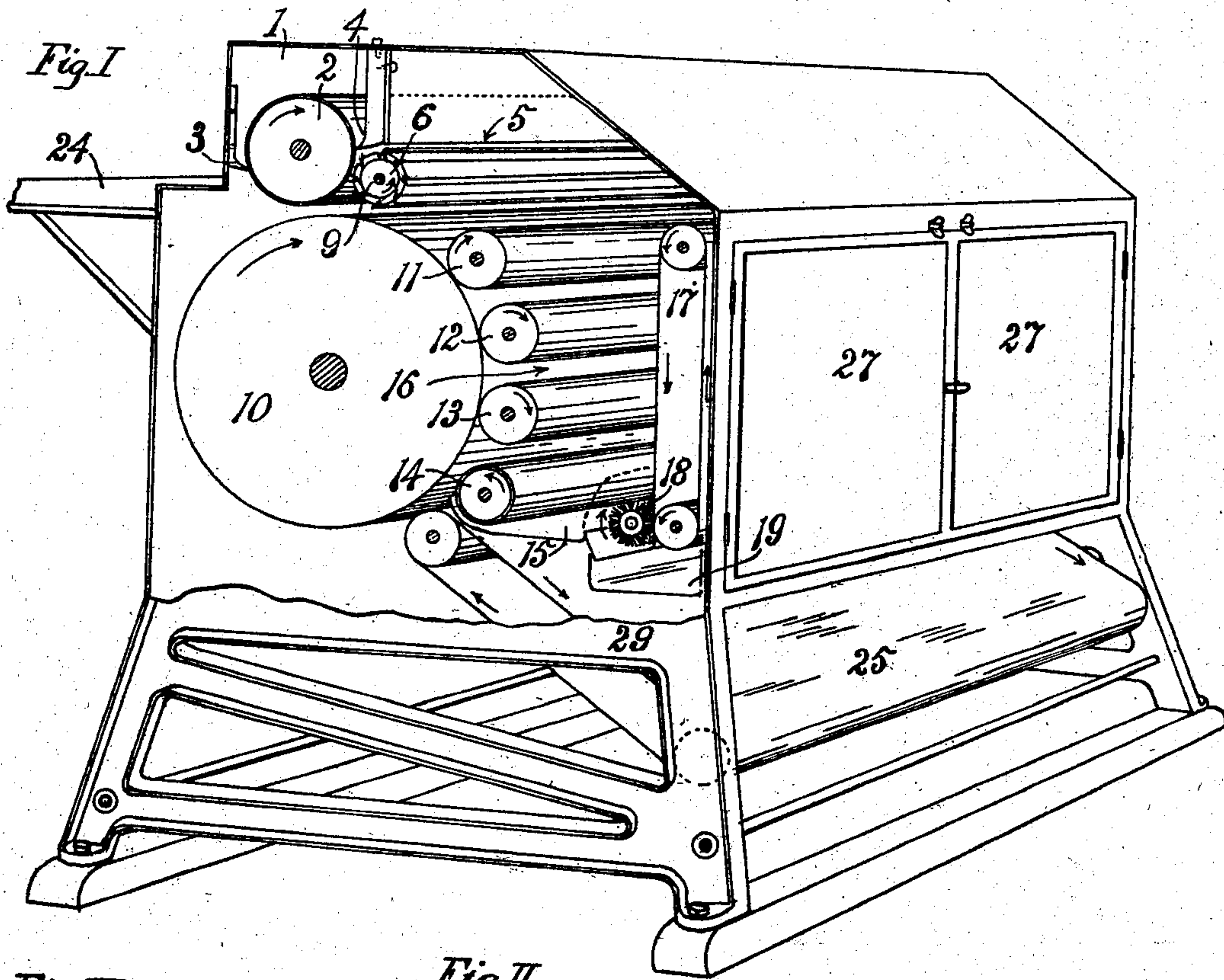
Patented June 17, 1902.

G. HARE.

BRONZING MACHINE.

(Application filed Aug. 27, 1901.)

(No Model.)



Witnesses
C. C. Holly
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Inventor

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his atty.

UNITED STATES PATENT OFFICE.

GEORGE HARE, OF LOS ANGELES, CALIFORNIA.

BRONZING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 702,551, dated June 17, 1902.

Application filed August 27, 1901. Serial No. 73,424. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HARE, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Bronzing-Machines, of which the following is a specification.

This invention relates to machines for applying ornamental powder or dust to printed matter, and pertains to means for securing uniform application of the powder to the printed sheet, improving the appearance of the work done, and securing greater economy of time and material, and for preventing the escape of the bronze-dust or other powder into the open atmosphere.

It includes, first, means for applying the dust or powder to the printed matter at the desired place or places with greater evenness and in the appropriate quantity, and, second, means for gathering together the surplus dust or powder which is brushed from the uninked portions of the printed sheet, so that it can with the greatest convenience be returned to the bronze-fountain.

The accompanying drawings illustrate my invention.

Figure I is a view of a bronzing-machine embodying my improvement. Portions of the machine are omitted to expose the parts in which my invention resides. Fig. II is a fragmental view showing the sprayer and the sprayer-shaft detached. One section of the sprayer is shown complete and a fragment of another section is shown. Fig. III is a section on line III III, Fig. II, looking right in the direction of the arrow. Fig. IV is an end elevation of the bronzing-machine. The directions in which certain parts are driven relative to each other are indicated. Fig. V is a sectional detail on line V V, Fig. IV, to show the means for allowing the apron-roller to be removed.

1 indicates the ordinary bronze fountain or box.

2 indicates the ordinary plush fountain-roller, which, it is to be understood, is driven in the direction of the arrow by the usual ratchet-and-cam device.

3 4 indicate the knives, which, with the plush fountain-roller, constitute the bottom

of the bronze fountain, receptacle, or box 1 in the ordinary manner.

5 indicates my newly-invented sprayer in a form which I at present deem preferable, consisting in a barrel formed in two end disks or heads 6 7, to which is secured at intervals spraying scrapers or blades 8. 9 indicates the shaft upon which said sprayer is mounted and which shaft is driven by suitable means at a high speed relative to the speed of the plush fountain-roller 2. It is to be understood that the sprayer is preferably formed in sections, as indicated in Fig. II, which are detachably mounted on the shaft 9 and held by set-screws *a*. Any of the sections may be used or omitted at pleasure, thus to determine the place or places across the printed sheet at which the bronze is to be applied.

The sprayer may be run at any suitable speed. I prefer a speed for the sprayer from three to six times as fast as the plush roller 2, so that the sprayer-blades 8 will overtake the piles of the plush roller and will scrape or brush therefrom the bronze-powder carried by the plush and will project said powder against the printed sheet, (not shown,) which passes through the bronzing-machine for that purpose.

In the drawings only such portions of the bronzing-machine are shown as are deemed requisite for a complete understanding of this invention; but it is to be understood that I do not limit myself to any particular construction of the bronzing-machine nor to any specific construction of the parts of my invention.

10 indicates the ordinary cylinder of the bronzing-machine, and 11, 12, and 13 the ordinary dusters which are common in the ordinary bronzing-machine and which remove the surplus bronze dust or powder from the printed matter. 14 is the ordinary felt roller of such machine.

15 is the floor of the chamber 16, into which the bronze-dust is thrown by the dusters 11, 12, and 13.

17 indicates an endless apron or belt, preferably of plush, having one face arranged in the path of the bronze-dust which is brushed from the printed sheet by the dusters 11, 12, and 13.

18 indicates a dust-brush to brush the dust from the endless apron or belt 17.

Preferably the belt 17 runs at a low speed and the dust-brush 18 at a relatively high speed.

19 indicates a removable dust-receiving receptacle in the form of a drawer below the apron and dust-brush to receive the bronze-dust which is brushed from the dust-belt 17.

It is to be understood that the fountain-roller 2 is intermittently driven at a low speed by mechanism hidden by the body of the machine in Figs. I and IV. The machine-body is broken to show a part 20 of such mechanism.

21 indicates a high-speed pulley to drive the sprayer 5, 22 a low-speed pulley to drive the dust-receiving belt 17, and 23 a high-speed wheel to drive the dust-brush 18.

In practical use the bronzing-machine is operated in the ordinary way, the printed sheets being passed in over the table 24 and the cylinder 10 and passing through the machine and out at the delivery 25. The slowly and intermittently revolving fountain-roller 2 carries from the bronze-fountain 1 the requisite amount of bronze-powder, which by means of the sprayer 5 is stripped from the piles of the plush roller and projected onto the printed sheet (not shown) in perfectly even and suitable distribution over the desired surface of the printed matter. The sheet then passes on between cylinder 10 and the dusters 11, 12, and 13 and to the felt roller 14, which delivers the sheet to the delivery apron or plate 25. The bronze-dust remaining on the unprinted portions of the sheet after it has passed the sprayer 5 is brushed off by the dusters 11, 12, and 13 and thrown over against the face of the plush belt or apron 17, which face moves slowly toward the revolving dust-brush 18, which revolves at a sufficiently high speed to brush from the plush apron 17 the bronze-dust carried thereby, thus delivering said dust to the dust-receiving receptacle 19, which from time to time will be removed and its contents poured into the bronze-fountain 1, thus avoiding any inconvenience or any such disturbance of the dust as might cause the same to escape into the surrounding atmosphere. This arrangement avoids all necessity of stoppage of machine and presses heretofore necessary for the purpose of clearing the machine of the surplus bronze.

26 indicates screws by which the blades 8 of the sprayer are attached to the end disks 6, which carry said blades. Preferably the faces of the blades lie tangentially, as indicated in Fig. II, in order that they may be most effectively brushed along the piles to remove therefrom the bronze-dust.

Suitable adjusting and releasing devices are provided by means of which the endless apron may be adjusted to appropriate tension and may be released and taken out of the way to allow access to the interior of the bronzing-machine through the rear doors 27.

For this purpose 28 indicates a bearing-plate adjustably fastened to the frame 29 of the machine by bolts 30, which pass through slots 31 in said bearing-plate. The frame is provided with a hole 32, through which the upper roller 33 for the belt or apron 17 is carried. When it is desired to gain access to the interior of the machine, the bearing-plate 29 will be released, the roller 33 will be withdrawn through the hole 32, thus allowing the endless apron to be lowered out of the way and any accumulations of bronzing-dust which may have occurred inside the machine may be removed. Then the roller 33 will be passed back into the machine through the hole 32 and brought into appropriate position in the belt, and the roller-shaft 34 will be inserted in an adjustable bearing on the farther side of the machine-frame, and then the bearing-plate 29 will be brought to the appropriate position and secured in place by the screws 30.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a bronzing-machine, the combination with a plush fountain-roller; of a sprayer provided with blades to remove the dust from the fountain-roller and to throw it onto the surface which is to receive the same.

2. The combination of the fountain-roller, of a spraying-roller, and means for rotating said spraying-roller at a speed greater than that of the fountain-roller.

3. In a bronzing-machine, a sprayer comprising a barrel furnished with scrapers or blades.

4. A sprayer for a bronzing-machine consisting in heads and blades fastened to said heads to form scrapers for removing the dust from the piles of the fountain-roller.

5. The combination with the cylinder and duster of a bronzing-machine, of an apron having a face located in the path of the dust thrown by said dusters; means for moving the apron; and means for removing the dust from the apron.

6. In a bronzing-machine, a dust-receptacle; a dust-catching apron arranged in the path of the dust, and means for moving said apron to deliver the dust to the dust-receptacle.

7. A bronzing-machine furnished with a removable dust-receiving receptacle; a moving apron to receive the dust thrown by the dusters of said machine; means for moving the apron at one speed; and a dust-brush arranged to brush the face of said apron and to deliver the dust therefrom into said removable receptacle.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, at Los Angeles, California, this 21st day of August, 1901.

GEO. HARE.

Witnesses:

JAMES R. TOWNSEND,
JULIA TOWNSEND.