I. DE FRANCISCI.

MACHINE FOR CONVEYING AND DISTRIBUTING BUTTON BLANKS.

APPLICATION FILED FEB. 12, 1908.

910,511. Patented Jan. 26, 1909.

3 SHEETS—SHEET 1.

Fig. 1

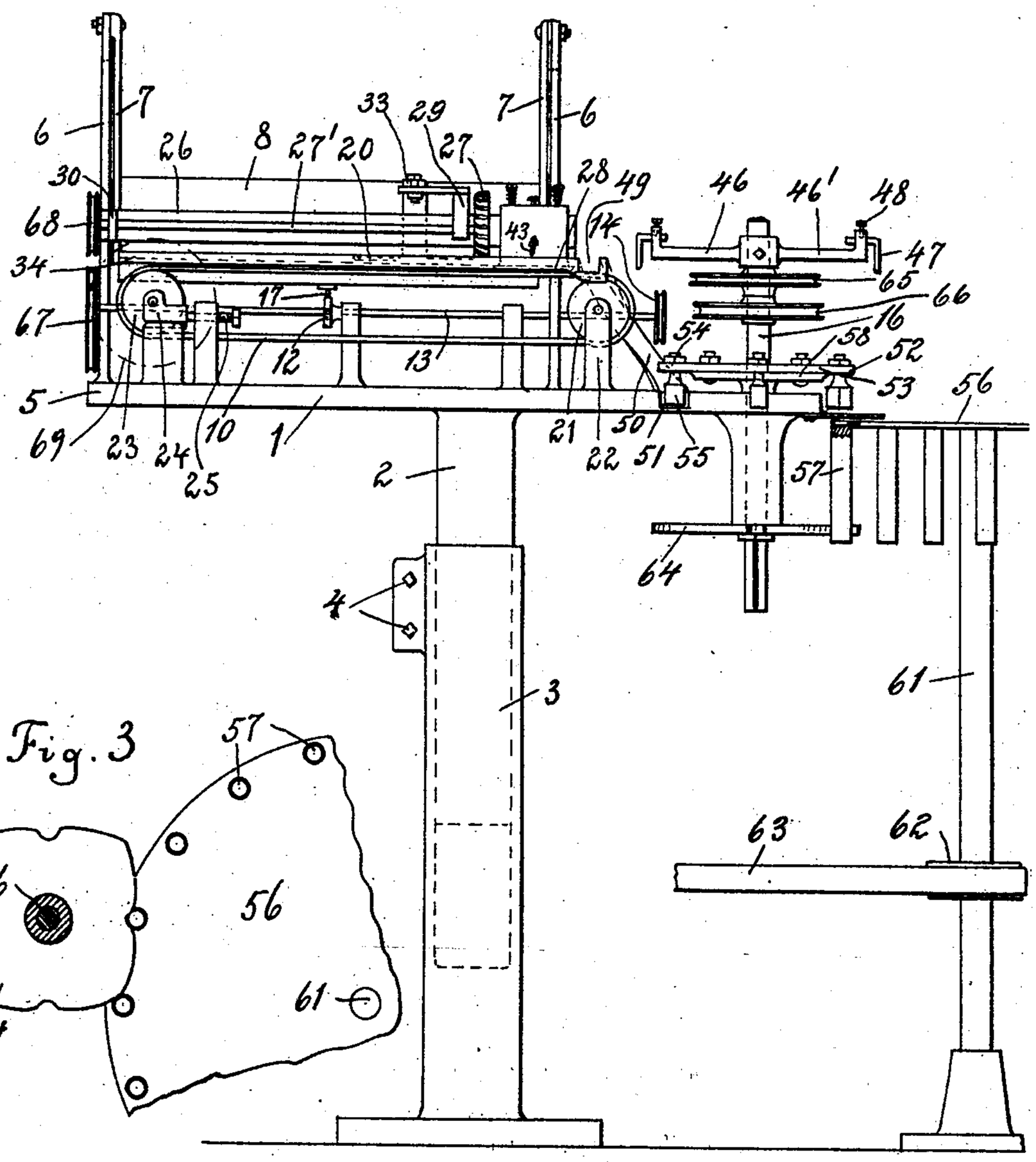

Fig. 3

WITNESSES:

S. Birnbaum.

Thos Veitch.

INVENTOR

Ignazio de Francisci

BY

Sigmund Herzog

his ATTORNEY

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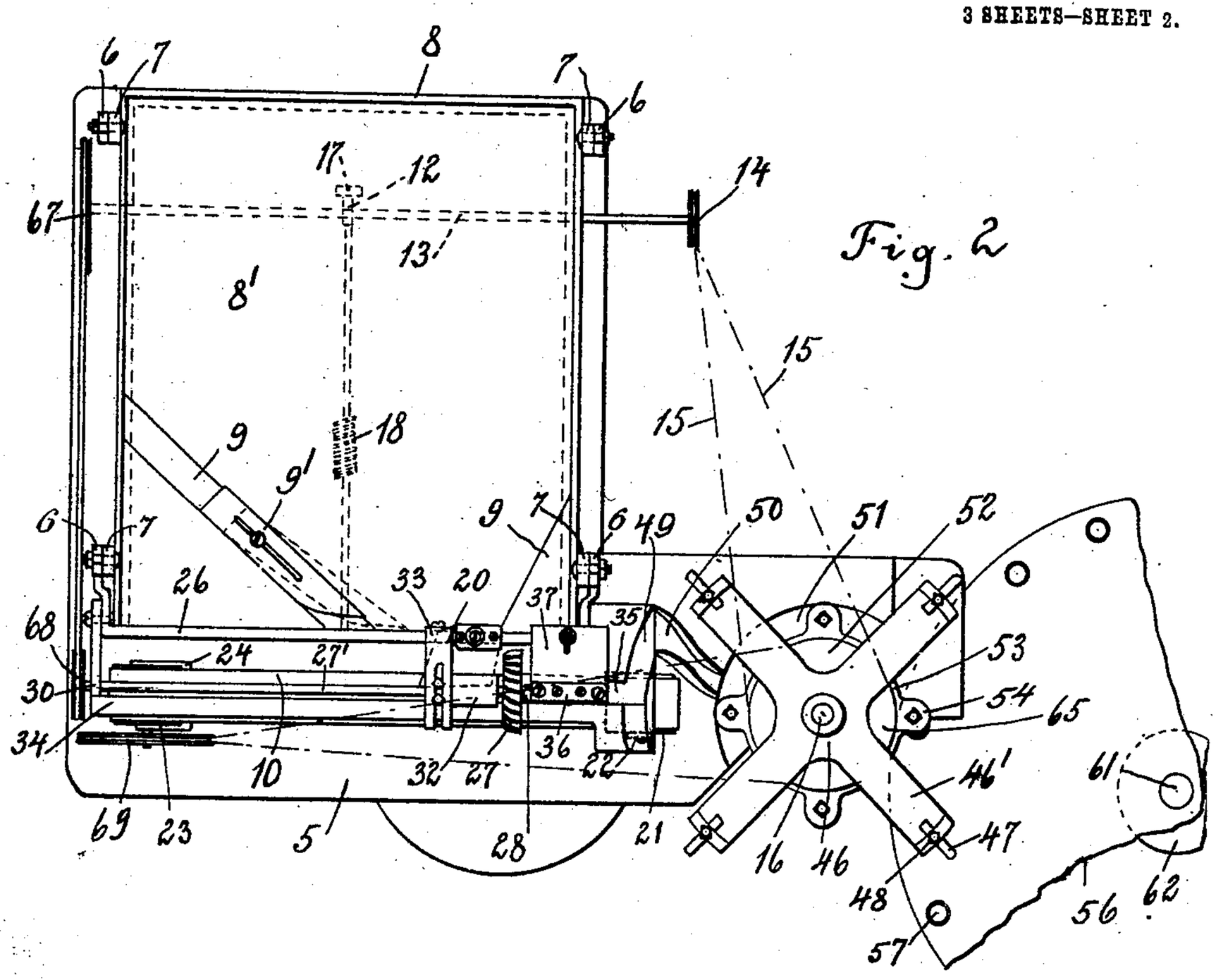

Fig. 2

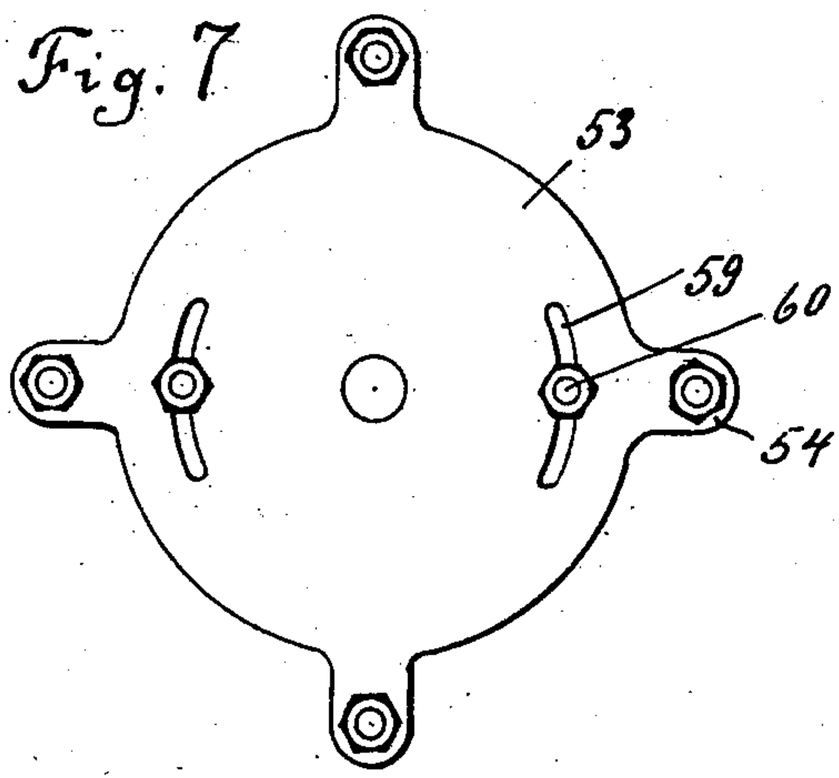

Fig. 7

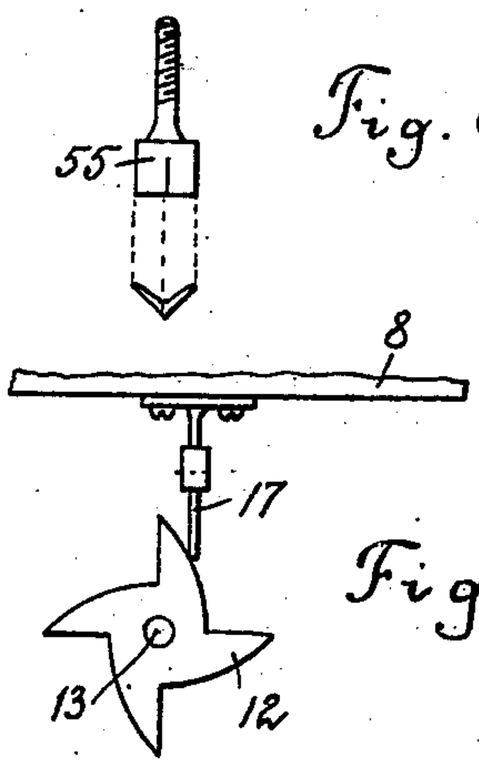

Fig. 8

Fig. 9

WITNESSES:

S. B. Birnbaum

Thos. Veitch

Ignazio De Francisci INVENTOR

BY Sigmund Herzog his ATTORNEY

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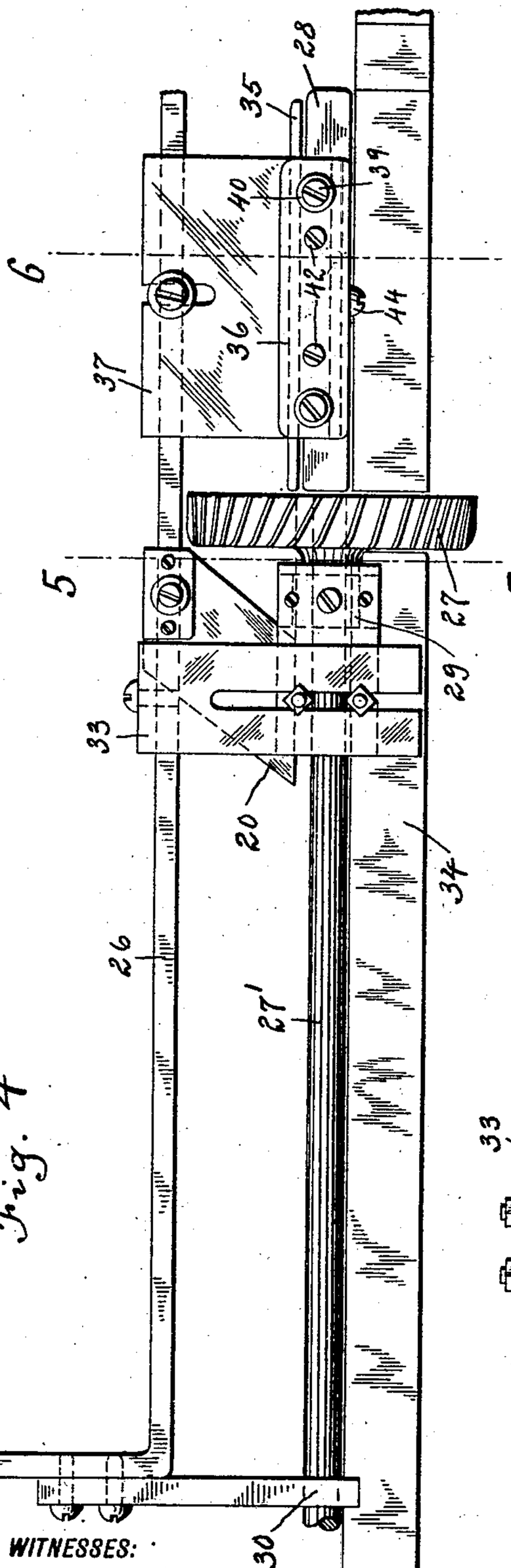

Fig. 4

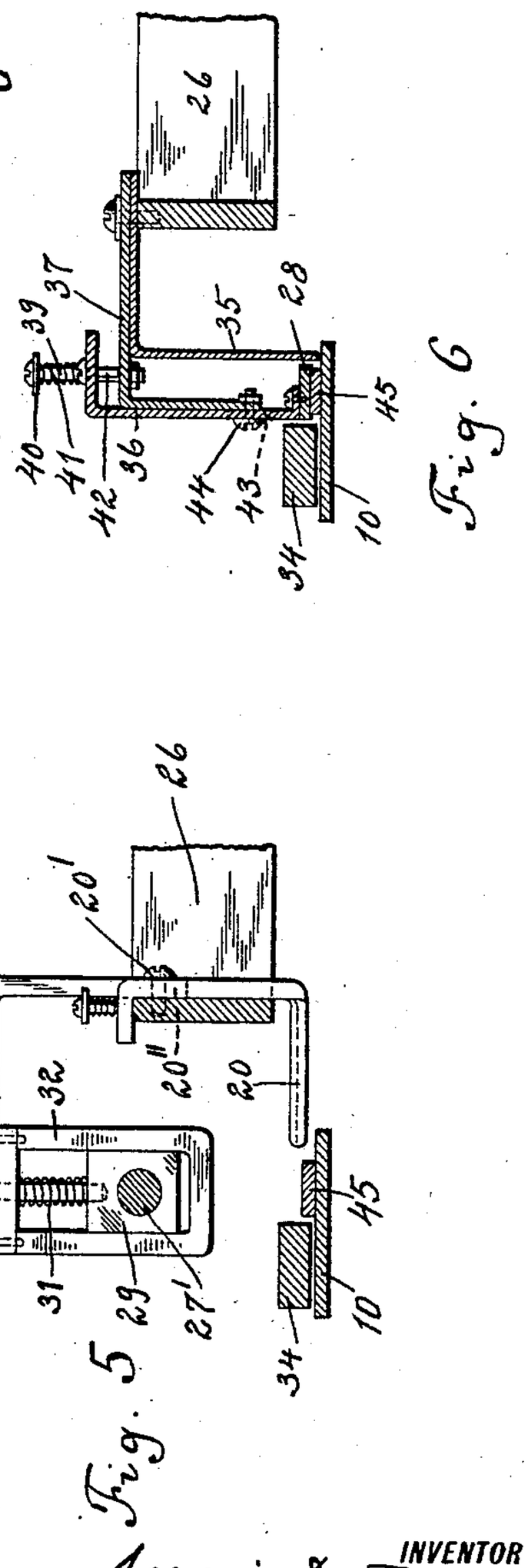

Fig. 6

WITNESSES:

S. Birnbaum

Hos Veitch

INVENTOR

Ignazio De Francisci

BY

Sigmund Herzog

his ATTORNEY

UNITED STATES PATENT OFFICE.

IGNAZIO DE FRANCISCI, OF NEW YORK, N. Y.

MACHINE FOR CONVEYING AND DISTRIBUTING BUTTON-BLANKS.

No. 910,511. Specification of Letters Patent. Patented Jan. 26, 1909.

Application filed February 12, 1908. Serial No. 415,574.

To all whom it may concern:

Be it known that I, IGNAZIO DE FRANCISCI, a subject of the King of Italy, and a resident of the city of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Machines for Conveying and Distributing Button-Blanks, of which the following is a specification.

The present invention relates to improvements in an apparatus for delivering button-blanks or similar articles to special devices, whereon the blanks are worked upon in any suitable manner for the purpose of making finished buttons therefrom.

The new and useful features of the invention, forming the subject matter of the present application, comprise that part of a button machine, by means of which the blanks are removed from a storage table and conveyed to and distributed on a receiving table, for the purpose hereinabove specified.

Speaking in general terms, the device consists of an oscillating storage table, delivering the button blanks to a belt conveyer, which, in turn, conveys the same to rotatable members, and which deliver the buttons to a receiving disk.

In the drawings, Figure 1 shows a front elevation of the entire conveying part of the button machine, Fig. 2 a top view of the same, Fig. 3 a detail of construction of the receiving disk, Fig. 4 a top view of a detail of the belt conveyer and its attachment, Fig. 5 a section on line 5, 5 of Fig. 4 and Fig. 6 a section on line 6, 6 of Fig. 4. Figs. 7 and 8 are details of construction of one of the distributing disks, and Fig. 9 a detail of construction of the oscillating means of the storage table.

The frame of the apparatus is shown at 1, supported by a standard 2, slidably mounted in the leg 3 of the machine. The frame and thus the whole apparatus resting thereon may be raised or lowered relative to the leg 3, the screws 4, 4, holding the frame in the desired position.

The frame 1 comprises a table 5, having arranged thereon standards 6, 6, to each of which are pivotally connected arms 7, 7, supporting a storage table 8, provided with a glass bottom 8′. The inner end of the storage table 8 is provided with guides 9, 9, providing thus a comparatively narrow outlet leading to a belt conveyer 10, hereinafter to be described. Upon one of the guides 9 is mounted a secondary adjustable guide 9′, by means of which the size of the outlet of the table may be varied.

The storage table is oscillated by means of a star wheel 12, mounted on a shaft 13, which is rotated by means of a pulley 14 and a rope or belt 15 from the main shaft 16 of the apparatus. The star wheel 12 is in operative engagement with an adjustable finger 17, attached to the oscillating table, and held in operative engagement with the star wheel by means of a spring 18, connected to the frame and to the oscillating table, respectively.

The button-blanks are placed with their faces to be operated upon upwards on the glass plate 8′ of the oscillating table 8. In oscillating this table by the means, hereinbefore described, the buttons will move toward the inner end of the table and will be guided by the guides 9, 9 and a passage 20 onto the belt 10 hereinbefore mentioned.

The belt conveyer 10 runs over a pulley 21, supported by a bearing 22 and over a second pulley 23, supported by an adjustable bearing 24, which may be adjusted by means of the set screws 25 so as to vary the tension of the belt 10. The buttons, being conducted onto the belt, are by intermediary means brought within the reach of a rotary conveyer. The intermediary guiding means are mounted on a bracket 26, attached to the standards 6, 6 and comprise besides the recessed guiding plate 20, forming a passage between the oscillating table and the belt 10, a rotatable oblique-toothed wheel 27, which forces the blanks under a resiliently suspended guiding bar 28.

As shown in Figs. 4 to 6 of the drawings, the recessed plate 20 is attached to the bracket 26 by means of screws 20′, engaging slots 20″, for the purpose of allowing of a vertical adjustment of the guiding plate 20, which may become necessary as different sizes of buttons are manipulated on the machine. The oblique-toothed wheel 27 is mounted on a shaft 27′, supported by bearings 29 and 30. The bearing 29 is under the pressure of a spring 31, pressing the oblique-toothed wheel 27 against the buttons, but allowing at the same time of a vertical movement of the shaft in case there should be any obstruction. The bearing 29 is supported by a bracket 32, adjustably mounted upon a support 33, which is attached to the bracket 26, hereinbefore mentioned. In

order to prevent the buttons from falling off the belt, a rod 34 is provided, attached to some stationary part of the apparatus. The rod 34, the resiliently suspended bar 28 and furthermore a vertical wall 35 form a passage, into which the buttons are forced by the wheel 27, whereupon the same are conveyed within the reach of the rotatable conveyers.

The resiliently suspended bar 28 is attached to a U-shaped member 36, which in turn is fastened to an angle beam 37, attached to the bracket 26. On the member 37 are arranged two screw bolts 39 passing through the U-shaped member 36 and carrying washers 40. Between the washers 40 and the U-shaped member are arranged springs 41 tending to press the U-shaped member downwardly and against the face of the buttons, the downward movement being determined by the stop screws 42 which bear against the angle beam 37. In order to allow of a vertical movement of the U-shaped member, the latter is provided with a slot 43, engaged by a bolt or pin 44 attached to the angle beam 37. The button 45 being now conducted within the reach of the rotatable delivery member 46, it will be engaged by the same. This rotatable delivery member is mounted on a vertical shaft 16, and comprises, preferably, four arms 46′, arranged at right angles to each other, each of these arms carrying a finger 47, which is held thereon by means of a screw 48. It will be noticed that thus the diameter of the delivery member may be varied. One of the fingers of the delivery member engages the blank as soon as it comes within the path of travel of the same and moves the blank along the passage 49 until it reaches the inclined passage way 50, when it will slide down the same and into a semi-circular passage or conduit 51, coming thus within the path of the rotating member 52, which consists of a disk 53, provided with arms 54, carrying receiving shovels 55, which move the button-blanks along the semi-circular path 51 and thus onto the receiving table 56. The rotation of this table is so regulated that the button-blanks, moved by the shovels 55, drop one after the other into the heads of the chucks 57, whereby they get out of the range of the shovels and by the rotation of the table may be delivered to other parts of the machine for further manipulation.

The disk 53 is mounted on a disk 58, which latter disk is keyed to the main shaft 16, and since the disk 53 is provided with slots 59 engaged by screw bolts 60 of the disk 58, it will be noticed that the relation of the shovels to the axis of the main shaft may be varied at will.

The disk or table 56 is secured to a rotatable shaft 61, receiving its rotation by means of a pulley 62 and a driving belt 63 from any suitable source of power. The lower extensions of the chucks 57, at the same time, are instrumental in imparting rotation to the shaft 16, upon which the members 46 and 52 are secured. The direct means for this purpose comprises a cam wheel 64, having surfaces coöperating with the chucks 57, so that, in the form of the machine illustrated in the drawings, each chuck causes a rotation of 90° of the shaft 16, and as the radial arms of the members 46 and 52 are arranged at right angles to each other and the radial arms of one member in relation to the similar arms of the other member are set at 45°, it will be seen that each chuck corresponds, in turn, to one radial arm on each of the rotatable members, and in course of the operation an easy and effective distribution of the button-blanks onto the heads of the chucks takes place. Upon the main shaft 16 are further arranged two pulleys 65 and 66. The driving belt of the pulley 65 runs over the pulley 14 of the star wheel 12 and rotates thus the same. On the shaft 13 of the star wheel is mounted a second pulley 67, the driving belt of which runs over a pulley 68, mounted on the shaft 27′ of the oblique-toothed wheel. The pulley 66 is operatively connected to a pulley 69, which is mounted on the shaft of the conveyer pulley 23. It will be noticed that thus the entire apparatus is driven from the shaft 61 of the receiving table 56.

What I claim is:—

1. In a button machine, the combination with a conveyer, of means capable of delivering button blanks thereto, a horizontal table having a conduit, an inclined passage between said conveyer and said conduit, a knock off member adapted to feed said blanks from said conveyer into said conduit, a distributer adapted to engage said blanks on said table and convey the same along said conduit, and means adapted to receive said blanks from said distributer.

2. In a button machine, the combination with a conveyer, of means capable of delivering button blanks thereto, a horizontal table having a conduit, a knock-off member adapted to feed said blanks from said conveyer into said conduit, a distributer adapted to engage said blanks on said table and convey the same along said conduit, and means adapted to receive said blanks from said distributer.

3. In a button machine, the combination with a conveyer, of means capable of delivering button blanks thereto, a horizontal table having a conduit, a rotatable shaft, a knock-off member mounted thereon and adapted to feed said blanks from said conveyer into said conduit, a distributer mounted on said shaft in a plane parallel to the plane of said knock-off member and adapted to engage

said blanks on said table and convey the same along said conduit, and means adapted to receive said blanks from said distributer.

4. In a button machine, the combination with a conveyer, of means capable of delivering button blanks thereto, a horizontal table having a conduit, a knock-off member adapted to feed said blanks from said conveyer into said conduit, a distributer adapted to engage said blanks on said table and convey the same along said conduit, means for guiding said blanks on said conveyer, and means adapted to receive said blanks from said distributer.

Signed at New York, in the county of New York and State of New York, this 23rd day of January, A. D. 1908.

IGNAZIO DE FRANCISCI.

Witnesses:
NUNZIO MANIARI,
SIGMUND HERZOG.