

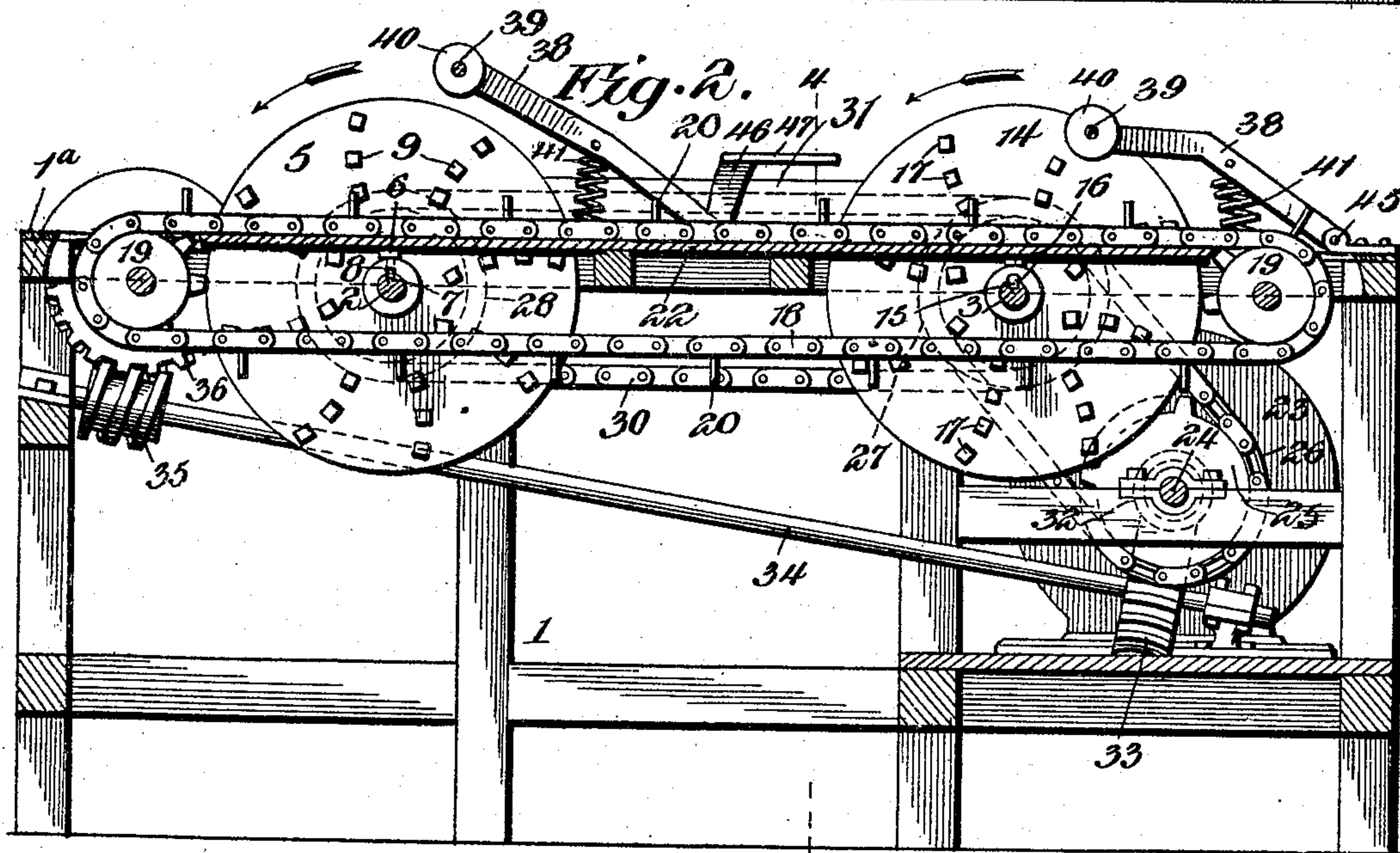
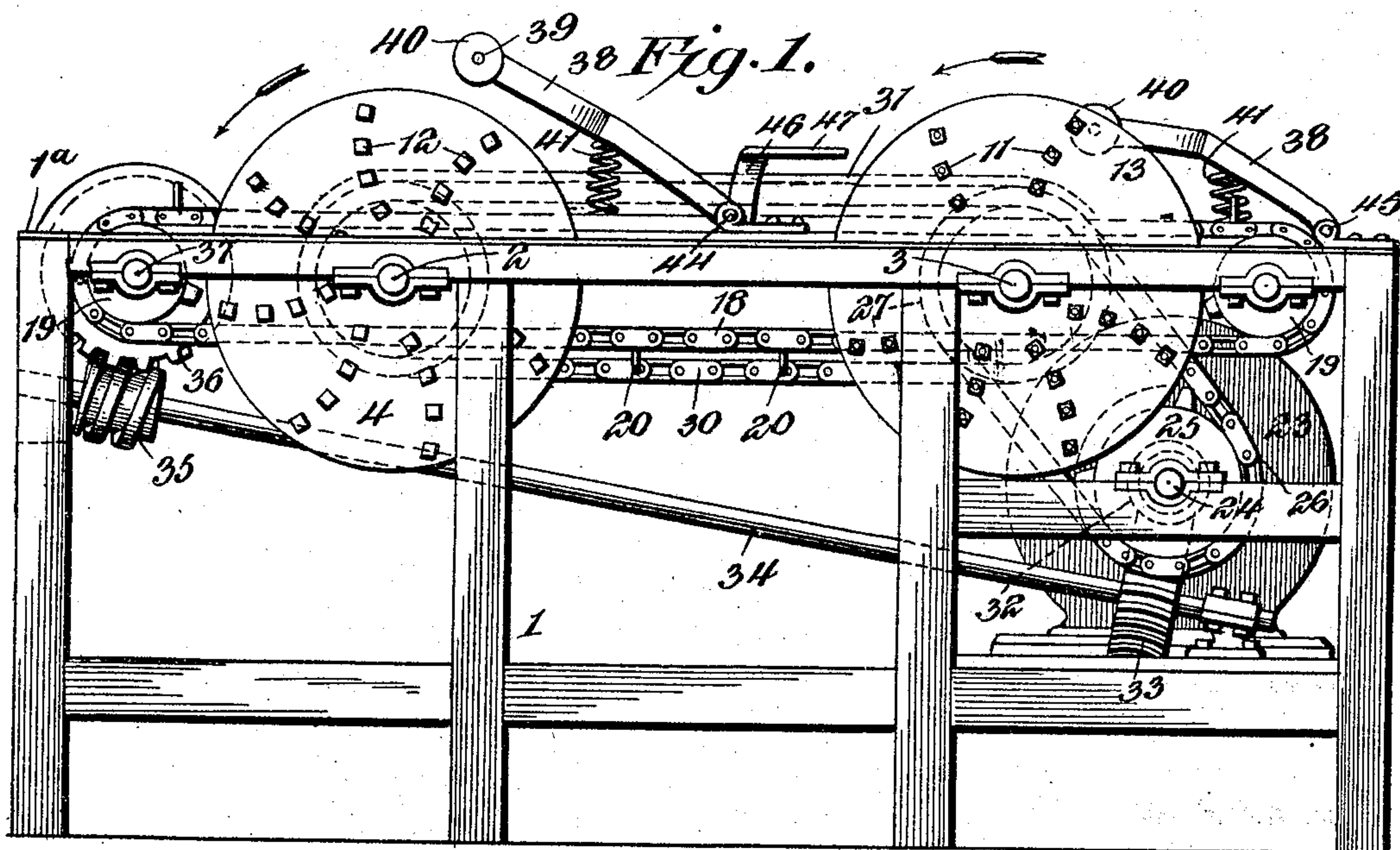
No. 782,324.

PATENTED FEB. 14, 1905.

M. T. CHRISTOPHER.
BRICK CLEANING MACHINE.

APPLICATION FILED JAN. 15, 1904.

2 SHEETS—SHEET 1.



M. T. Christopher, Inventor,

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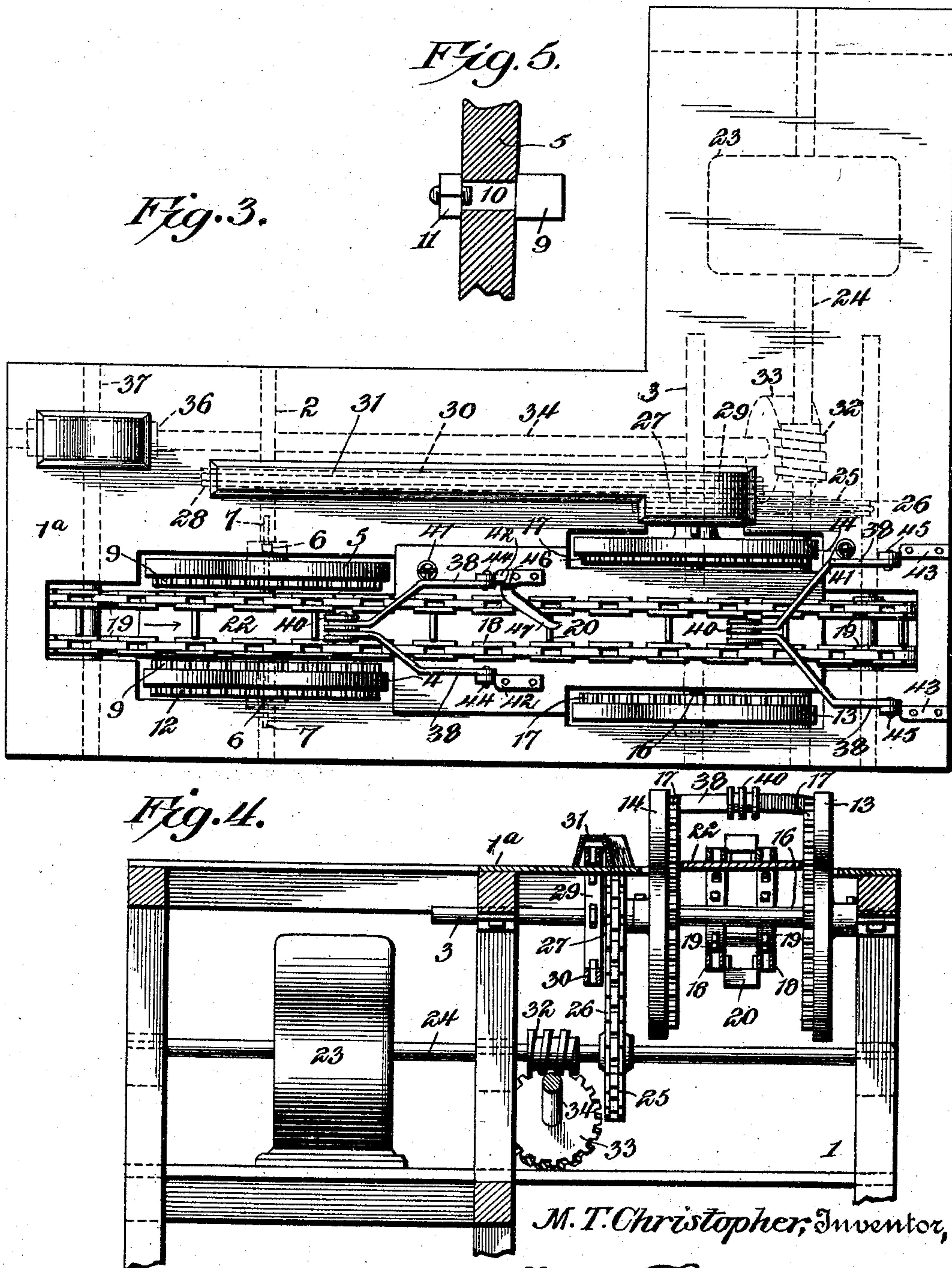
Witnesses

Howard W. Carr.

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2 SHEETS—SHEET 2.



M. T. Christopher, Inventor,

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UNITED STATES PATENT OFFICE.

MAX T. CHRISTOPHER, OF FINDLAY, OHIO.

BRICK-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 782,324, dated February 14, 1905.

Application filed January 15, 1904. Serial No. 189,218.

To all whom it may concern:

Be it known that I, MAX T. CHRISTOPHER, a citizen of the United States, residing at Findlay, in the county of Hancock and State of Ohio, have invented a new and useful Brick-Cleaning Machine, of which the following is a specification.

The invention relates to a brick-cleaning machine.

The object of the present invention is to improve the construction of brick-cleaning machines and to provide a simple and comparatively inexpensive one adapted for cleaning or removing the mortar or other surface-coating from bricks and adapted to discharge such bricks in a condition for reuse.

A further object is to provide a machine of this character adapted to enable the operator to first clean the ends of a brick before placing the same in it and capable after a brick has been placed in it of first cleaning the side faces and then the side edges of the brick.

Another object of the invention is to provide a device adapted after the side faces of the brick have been cleaned to automatically trip or reverse the brick to present the side edges of the same for cleaning.

Furthermore, the invention has for its object to provide an efficient device for holding the bricks firmly in position while they are operated on by the cleaning device.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that changes in the form, proportion, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a side elevation of a brick-cleaning machine constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a plan view. Fig. 4 is a transverse sectional view on the line 4-4 of Fig. 2. Fig. 5 is a detail view illustrating the construction of the spurs.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a supporting-frame provided with a suitable top to form a table and having supporting legs or posts arranged at intervals and connected by suitable horizontal bars, as illustrated in Figs. 1 to 3, inclusive; but the frame may be constructed in any other desired manner, as will be readily understood. The frame is provided with suitable bars having horizontal shafts 2 and 3, located at the front and rear portions of the machine and carrying front and rear disks, which are provided with means for engaging the bricks to be cleaned. The front disks 4 and 5, which are designed for engaging the side faces of the bricks, are adjustably mounted on the transverse shaft 2 by means of set-screws 6 and a spline or splines 7, which are mounted on the shaft and which work in grooves 8 of the disks 4 and 5. By this construction the front disks are securely held against rotation independently of the front shaft and are adapted to be moved longitudinally thereof to vary the distances between them to accommodate bricks of different sizes. The bricks are engaged by spurs 9, having squared shanks 10 and provided with nuts 11. The squared shanks fit in corresponding apertures of the front disks and the nuts are arranged on threaded portions of the shanks. The front disk 4 at the outer side of the frame is provided with outwardly-extending spurs 12, which are adapted to engage the ends of the bricks, and the latter before being introduced into the machine are held against the front disk 4 to enable the spurs 12 to remove the mortar from the ends of the bricks. The spurs are arranged in radial series. The series of spurs are slightly curved and are spaced from each other and the spurs of each series are also spaced from each other.

The rear disks 13 and 14 are arranged a greater distance apart than the front disks and are adapted to operate on the side edges of the bricks after the side faces thereof have been cleaned by the front disks. The rear disks are adjustably mounted on the rear transverse shaft 3 by means of a suitable spline or splines 15 and set-screws 16 and

they are provided at their inner faces with spurs 17, similar to those heretofore described.

The bricks are conveyed from the front disks to the rear disks by an endless carrier 5 composed of a pair of endless chains 18, arranged on sprocket-wheels 19 and connected at intervals by transverse carrier-pieces 20, which are adapted to engage the bricks. The endless chains are disposed horizontally and 10 their upper flights are supported by a horizontal plate 22, located between the disks and secured to the top 1^a of the table. The top of the table will in practice be constructed of sheet metal about a quarter of an inch 15 thick, and the plate 22, which supports the upper flights of the endless sprocket-chains to prevent the same from sagging, will be constructed of metal one inch thick; but the thickness of the plates may be varied, as will be 20 readily understood. The width of the plate 22 is increased between the disks to enable the said plate to overlap the adjacent portions of the top of the frame. The bricks are placed upon the carrier at the front end thereof, and 25 each is carried forward in an upright position resting on one of its longitudinal edges. This presents the side faces of the bricks to the front disks, which remove the mortar from the bricks. After the brick leaves the front 30 disks it is automatically tripped or reversed by the means hereinafter described, and it is thereby thrown flat upon the tables and is carried forward in this position to present its side edges to the rear disks, which remove the 35 mortar from the bricks. After the mortar has been removed from the side edges of the bricks the latter are discharged at the rear end of the machine.

The disks are rapidly rotated, the power 40 being supplied by an electric motor 23, or any other suitable means may be employed for operating the machine, as will be readily understood. The drive or motor shaft 24 carries a sprocket-gear 25, which is connected 45 by a sprocket-chain 26 with a similar sprocket-wheel 27, keyed or otherwise secured to the rear shaft 3, on which the rear disks are mounted. The front and rear shafts 2 and 3 are also provided with sprocket-wheels 28 and 50 29 and are connected by a sprocket-chain 30, whereby the said front and rear disks will be simultaneously rotated at the same speed. The sprocket-gear which connects the front and rear shafts 2 and 3 is preferably housed 55 within a protecting-casing 31, arranged as clearly shown in Fig. 3 of the drawings.

The endless carrier is driven at a slower speed than the cleaning-disks, and the motor-shaft 24 is provided with a worm 32, which 60 meshes with a gear 33 of an inclined longitudinal shaft 34. The gear 33 is located at the lower end of the inclined shaft 34, and the upper portion thereof carries a worm 35, which meshes with a gear 36, mounted on a

shaft 37, and the latter is arranged at the 65 front of the endless carrier and has the front sprocket-wheel 19 keyed or otherwise secured to it. When the motor is operated, motion will be communicated from the shaft 24 to the shaft 37 through the said gearing, and the 70 endless carrier will be thereby operated simultaneously with the cleaning-disks.

The disks rotate in the direction of the arrows in Fig. 1 of the drawing, and the downward movement of the front portions of the 75 disks operates to hold the bricks against the endless carrier. While the bricks are passing between the rear upwardly-moving portions of the disks they are held upon the endless carrier by means of yieldable antifriction 80 clamping devices, consisting of an arch or yoke composed of two sides 38, hinged at their lower ends to suitable brackets or plates and connected at their upper ends by a pivot or shaft 39, upon which pivot or shaft the wheels 85 40 are mounted. The bricks pass between the sides of the arch or yoke and are engaged by the rollers or wheels, which are held against the bricks by springs 41, secured to the plate 22 and to the adjacent sides of the 90 arches or yokes. The plates or brackets 42 and 43, which are mounted upon the frame of the machine, are provided with perforate ears for the reception of pivots or pintles 44 and 45, which also pass through the sides of 95 the yokes or arches.

One of the front plates or brackets has mounted upon it a trip 46, having an angularly-disposed portion 47 arranged approxi- 100 mately diagonally of the endless carrier in the path of the bricks and adapted to turn the same. The bricks pass through the first set of rotary disks standing on edge and the trip 105 tilts the bricks and causes the same to fall over upon one of their side faces, whereby the bricks are caused to present their side edges when passing between the rear disks. The trip is provided with an approximately 110 L-shaped shank or portion, which is secured to one of the front brackets or plates 42.

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

1. In a machine of the class described, the combination of rotary cleaning devices ar- 115 ranged in pairs and provided with projecting spurs at their inner faces for engaging bricks at opposite sides thereof, one of the disks being provided with exterior spurs, and means for operating the disks, and for carrying bricks 120 between the same, substantially as described.

2. In a machine of the class described, the combination with rotary cleaning devices, and a carrier, of a yieldable brick-engaging device 125 for holding the brick to the carrier contiguous to the rotary cleaning devices to prevent the upward movement of the latter from displacing the brick, substantially as described.

3. In a machine of the class described, the combination with rotary cleaning devices, and a carrier, of a yieldable brick-engaging device provided with a roller or wheel arranged to engage the bricks for holding the same on the carrier contiguous to the rotary cleaning devices for preventing the upward movement of the latter from displacing the brick, substantially as described.

10 4. In a machine of the class described, the combination with rotary cleaning devices, and a carrier, of a hinged yoke or arch, and a spring connected with the yoke or arch for holding the same in engagement with the
15 bricks to prevent the latter from being dis-

placed by the upward movement of the rotary cleaning devices, substantially as described.

5. In a machine of the class described, the combination of rotary cleaning devices arranged in pairs, and a carrier, of front and rear yieldably-mounted brick-engaging devices, and an intermediate trip for turning the brick, substantially as described. 20

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses. 25

MAX T. CHRISTOPHER.

Witnesses:

JNO. SHERIDAN,
A. P. HAHN.