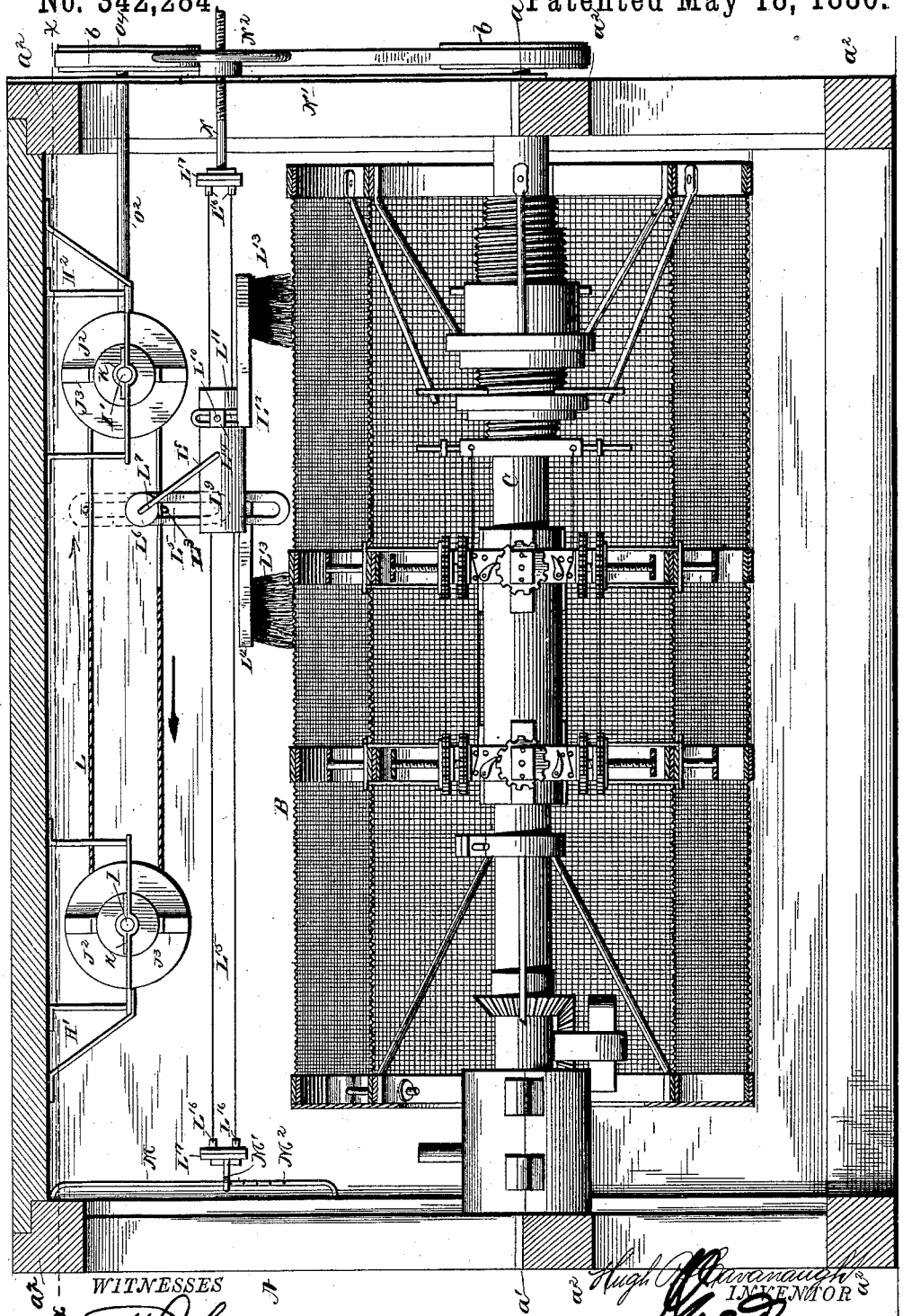
(No Model.) 3 Sheets—Sheet 1.

H. P. CAVANAUGH.

BRUSH FOR BOLTING REELS.

No. 342,284. Patented May 18, 1886.



WITNESSES

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(No Model.) 3 Sheets—Sheet 3.

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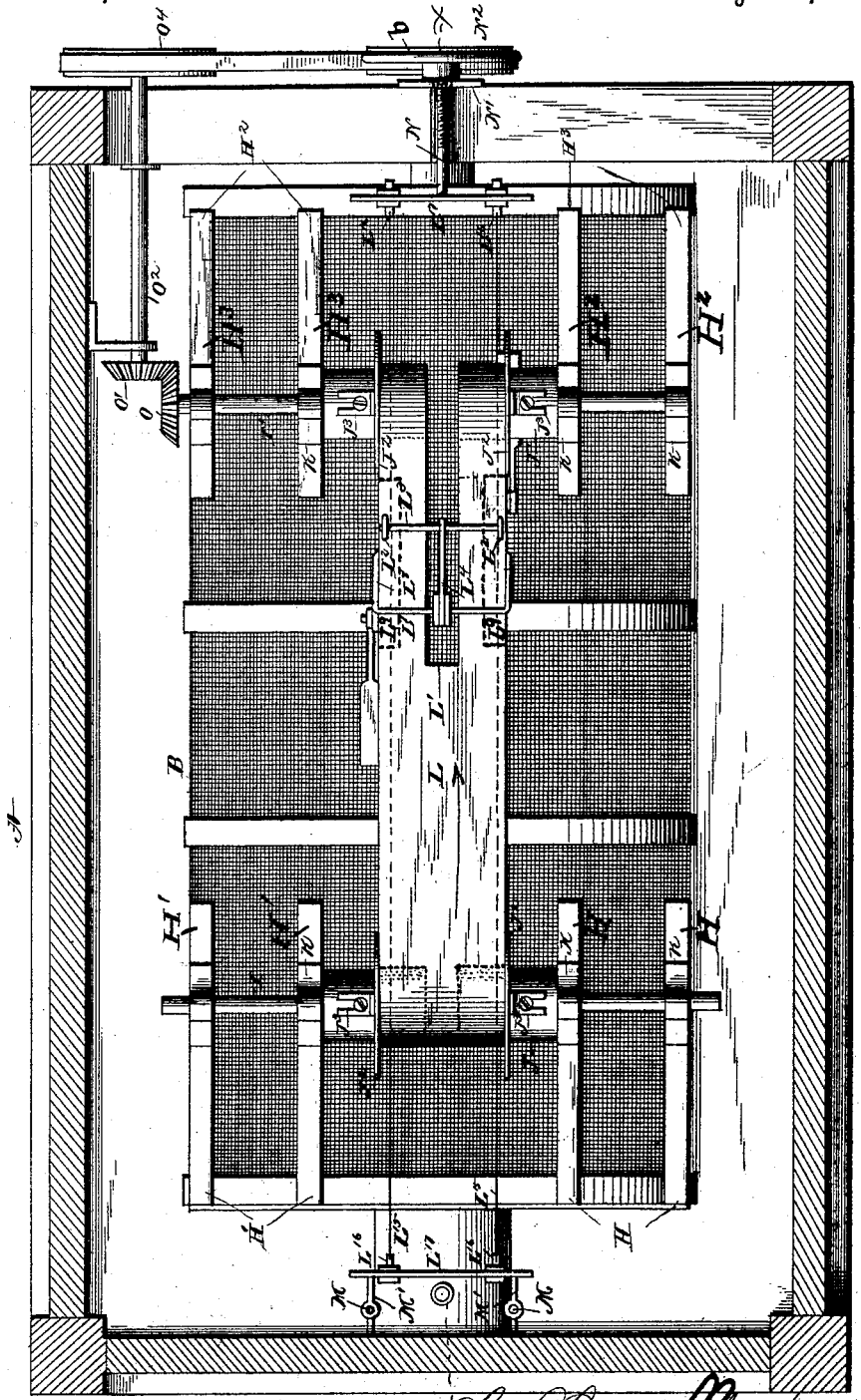

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Fig 2

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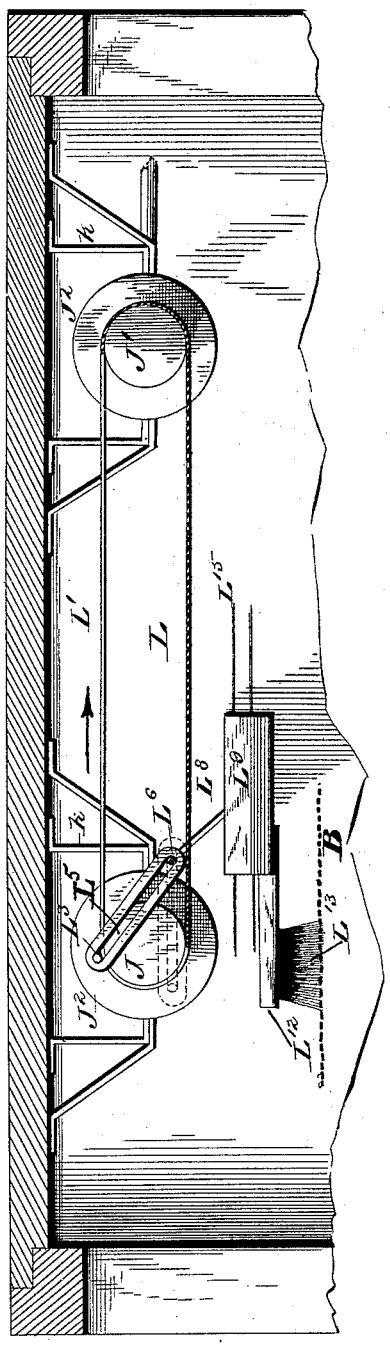

Fig. 3.

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HUGH PATRICK CAVANAUGH, OF ADRIAN, MISSOURI, ASSIGNOR OF ONE-THIRD TO REUBEN BRYANT, OF SAME PLACE.

BRUSH FOR BOLTING-REELS.

SPECIFICATION forming part of Letters Patent No. 342,284, dated May 18, 1886.

Application filed September 7, 1885. Serial No. 176,426. (No model.)

To all whom it may concern:

Be it known that I, HUGH PATRICK CAVANAUGH, a citizen of the United States of America, residing at Adrian, in the county of Bates and State of Missouri, have invented certain new and useful Improvements in Brushes for Bolting-Reels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to cleaning devices for bolting-reels; and it consists in the improvements hereinafter fully described and set forth.

In the accompanying drawings, forming part of this specification, Figure 1 is a longitudinal vertical sectional view of the bolting chest and reel having my cleaning device applied thereto. Fig. 2 is a sectional plan view of the bolting-chest, taken on the dotted lines $x\,x$, Fig. 1; and Fig. 3 is a central vertical sectional view showing the brush-connections and operating devices in different positions, parts of the entire device being omitted in order to disclose more clearly the features sought to be specially illustrated.

A refers to the chest, and B the bolting-reel, supported at each end by bearings in the ends of the chest $a\,a'$.

a^2 are horizontal timber-sections, arranged one above the other, and connected together by means of longitudinal bars in any suitable manner.

The lower portion of the bolting-chest may be tapered or contracted, as in well-known forms of other bolting-chests.

C refers to the shaft of the reel proper, which shaft has its ends bearing in the ends of the chest, and one of said ends projects beyond the chest and has keyed thereon a drive-pulley, b.

Upon shaft C is mounted the frame-work of a suitable cylindrical reel, the frame being surrounded by and having secured thereon a bolting-cloth after the well-known ways for securing bolting-cloths to other frames.

The cleaning device is secured to the under face of the top of the bolting-chest, and is located immediately above the reel.

By referring to the figures of the drawings it will be seen that on the end face of the top are secured four pairs of hangers, H H' H^2 H^3, the four hangers H H' being arranged in horizontal pairs near one end of the top and the other four being likewise arranged near the other end of the top. Each pair of hangers has bearing thereon a shaft, I I', the inner end of which shaft extends sufficiently toward the center of the chest as to permit the half-section J J' of a drum to be secured thereon. Part of said sections jointly form a drum, which is split or separated at the center. Each drum-section J J' is embraced by an annular radial flange, J^2, which is connected to its respective drum-section by means of brackets J^3, the horizontal portions of which bearing on the drum-sections being slotted to enable them with the flange to be adjusted longitudinally on the drum-section. The shafts I I' are retained permanently in the hangers by means of strips K. A belt, L, passes around the two drums presented by the several sections, and the said flanges on the sections are so adjusted with the belt that they will be of the width of the intermediate space and be properly a central guide therefor. The said belt is provided longitudinally with a slot, L', which is of such length that it extends from one drum to the other, and is so located that it registers with the split between the portions of said drums.

Secured on the outer face of the belt L, adjacent to one end of the slot L', near the outer edges thereof, is a pair of eyes, L^2, which form the bearing for the ends of the horizontal rods L^3. Arranged transversely across the belt is a rod, L', thereof, and the said rod L^3 has hung therefrom a slotted plate, L^4, in the slot L^5 of which plays a grooved roller, L^6, centrally perforated for the passage of the transverse horizontal portion L^7 of a yoke-bar having its side portion, L^8, bent downwardly and then inwardly to engage and suspend rectangular blocks L^9. Each of the said blocks L^9 has projecting from its side, near one end, a threaded bolt, L^{10}, designed to pass through the vertically-slotted portion L^{11} of the brush handle or

tongue L^{12}, on the free end of which is located a brush, L^{13}. The bolt and nut L^{14} clamp the vertical slotted portion against the side of the rectangular block. It will be noted that the brushes of the respective blocks L^9 L^9 extend in different directions, so that as the reel revolves there will be no liability of both brushes acting on the same circumferential surface, a spiral brushing action being secured instead. Each block L^9 has two perforations extending longitudinally through it, the said perforations being arranged one above the other, and through these perforations pass guide-wires L^{15}, which are secured at each end to bolts L^{16} and the horizontal plate L^{17}. It will be noted that L^{17} carries four bolts, in order that the four guide-wires L^{15} of both blocks L^9 may be secured thereto.

M M refer to two vertical parallel rods, the ends of which are bent horizontally to pass through the head-section of the chest and engaging nuts on the outer side of said head, by means of which said rods are retained rigidly in position. Horizontal loops or eyes M′ extend rearwardly from the head-plate L^{17} and embraces the vertical portions of the rods M, in order that the said plate L^{17} may have a vertical slide movement upon said rods. By vertically moving said plate L^{17} upon said rods, and passing a horizontal rod through one of the series of perforations M^2 formed in said rods, the plate L^{17} may be supported at any desired position on said rods. The plate L^{17}, arranged at the tail of the chest, is in all respects similar to the plate L^{17} located at the head. The tail-plate, however, instead of being connected to vertical rods M, is provided with a horizontal extended grooved rod, N, which passes through the elongated vertical slot formed in the vertical plate N′, which is secured at its upper and lower ends to the outer face of the upper and middle timbers, *a a′*, of the tail of the chest, and the projecting threaded portion of said rod is designed to be engaged by a hand-winch, N^2, adapted to clamp the rod into position at any point of the vertical slot in the plate N′. The outer end of the shaft I′, located near the tail of the chest, is provided with a bevel gear-wheel, O, meshing with a second gear-wheel, O′, arranged at right angles thereto on the end of the shaft O^2, suitably suspended by depending and horizontal hangers secured to the end side of the chest; and the other end of said shaft O^2 projects sufficiently beyond the end plates of the tail of the chest to carry a band-pulley, O^4, which is belted with a band-pulley, *b*, on the end of the roller-shaft.

In operation the drums composed of the sections J J′ are driven from the reel-shaft, so as to continuously rotate the belt. As illustrated in Fig. 2, if the belt be rotated in the direction indicated by the arrow, the rod L^3 will exert a traction upon the slotted plate L^4, and thereby, by reason of the pulley and yoke connection, pull the blocks and their brushes in the same direction. Now, when the pin L^3 passes around the tail-drum to the end of said belt, the plate L^4 dives down with said pin into the split portion of the ring. As the belt continues to move along with the pin L^3 the plate L^4 drops downward beneath the belt, causing the roller L^6 to occupy the other end of the slot L^5, and continues to move along, carrying the brushes in the opposite direction, until the other pulley or drum is reached, at which point the motion of the brushes ceases by reason of the pin L^3 having run to the end of the motion in that direction, after which it passes around said drum and at the same time moves to the other end of the slotted plate L^4 and carries the same along in the opposite direction, in the manner described.

In Fig. 3 the link is represented in dotted and full lines in two different positions when it reaches the head drum. By dotted lines it is represented before the pin L^3 passes to the upper side of the head drum, and the full lines show the position of said link after the pin has so passed to the upper side of said drum.

From the foregoing it will be apparent that the operation of the device is such that the meshes of the cloth of the screen are at all times preserved in the free and open condition by the action of the brushes traveling back and forth upon its surface. Furthermore, the location of the brushes is such that they will in no way interfere with the free passage of the flour through the cloth of the outer reel.

I do not herein claim anything but such features as appertain to the brush device and accessories for effecting its adjustment and reciprocation relatively to the reel. While I have represented the form of reel specifically described and claimed in my application for Patent, Serial No. 176,201, filed September 4, 1885, I desire it distinctly understood that the invention herein sought to be covered relates to the said brush device and its adjusting and actuating devices.

I claim—

1. The combination, with a rotary bolting-reel, of wires L^{15}, block L^9 thereon, and an endless belt and connections for reciprocating said blocks on said wires, substantially as set forth.

2. The combination, with a rotary bolting-reel, of wires L^{15}, block L^9 thereon, a brush carried by said block and an endless belt and connections for reciprocating said block, plates L^{17}, to which said wires are connected, and devices for vertically adjusting said plates, substantially as set forth.

3. The combination of the drum-sections J J′, slotted belt L, pin L^3, slotted plate L^4, hung on said pin, wires L^{15} and brushes guided thereby and connected to said plate L^4, and devices, substantially as described, for reciprocating said brush on said wires, substantially as set forth.

4. The combination, with the guide-wires

L^{15}, blocks L^{9}, and bolts L^{10}, of brushes L^{13}, provided with slotted handles, bolts and nuts L^{14}, and devices, substantially as described, for reciprocating said blocks on said wires, substantially as set forth.

5. The combination, with endless belt L and drum-sections J J′, of flanges J^{2} and brackets J^{3}, adjustably securing said flanges on said drum-sections, and brush devices adapted to be reciprocated by said endless belt, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HUGH PATRICK CAVANAUGH.

Witnesses:
J. J. WOODS,
J. P. KINSLEY.