

(No Model.)

3 Sheets—Sheet 2.

W. B. BRADY.
NAILING MACHINE.

No. 597,097.

Patented Jan. 11, 1898.

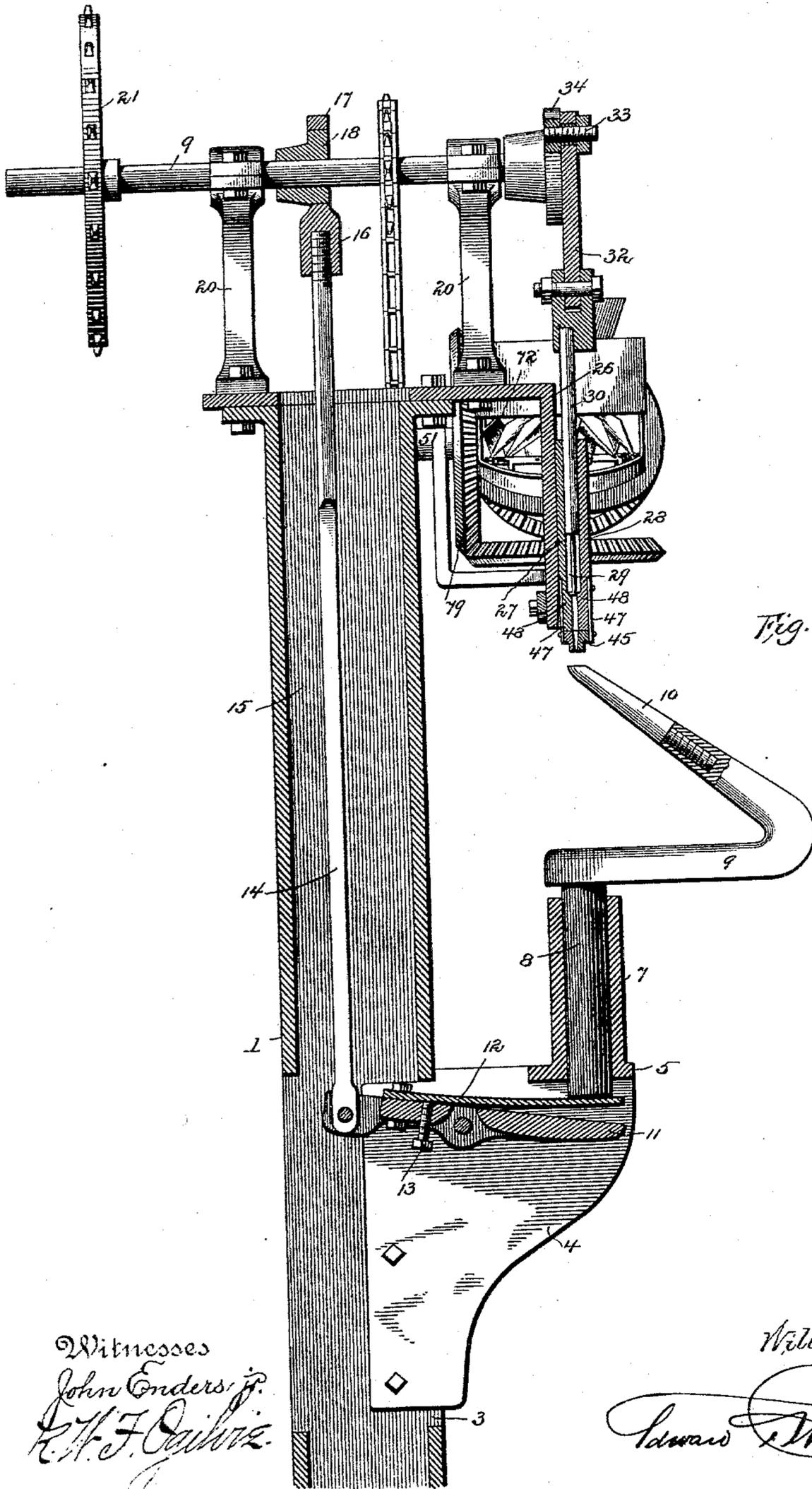


Fig. 2.

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R. H. F. Quinn

Inventor
William B. Brady.
Edward S. Moore, Attorney

(No Model.)

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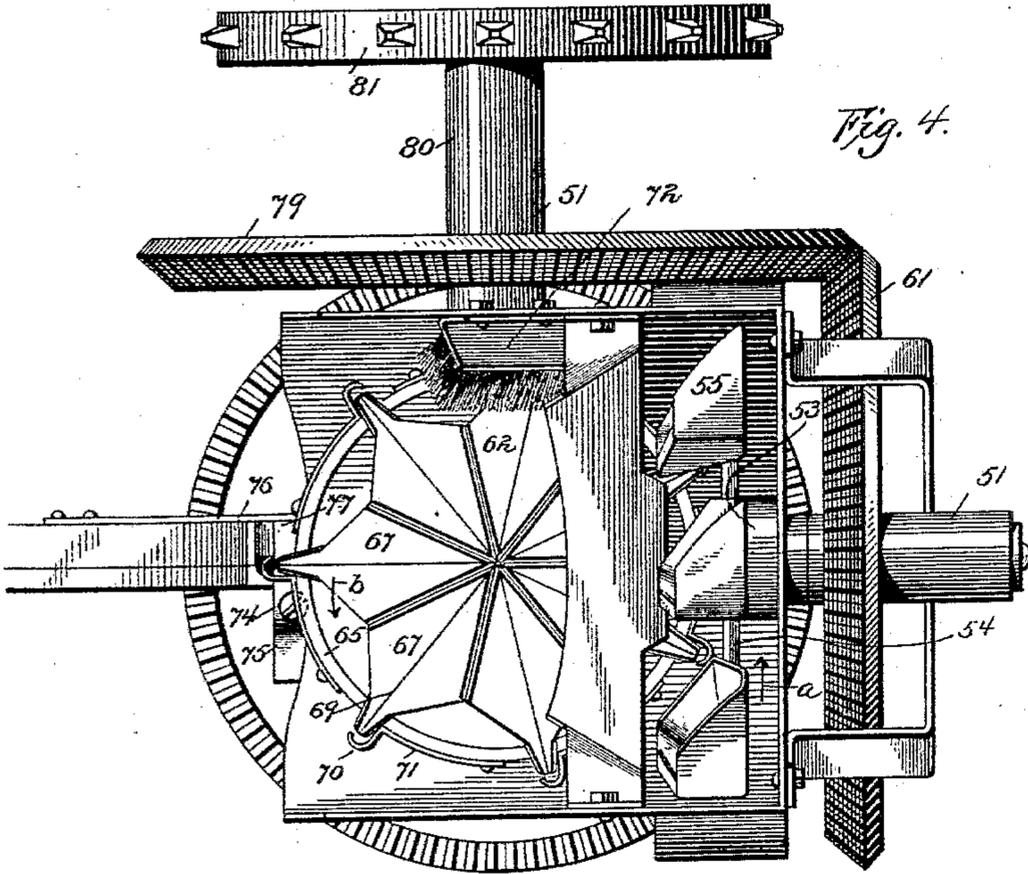


Fig. 4.

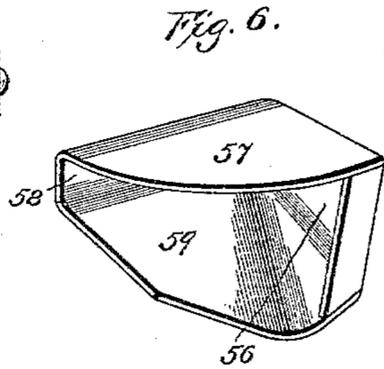


Fig. 6.

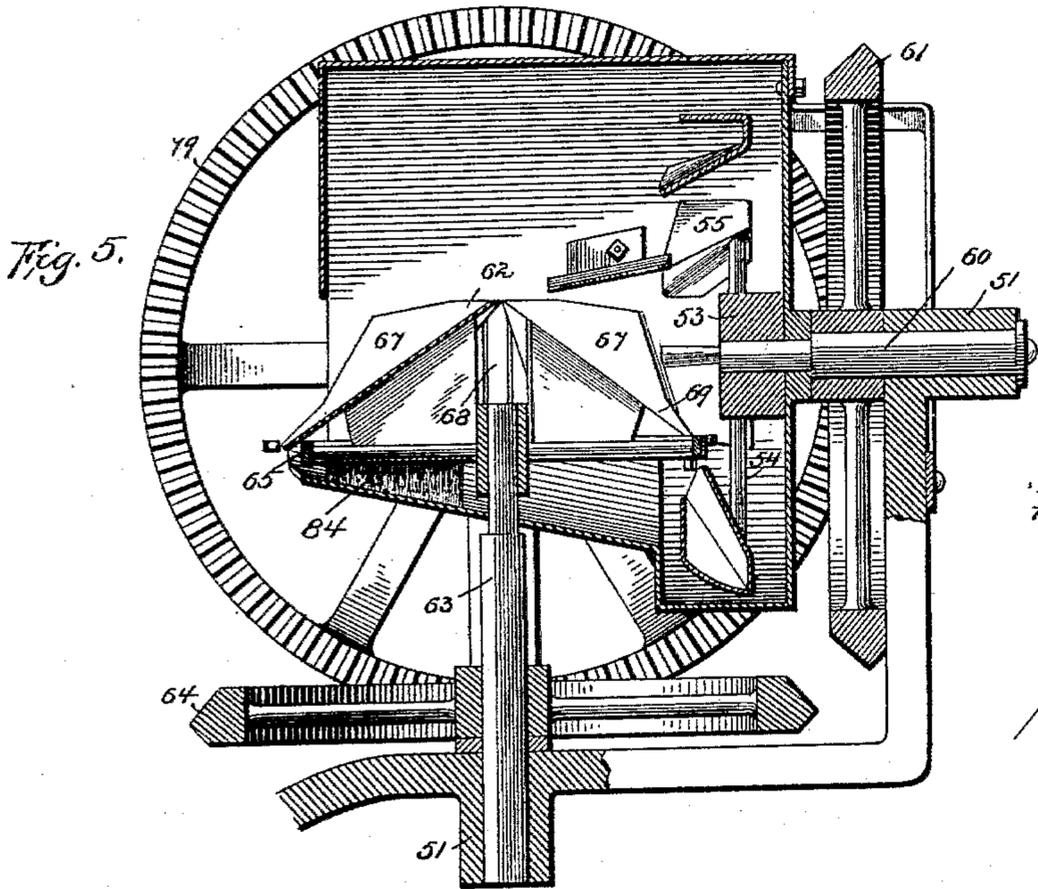


Fig. 5.

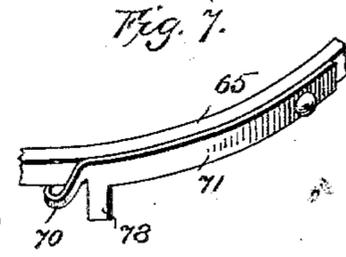


Fig. 7.

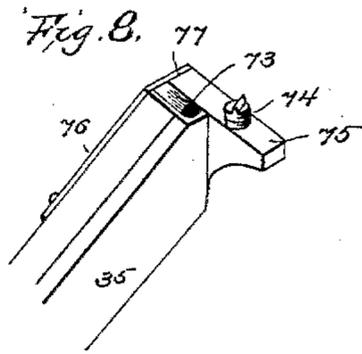


Fig. 8.

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UNITED STATES PATENT OFFICE.

WILLIAM B. BRADY, OF AUSTIN, TEXAS.

NAILING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 597,097, dated January 11, 1898.

Application filed September 12, 1896. Serial No. 605,599. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. BRADY, a citizen of the United States, residing at Austin, in the county of Travis and State of Texas, have invented certain new and useful Improvements in Nailing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to machinery for driving nails, and is adapted to automatically distribute and feed the nails to a predetermined point, where they are driven into the fabric to be nailed and, if so desired, clenched.

Before defining in the claims the matter I desire to protect by Letters Patent I will first fully describe the mechanical parts and the working thereof with the aid of the accompanying drawings, in which—

Figure 1 is a front elevation of the machine, showing the correlation of the various parts. Fig. 2 is a complete vertical section thereof upon the line 2-2. Fig. 3 is a detail face view of the nail feeding and driving device, the front plate being removed. Fig. 4 is a plan view of the nail-distributing device. Fig. 5 is a vertical section thereof. Figs. 6 and 7 are details. Fig. 8 is a detail perspective of the upper end of the nail feeding and driving device.

In all of the figures the same numeral indicates the same part.

1 is an upright metallic standard resting upon the base 2 and having in its front face the rectangular opening 3, into which are thrust the wings 4 of the bracket 5 till the projecting flange 6 is seated against the standard 1, the said wings then being bolted thereto.

Integral to the bracket 5 and projecting vertically therefrom is the hollow stud 7, within which rests the pintle 8 of the movable anvil 9, ending in the removable horn 10.

Pivoted within the bracket 5 is a lever 11, bolted to the upper face of which is a strong leaf-spring 12, adapted to support at its free end the pintle 8. A set-screw 13 in the lever 11 adjusts the tension of the spring 12. At the end of the lever 11 is pivotally secured the rod 14, traversing the well 15 of the standard 1 and secured by screw-threads into the sleeve 16 of the eccentric-ring 17, within which rotates the eccentric 18, secured to the shaft 19, journaled in the pedestals 20, se-

cured to the top of the standard 1. The shaft 19 is actuated by the sprocket-wheel 21, secured thereto, and engaged by a chain 22 to the sprocket-wheel 23, secured to counter-shaft 24, having power-pulley 25.

Depending from the top of the standard 1 and located above the horn 10 is a supporting-plate 26, to which is bolted the mechanism for feeding and driving the nails. This mechanism is contained within a shell comprising the registering half portions 27 and 28, the former of which is secured to the plate 26, as already indicated. In both the parts 27 and 28 is the vertical groove 29, in which is adapted to reciprocate the driving-bar 30, having at one end the punch or die 31 and journaled at its other end to the link 32, pivoted to the wrist-pin 33 of the wrist-wheel 34, secured to the shaft 19. Entering the groove 29, near its lower end, is the slanting channel 35 of the arms 36, integral with the half portions 27 and 28. This groove 35 is adapted to receive nails from a distributing mechanism and to feed the same beneath the die 31. A bead or beads 37 engage the nails just below the head and preserve them in a proper upright position. In the side of the portion 28 is a sight-slot 38, by which the interior may be viewed.

Pivotally secured in the slot 39 of the portion 27 are levers 40 and 41, having at their lower ends the fingers 42, which by their successive movement separate nail from nail as they slide down the channel 35 and pass the same to the proper position beneath the die 31. The said levers are actuated by a friction-wheel 43 of the lug 43^a of the bar 30 coming into contact with the said levers and actuating the spring 43^b, retracting the same. The recess 44, also in said bar 30, permits the retraction of the lever 41 that its finger 42 may support the column of nails while the separating is taking place.

At the bottom of the groove 29 is located the sectional jaws 45, the groove through which contracts rapidly at the mouth 46, at which point it approximates the size of the nail-body. The jaws 45 are secured in place by a strap-spring 47, secured in the recess 48 of the portions 27 and 28. Thus when in operation the die will thrust the nail through the jaws, spreading them when the head passes through. In this manner the tendency of the nail to buckle is avoided.

I will now describe the mechanism of the distributor by which the nails are selected and placed into the feeding-channel 35 in a proper position—that is, with the head up and the point down.

Secured by bolts to the plate 26 is a laterally-extending arm 49, supporting a rectangular casing 50, and being provided with a series of journal-bearings 51, the use of which will later be described.

Within the casing and at the bottom thereof is a well 52, with a floor curved to be concentric with a scooping or elevating wheel 53, rotating therein. The wheel 53 comprises the radial arms 54, to which are secured the buckets 55, having a bottom 56, a side 57, an end 58, and a flaring side 59, such that when the wheel rotates in the direction of the arrow *a* the bucket 55 will scoop nails from the well 52 and raise them to the topmost point of revolution, when the side 59 becomes a delivery-plane and throws the nails out upon a separating-wheel, to be next described. The wheel 53 is mounted upon the journal 60, rotating in a bearing 51 and actuated by a gear-wheel 61.

The before-mentioned separating-wheel 62 rotates in a horizontal plane, being secured to a shaft 63, rotating in a bearing 51 and actuated by a gear-wheel 64. The said wheel 62 comprises a rim 65, upon which rests a series of radial flaring troughs 67, the other ends of which rest upon a common supporting-hub 68 and which are raised somewhat above the plane of the rim. The wheel 62 is so located in its juxtaposition to the wheel 53 that the latter will land its load of nails upon the troughs of wheel 62 at the nearest portion only. The nails will then slide down the said troughs, and one, coming point first and being well in the vertex 69 of said trough, will be caught at its head by a hook 70 of the spring 71, secured to the rim 65, and maintained in a pendent position thereby, as the wheel continues to rotate in the direction of the arrow *b*. All nails that have not already fallen from off the troughs 67 will be swept back in the well by the comb 72, secured to the casing 50. The depending nail, as described, is now carried about till it is located just above the opening 73 of the feeding-channel 35. At this point a diagonal adjustable lug 74, supported by the arm 75, pivoted to the end of said channel and held into an operative position by the spring 76, engaging its flat end 77, will strike or engage a lug 78 of the spring 71, thus separating the hook 70 from its proximity to the rim 65 and cast the nail point first into the said channel-opening 73. The continuous movement of the wheels 53 and 62 is accomplished by the engagement of the gear-wheels 61 and 64 by a gear-wheel 79, mounted upon a shaft 80, journaled in a bearing 51 and actuated by the sprocket-wheel 81, connected by a chain 82 to the sprocket-wheel 83, mounted on the shaft 19.

To prevent the wastage or overflow of nails from the well 52, several brushes 84 are secured to the lower face of the wheel 62, being adapted to sweep back into the well.

From the description already given it will be readily understood that the nails are fed one at a time to the position within the groove 29 and between the jaws 45, whence they are forced into the parts to be nailed, which are supported by the horn 10 by the reciprocation of the die 31. The spring 12, giving slightly, will permit the nail to pass through the body to be nailed. The action of the lever 11, raising the horn 10 with power, clenches the nail.

Having described both my machine and its operation, what I claim is—

1. In a nailing-machine, the combination of a driving mechanism, a channel for delivering nails thereto, the pivoted levers with separating-fingers and means for actuating the same, an anvil, means for lifting the same and the anvil-cushion, and mechanism for distributing nails to the channel comprising a nail-well, the vertical elevating-wheel and the horizontal separating-wheel with means for actuating the said wheels, substantially as described.

2. In a nail-driving machine, a mechanism for distributing nails from a receptacle to a feed-channel comprising an elevating bucket-wheel, a horizontal wheel receiving nails therefrom, the said wheel having radially-descending nail-troughs, nail-holding hooks at the ends thereof, and means for releasing said nails at a predetermined point, combined with means for rotating both of said wheels, substantially as and for the purpose described.

3. In a nail-driving machine, a mechanism for distributing nails from a receptacle to the feed-channel, comprising means for throwing the nails upon the distributing-wheel having a series of descending radial troughs, nail-holding hooks secured to springs and held thereby to the ends of said troughs, means for rotating said wheel, combined with a tripping-lug adapted to open said nail-holding hooks that the nail may be dropped in the channel, substantially as described.

4. In a nailing-machine, a driving mechanism, a mechanism for feeding nails thereto, comprising the elevating and distributing wheels and the channel, combined with a tripping-lug for said distributing-wheel, comprising a pivoted arm, a spring maintaining the horizontal position thereof and a projecting screw set therein having a flattened head, for the purpose and substantially as described.

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

WILLIAM B. BRADY.

Witnesses:

WILLIAM W. DEANE,
H. M. STERLING.