

**No. 622,661.**

**Patented Apr. 11, 1899.**

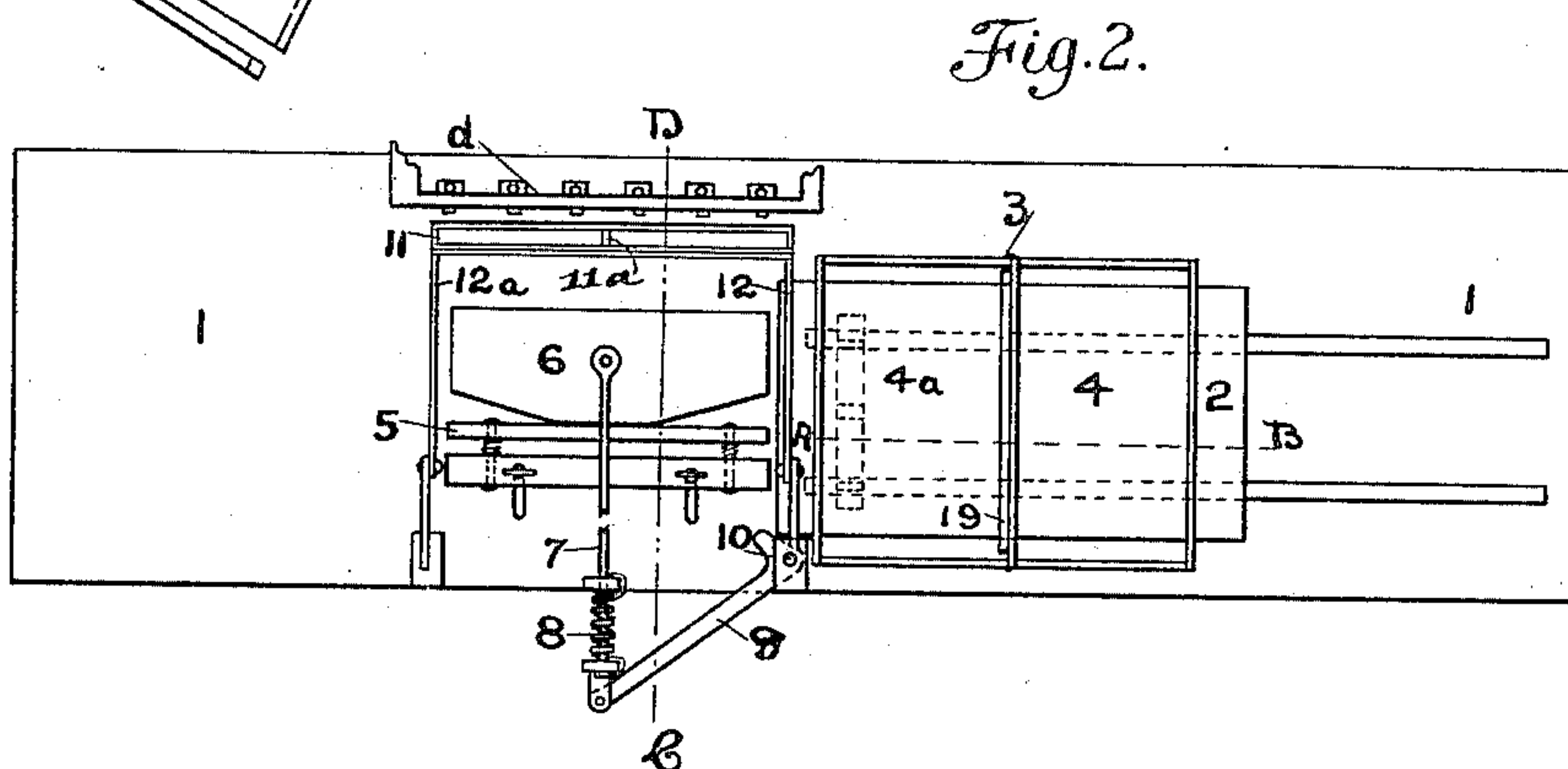
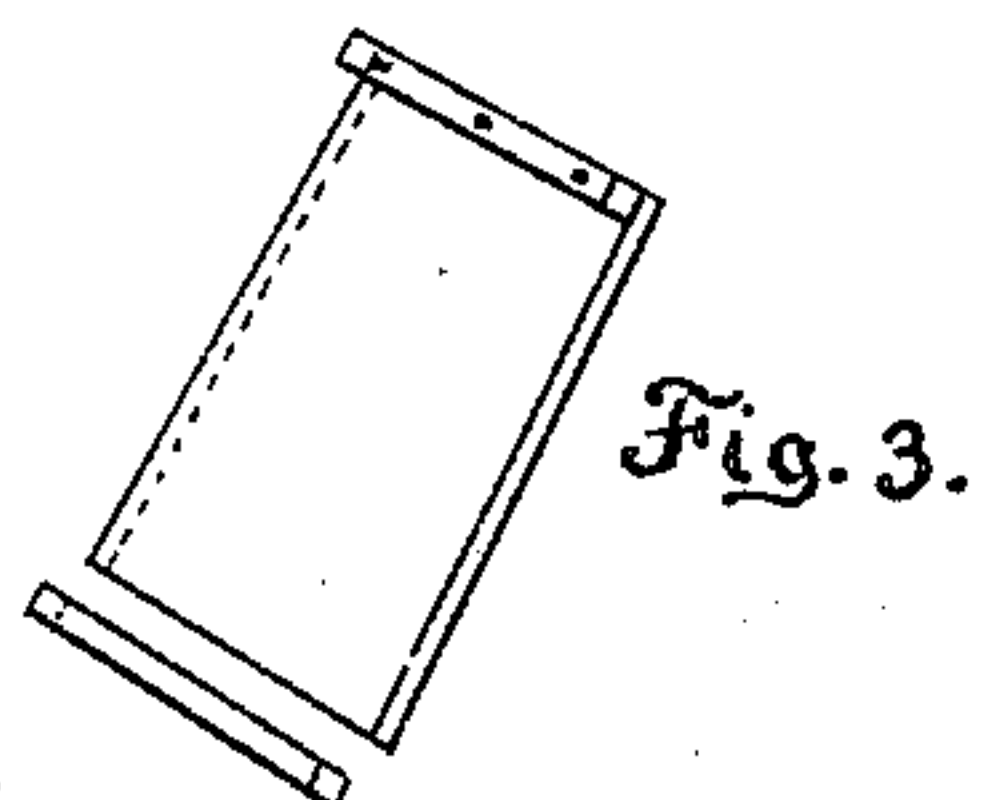
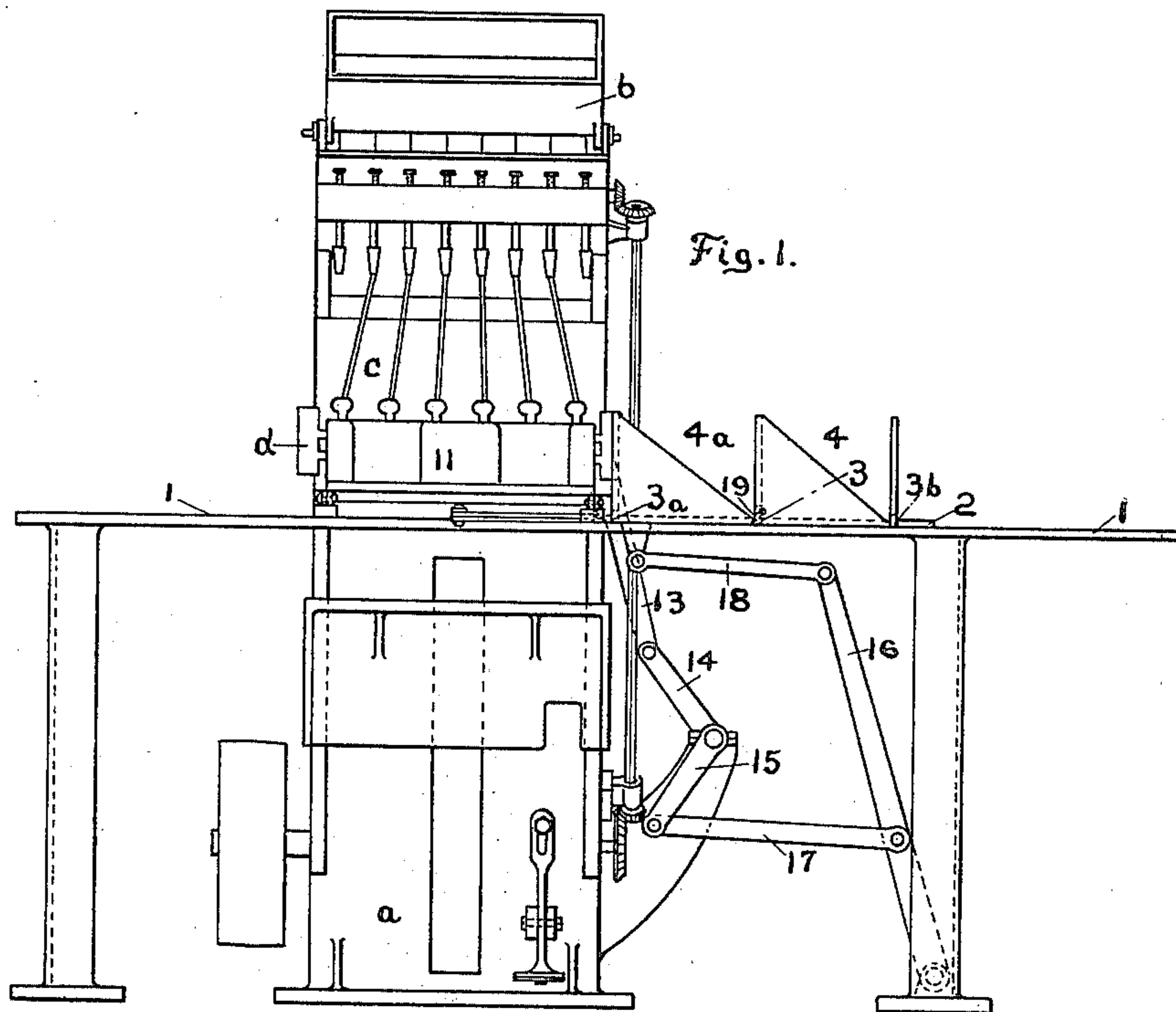
**W. R. BOSS**

# AUTOMATIC FEEDING DEVICE FOR NAILING MACHINES.

(Application filed Dec. 15, 1897.)

(No Model.)

**2 Sheets—Sheet 1.**



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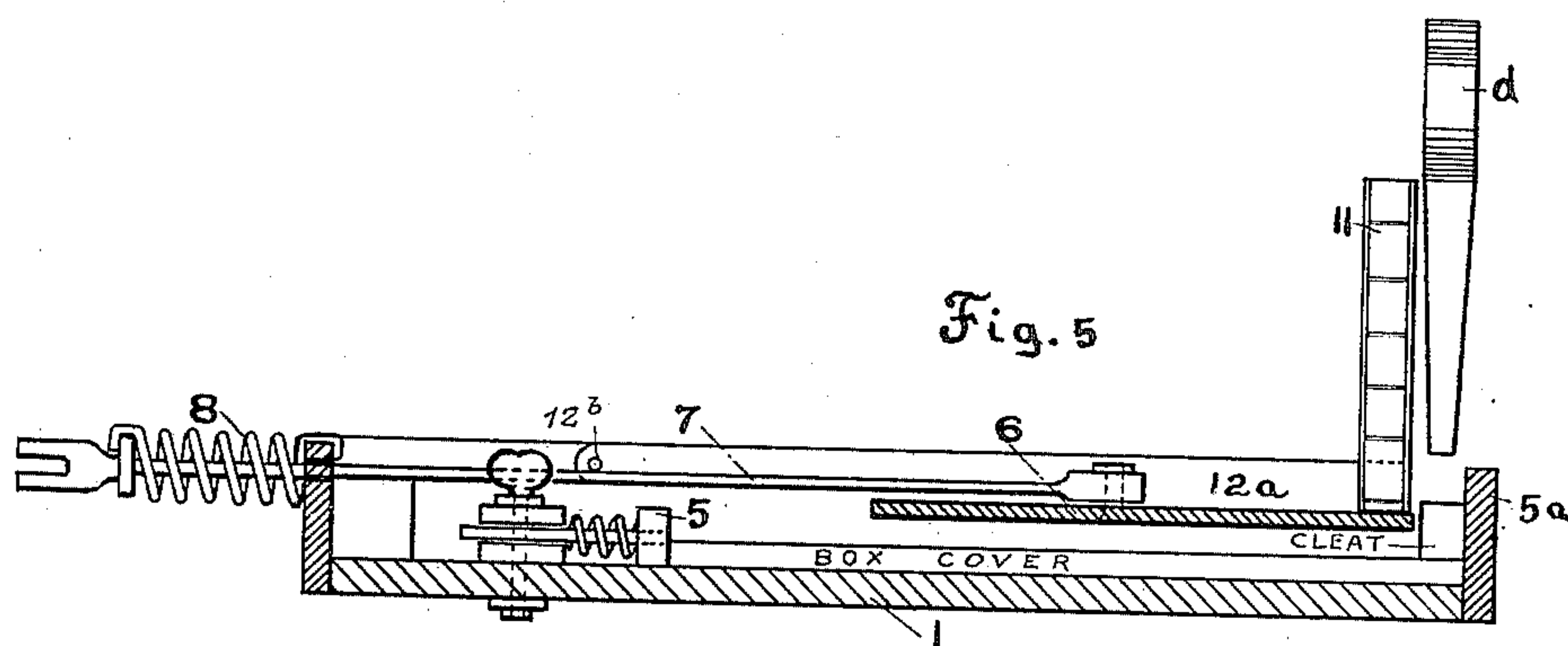
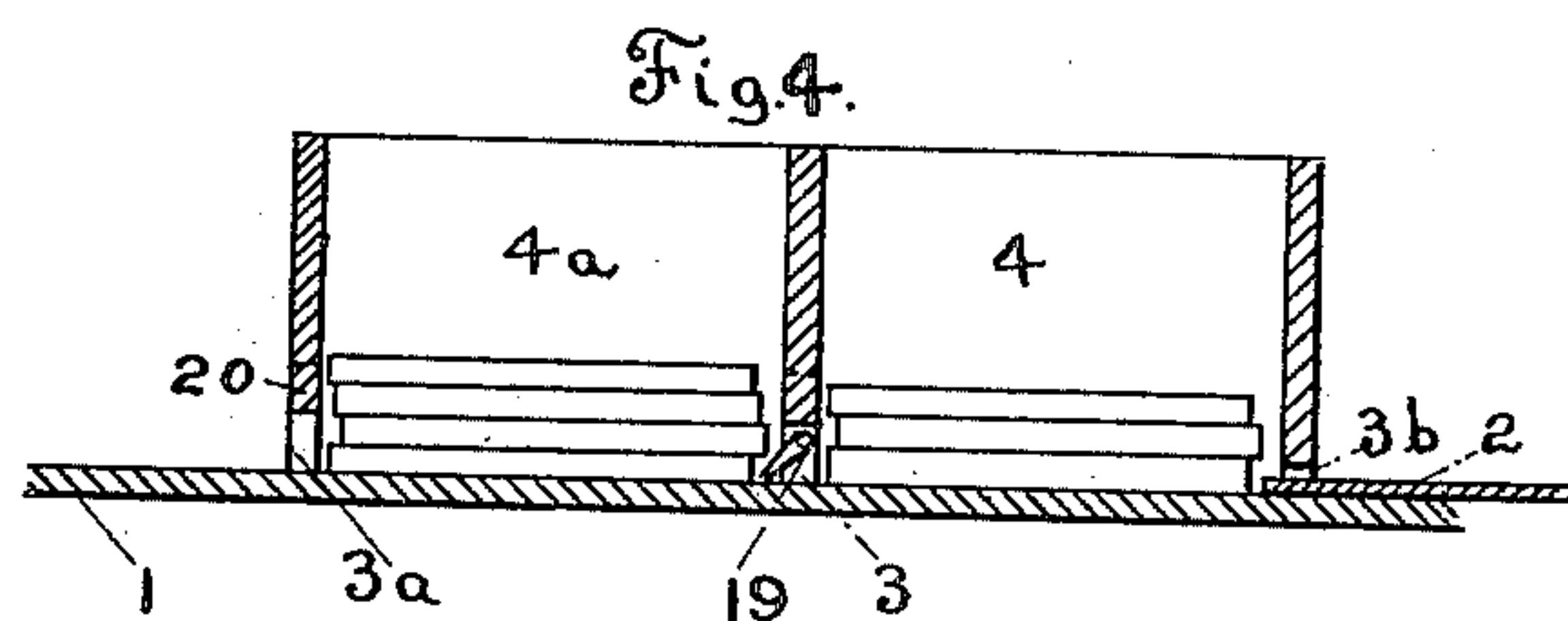
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AUTOMATIC FEEDING DEVICE FOR NAILING MACHINES.

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(No Model.)

2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

WILLIAM R. BOSS, OF WEST BAY CITY, MICHIGAN, ASSIGNOR TO THE  
HANDY BROTHERS, OF SAME PLACE.

## AUTOMATIC FEEDING DEVICE FOR NAILING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 622,661, dated April 11, 1899.

Application filed December 15, 1897. Serial No. 662,063. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM R. BOSS, a citizen of the United States, and a resident of West Bay City, in the county of Bay and State of Michigan, have invented a new and useful Improvement in Automatic Feeding Devices for Nailing-Machines, of which the following is a specification.

My improvements relate to machines for nailing boxes; and the invention consists in certain novel features in a mechanism for automatically feeding, assembling, nailing, and discharging the material from the nailing-machine.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters and figures of reference indicate corresponding parts in all the views.

In the drawings, Figure 1 is a front elevation of a nailing-machine with my improvements attached. Fig. 2 is a plan view of the feeding-table. Fig. 3 is a box-cover with one cleat nailed on, the other cleat being shown in position for assembling. Fig. 4 is a longitudinal section of a part of the feeding-table, taken on the line A B of Fig. 2. Fig. 5 is a transverse section of the feeding-table, taken on the line C D of Fig. 2.

The nailing-machine shown in front elevation in Fig. 1 consists of an upright frame *a*, carrying an oscillating nail-hopper *b* and nail-feeding pipes *c*, which guide the nails to nail-holders supplying the vertically-reciprocating driving-head of the machine. In Fig. 1 the driving-head is shown as partly hidden behind the cleat-feeding part of my improvement, described in detail later.

To accomplish my purpose of automatically feeding box covers and cleats to the machine, assembling, nailing, and discharging them, I employ the mechanism described herein.

A feeding-table 1, over which the covers pass on the way to the machine, is placed below the driving-head, as shown in Figs. 1 and 2. A plate 2 for feeding the covers to the machine is reciprocated by lever attachment to the driving-head of the machine and slides longitudinally over one end of the feeding-table. In its movement back and forth the

feeding-plate passes through horizontal openings 3, 3<sup>a</sup>, and 3<sup>b</sup> in the lower ends of suitable boxes or hoppers 4 and 4<sup>a</sup>, which hold a supply of covers.

In the form of feeding mechanism shown provision is made for feeding and nailing the cleats to two covers at one operation. The covers are piled in the hoppers 4 and 4<sup>a</sup>, and at each forward movement of the sliding plate 2 the bottom covers of each pile are pushed through the slots 3<sup>a</sup> and 3 to position in front of the driving-head. A suitable device to prevent the covers catching and insuring a positive feed is placed between the hoppers. This device will be described further. As the covers are pushed along the feeding-table they pass between the driving-head of the machine and an adjustable spring-pressed guide 5, attached to the feed-table, which normally presses them against a stop-plate 5<sup>a</sup>, back of the driving-head, and holds them while being nailed. The guide 5 may be somewhat flared at the end where it receives the work.

A presser-plate 6, having its edge parallel to the driving-head, is mounted at a height above the table sufficient to allow the covers to pass between and has a reciprocating motion toward and from the stop-plate for holding the cleats in position on the cover and against the stop-plate while being nailed.

The plate 6 derives its motion through a rod 7, normally drawn toward the stop-plate, preferably by a spring 8 or other suitable means, as by a cord and weight. The rod 7 is reciprocated by a lever 9, pivoted at one end to the rod and at the other end to the feeding-table. The inner end of lever 9 has a projecting cam or wiper 10 adapted to be pushed back by the forward stroke of the feeding-plate 2, thus drawing back the cleat-feeding plate 6.

The cleats are stored in a case or hopper 11, preferably rectangular in shape, open at the top and bottom, and of sufficient thickness to admit a single vertical row of cleats. In the form shown the hopper is adapted for feeding two cleats simultaneously. A partition 11<sup>a</sup>, Fig. 2, is provided across the hopper to separate the two rows of cleats. The cleat-hopper is fixed to two rods 12 and 12<sup>a</sup>, hinged



at their outer ends 12<sup>b</sup>, thus enabling the hopper to be raised clear of the driving-head of the machine when feeding the cleats by hand.

The operation of the machine in detail is as follows: Box-covers to be nailed are laid in the 5  
hoppers 4 and 4<sup>a</sup> and the cleats are laid horizontally in the hopper 11. As the driving-head rises the link 13, pivoted thereto, raises the lever 14, and the feeding-plate 2 is moved 10  
forward by the intermediate levers 15 and 16 and links 17 and 18. In its forward movement through the slots 3<sup>b</sup>, 3, and 3<sup>a</sup> plate 2 pushes the bottom covers forward to position in front of the driving-head. To prevent the covers 15  
becoming blocked in the hoppers, as might occur when the cover at the bottom of 4<sup>a</sup> is slightly thinner than that in 4, I provide a horizontally-hinged plate 19 across the slot 3, arranged to rise when the cover from 4 is pushed 20  
forward, and by engaging its edge in the end of the second cover in 4<sup>a</sup> to raise the latter, so as to allow the cover from 4 to pass freely through 4<sup>a</sup>, pushing the bottom cover of 4<sup>a</sup> before it. As the covers pass in front of the 25  
nailing-head they are pressed endwise by the spring-operated guide 5, and are thereby securely held against the stop-plate. For the sake of clearness in the drawings the guide 5 is shown in a position nearer the driving-head 30  
than it occupies in actual practice. The cleats are fed down from the hopper 11 simultaneously with the placing of the covers in the following manner: The plate 6 normally projects under the cleat-hopper 11, forming a removable bottom for the hopper and being held 35  
in place by the spring 8. As the covers move forward they pass under the plate 6, and when near the end of their travel plate 6 is drawn back by the tripping of the cam 10 on the end 40  
of the plate 2. The bottom cleats in hopper 11 then drop down upon their respective covers. The vertical distance between the top of the box-cover and the bottom of the cleat-hopper is such as to prevent more than one cleat from 45  
dropping out at a time. When the driving-head has reached the top of its stroke, it begins to descend, and by reverse motion of the levers draws the table 2 back, releasing the cam 10 and allowing plate 6 to spring 50  
forward, pushing the cleats against the stop-plate and holding them securely in position while the driving-head descends and nails them to the covers. The covers with cleats nailed thereto are discharged along the table 55  
by new covers advancing, as above described.

For feeding covers to the machine that have cleats already nailed to one end, it being desired to nail cleats to the other end, I provide notches or passages 20 through the partitions between the hoppers, through which 60  
the cleats may pass.

It is seen that by means of the mechanism above described I am enabled to produce an automatic feeding attachment for nailing-machines that is simple, easily attached to 65  
the machine and not liable to get out of order.

Although the device herein described is adapted for feeding two covers and cleats simultaneously, the spirit of my invention would still be preserved if it were adapted to 70  
feed only a single cleat and cover, using only one hopper for cleats and one for covers. It is also evident that without departing from my invention the feeding-table may be placed in any other suitable position, as in front of 75  
the machine, thus feeding the cleats forward instead of transversely, as described.

What I claim as my invention, and desire to secure by Letters Patent, is as follows:

1. In an automatic feed for nailing-machines, the combination with a feeding-table 80  
of a cover-feeding plate sliding thereon means for reciprocating it from and in unison with the driving-head of the machine; hoppers for containing covers above said reciprocating 85  
plate adapted to allow the bottom cover to be removed by said plate; hoppers for containing cleats located in front of the driving-head; a cleat-feeding plate operated by contact with 90  
the cover-feeding plate to automatically release the bottom cleat and holding it to the end of the cover while being nailed, substantially as and for the purpose described.

2. In an automatic feed for nailing-machines the combination with the herein-described means for feeding the covers to the 95  
driving-head and for holding them while being nailed, of a cleat-containing hopper, open at the bottom; a cleat-feeding plate to slide underneath said hopper for releasing and 100  
feeding the bottom cleat therefrom; and the means for operating said plate intermittently from the cover-feeding plate, substantially as and for the purpose described.

3. In an automatic feed for nailing-machines, the combination with the feeding-table 105  
1 of hoppers mounted thereon having transverse slits at their lower ends, the sliding plate 2 means for reciprocating it in unison with the driving-head, the hinged catch 110  
19, cleat-containing hopper 11, feeding-plate 6, normally held under the hopper and drawn back by the lever 9 when plate 2 presses the cam or projection 10 on said lever, together with the spring-pressed guide 5, substantially 115  
as and for the purpose described.

In testimony whereof I sign this specification in the presence of two witnesses.

WILLIAM R. BOSS.

Witnesses:

THOS. L. HANDY,  
GEO. B. WILLCOX.