

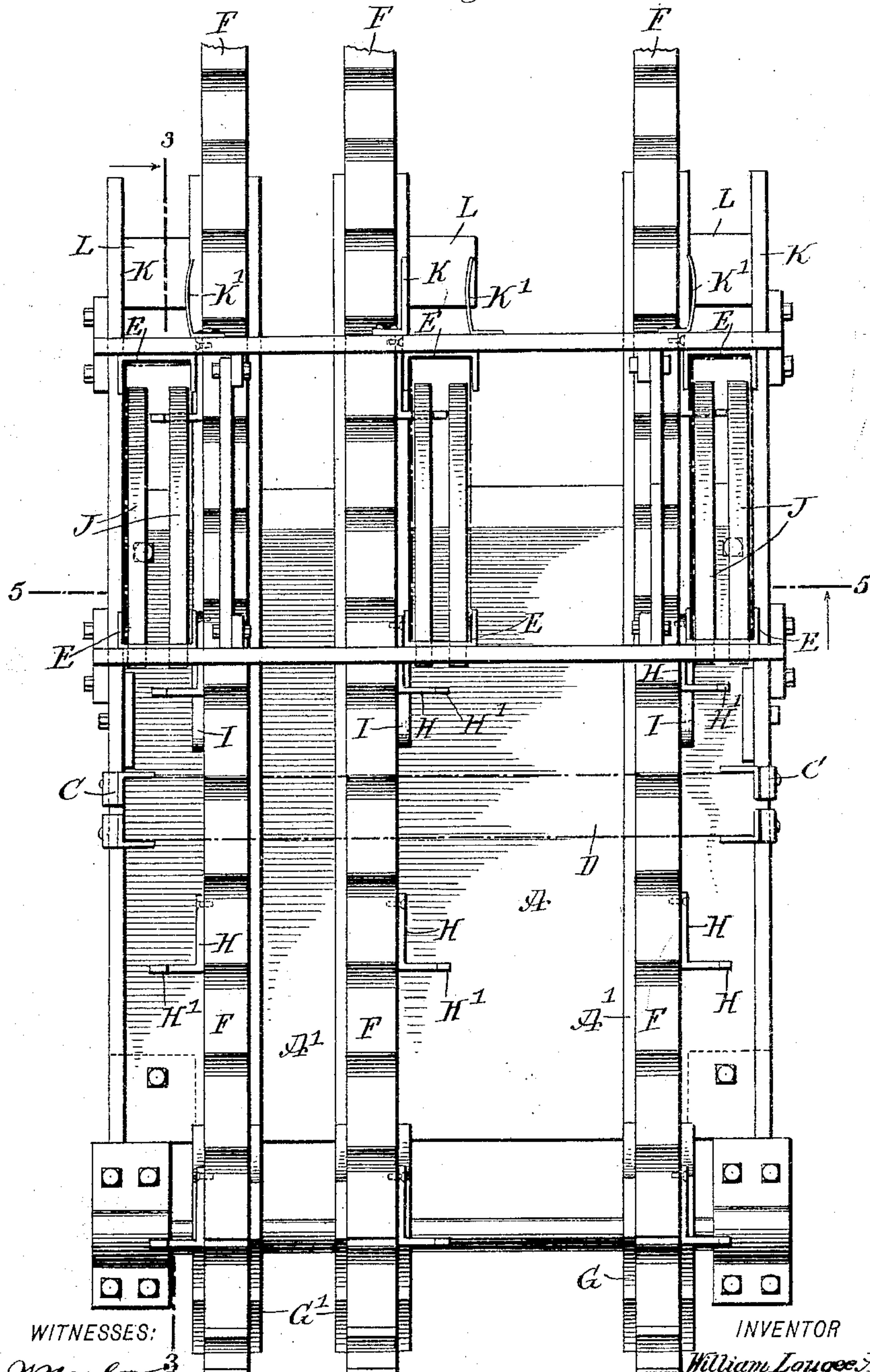
No. 887,731.

PATENTED MAY 12, 1908.

W. L. AINSLIE.
AUTOMATIC ASSEMBLER.
APPLICATION FILED SEPT. 28, 1905.

4 SHEETS—SHEET 1.

Fig. 1.



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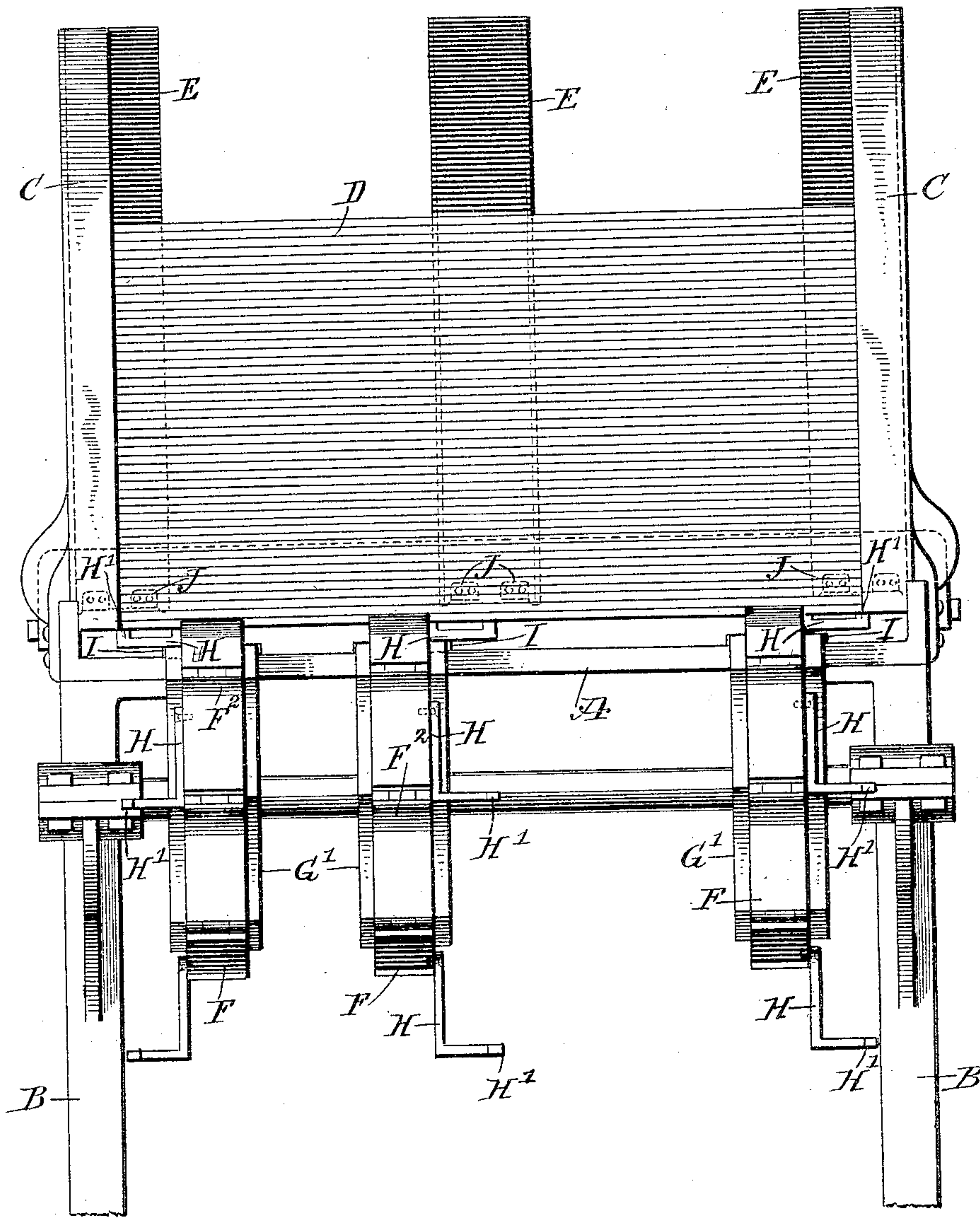
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4 SHEETS—SHEET 2.

Fig. 2.



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4 SHEETS—SHEET 3.

Fig. 3.

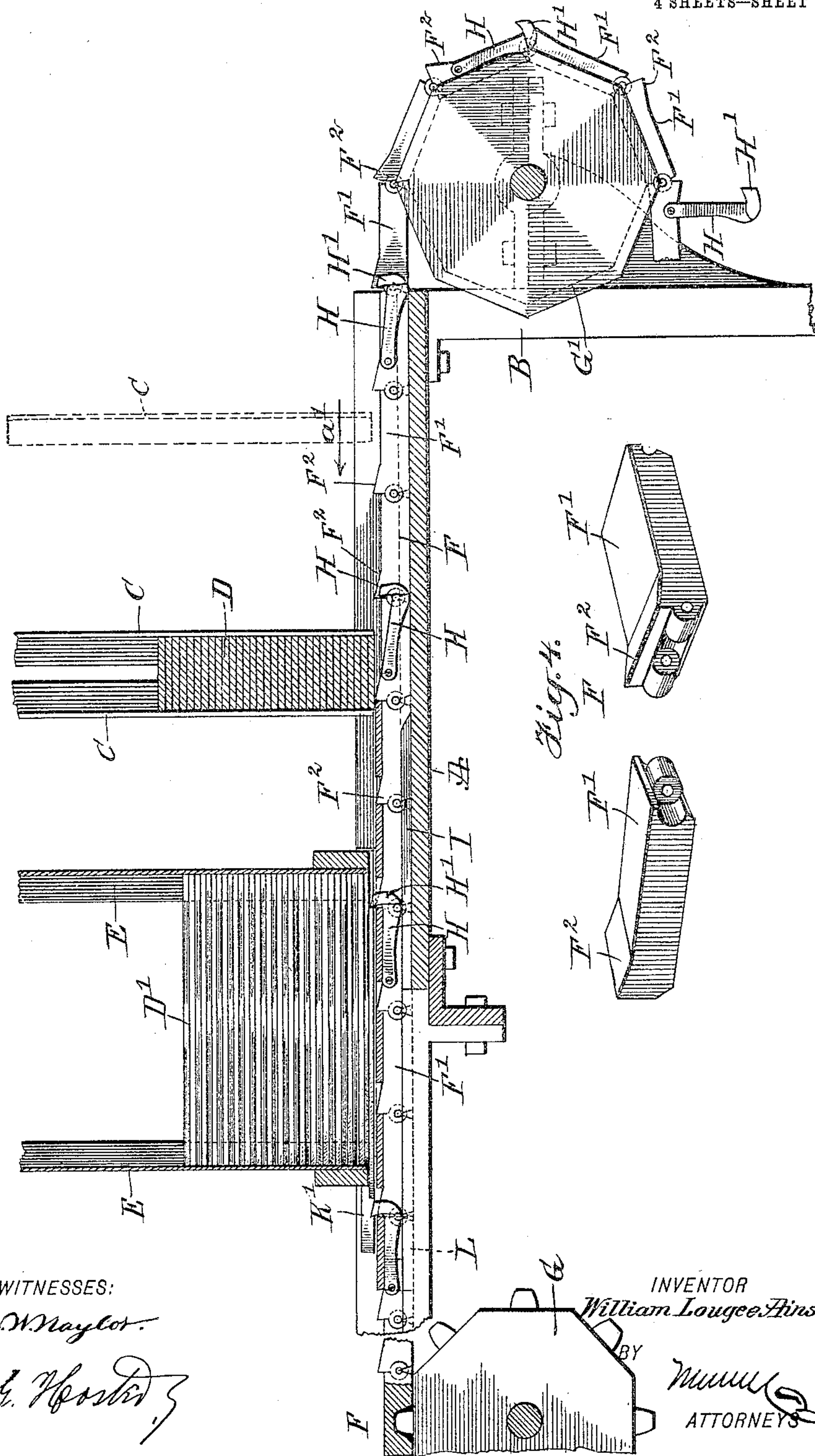
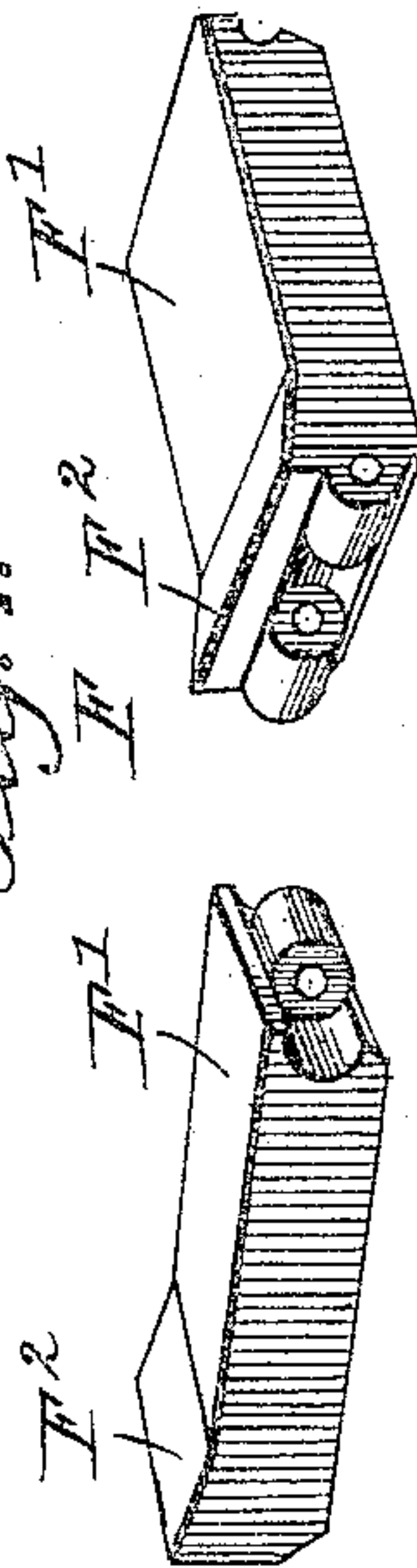


Fig. 4.



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4 SHEETS—SHEET 4.

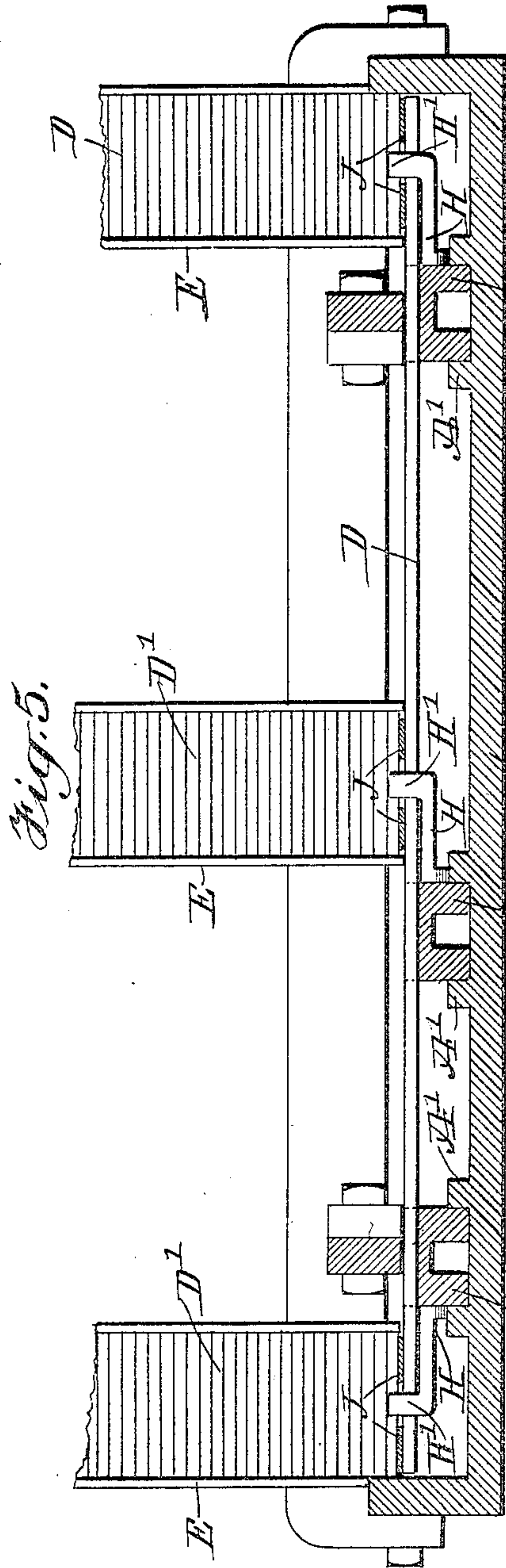
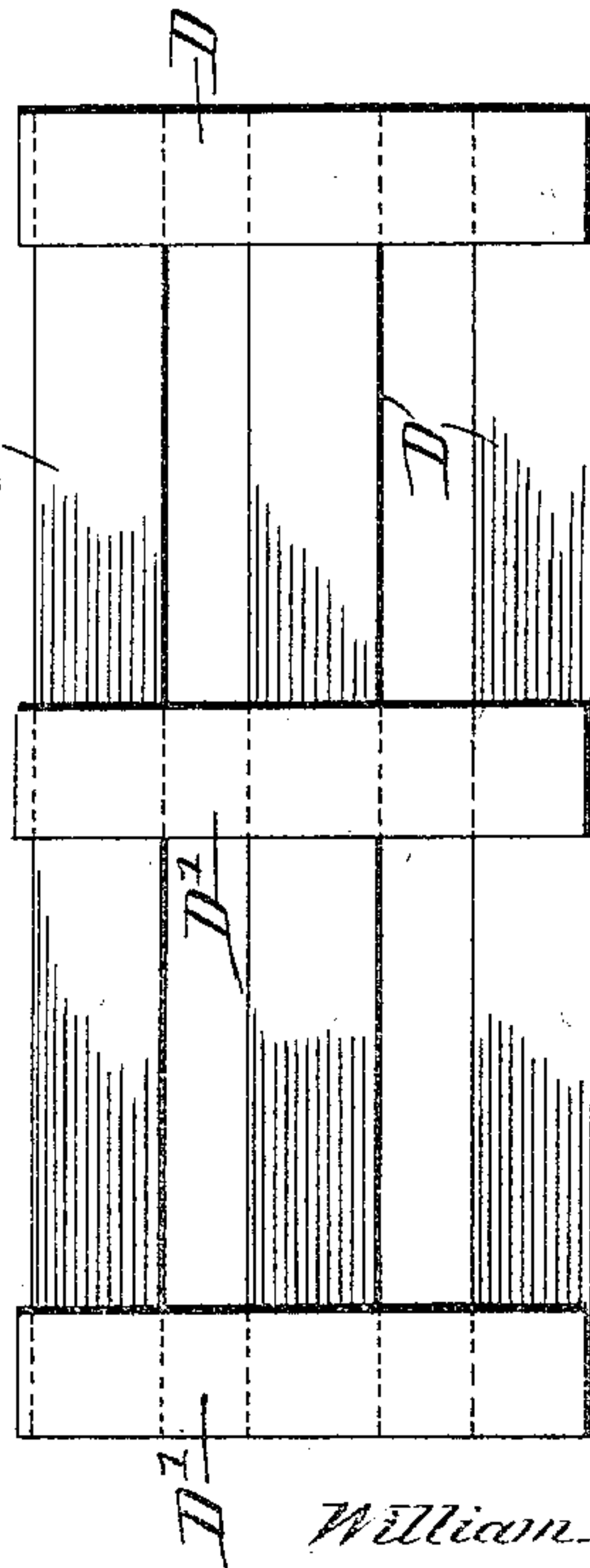
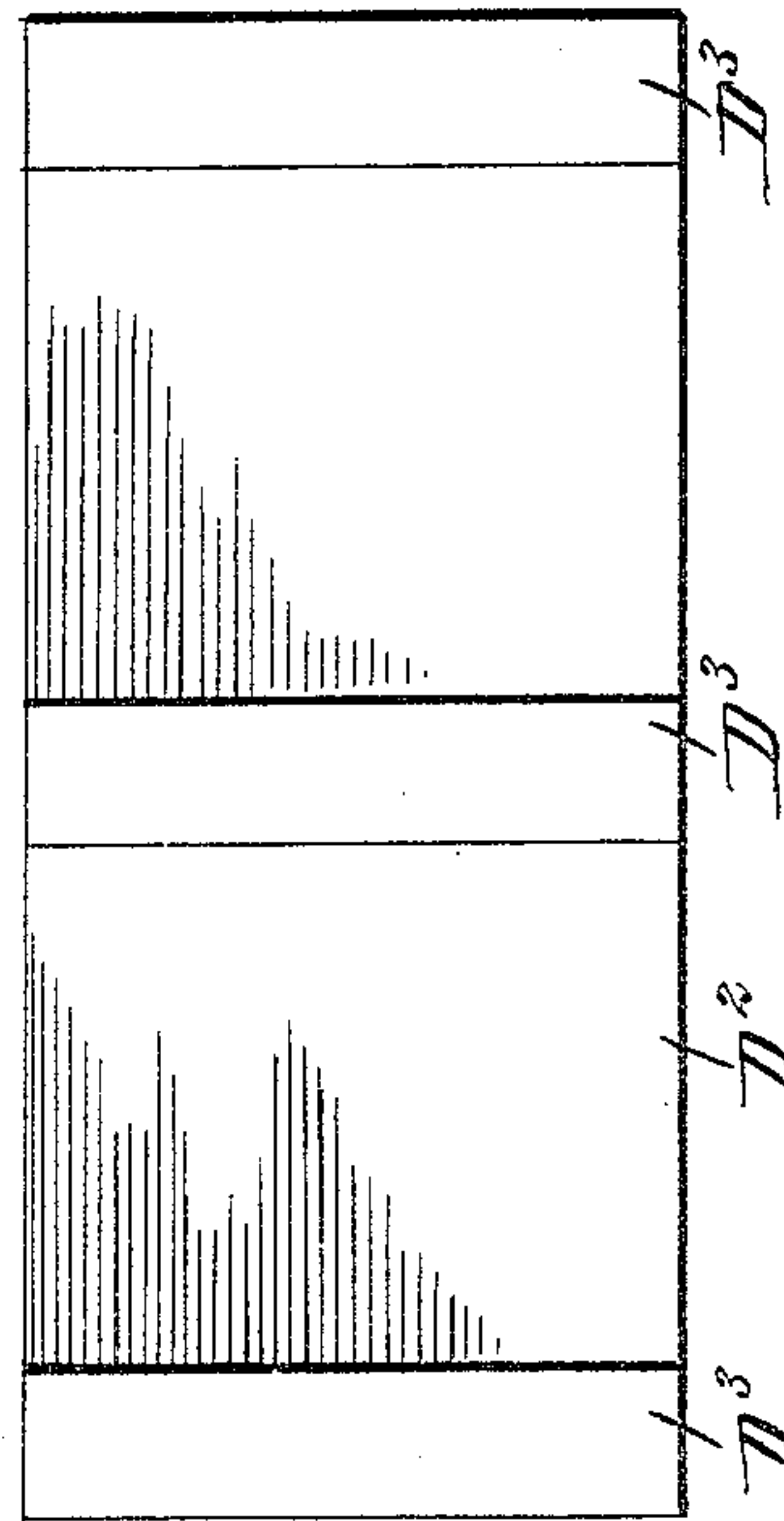


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM LOUGEE AINSLIE, OF JACKSONVILLE, FLORIDA, ASSIGNOR OF ONE-HALF TO CUMMER LUMBER COMPANY, OF JACKSONVILLE, FLORIDA.

AUTOMATIC ASSEMBLER.

No. 887,731.

Specification of Letters Patent.

Patented May 12, 1908.

Application filed September 23, 1905. Serial No. 280,448.

To all whom it may concern:

Be it known that I, WILLIAM LOUGEE AINSLIE, a citizen of the United States, and a resident of Jacksonville, in the county of Duval and State of Florida, have invented a new and Improved Automatic Assembler, of which the following is a full, clear, and exact description.

The invention relates to machines for making fruit packages, such as crates and the like, and its object is to provide a new and improved automatic assembler designed as a feeder for the package-making machine and arranged to automatically assemble the several members of the side or top of the package, in such a manner that the assembled members can be readily fastened together in the package-making machine by the use of nails, staples, rivets or like fastening devices.

The invention consists of novel features and parts and combinations of the same which will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improvement; Fig. 2 is an end elevation of the same; Fig. 3 is a longitudinal sectional side elevation of the same, on the line 3—3 of Fig. 1; Fig. 4 is a perspective view of a pair of detached links; Fig. 5 is an enlarged cross section of the improvement, on the line 5—5 of Fig. 1; Fig. 6 is a plan view of a side of the package, showing the battens assembled on the body members; and Fig. 7 is a like view of the top of a package, showing the battens secured on the body members.

The apparatus illustrated in the drawings is arranged for forming the sides of crates and like packages, and is provided with a table A mounted on legs B, and on the said table is removably secured a hopper C for containing, in stack form, the body members D for the side of a package; and on the said table A are also secured a plurality of transversely alined and spaced hoppers E for containing, in stack form, the battens D' to be superimposed and secured to the body members D to form a side of a package, as will be readily understood by reference to Fig. 6.

On the top of the table A are arranged a plurality of longitudinally-extending guide-

ways A', preferably three in number, and each receiving the upper run of a carrier F, preferably in the form of an endless chain passing over wheels G and G' journaled on the legs B, and of which the wheel G is in the form of a sprocket wheel and is driven from the package-making machine to cause the carriers F to travel in unison with the devices employed for driving the nails, staples, rivets or like fastening devices into the battens D' and body members D, with a view to fasten the box together.

Each of the links F' of the carrier F is provided, at its forward end, with a rising shoulder F² (see Figs. 3 and 4), and each shoulder is adapted to engage the lowermost body member D in the hopper C at the time the carriers F travel forward in the direction of the arrow a', so that a set of transversely alined shoulders F² of the several carriers F may move the lowermost body member D from the hopper C and carry said body member forward. On each of the carriers F are pivoted hooks H, spaced apart in such a manner that successive hooks alternate with a plurality of links F', as plainly shown in Fig. 3, and the free or hook ends H' of the hooks H are in transverse alinement with the shoulders F² of the links F' adjacent to the links on which the hooks H are fulcrumed. The hook ends H' of the hooks H are adapted to engage and remove the lowermost battens D' from the hoppers E whenever the carriers F travel forward in the direction of the arrow a', and in such a manner that a plurality of body members D are underneath the lowermost battens D', removed at a time from the several transversely alined hoppers E. Thus a number of battens (three, as shown) are removed simultaneously from the hoppers E at the time three body members D are directly under the battens, and are carried with the same forward by the carriers F (see Fig. 3). The free ends of the hooks H rest loosely on the top of the table A as the carriers F travel forward, and the top of each hook end H' is below the adjacent shoulder F² during the time a hook passes underneath the hopper C; and as soon as the hook has passed this hopper C, it travels up a cam surface I to bring the top of the hook end H' a distance above the shoulder F², to cause the hook end H' to engage the lowermost batten D' in the corresponding hopper E, while the body members D supported on the links F'

travel below the under surface of the lowermost batten D'. The lowermost batten D' in each hopper E rests upon supporting plates J, between which passes the hook end H' of each hook H as the carrier F travels forward (see Fig. 5).

As shown in Fig. 5, the carriers F are arranged to the sides of the hoppers E, while the hooks H project transversely sufficiently to bring their hook ends H' into engagement with an end of the lowermost batten, at the middle thereof. A batten, when pushed out from underneath the stack of battens, passes between a guiding and holding device, preferably formed of a fixed member K and a spring member K' (see Figs. 1 and 3), to properly hold and guide the removed batten during the process of fastening the batten in position on the body members D by the package-making machine referred to, the clench block L of the said machine being arranged directly below the said members K, K' of the guiding and holding device (see Figs. 1 and 3).

It is understood that when the hooks H return on the lower runs of the endless carriers F, the hooks are free to swing into a vertical position; but the hooks are returned to their horizontal position while passing around the wheel G' and back onto the upper surface of the table A, as will be readily understood by reference to the right-hand end of Fig. 3.

When it is desired to form the top of a package, then the single body member D² receives a plurality of battens D³, it being understood that the battens D³ are stacked in the hoppers E, while the body members D² are stacked in a correspondingly shaped hopper C (see dotted lines, Fig. 3); but in this case a single body member D² is removed from its hopper and moved under the battens D' for receiving a plurality of the same at a time. For the purpose mentioned, it is necessary to use carriers F having every third link only provided with shoulders F², arranged in alinement with the ends H' of the hooks H.

The machine is very simple and durable in construction and is arranged to automatically assemble the several members of a side or top of the package to allow convenient fastening together of the said members, with a view to form the side or top of a package.

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

1. An automatic assembler, comprising hoppers an endless traveler provided with links having shoulders, hooks movably mounted on the traveler and alternating with a plurality of links, and means for operating the hooks.

2. An automatic assembler, comprising hoppers an endless traveler provided with

links having shoulders, hooks movably mounted on the traveler and alternating with a plurality of links, and means for raising the hooks above the shoulders of the links.

3. An automatic assembler, comprising a body hopper for containing the body members, a plurality of transversely alined hoppers for containing the battens, an endless traveler passing underneath the said hoppers and provided with shouldered links for successively removing the stacked body members from the body hopper and spacing the same apart, the traveler being also provided with hooks movably mounted on the traveler and alternating with a plurality of the said links for simultaneously removing a plurality of battens from the transversely alined batten hoppers on the successive removal of a plurality of body members from the body hopper, and means for operating the hooks.

4. An automatic assembler, comprising a body hopper for containing the body members, a plurality of transversely alined hoppers for containing the battens, an endless traveler passing underneath the said hoppers and provided with shouldered links for successively removing the stacked body members from the body hopper and spacing the same apart, the traveler being also provided with hooks movably mounted on the traveler and alternating with a plurality of the said links for simultaneously removing a plurality of battens from the transversely alined batten hoppers on the successive removal of a plurality of body members from the body hopper, and a fixed cam device for raising the said hooks above the shoulders of the said links.

5. An automatic assembler, comprising a body hopper for containing the body members, a plurality of transversely alined hoppers for containing the battens, an endless traveler passing underneath the said hoppers and provided with shouldered links for successively removing the stacked body members from the body hopper and spacing the same apart, the traveler being also provided with hooks movably mounted on the traveler and alternating with a plurality of the said links for simultaneously removing a plurality of battens from the transversely alined batten hoppers on the successive removal of a plurality of body members from the body hopper, a table over which passes the said traveler, and cams fixed on the said table for raising the hooks after leaving the body hopper to engage the battens in the batten hoppers.

6. An automatic assembler, comprising a body hopper for containing the body members, a plurality of transversely alined hoppers for containing the battens, an endless traveler passing underneath the said hoppers and provided with shouldered links for suc-

cessively removing the stacked body members from the body hopper and spacing the same apart, the traveler being also provided with hooks movably mounted on the traveler
5 and alternating with a plurality of the said links for simultaneously removing a plurality of battens from the transversely alined batten
10 hoppers on the successive removal of a plurality of body members from the body hopper, means for operating the hooks, and
guiding and holding devices for guiding and holding the battens in position while fastening the same to the body members.

7. An automatic assembler, comprising a
15 body hopper for containing the body members, a plurality of transversely alined hoppers for containing the battens, an endless traveler passing underneath the said hoppers and provided with shouldered links for suc-
20 cessively removing the stacked body members from the body hopper and spacing the same apart, the traveler being also provided with hooks movably mounted on the traveler
and alternating with a plurality of the said
25 links for simultaneously removing a plurality of battens from the transversely alined batten hoppers on the successive removal of a plurality of body members from the body
hopper, means for operating the hooks and a
30 support in the bottom of each batten hopper.

8. An automatic assembler provided with means for containing the body members and with means for containing the battens for the side and top of a package, an endless traveler having shouldered links for successively re- 35
moving the body members, hooks on the links, and means whereby the hooks will be brought into position for successively removing the battens at the time a body member is underneath a plurality of battens. 40

9. An assembler, comprising holders for holding the body members and battens, a traveler provided with projections for feeding the body members, movable members on the traveler for feeding the battens, and means 45
for operating the movable members.

10. An assembler, comprising holders for holding body members and battens, an endless traveler provided with projections for feeding the body members, swinging mem- 50
bers on the traveler for feeding the battens, and means for swinging the said members above the projections of the traveler.

In testimony whereof I have signed my name to this specification in the presence of 55
two subscribing witnesses.

WILLIAM LOUGEE AINSLIE.

Witnesses:

W. W. HUNT,
CHAS. E. BELL.