

No. 675,703.

Patented June 4, 1901.

A. M. ALLEN.
ELEVATOR FOR BINDERS.

(No Model.)

(Application filed Jan. 28, 1901.)

Fig. 1.

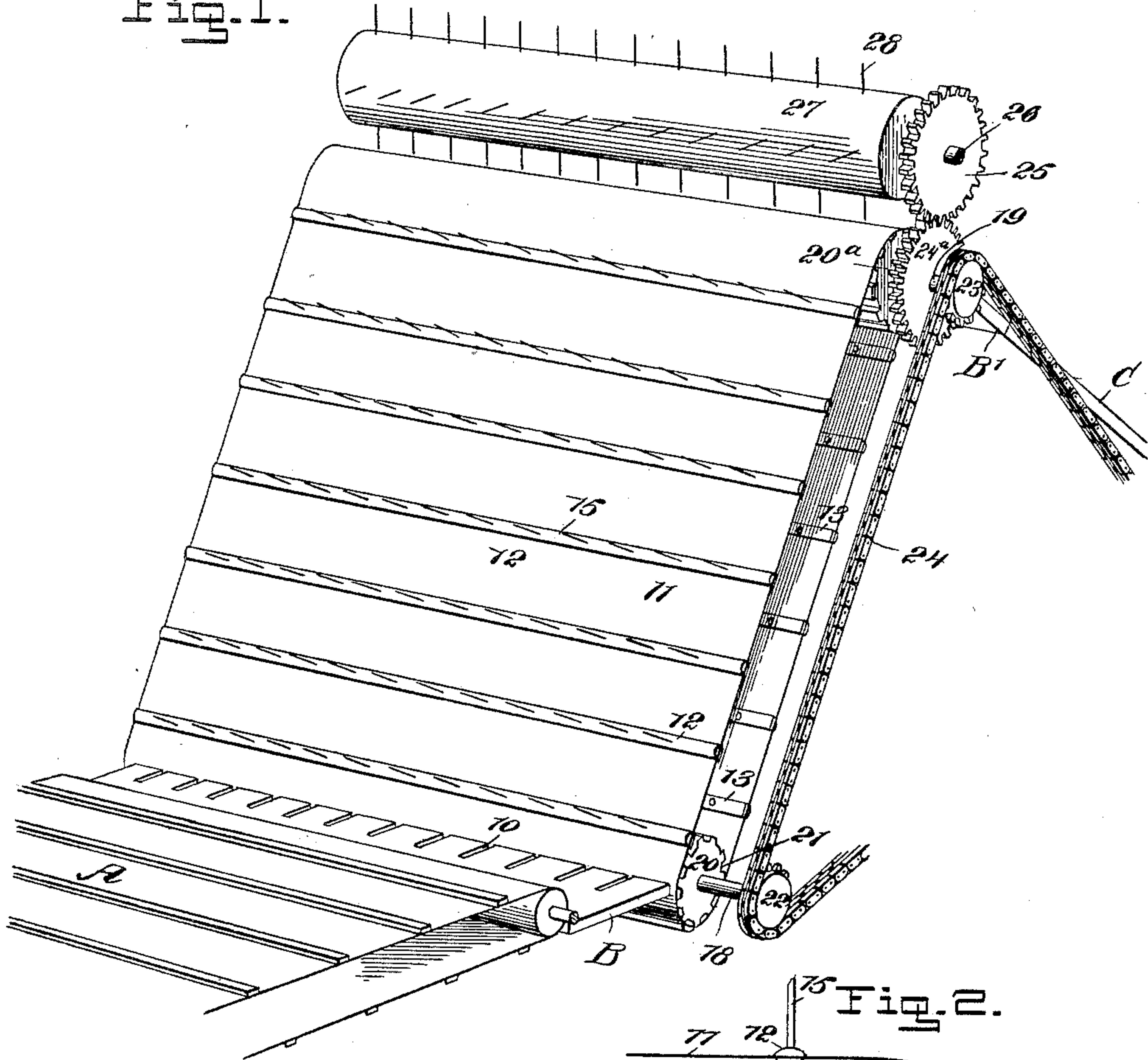


Fig. 2.

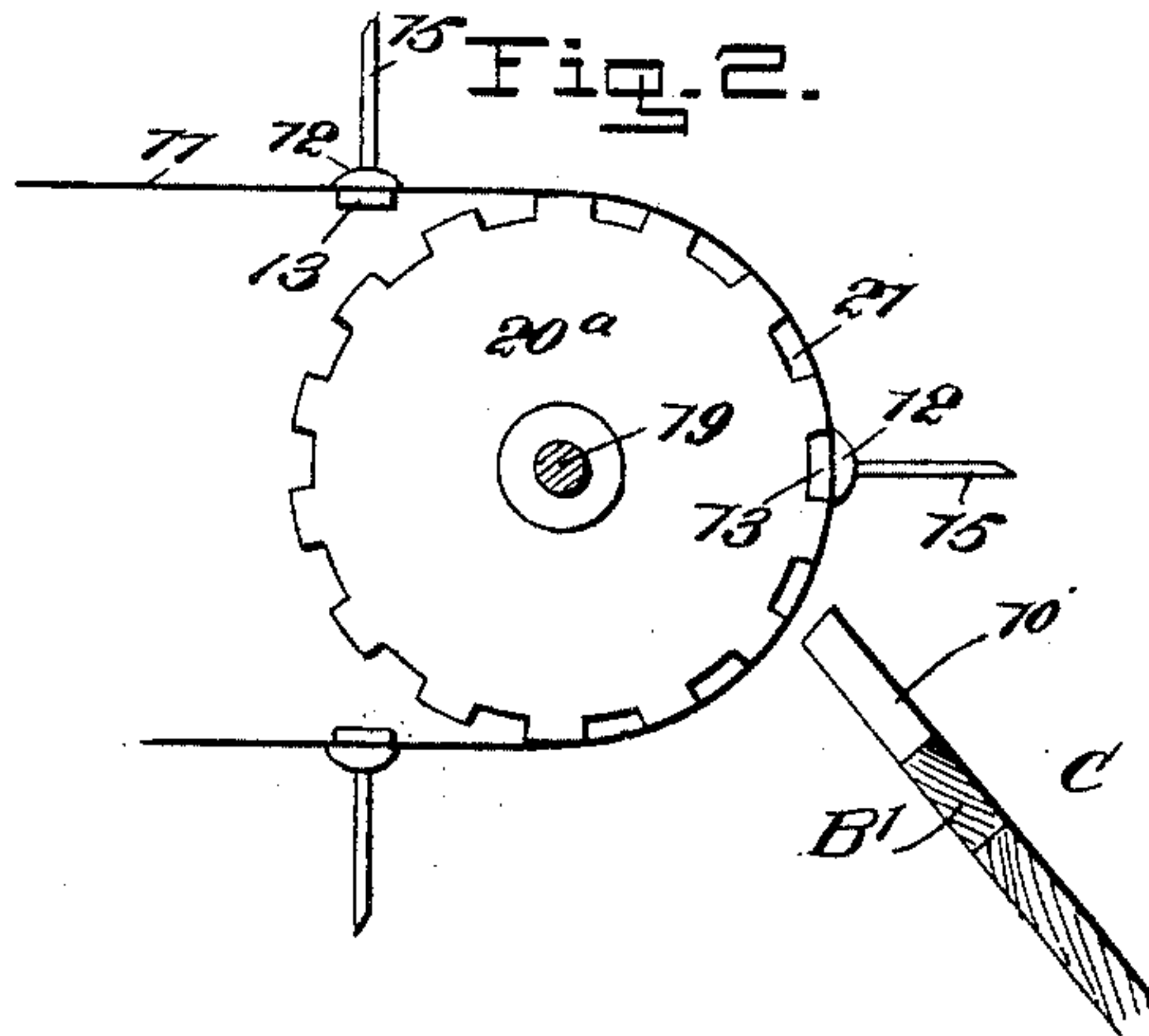
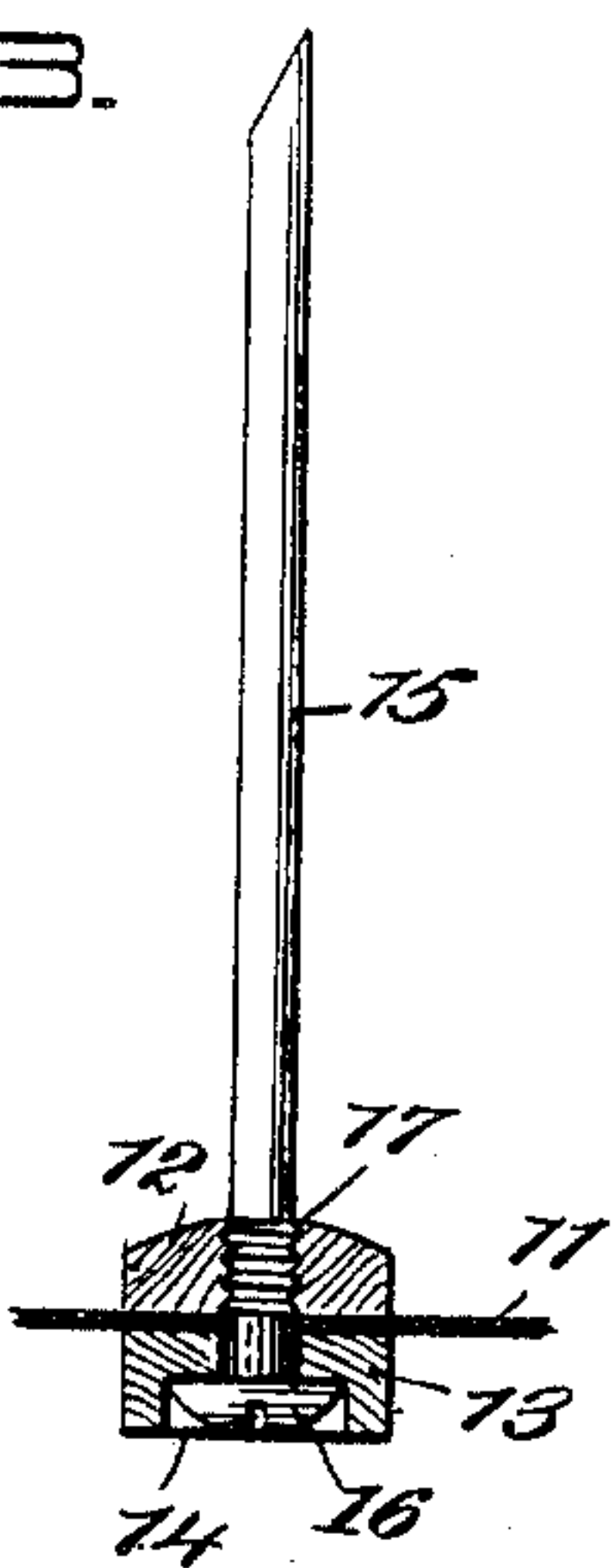


Fig. 3.



WITNESSES:

James F. Duhamel
James F. Duhamel

INVENTOR
Albert M. Allen.

BY *M. M. Allen*
ATTORNEYS

UNITED STATES PATENT OFFICE.

ALBERT MILTON ALLEN, OF PAULS VALLEY, INDIAN TERRITORY.

ELEVATOR FOR BINDERS.

SPECIFICATION forming part of Letters Patent No. 675,703, dated June 4, 1901.

Application filed January 28, 1901. Serial No. 45,036. (No model.)

To all whom it may concern:

Be it known that I, ALBERT MILTON ALLEN, a citizen of the United States, and a resident of Pauls Valley, Chickasaw Nation, Indian Territory, have invented a new and Improved Elevator for Binders, of which the following is a full, clear, and exact description.

Heretofore in the construction of binders two elevator-aprons have been employed, and the grain has been carried up between the two.

One purpose of this invention is to do away with the top elevator-apron by providing a single apron having slats carrying teeth and in this way materially reduce the draft of the machine.

A further purpose of the invention is to pass the apron of the elevator over toothed wheels, the slats at the inner face of the apron being adapted to enter the spaces between the teeth of the wheels, so that the apron is given a positive and uniform movement and will not be moved, as heretofore, by frictional contact with a smooth surface.

Another purpose of the invention is to provide means whereby the teeth may be utilized to secure the slats to the outer and inner faces of the elevator-apron and to provide finger-boards at both the top and bottom portions of said elevator-apron.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

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

Figure 1 is a perspective view of the improved elevator and adjacent coöperating parts. Fig. 2 is a section through one of the shafts supporting the elevator-apron, showing the drum or wheel in end view, the said figure also representing an end view of the upper finger-board and a portion of the drop from the finger-board to the packer of the machine; and Fig. 3 is a transverse section through a portion of the apron of the elevator and through opposing slats, illustrating the manner in which a finger is employed to secure the slats to the apron.

A represents a feed apron or platform, and at the delivery end of this feed apron or plat-

form a finger-board B is supported in any suitable or approved manner, the said board being provided with a series of slots 10 in its longitudinal edge farthest removed from the feed apron or platform. The elevator consists of an endless apron 11, which is usually of canvas, and outer slats 12 and inner slats 13 are correspondingly placed in engagement with the outer and inner faces of the said apron, as is shown best in Figs. 2 and 3. The outer slats 12 are preferably more or less rounded at their outer faces, being flat where they bear against the apron, and the inner slats 13 are also flat where they bear against the apron; but in their inner faces recesses or countersinks 14 are produced, and corresponding outer and inner slats are held in position upon the apron by pins 15, which are preferably pointed and beveled at their outer ends and are provided with heads 16 of the screw type at their inner ends. These heads are made to enter the countersinks 14 and the pins are passed through registering apertures in corresponding slats 12 and 13, said pins passing loosely through the apertures in the inner slats 13. The apertures in the outer slats 12 are threaded to receive exterior threads produced upon said pins, as shown in Fig. 3. In this manner the pins are held firmly in position at suitable intervals apart longitudinally of the slats and also serve to secure the slats to the apron 11. A lower shaft 18 and an upper shaft 19 are used in connection with the endless apron 11 of the elevator. Upon the lower shaft 18 a drum 20 is secured, and this drum is provided with a longitudinally-toothed peripheral surface having practically rectangular grooves 21 between the teeth, adapted to receive the slats on the inner face of the apron, and a corresponding drum 20^a, similarly grooved and toothed, is secured upon the upper shaft 19 of the elevator. At one end of the lower shaft 18 of the elevator a sprocket-wheel 22 is secured, and a similar wheel 23 is secured to the like end of the upper shaft 19. A driving-belt 24 is passed over these wheels 22 and 23, being carried to an engagement with any driving-pulley on the machine.

At the upper portion of the elevator a finger-board B' is located, corresponding to the lower finger-board B, and from the upper fin-

ger-board B' a drop C is carried to the packer of the machine. The teeth of the elevator pass through the slots 10 in the finger-boards, and the teeth are thus cleaned and the return stretch of the elevator is rendered free from all adhering matter and is in condition at the upper stretch to carry material upward.

A gear 24^a is secured to the upper shaft 19, and this gear meshes with a gear 25, which is secured to a journal 26 of a roller 27, superimposed at the top of the elevator and provided with longitudinal series of teeth 28, the said upper roll or roller 27 being so placed that its teeth will pass between the teeth 15 on the elevator, but the teeth of the roller 27 do not touch the apron of the elevator.

The foregoing construction of an elevator will obviate the necessity of an operator adjusting the canvas of the apron in the morning, when grain is wet from dew, and then being obliged to tighten the apron as the grain and canvas dry. It will never be necessary to set the apron so tight that the straps and buckles rip from it, and when the improved elevator is employed there will never be any clogging, as often occurs between two elevator-aprons when rank green grain is treated. If the grain is too heavy for the improved apron to elevate, the surplus will simply slip past the finger-board and accumulate upon the platform or apron A, from whence it can be readily removed.

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

1. In an elevator for binders, an endless apron, correspondingly -located transverse slats upon the outer and inner faces of the apron, pins which extend through each pair of slats and the apron, extending beyond the outer faces of the outer slats, and means for securing the said pins in position, whereby the pins in addition to serving as elevators bind the slats through which they pass to the apron.

2. In an elevator for binders, an endless

apron, drums over which the apron passes, the drums being provided with peripheral longitudinal recesses, corresponding slats located transversely upon the outer and inner faces of the apron, the inner slats being adapted to enter the grooves in the said drums, the inner slats being provided with countersinks and plain apertures connecting therewith, the outer slats having series of threaded apertures produced therein, and pins provided with heads adapted to enter the countersinks in the inner slats and threaded exterior surfaces adapted to enter the threaded apertures in the outer slats, the pins extending beyond the outer faces of the outer slats, for the purpose described.

3. In an elevator for binders, the combination with an endless apron, longitudinal peripherally-grooved drums supporting the upper and lower portions of the apron, a driving mechanism for the said drums, corresponding slats transversely located on the inner and the outer faces of the apron, the inner slats being adapted to enter the grooves in the said drums, and pins extending outward through corresponding slats, binding them to the apron, of a feed-apron, a finger-board at the delivery end of the feed-apron, having slots therein through which the pins of the elevator-apron may pass, a corresponding finger-board located at the upper portion of the elevator, and a roll driven from the drive mechanism of the elevator, said roll being located at the upper portion of the elevator and provided with series of peripheral teeth longitudinally arranged, adapted to enter the spaces between the teeth on the elevator yet not engage with the apron of the elevator, as set forth.

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

ALBERT MILTON ALLEN.

Witnesses:

L. C. ANDREWS,
J. T. BLAUTON.