

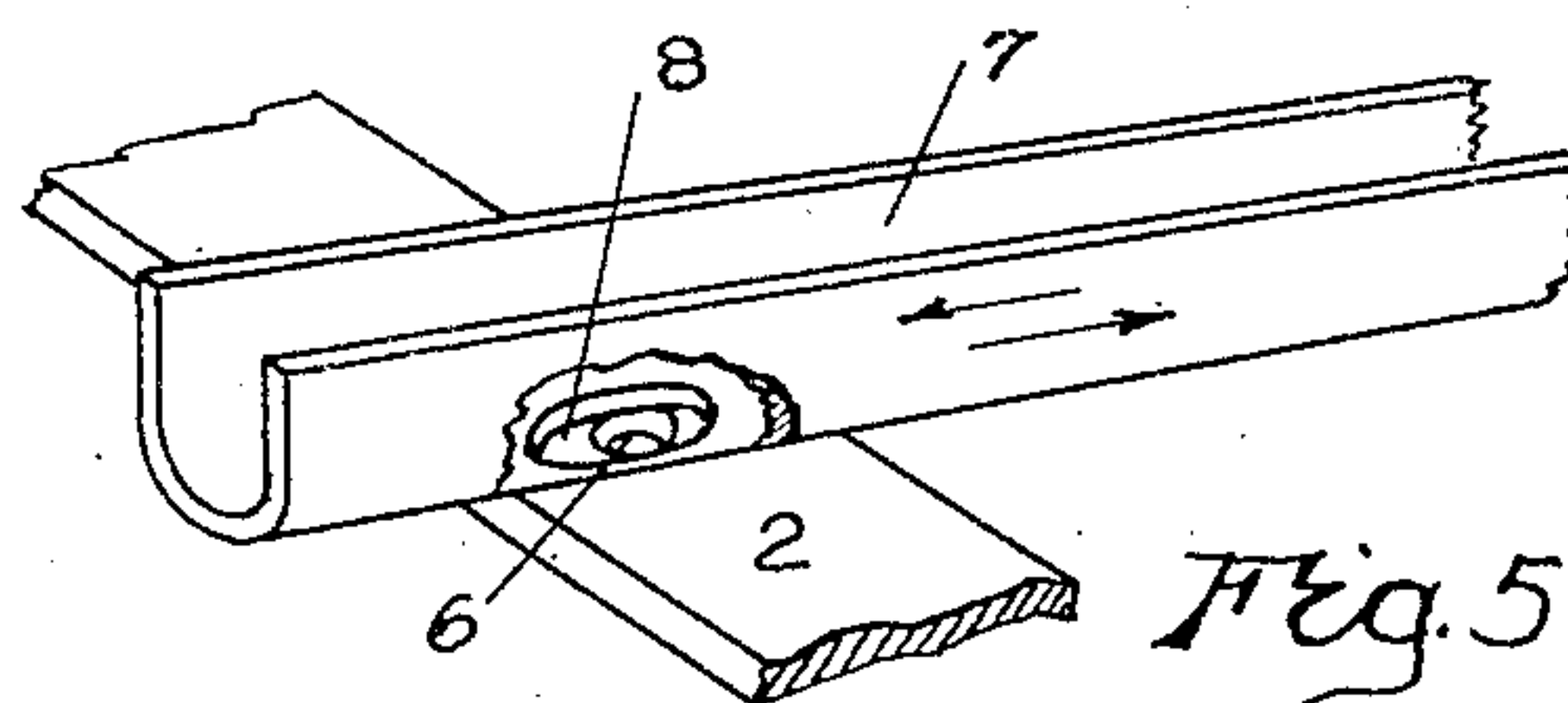
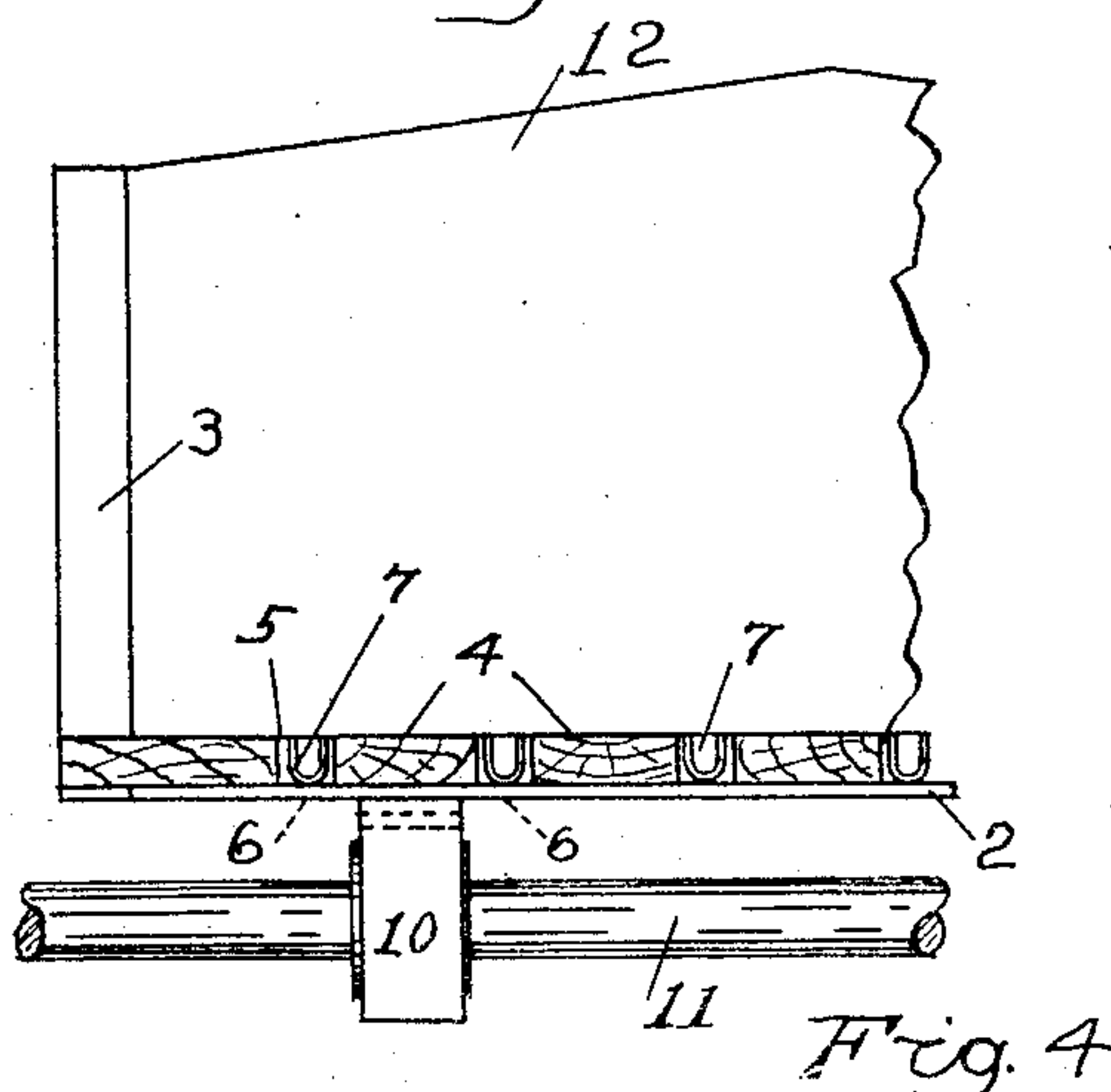
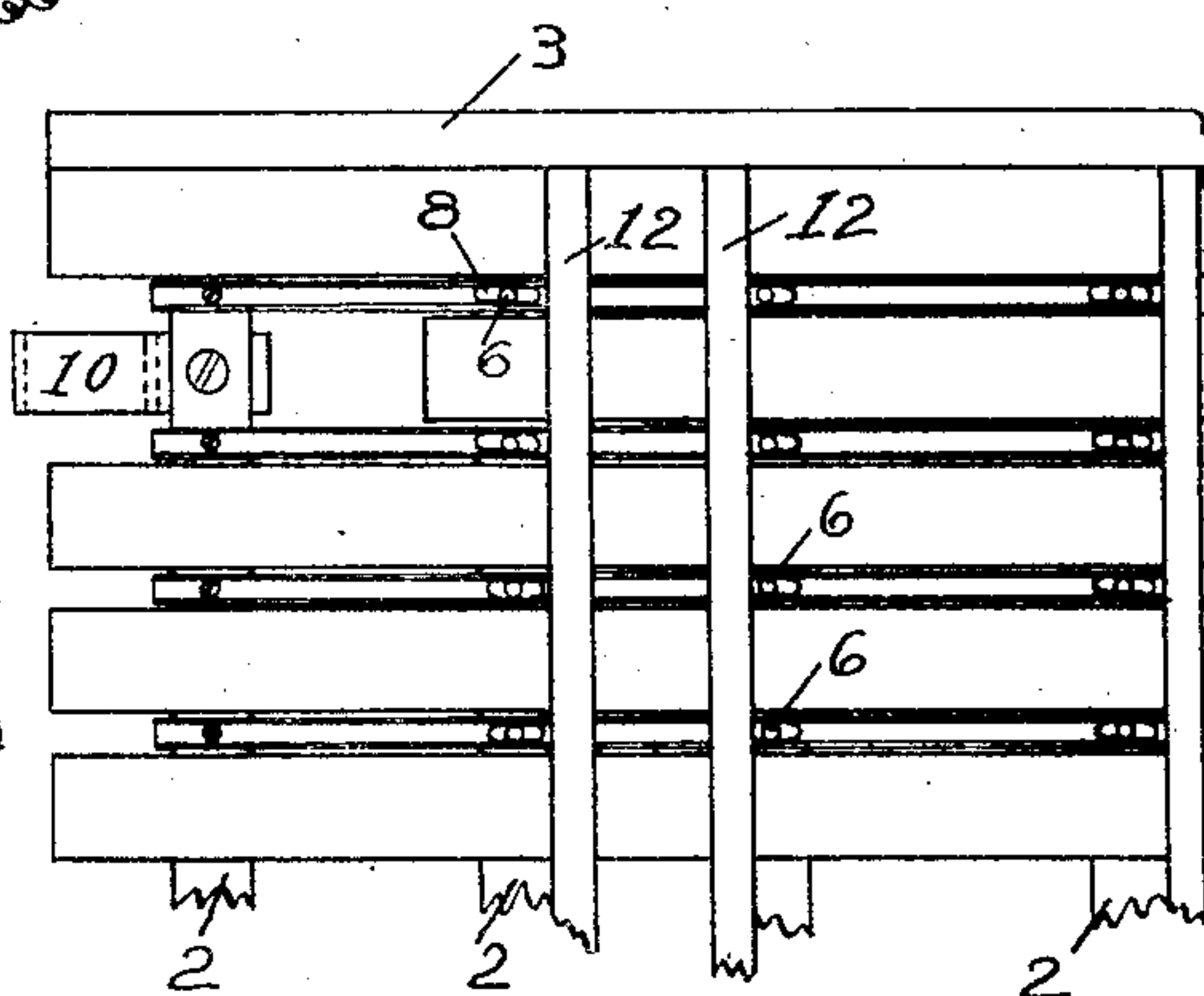
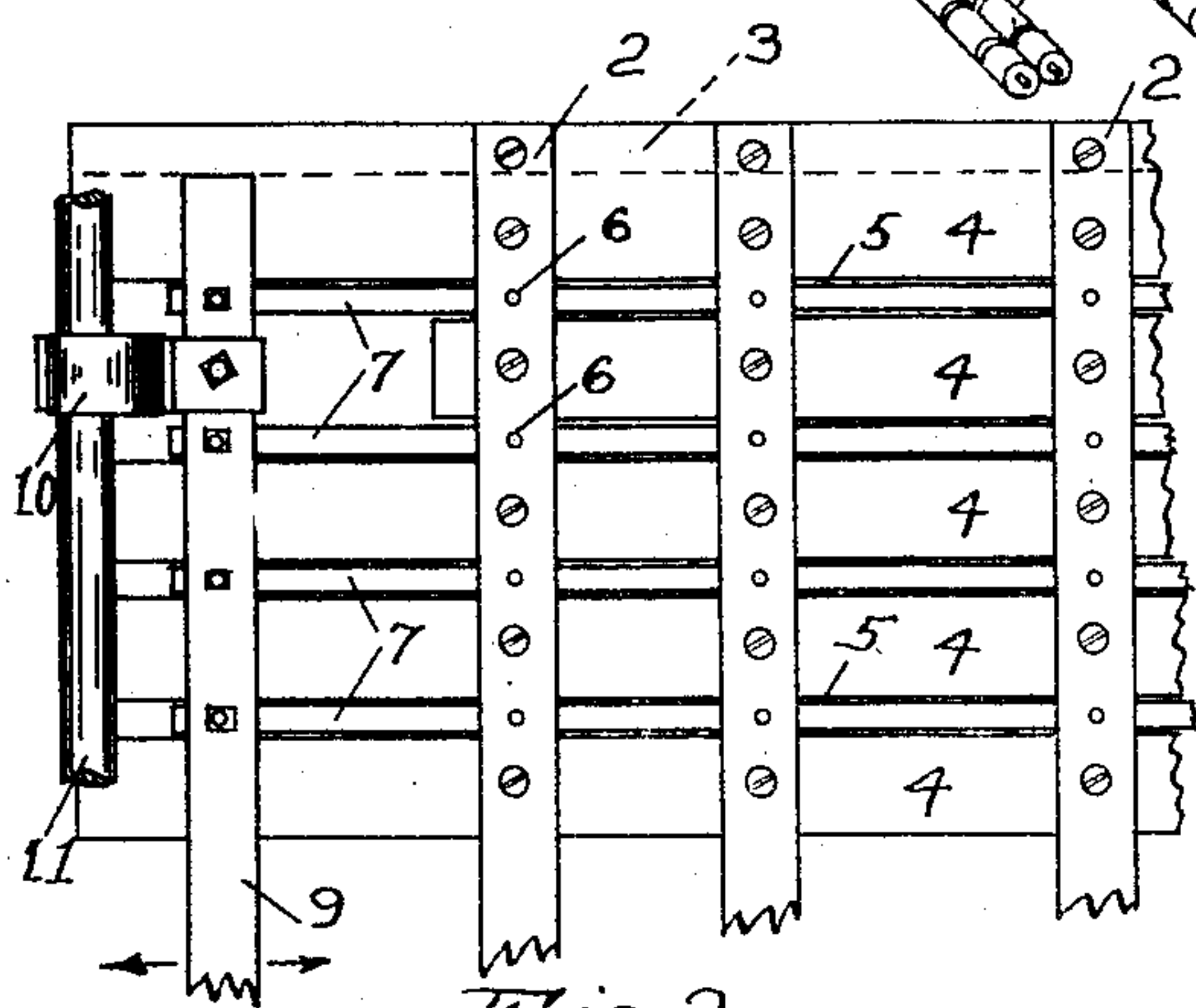
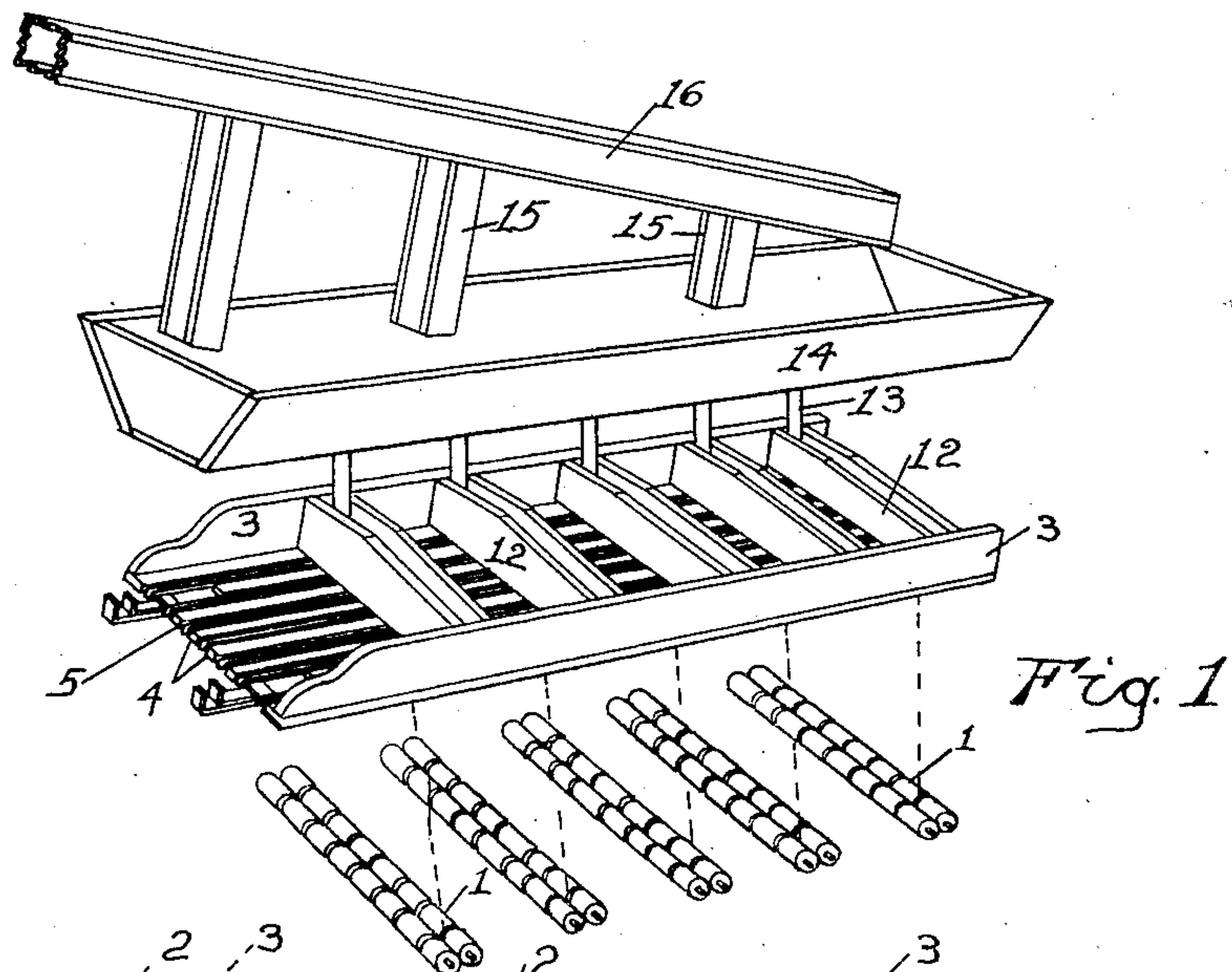
June 19, 1923.

1,459,553

A. ROCHELEAU

FEED DEVICE FOR BEAN SORTING MACHINES

Filed Jan. 19, 1923



Alphonse Rocheleau INVENTOR

BY Geo. B. Wilcox ATTORNEY

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UNITED STATES PATENT OFFICE.

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FEED DEVICE FOR BEAN-SORTING MACHINES.

Application filed January 19, 1923. Serial No. 613,639.

To all whom it may concern:

Be it known that I, ALPHONSO ROCHELEAU, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Feed Devices for Bean-Sorting Machines; 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.

This invention relates to automatic feed devices for bean sorting machines and the like and pertains more particularly to an improved feed device especially adapted for feeding beans to roll sorting machines of the character shown and described in my co-pending application, Serial No. 549,838 of 1922, in which I employed a plurality of pairs of sorting roll shafts, each shaft carrying a plurality of short roll sections, these sections operatively arranged in pairs. Each pair of short roll sections is provided with an individual feed mechanism and two individual delivery mechanisms, one for delivering good beans discharged from the end pair of short roll sections and the other for delivering the split or defective beans that pass between the rolls comprising each pair of short sections.

A bean sorting machine of the character described requires that each pair of short roll sections, (and there may be many such pairs of sections on each shaft), shall be provided with an individual feed mechanism that will supply one bean at a time. The effective operation of multiple short roll sections requires that beans be fed practically one at a time, so as to avoid the possibility of their piling up or jamming in the trough or groove formed by the two co-acting roll sections.

My present improvement, therefore, relates to an improved means for feeding beans one at a time, but very rapidly, to each of the pairs of short roll sections on a pair of shafts, there being sometimes as many as eight or ten of such pairs of short roll sections on each pair of shafts.

My improvement further provides means for simultaneously feeding beans one at a time, not only to all of the plurality of pairs of short roll sections on a given pair of shafts, but also to all of such sections

on any desired number of pairs of shafts arranged side by side, so that by one mechanism as many as one-hundred or more feed devices may be operated to feed as many pairs of short picking rolls, each roll section being fed with a practically continuous stream of beans, but the feed device being so constructed that only one bean at a time is fed to any one pair of roll sections.

A further object of my improvement is to provide means whereby beans in bulk may be rapidly and automatically distributed and fed in the manner above described, to a great number of roll sections simultaneously. The quantity of bulk beans is first divided into smaller bulk units and these bulk units are then subdivided simultaneously, each unit into as many as eight or ten separate feeds, through each of which beans are delivered, one at a time, to the roll sections beneath.

With the foregoing and certain other objects in view which will appear later in the specifications, my invention comprises the devices described and claimed and the equivalents thereof.

In the drawings Fig. 1 is a perspective view showing diagrammatically a plurality of pairs of roll shafts, each pair carrying a plurality of short roll sections, the feeding device forming the substance of my present invention being shown above the feed rolls and separated therefrom for sake of clearness.

Fig. 2 is a fragmentary top plan view of a part of the feeding frame and its mechanism.

Fig. 3 is a view of the parts shown in Fig. 2 as they appear when viewed from beneath.

Fig. 4 is an end view of the parts shown in Fig. 2.

Fig. 5 is a perspective view, partly broken away, showing the relative arrangement of the reciprocating feed trough and the apertured bottom cross-bar of the feed frame through which the beans are delivered to the respective roll sections.

As is clearly shown in the drawings, 1 indicates a plurality of pairs of rolls arranged on parallel roll shafts in the usual manner and as described in my co-pending application above referred to.

Above the rolls and in proximity thereto is a stationary feed frame including bot-

tom cross-bars 2 and side rails 3. Longitudinally extending bottom slats 4 are secured to the cross-bars 2, but spaced apart to provide longitudinal spaces or guideways 5 between said slats.

Each cross-bar is formed with holes 6, each hole located above the upper end of a pair of short roll sections and communicating with the spaces or guideways 5.

In each one of the guideways 5 is mounted a longitudinally movable reciprocating trough 7 which may be of sheet metal. This trough is provided in its bottom with longitudinally disposed elongated holes 8 registering with the holes 6 in cross-bar 2, the elongated holes being of sufficient length so that the holes 6 in the cross bars are always open while the trough is being reciprocated.

There are as many troughs 7 as there are pairs of short roll sections on one of the pairs of roll shafts, that is to say, if there are eight pairs of short roll sections on a pair of shafts, there will be provided eight troughs 7 and there will be as many perforated cross-bars 2 as there are pairs of shafts. For each pair of short roll sections 1 there will be a feed hole 6 directly above the rolls and an elongated feed opening 8 co-operating therewith.

All longitudinally movable troughs 7 may be connected by a bar or yoke 9, and this bar with its attached troughs may be rapidly reciprocated by any suitable means, as an eccentric 10 and its shaft 11.

To feed beans simultaneously into the troughs 7 at places above the various pairs of roll sections I provide transverse partitions 12, 12 extending across the feed frame from side to side and secured at their ends to the side rails 3, 3 as shown in Fig. 1. The space between each pair of transverse partitions 12, 12 comprises a small hopper, the bottom of this hopper formed by alternate slats 4 and troughs 7 so that beans fed into the hoppers between the partitions 12, 12 will escape through the reciprocating troughs 7 and move along the troughs in single rows, one bean behind the other. The reciprocating movement of the trough feeds the beans two or three at a time into the elongated hole 8 and as these beans are moved along with the trough they drop one at a time through the holes 6 onto the corresponding short picking roll section 1.

Beans may be supplied to the space between the pair of transverse partitions 12, 12 in any suitable manner as for example by the feed spouts 13, which take their supply from the feed hopper 14, this hopper in turn being supplied from supply spouts 15 and main supply 16.

By the means above described I have produced a simple, easily constructed and inexpensive feeding device, whereby a great number of short pairs of picking rolls may be simultaneously supplied with beans in such a way that one bean at a time will be fed to a given pair of rolls, but the beans will follow each other with great rapidity comprising in fact an almost steady stream, to each roll section.

Since there are a great number of roll sections in one machine, it follows that the rate of supply will be very great, and the capacity of such a picking machine will be enormously increased by the use of my improved multiple feed mechanism as herein described and claimed.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a bean sorting machine of the class described, a pair of rolls, a feed frame, bottom cross-bars on said frame, each cross-bar formed with a hole located above each pair of rolls, a longitudinally movable reciprocating trough formed with an elongated hole in the bottom thereof, said hole registering with the hole in said cross-bar, and means for imparting reciprocatory movement to said trough.

2. In a sorting machine of the class described, a plurality of pairs of sorting rolls, each pair comprising a plurality of short roll sections, a feed frame, a plurality of bottom cross-bars on said frame, each cross-bar formed with a hole located above a pair of short roll sections of each pair of sorting rolls, a longitudinally movable reciprocating trough formed with elongated holes in the bottom thereof, each of said elongated holes registering with a hole of one of said cross-bars, and means for imparting reciprocatory movement to said troughs.

In testimony whereof, I affix my signature.

ALPHONSO ROCHELEAU.