

No. 704,890.

Patented July 15, 1902.

T. MORRISON.
FEED TABLE MECHANISM.

(Application filed June 29, 1901.)

(No Model.)

3 Sheets—Sheet 1.

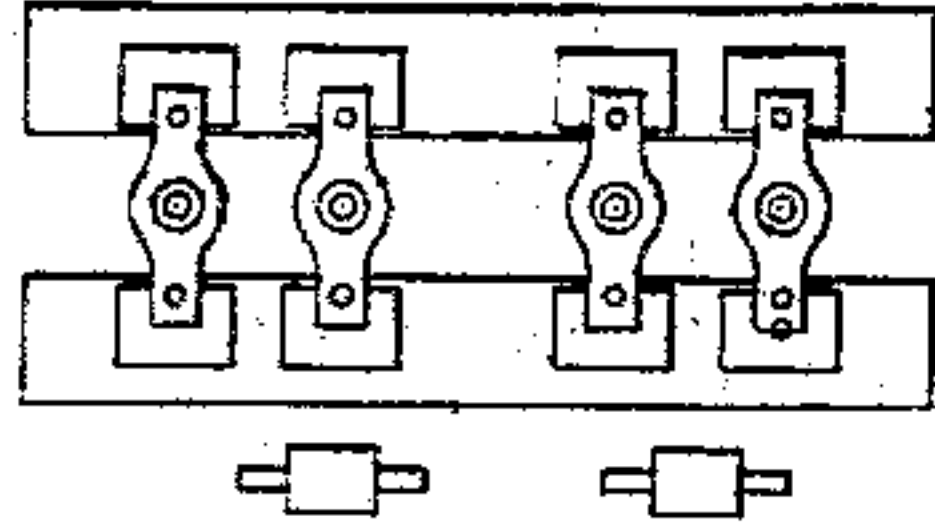
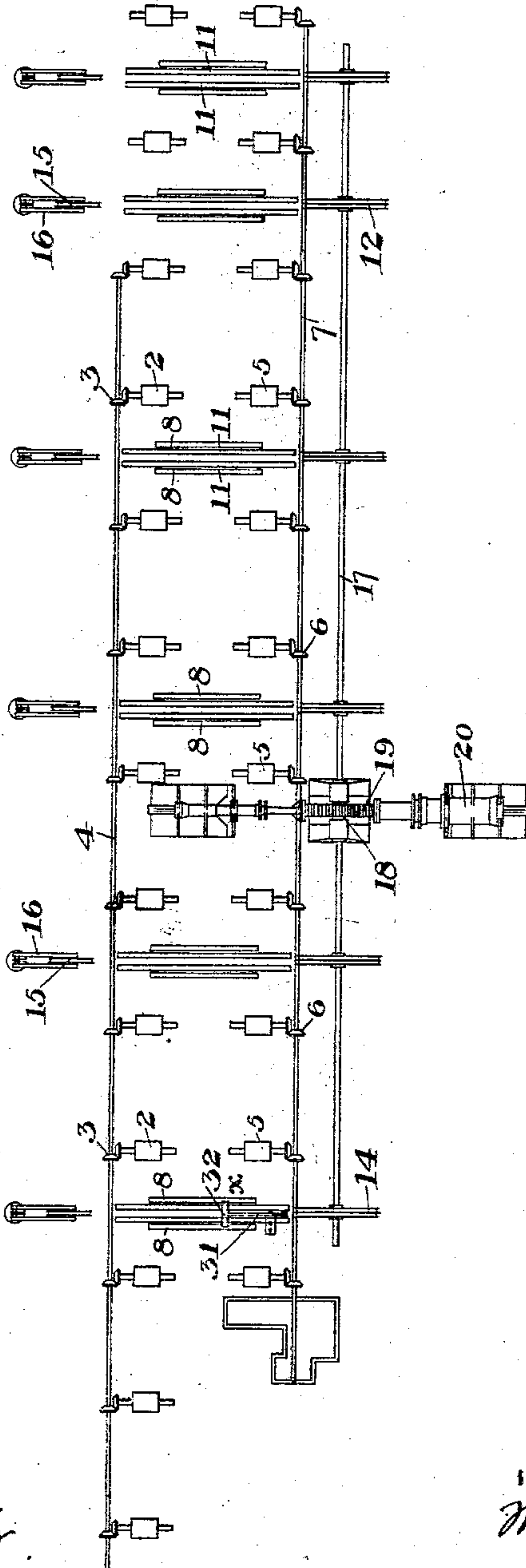


Fig. 1.



WITNESSES

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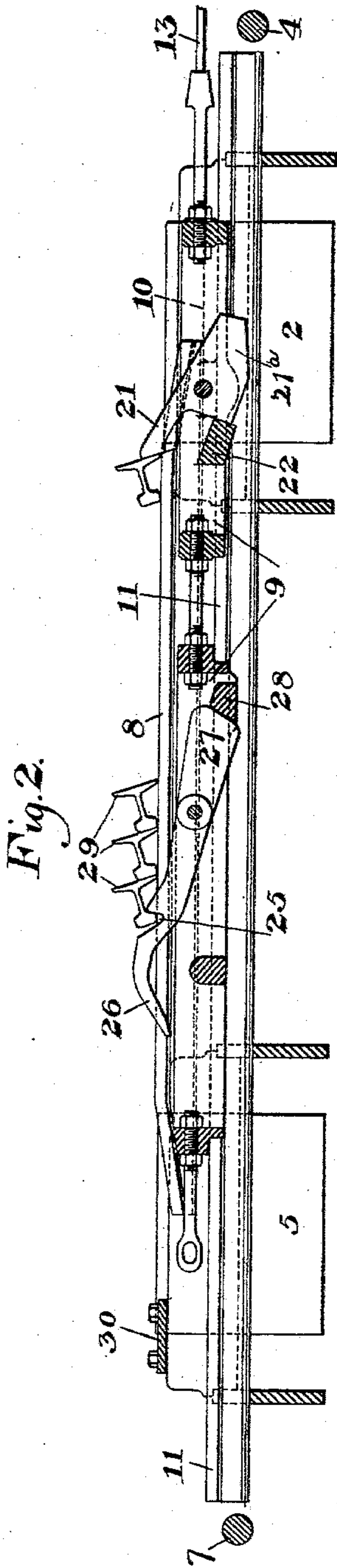


Fig. 2.

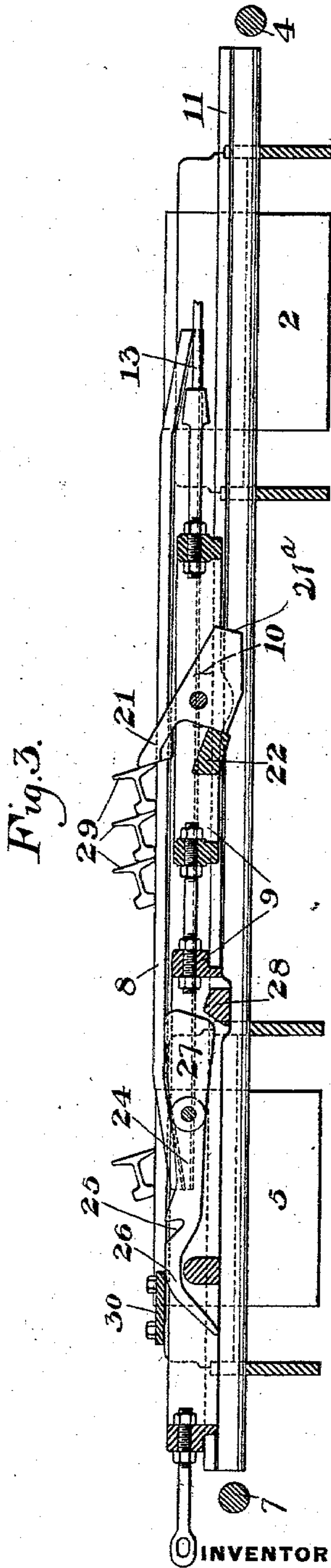
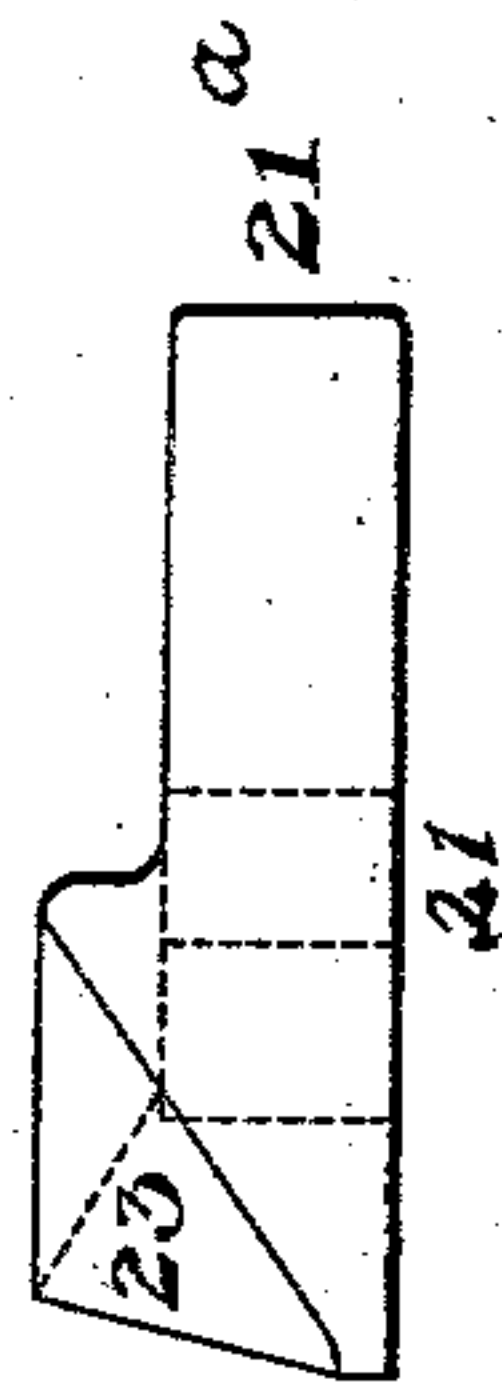


Fig. 3.

Fig. 5.



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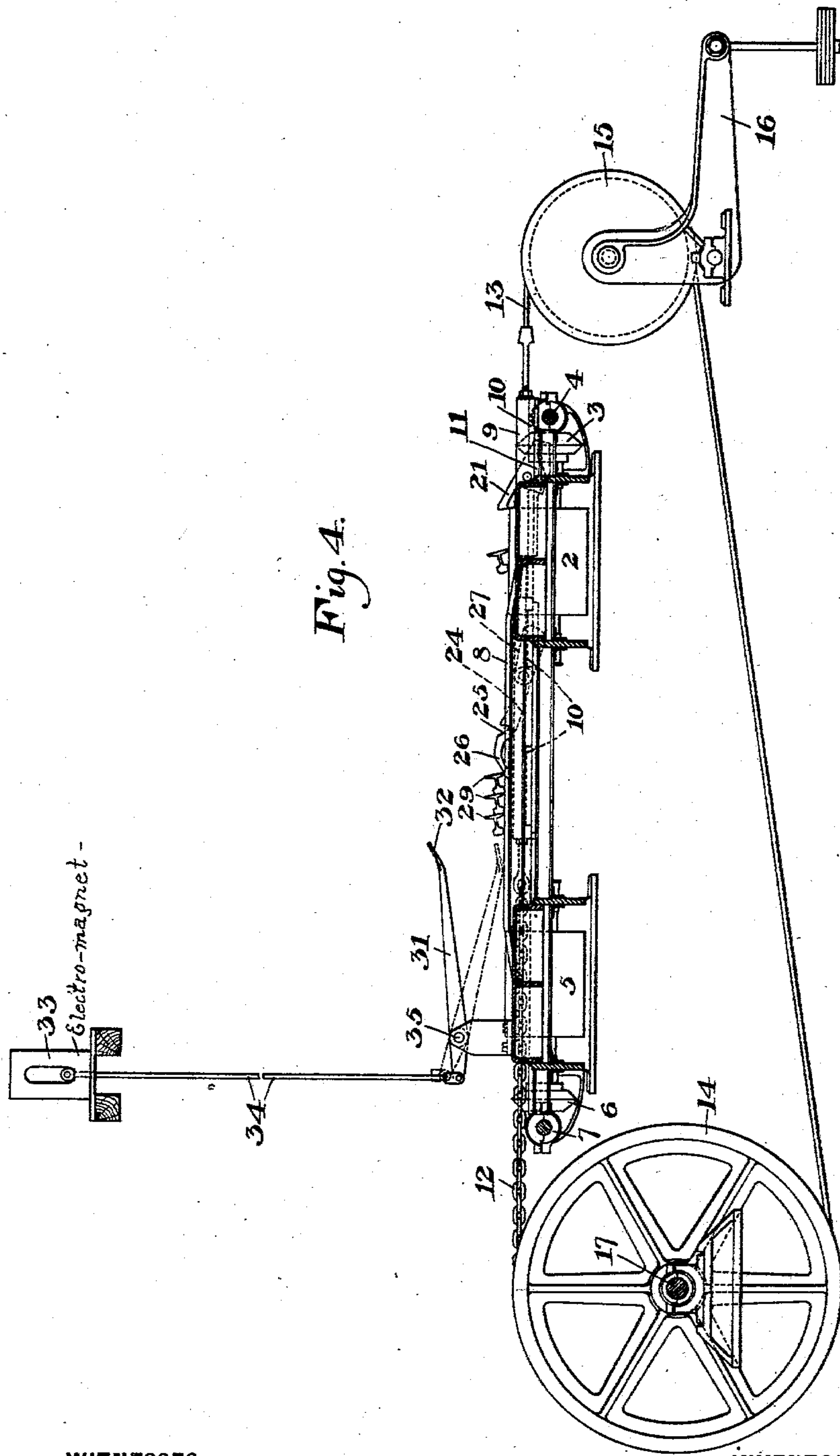
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3 Sheets—Sheet 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

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FEED-TABLE MECHANISM.

SPECIFICATION forming part of Letters Patent No. 704,890, dated July 15, 1902.

Application filed June 29, 1901. Serial No. 66,482. (No model.)

To all whom it may concern:

Be it known that I, THOMAS MORRISON, of Braddock, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Feed-Table Mechanism, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a diagrammatic top plan view showing feed-table apparatus constructed in accordance with my invention. Figs. 2 and 3 are cross-sectional views of the same, on a larger scale, showing the parts in two different positions. Fig. 4 is a cross-sectional view showing a special device hereinafter referred to; and Fig. 5 is a top plan view, on a larger scale, showing a shifting dog.

My invention relates to feed-tables for rolling-mills, and is designed to provide improved mechanism for separating one rolled section from a group and moving it to a point laterally separated from said group; and, further, to provide mechanism for moving one section laterally into the group at the same time that one section of the group is thus separated from it.

The invention is more specially adapted to the apparatus described in my United States Patent No. 654,100, though it may be applied to other mills and in other connections.

In the drawings I show a feed-table having a longitudinal series of feed-rollers 2, which may be driven by bevel-gear connections 3 with a driven shaft 4. These feed-rollers are in line with a pass of the rolling-mill which feeds the metal forward upon them, and parallel with such set is another set of feed-rollers 5, which may be driven by bevel-gear connections 6 with a driven shaft 7. Transverse supports 8 8 are arranged in pairs extending transversely between the lines of two sets of feed-rollers, these supports having their intermediate portions slightly above the level of the rollers, while their end portions are inclined down to points below such levels.

To transfer the metal laterally upon the transverse supports 8, I provide a series of sliding carriers 9, having lateral flanges 10, which are supported on guideways 11 between each pair of supports 8. To the ends of each

carrier are secured flexible connections 12 and 13, which are secured, respectively, to wheels 14 and pulleys 15, carried on counterweighted bell-cranks 16. The wheels 14 are mounted upon the common shaft 17, which is provided with a pinion 18, intermeshing with rack 19, which may be reciprocated by motor 20. By actuating this motor in either direction the shaft 17 will be rocked and the carriers will be moved transversely across the feed-table.

Each carrier is provided in its rear portion adjacent to the rollers 2 with a pivoted dog 21, the lower part 21^a of which is counterweighted to hold it normally in the position shown in Figs. 2 and 3 against the stop 22 on the carrier. One side face of this dog is cut away upon a bevel, as shown at 23 in Fig. 5. This bevel is provided so that if through accident the entering rail-section or other section should strike the dog it will move up the inclined face 23 and depress the dog and pass over it, thus avoiding the injury which would otherwise occur.

A swinging selector 24 in the form of a counterweighted lever is pivoted to the other end of each carrier, such selector having a gripping-notch 25 and beyond this an inclined nose portion 26. The counterweighted end 27 of the lever tends to hold the nose end of the selector elevated, as shown in Fig. 2, the other end resting against a stop 28 on the carrier.

In the operation of the apparatus a group of rolled sections 29 is constantly maintained on the intermediate part of the table, and after an additional rolled section has been fed forward on the rollers 2 the carriers are actuated and moved across the table from a position shown in Fig. 2 to that shown in Fig. 3. During this movement the dogs 21 contact with the last-entering section and move it forward into the group and then push the group forward. At the same time the selector-levers move along beneath the group, their nose portions contacting with the sections and holding them depressed until the last section is reached. The counterweighted portions of these levers constantly tend to force up the nose portions, and when these nose portions pass this last section the selectors rock up-

wardly and cause their recessed portions to engage the last section of the group, as shown in Fig. 2. As the motion of the carrier continues this side section of the group is carried forwardly over the supports 8 and onto the series of rollers 5, and the selectors are disengaged therefrom by depressing plates 30, which engage their nose portions, as shown in Fig. 3. A section is thus transferred from the group to the rollers 5 at the same time that another section is added to the group and the group moved laterally, and the carriers are then moved back to their original position ready to repeat the operation.

I have shown the invention as applied to the rolling of rails, and such rails are rolled in sections of different lengths, some sections being of the length of three rails and some of the length of two rails. It is apparent that with the system above described when a two-rail section succeeds a three-rail section in the group as the selectors move forward to separate the two-rail section one or more of them beyond the length of this two-rail section would engage the next three-rail section back of it, and thus prevent proper operation. To prevent this abnormal action, I provide at the point marked *x* on Fig. 1 a swinging lever 31, having a blank-section 32 at its end and which may be depressed when desired to take the place of that portion of the two-rail section which would normally be engaged by a selector if it were of a three-rail length. This lever is under the control of the operator and may be swung in any desired manner. I have shown for this purpose an electromagnet 33, the core of which is connected by a link 34 to a lever 31, which is pivoted at the point 35. The operator in the pulpit who controls the movements of the carriers also controls the movement of this lever by a suitable switch connection, and when on moving the carriers to separate one of the sections he sees that such section is a two-rail section he depresses the lever 31, and thereby holds down the nose of that selector which would otherwise engage the head of the next rail at this point, and thereby holds this particular selector out of action during such movement. If the next section is of three-rail length, the lever may then be lifted, so that on the next movement of the carrier this selector will operate in its normal way.

The advantages of my invention result from the withdrawing of one of the rolled sections from the group and its lateral transfer to another part of the table. Where the whole group was fed forward, as in the form shown in my patent above referred to, some difficulty was experienced in preventing more than one rail from being fed from the group to the transfer-rollers and this difficulty is entirely overcome by the present invention. The inclination of the face of the rear dog is of advantage in preventing accidents, and

the whole system is simple, easily operated, and not liable to get out of order.

The selectors may be arranged in front of the group in such a way as to move forward and then pull a section away from the group instead of pushing it, as in the form shown, and many other changes may be made in the form and arrangement of the parts without departing from my invention, since I consider myself the first to use the automatic selector, which moves one section from a group to another point on the table.

I claim—

1. A rolling-mill feed-table having a selector arranged to engage a single article in a group of articles and separate and move it laterally from the group of articles, and mechanism for moving the selector transversely of the table, substantially as described.

2. A feed-table having a transversely-movable carrier and a selector connected to the carrier and having a movable part arranged to engage a single article in a group of articles on the table and separate and move it laterally from the group of articles; substantially as described.

3. A feed-table having a transversely-movable carrier, a pusher on the carrier and arranged to move an article to a group of articles on the table, and a movable selector arranged to engage a single article in the group of articles and separate and move it laterally from the group; substantially as described.

4. A feed-table having transversely-movable carriers, and pivoted selectors connected to the carriers and having notched portions arranged to automatically engage a single article in a group of articles on the table and separate and move it laterally from the group; substantially as described.

5. A feed-table having transversely-movable carriers, pivoted selectors mounted on the carriers, and mechanism for pressing the selectors yieldingly toward articles on the table, the selectors being arranged to engage a single article in a group of articles and separate and move it laterally from such group of articles; substantially as described.

6. A rolling-mill feed-table having a transversely-movable carrier, a selector mounted on the carrier and arranged to engage a single article in a group of articles lying on the table and separate and move it laterally from such group of articles, and trip mechanism arranged to automatically disengage the selector from the article after it is separated from the group; substantially as described.

7. A rolling-mill feed-table having transversely-movable selectors arranged to engage a single article in a group of articles on the table and separate and move it laterally from the group, and controllable mechanism for preventing the normal action of one of said selectors; substantially as described.

8. A rolling-mill feed-table having a trans-

versely-movable carrier, a pivoted pusher-dog connected to the carrier and arranged to feed an article sidewise on the table and means for feeding metal longitudinally of the table, the dog being normally out of the line of feed and having an inclined face toward the entrance side, arranged to be contacted with by the article when the article being fed

accidentally strikes said dog; substantially as described.

In testimony whereof I have hereunto set my hand.

THOMAS MORRISON.

Witnesses:

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J. E. MITCHELL.