

No. 671,440.

Patented Apr. 9, 1901.

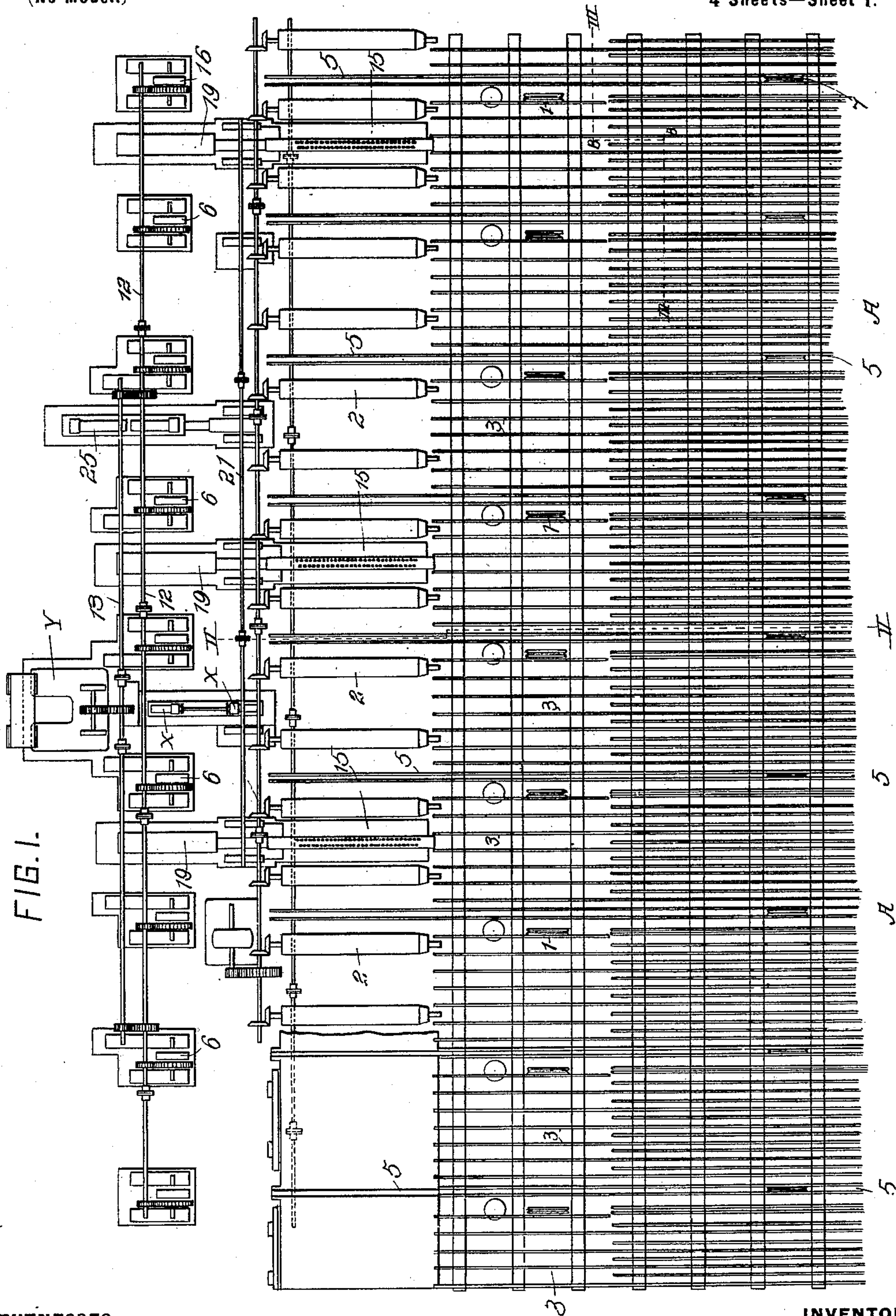
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MECHANISM FOR SHIFTING AND SEPARATING BARS, &c.

(Application filed June 18, 1900.)

(No Model.)

4 Sheets—Sheet 1.



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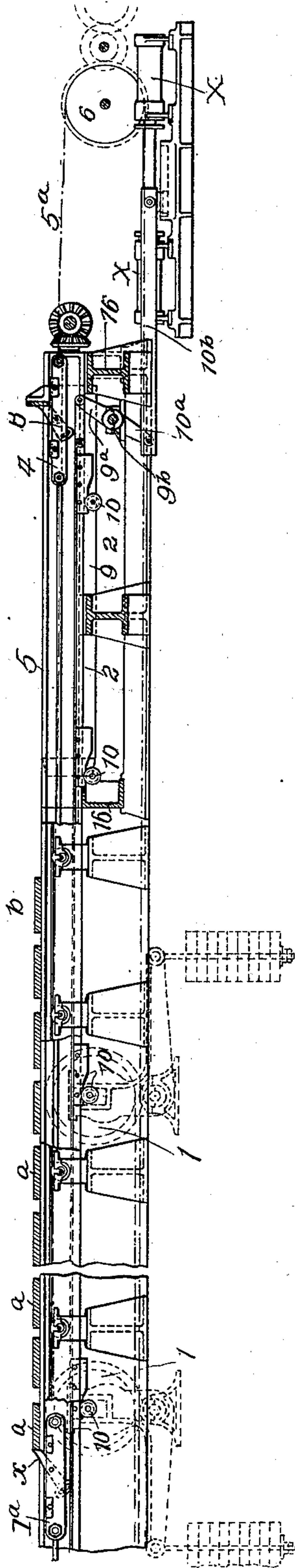
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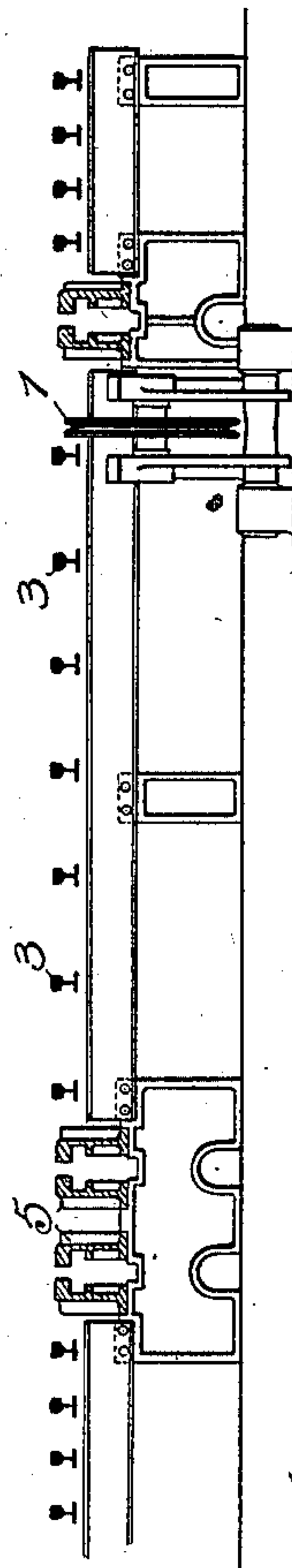
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FIG. 4.

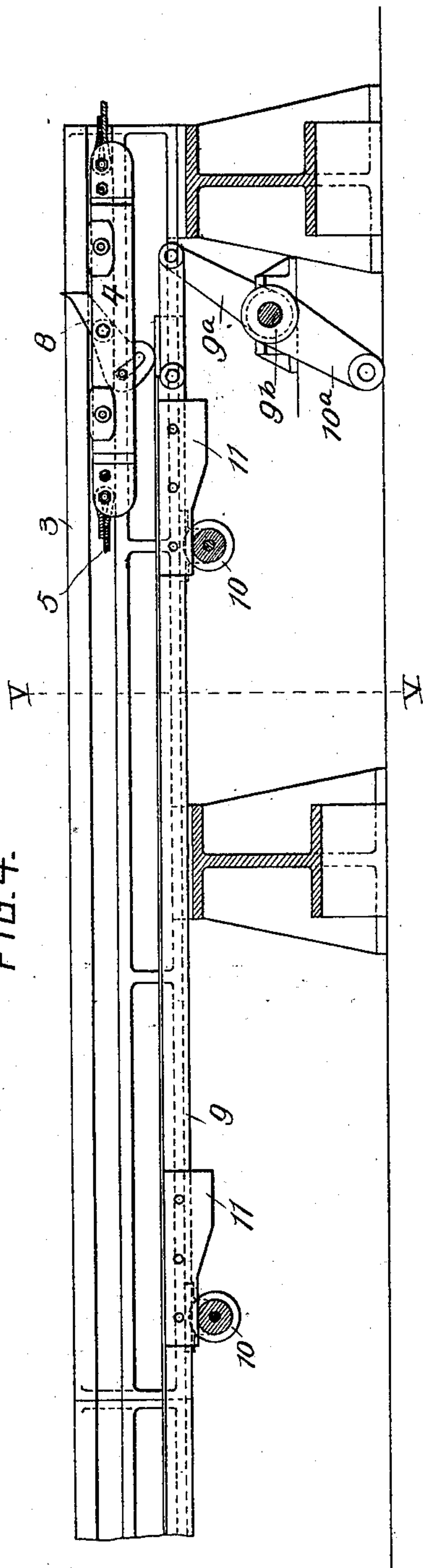
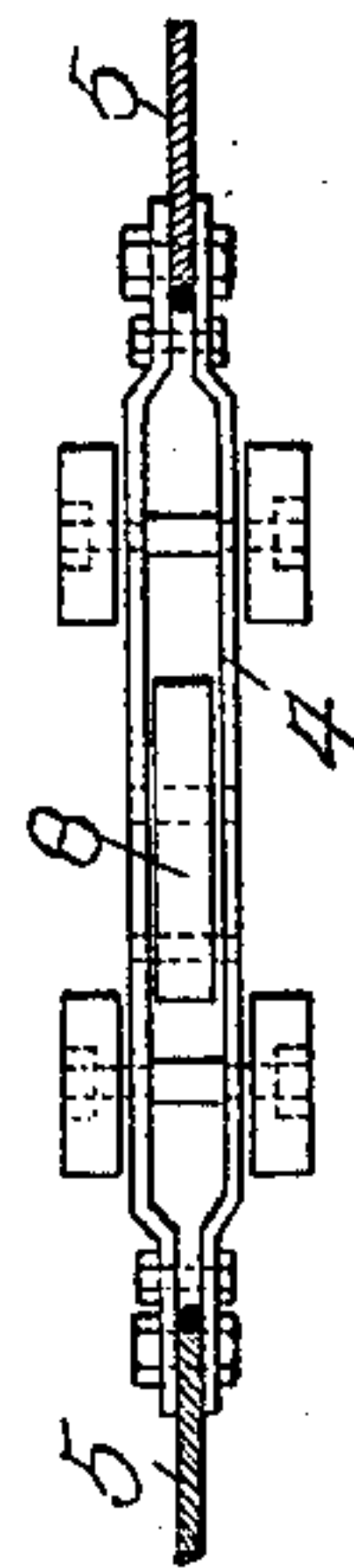
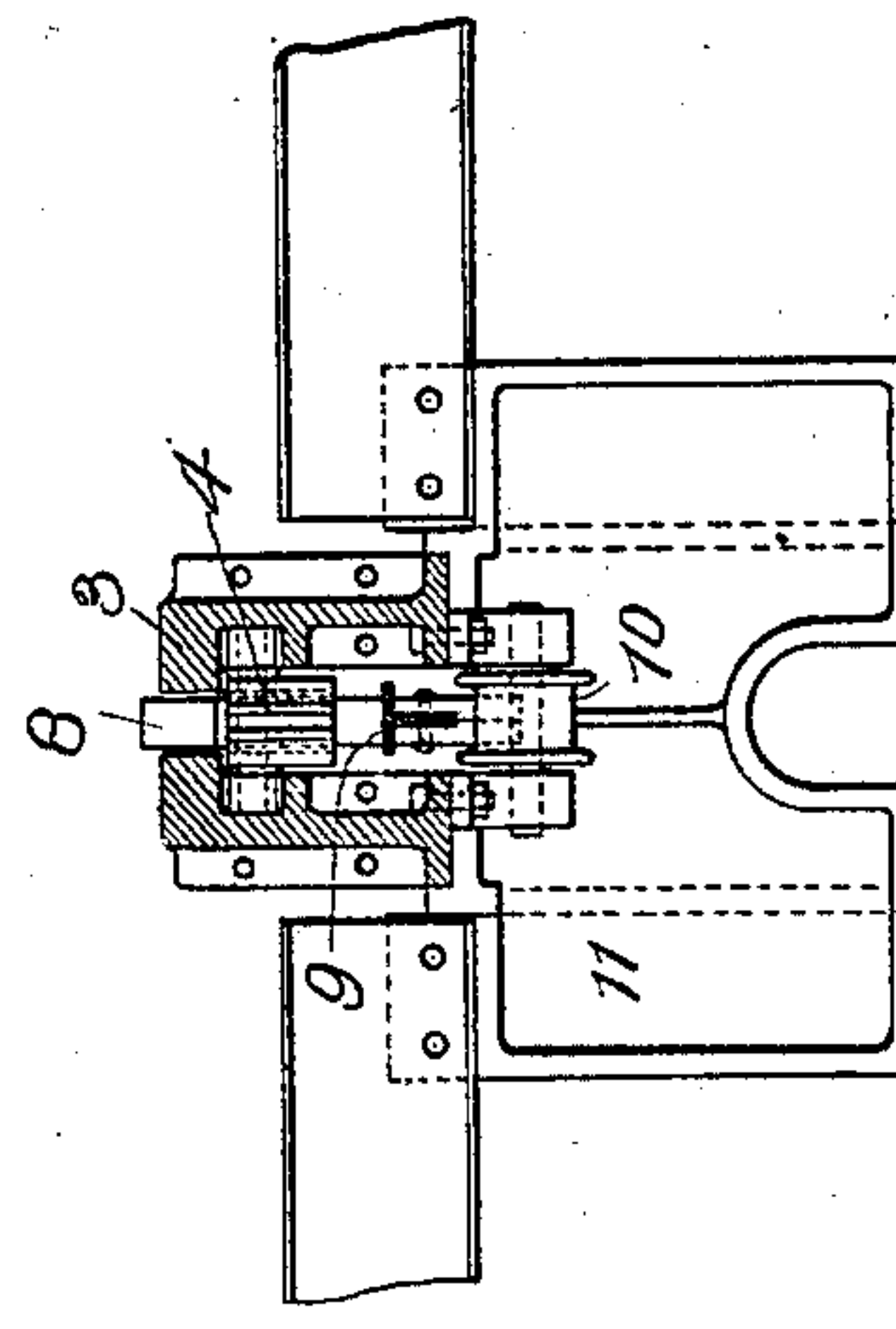


FIG. 5.



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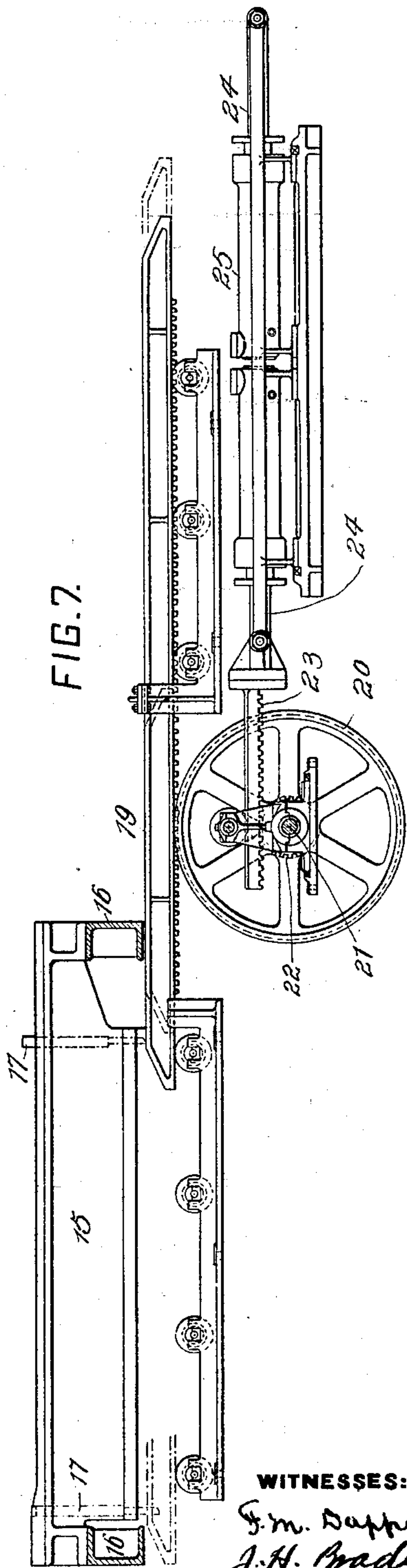
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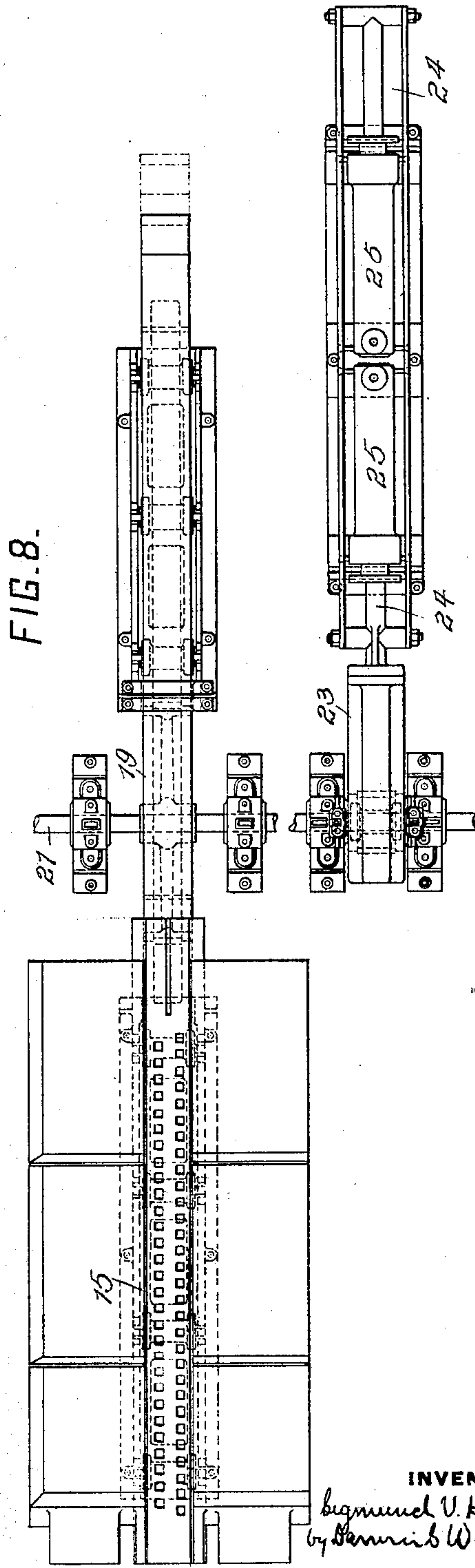
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4 Sheets—Sheet 4.



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UNITED STATES PATENT OFFICE.

SIGMUND V. HUBER, OF PITTSBURG, PENNSYLVANIA.

MECHANISM FOR SHIFTING AND SEPARATING BARS, &c.

SPECIFICATION forming part of Letters Patent No. 671,440, dated April 9, 1901.

Application filed June 18, 1900. Serial No. 20,667. (No model.)

To all whom it may concern:

Be it known that I, SIGMUND V. HUBER, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Mechanism for Shifting and Separating Plates, Bars, &c., of which improvements the following is a specification.

The invention described herein relates to certain improvements in mechanism whereby a series of plates or bars may be fed from a hotbed or other suitable support onto a feed-table and properly spaced thereon preparatory to their being fed to a shearing or other suitable mechanism.

In general terms the invention consists in a shifting mechanism whereby plates or bars may be fed one by one onto the rollers composing the feed-table and in suitably-operated stops whereby the plates or bars may be arrested while being shifted, so that they will preserve the proper relation to each other while being fed or shifted by the feed-rollers.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a top plan view of a portion of a hotbed with the feed-table arranged in proper relation thereto and illustrating diagrammatically the mechanism for shifting and spacing the plates or bars. Figs. 2 and 3 are sectional elevations, the planes of section being indicated, respectively, by lines II II and III III, Fig. 1; and Fig. 4 is a sectional elevation, on an enlarged scale, of the end portion of the mechanism shown in Fig. 2. Fig. 5 is a sectional elevation on a plane indicated by the line V V, Fig. 4. Fig. 6 is a detail view of the shifting carriage. Fig. 7 is a sectional elevation illustrating the plate separating or spacing mechanism, and Fig. 8 is a top plan view of the same.

In the practice of my invention the plates or bars are shifted laterally along the hotbed A by means of any suitable form or construction of shifting mechanism 1^a—such, for example, as a flexible endless band or chain—passing around suitable guide-pulleys, one of which, as 1, is shown and provided with upwardly-projecting fingers *x* to engage the bar

or plate and shift it along to such position on the hotbed that it can be engaged by the shifting mechanism employed for moving the plates or bars onto the feed-rollers 2. This second feed mechanism consists of a series of parallel plates or bars 3, forming a continuation or a part of the hotbed. A series of buggies or slides 4 are mounted in suitable ways 5 parallel with the rails 3 and extending between the rollers 2 and have their ends connected to endless bands or chains 5^a, passing around driving-pulleys 6 and tension-pulleys 7. As shown in Figs. 2, 4, and 6, tongues 8 are pivotally mounted in the buggies 4 and have one end weighted in such manner as to normally hold the opposite ends slightly above the surfaces of the rails 3, so as to engage the plates or bars and move them, with the buggies, to the right, as shown in Figs. 2 and 4. On a reverse movement of the buggies the elevated ends of the tongues will slide under any plates or bars which may be lying upon the rails 3.

It will be observed by reference to Figs. 1 and 2 that the two feed mechanisms for moving the bars or plates along the hotbed overlap each other, so that the primary feed mechanism will shift the bars to such position that they can be caught by the second or delivery feed mechanism.

It is frequently desirable to prevent the projection of the operative ends of the tongues above the surfaces of the rails 3 during a portion at least of the forward movement of the buggies to the right. To this end bars 9 are arranged upon a series of rollers 10 in the runways 5 immediately below the paths of movement of the buggies. On the bars 9 are secured a series of cam projections 11, which when the rails are shifted to the left in Figs. 2 and 4 will raise the bars, and thereby lift the weighted ends of the tongues 8, depressing the operative ends thereof below the surfaces of the rails 3 and runways 5, so that during the forward movement of the buggies the tongues may be held in operative position. By this construction the operator will be enabled to shift the buggies to the left any desired distance and then to the right and cause them to pass under during such forward movement to the right any desired number of plates *a*, lying on the rails 3, and then by shifting

the bars 9 to the right the operative ends of the tongues will be raised by their weighted ends, so as to engage the plate 6, for instance, and by the continued movement of the buggies shift such plate alone onto the rollers 2. The bars 9 are connected to arms 9^a on the shaft 9^b, to which is secured an arm 10^a, connected by rods 10^b to the piston or ram of fluid-pressure cylinder X, whereby the rails are shifted.

As shown in Fig. 1, the series of pulleys 6 are mounted in suitable bearings at one side of the feed-rollers 2 and are driven by shaft 12 through the medium of suitable interposed gearing. This shaft 12 is driven by a shaft 13 through suitable gearing, and this shaft by an electric or other suitable form of motor Y.

In order to properly space the plates or bars on the rollers 2, two or more beds 15 are arranged between the rollers 2, as shown in Fig. 1, the ends of these beds being supported by the side rails 16, on which the bearings for the rollers 2 are mounted. One or two series of holes are formed through the body 15 for the reception of pins 17. As shown in Fig. 7, the holes in the bottom plate of the frame are made somewhat smaller than those in the top plate and the pins have their lower ends reduced in size for a suitable distance, thereby forming shoulders which will arrest the downward movement of the pins when they have dropped such a distance that their upper ends will be flush with or slightly below the surface of the top plate of the frame 15. While a single series of holes and pins would in most cases permit a sufficient range of adjustment, it is preferred to provide two series of holes, the holes of one series alternating with those of the other series, as clearly shown in Fig. 8. In order to raise these pins, and thereby check the movement of the plates when shifted by the buggies 4, slide-bars 19 are arranged in suitable bearings below the plates 15 and have their front ends slightly inclined, so that the pins will ride easily up thereon. These slide-bars may be shifted by any suitable means, a convenient form of such mechanism being clearly shown in Figs. 7 and 8. The under sides of the bars 19 are toothed to engage the teeth on wheels 20, which are mounted on a shaft 21. On this shaft is also mounted a pinion 22, intermeshing with a rack-bar 23, connected with or operated by the pistons or rams 24 of the fluid-pressure cylinders 25. As the plates or bars

are moved onto the feed-table from the left in Figs. 7 and 8 it will be seen that by operating the slide-bars the pins which have been previously placed in holes in the frame 15 in accordance with the width of the plates and the distance the plates are to be spaced will be raised in succession as the plates are moved onto the rollers by the progressive movement of the slide-bars.

I claim herein as my invention—

1. The combination of a hotbed, means for shifting bars or plates along the bed, mechanism for shifting bars or plates off the hotbed overlapping the primary shifting mechanism, and means whereby the second shifting mechanism may be caused to engage or release a bar or plate at any desired point in its travel, substantially as set forth.

2. The combination of a hotbed, a series of buggies mounted in suitable runways in said hotbed, fingers normally held in position to engage plates or bars lying on the hotbed, means for reciprocating the buggies, and means whereby the fingers may be shifted to and held in operative position at any desired point in the movement of the buggies, substantially as set forth.

3. In a feed mechanism for rolling-mills, the combination of a table or support, mechanism for shifting plates or bars laterally onto the table, a series of movable stops and means for shifting said stops into the path of movement of the plates or bars, substantially as set forth.

4. In a feed mechanism for rolling-mills, the combination of a table or support, two series of movable stops so arranged in the table that the stops of one series alternate with those of the other series, means for shifting the stops in succession and means for shifting plates or bars laterally onto the bed or support, substantially as set forth.

5. In a feed mechanism for rolling-mills, the combination of a table or support having a series of vertically-movable pins arranged therein, a slide arranged below the pins adapted to raise and support said pins when raised, substantially as set forth.

In testimony whereof I have hereunto set my hand.

SIGMUND V. HUBER.

Witnesses:

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