

J. H. LONGSTREET.
PORTABLE SAWING MACHINE.
APPLICATION FILED JUNE 20, 1908.

961,870.

Patented June 21, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

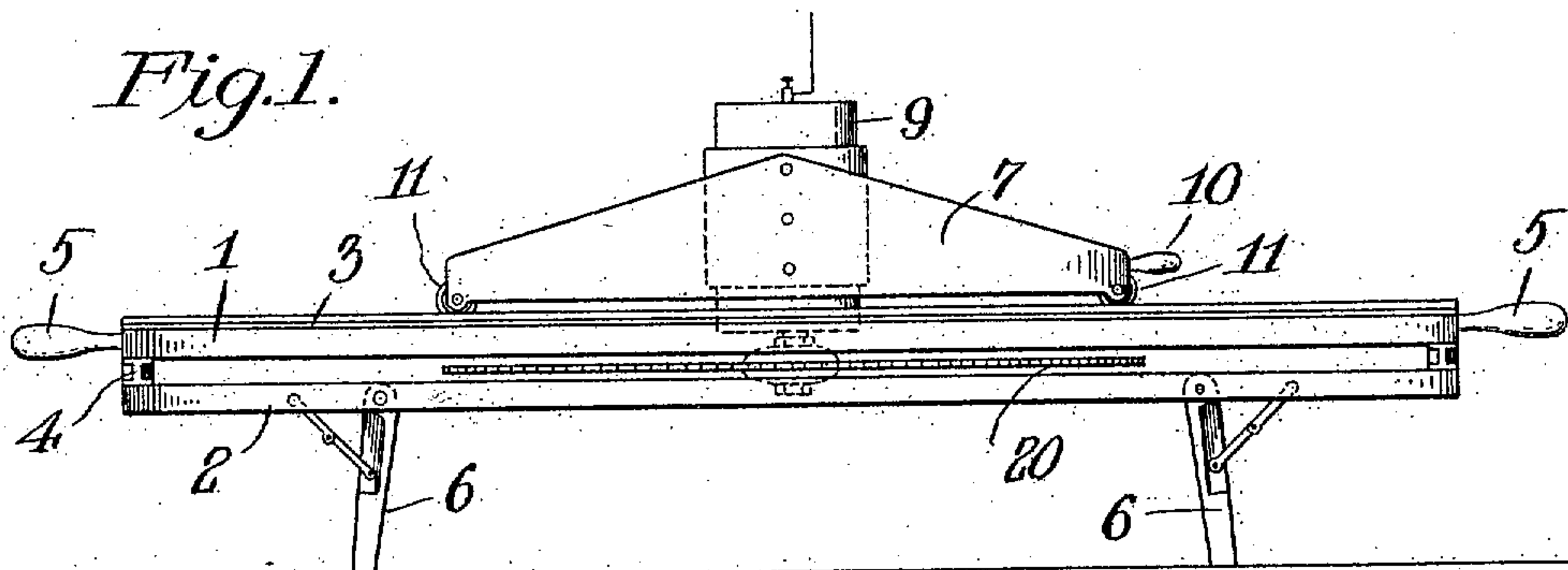


Fig. 2.

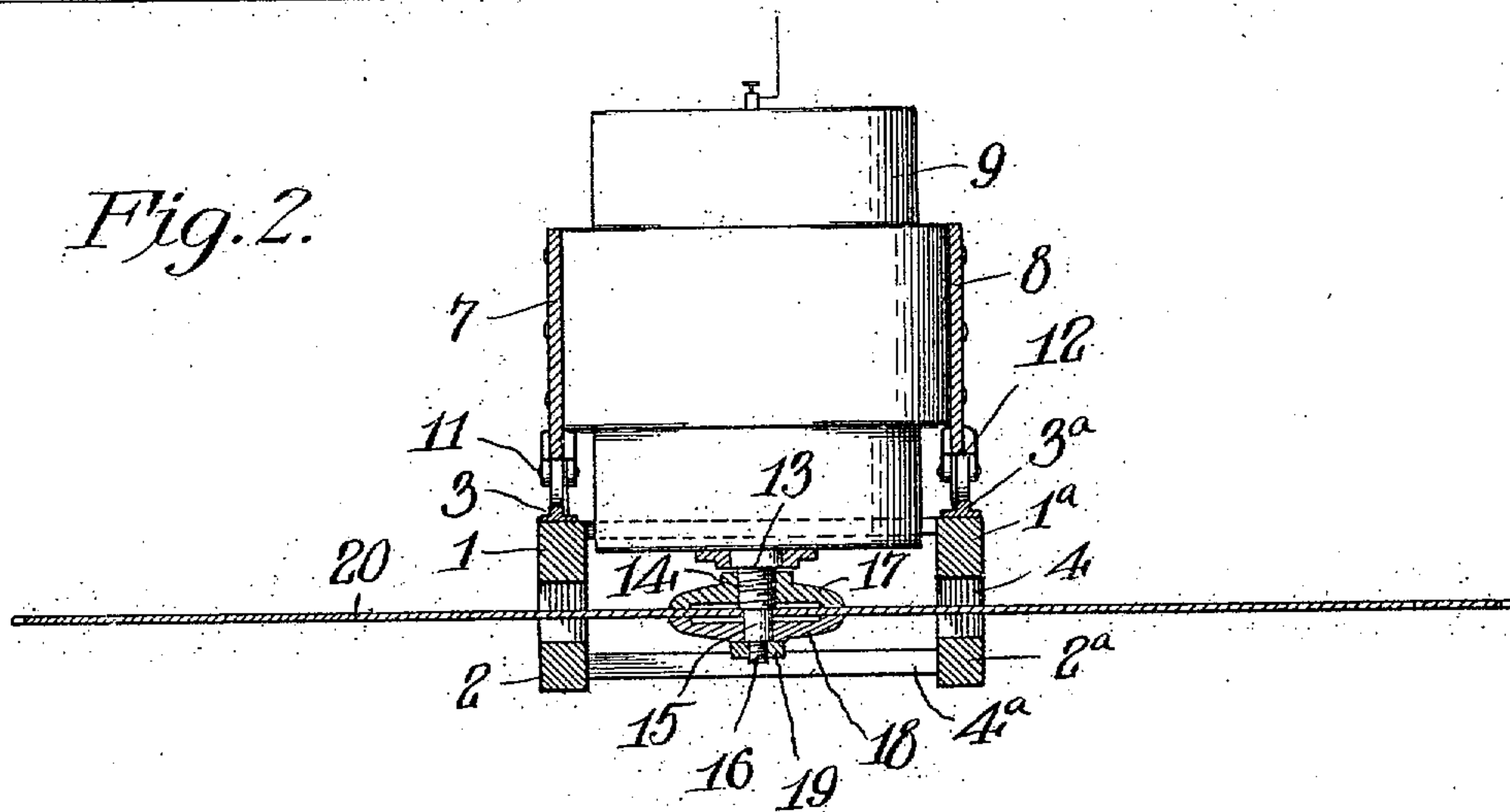


Fig. 3.

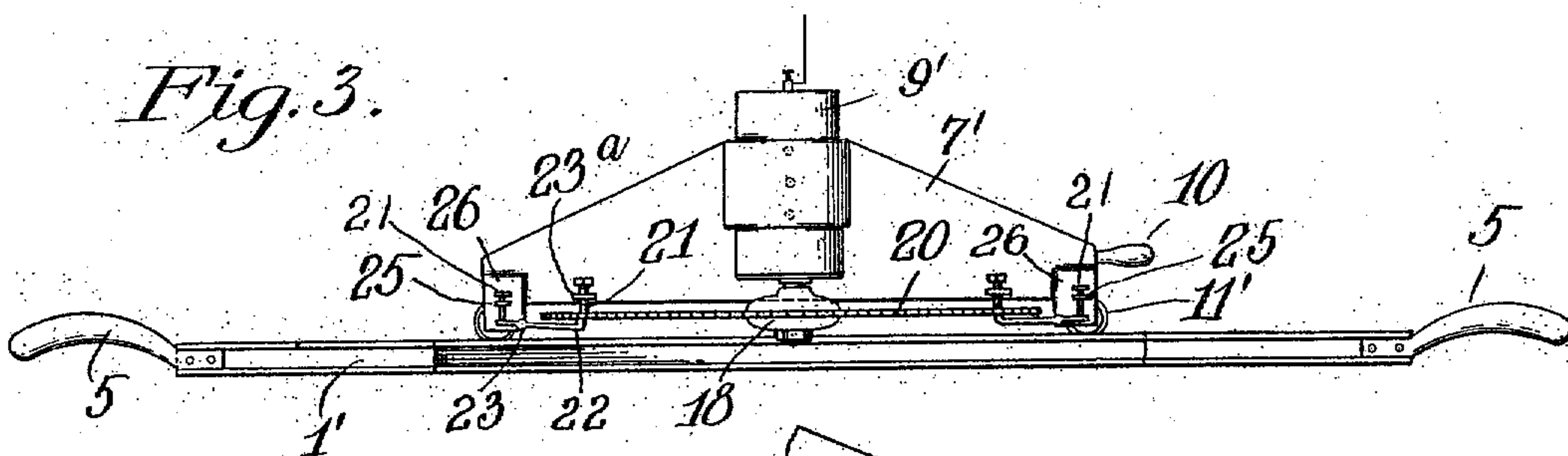
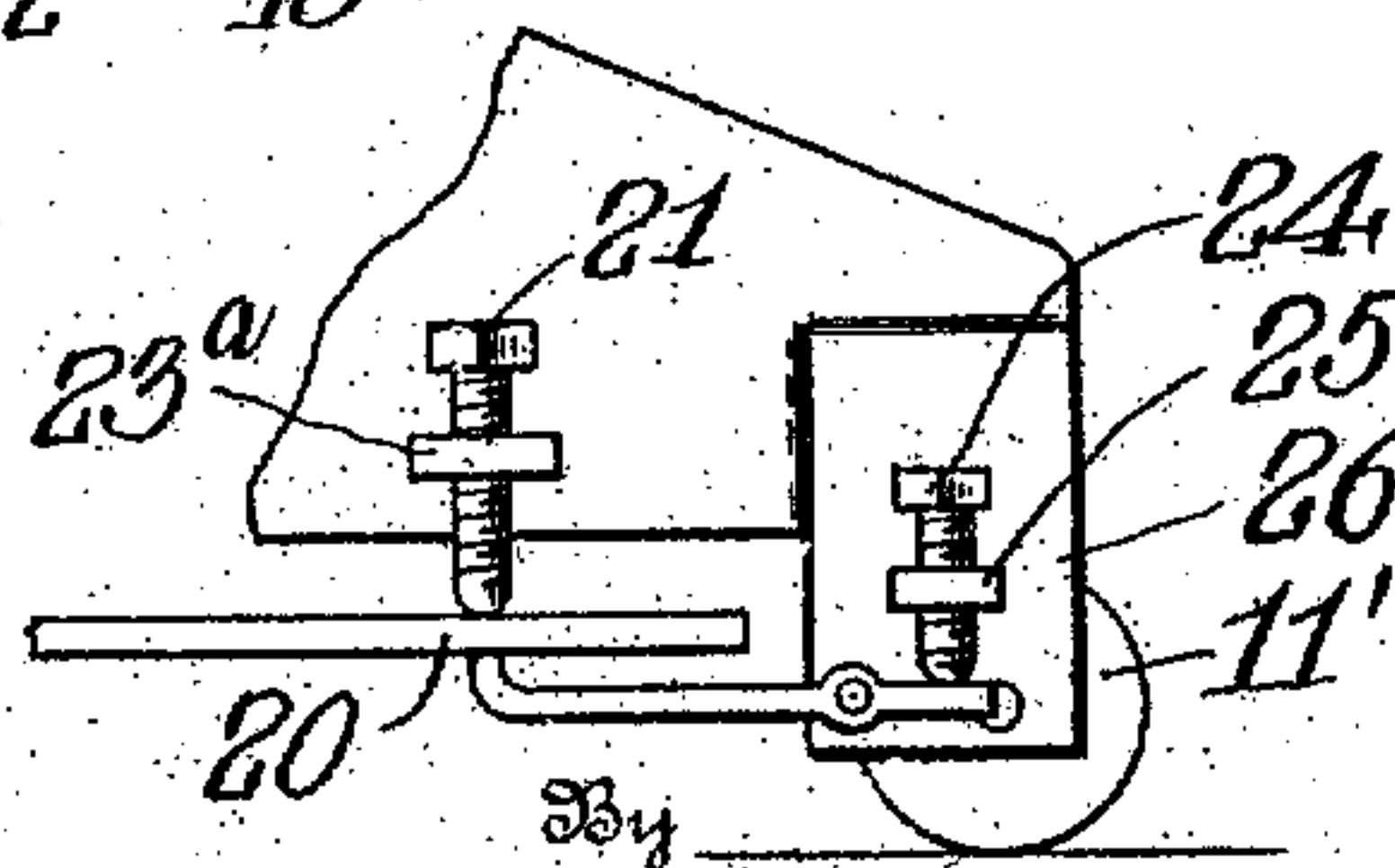


Fig. 7.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

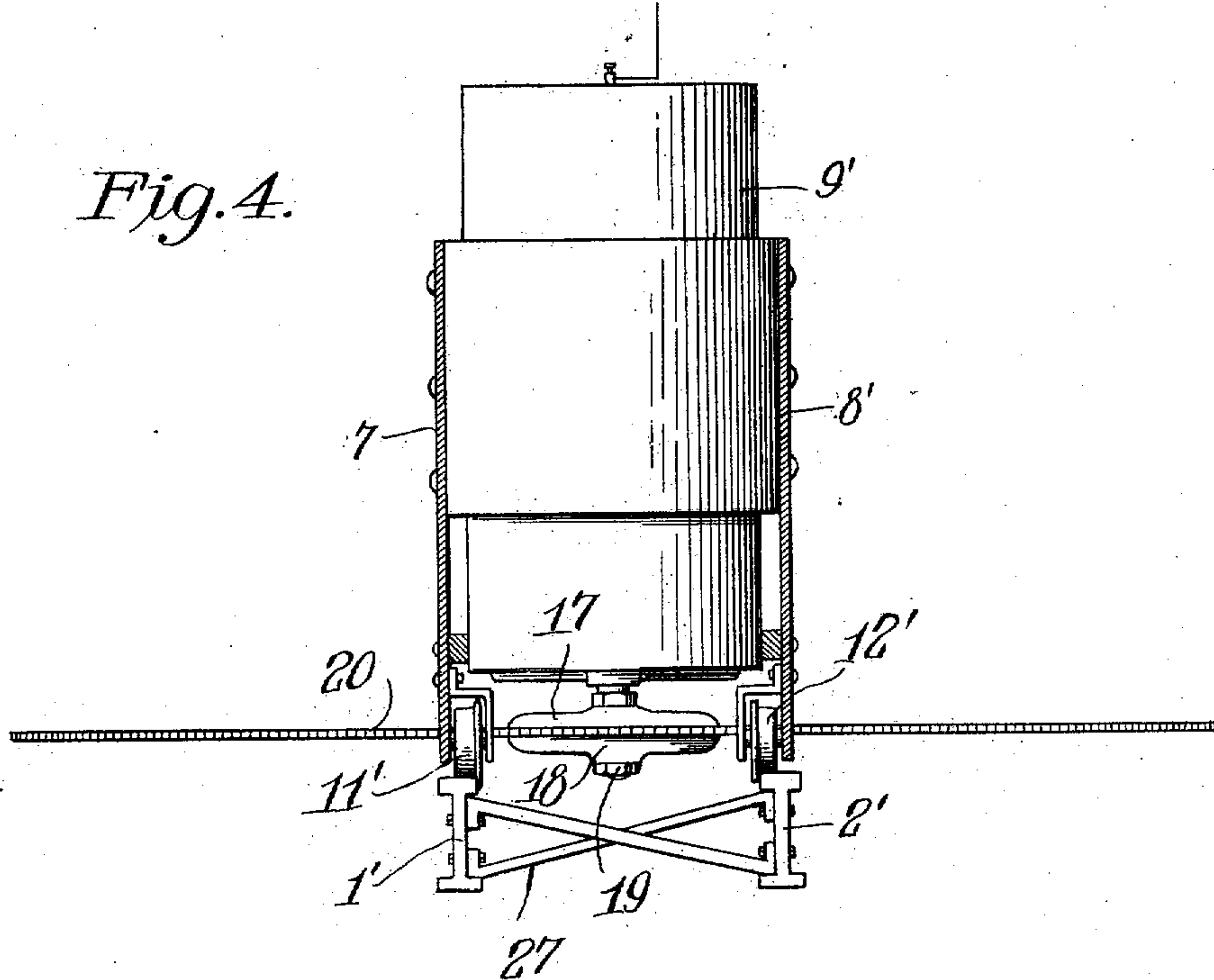


Fig. 5.

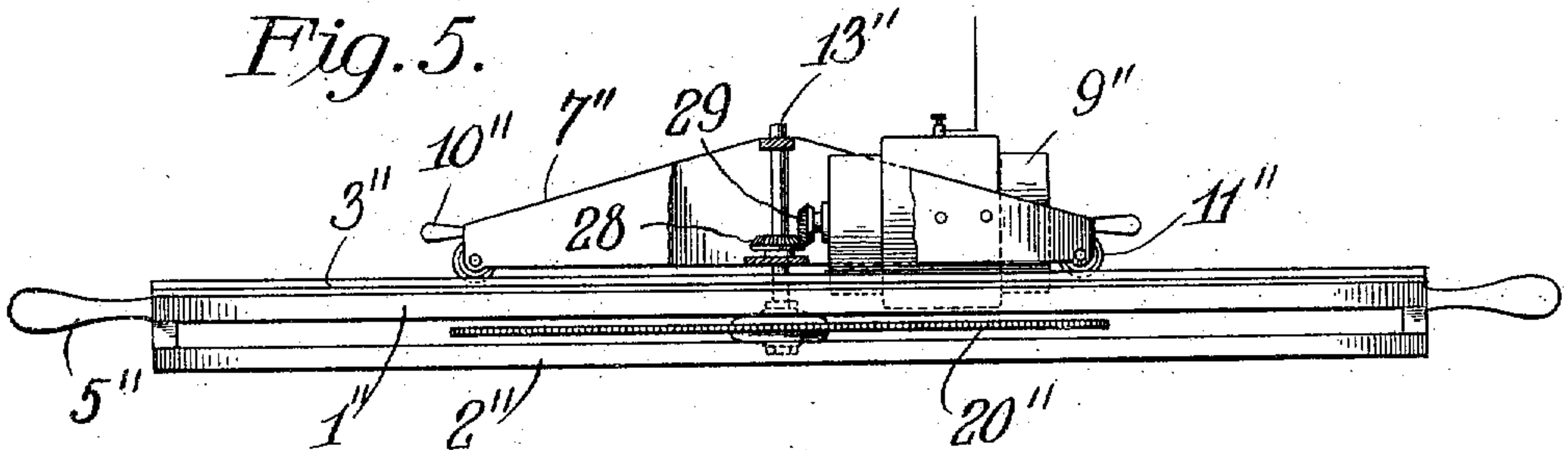
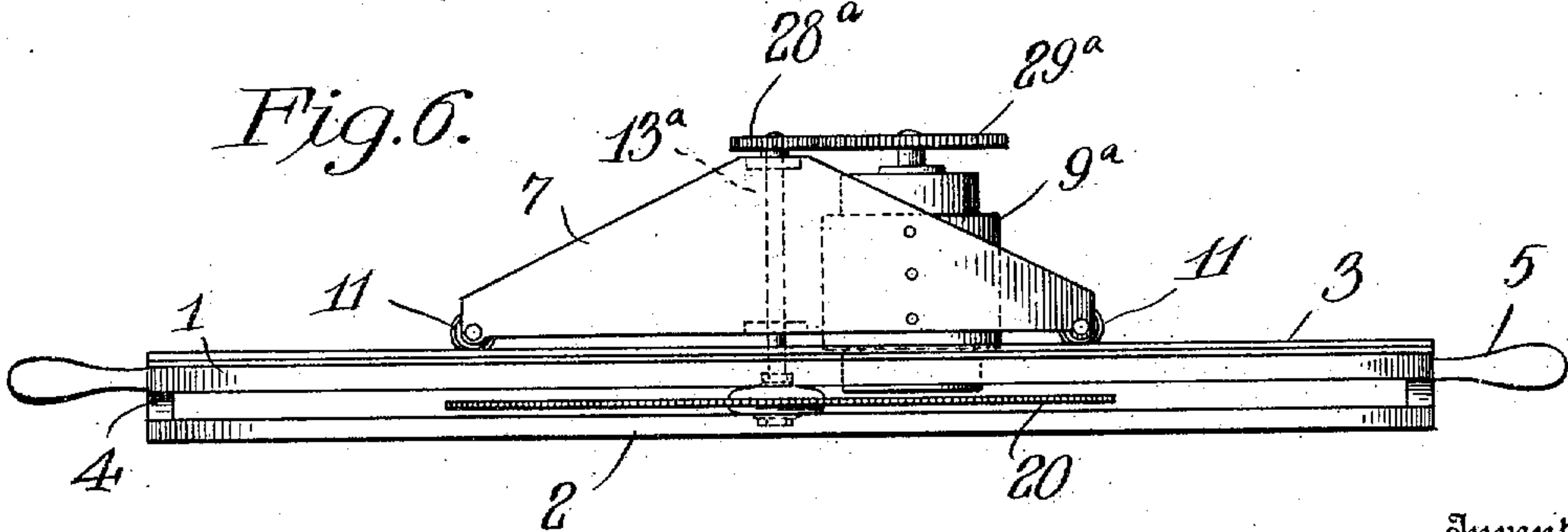


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN H. LONGSTREET, OF GERMANTOWN, PENNSYLVANIA.

PORTABLE SAWING-MACHINE.

961,870.

Specification of Letters Patent. Patented June 21, 1910.

Application filed June 20, 1908. Serial No. 439,498.

To all whom it may concern:

Be it known that I, JOHN H. LONGSTREET, a citizen of the United States, residing at Germantown, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Portable Sawing-Machines, of which the following is a specification.

My invention relates to portable sawing machines, and particularly to machines of the class shown and described in my co-pending application, Serial No. 439,497 filed June 20, 1908.

In the above-mentioned application I have illustrated a machine having a vertical saw, and adapted for cutting up timber in building operations, and for sawing logs in the forest. The present case relates to a sawing machine of this general character but in which the saw is horizontal, and is especially designed for use in felling trees.

One object of the invention is to provide a sawing machine which shall be light and readily handled, and at the same time strong and rigid, and efficient in operation.

Another object of the invention is to provide a construction by virtue of which the axis of the saw may run very close to the tree being cut.

A further object is to provide a carriage having improved means for guiding the saw and supporting the same on both sides of its axis.

With the above and other objects in view, my invention consists in the construction and arrangement of parts hereinafter described and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of one form of my improved sawing machine complete; Fig. 2 is a transverse section thereof on an enlarged scale; Fig. 3 is a side elevation corresponding to Fig. 1, but showing a modified construction; Fig. 4 is a transverse section thereof on an enlarged scale; Fig. 5 is a side elevation corresponding to Fig. 1, but showing a further modification; Fig. 6 is a similar view showing a still further modification; and Fig. 7 is a fragmentary side elevation on an enlarged scale showing the saw guides.

Referring to the drawings in detail, and more particularly to Figs. 1 and 2 thereof, the frame of the machine consists, as in the other case, of pairs of spaced members, 1, 2, 1^a, 2^a, on which are laid the rails 3, of any

suitable shape, constituting the track for the saw carriage. 4 and 4^a represent the cross bars or end members of the frame, near which are secured the carrying handles 5. Folding legs 6 may, if desired, be pivoted to the frame near each end. The carriage comprises the two truss-shaped side members 7 and 8, preferably formed of boiler plate or sheet steel between which is secured, as by means of rivets or screws, a vertically arranged electric motor 9. Handles 10 are preferably secured to each end of the carriage, by means of which the carriage may be lifted and the carriage and the saw moved back and forth, as desired. At each of the four corners of the carriage are arranged rollers 11, 12, suitably shaped to engage the rails 3, 3^a. The vertical shaft of the motor 9 is designated by the numeral 13, and, as clearly shown in Fig. 2, this shaft projects down beneath the motor frame and is provided with a screw-threaded portion 14, a plain portion 15, and a screw-threaded end 16. A combined nut and clamping member 17, is fitted onto the screw-threaded portion 14, of the shaft, and a second clamping member 18 is fitted over the smooth portion of the shaft, which serve to grip between them a horizontal circular saw 20. A nut 19 holds the clamping member 18 tightly in position. It will be noted that the shaft 13 is of such length and the clamping member so placed that the horizontal saw 20 extends laterally between and beyond each side of the members 1, 2, 1^a, 2^a, of the frame. Also, it will be observed that, owing to the fact that the carriage is narrow, being only of the width of the motor, the axis of the saw can run very close to the tree being cut.

Referring now to Figs. 3 and 4, I have shown the frame as comprising only the members 1', 2', secured by braces 27. No track rails are provided in this construction, the wheels 11' and 12' running directly upon the I-beams 1' and 2' forming the bed or frame. The carriage comprises the side members 7', 8', between which is secured the motor 9', carrying on its lower end the saw 20. In this case, however, the saw is arranged to run between the carriage and rails. To this end, the carriage is formed at each corner with depending portions 26, which turn down around the edge of the saw and carry the supporting rollers 11', which engage the track rails. In this way

the saw is located immediately beneath the carriage, and between the same and the track, and extends beyond each side of the bed and carriage as clearly shown in Fig. 4, so that in operation, the extending portion cuts into the tree or other object being operated upon. This construction has the advantage that the entire saw and carriage may be readily lifted from one track to another. This arrangement furthermore permits of saw guides being mounted on the carriage. As clearly shown in Figs. 3 and 7, these guides each consist of a lower member 22, pivoted at 23 to the carriage, and an upper member 21 adjustably secured in a lug 23^a. A set screw 24 works through a lug 25, and bears against the outer end of the arm 22 for adjusting the same. It will therefore be seen that by moving the screws and arms any desired adjustment may be secured, and the outer edge of the saw properly steadied in its movement.

While in the arrangement shown in Figs. 1 and 2, part of the motor lies below the plane of the tracks, and will ordinarily be found to run perfectly steady, it may sometimes be desirable, on account of greater stability, or for other reasons, to lay the motor 9 horizontally, as shown in Fig. 5. In this position the center of gravity falls much nearer the track rails. When the motor is so arranged, I mount the horizontal saw on a special shaft 13'', and gear it to the motor by means of bevel gear wheels 28, 29, secured to the said shaft and to the motor shaft, respectively. The other parts shown in Fig. 5 are the same as those of Fig. 1, and are designated by the same reference characters with the double prime affixed.

In order to get a greater speed of saw, or for other reasons, it may sometimes be desirable to arrange the parts as shown in Fig. 6. Here the saw is carried by a shaft 13^a to the upper end of which is secured a pinion 28^a meshing with a gear wheel 29^a mounted on the upper end of the motor shaft, which motor 9^a is vertically arranged. The remaining parts are the same as those of Fig. 1 and are similarly designated.

It will thus be seen that I have provided a sawing machine which, on account of its simplicity and adaptability will, it is thought, readily commend itself to those skilled in the art.

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

1. In a sawing machine, a pair of rails constituting a track, a movable carriage supported on said track and comprising verti-

cal side members parallel to said track and having bearings at the end of each side member engaging a rail, a motor carried by said carriage, and a horizontal circular saw driven by said motor and rotatably mounted on said carriage below the side members and projecting laterally thereof.

2. In a sawing machine, a pair of rails constituting a track, a movable carriage supported on said track, a motor carried by and connected to said carriage, a horizontal circular saw rotatably mounted on said carriage below the frame and completely exposed on its under side, said saw projecting in an operative position beyond the carriage and operatively connected with said motor.

3. In a sawing machine, a pair of rails constituting a track, a movable carriage supported on such track, a motor carried by and connected to said carriage, a horizontal circular saw rotatably mounted on said carriage below the side members thereof and the plane of their engagement with the track and projecting in an operative position beyond the same and operatively connected with said motor.

4. In a sawing machine, a pair of rails constituting a track, a movable carriage supported on such track, a motor carried by and connected to said carriage, a horizontal circular saw rotatably mounted on said carriage and operatively connected to said motor, said saw lying below the rails and projecting in an operative position beyond the same, and folding legs pivoted to said track for supporting the sawing machine when necessary.

5. A portable sawing machine comprising a frame having spaced parallel side members, track rails secured to such members, a movable carriage supported on said track and comprising a pair of spaced parallel side members, a motor mounted directly between such spaced side members and rigidly fastened thereto, a horizontal circular saw mounted on said carriage and operatively connected with said motor, said saw projecting beyond the sides of said frame between the side members of said carriage and the bottom of the frame members in position to act upon the material to be cut, and adjustable saw guides secured to the carriage adjacent each end embracing said saw.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN H. LONGSTREET.

Witnesses:

W. H. KOLLER,

GEORGE S. DELLINGER.