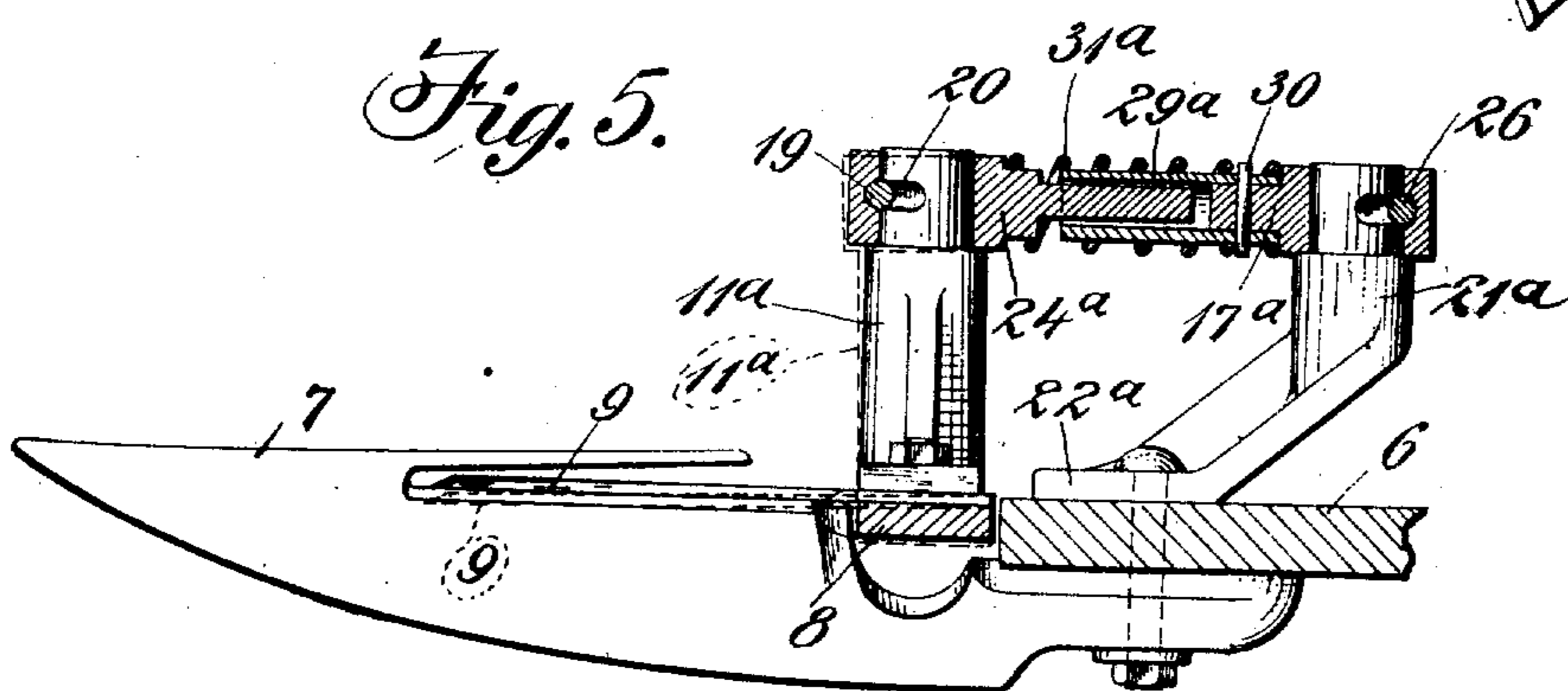
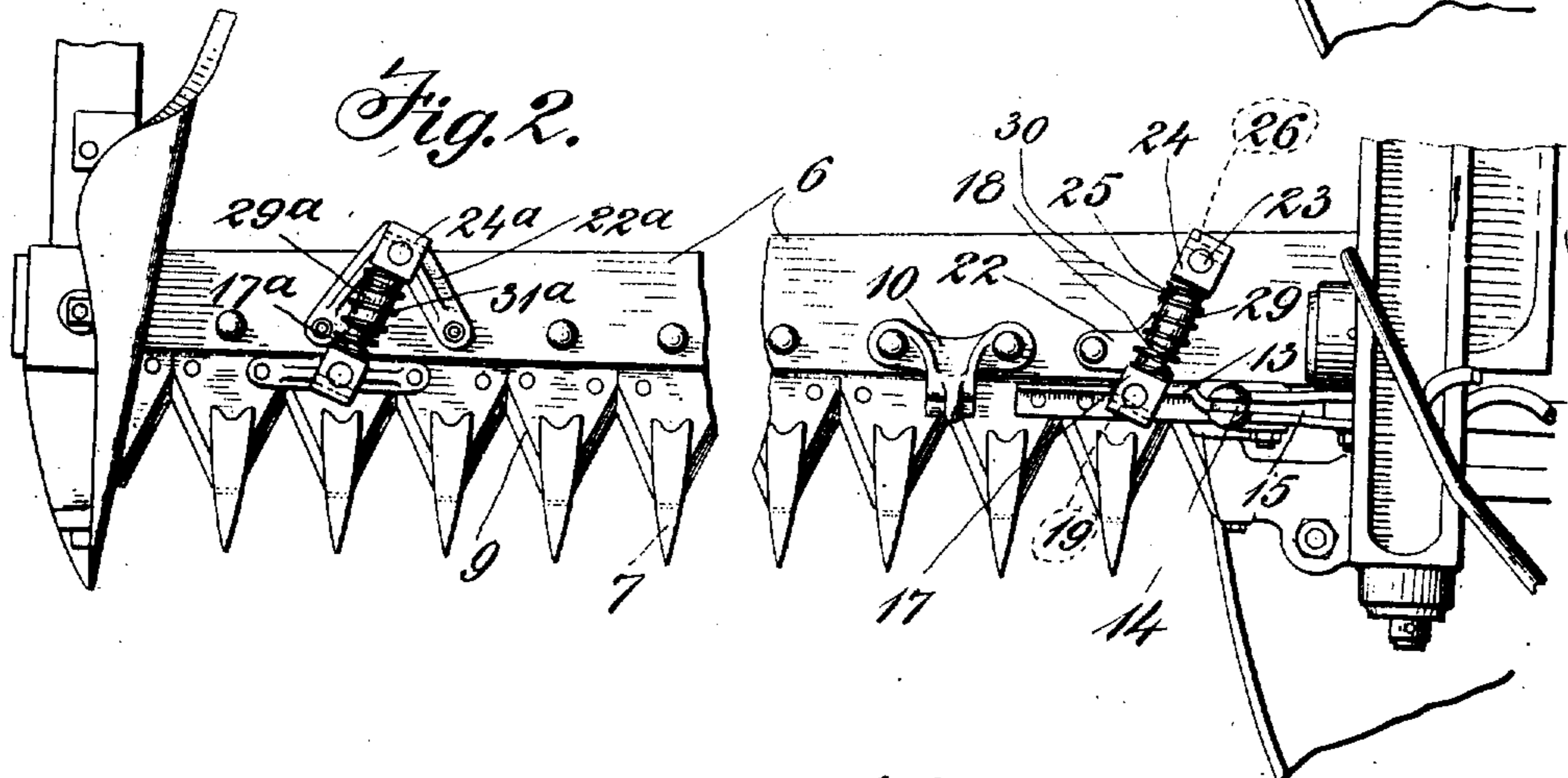
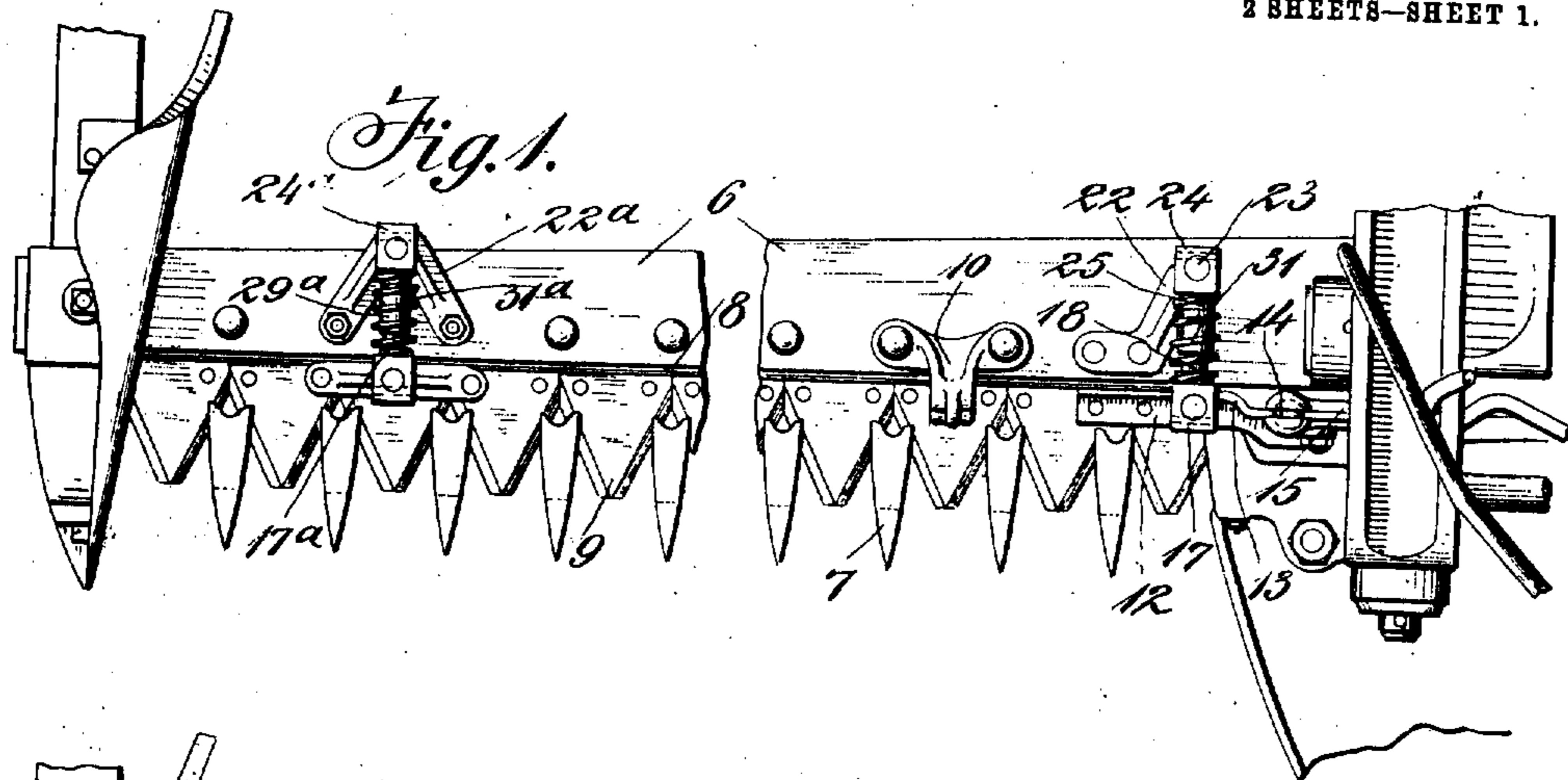


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CUTTING APPARATUS.
APPLICATION FILED JAN. 31, 1908.

903,273.

Patented Nov. 10, 1908.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

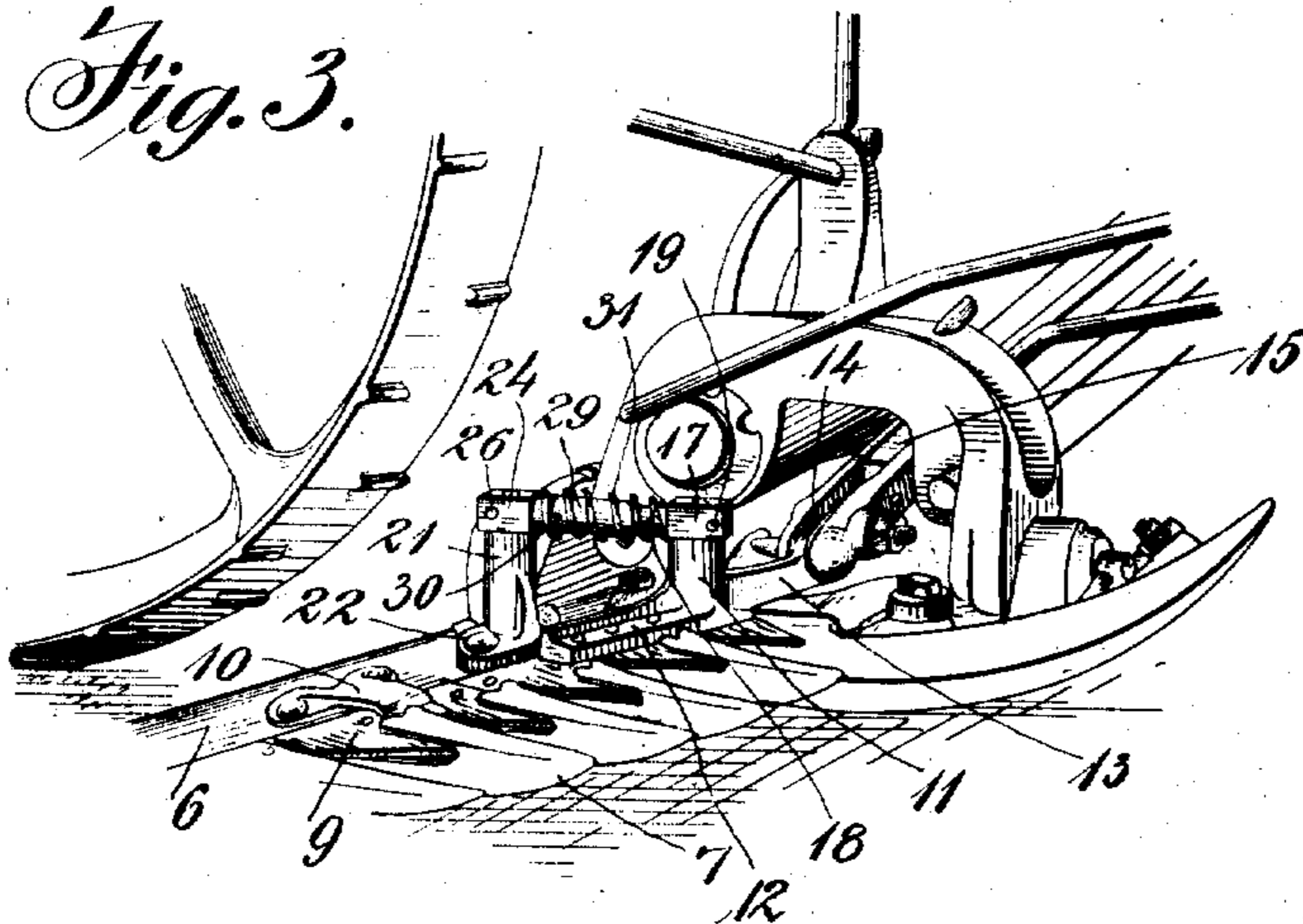


Fig. 4.

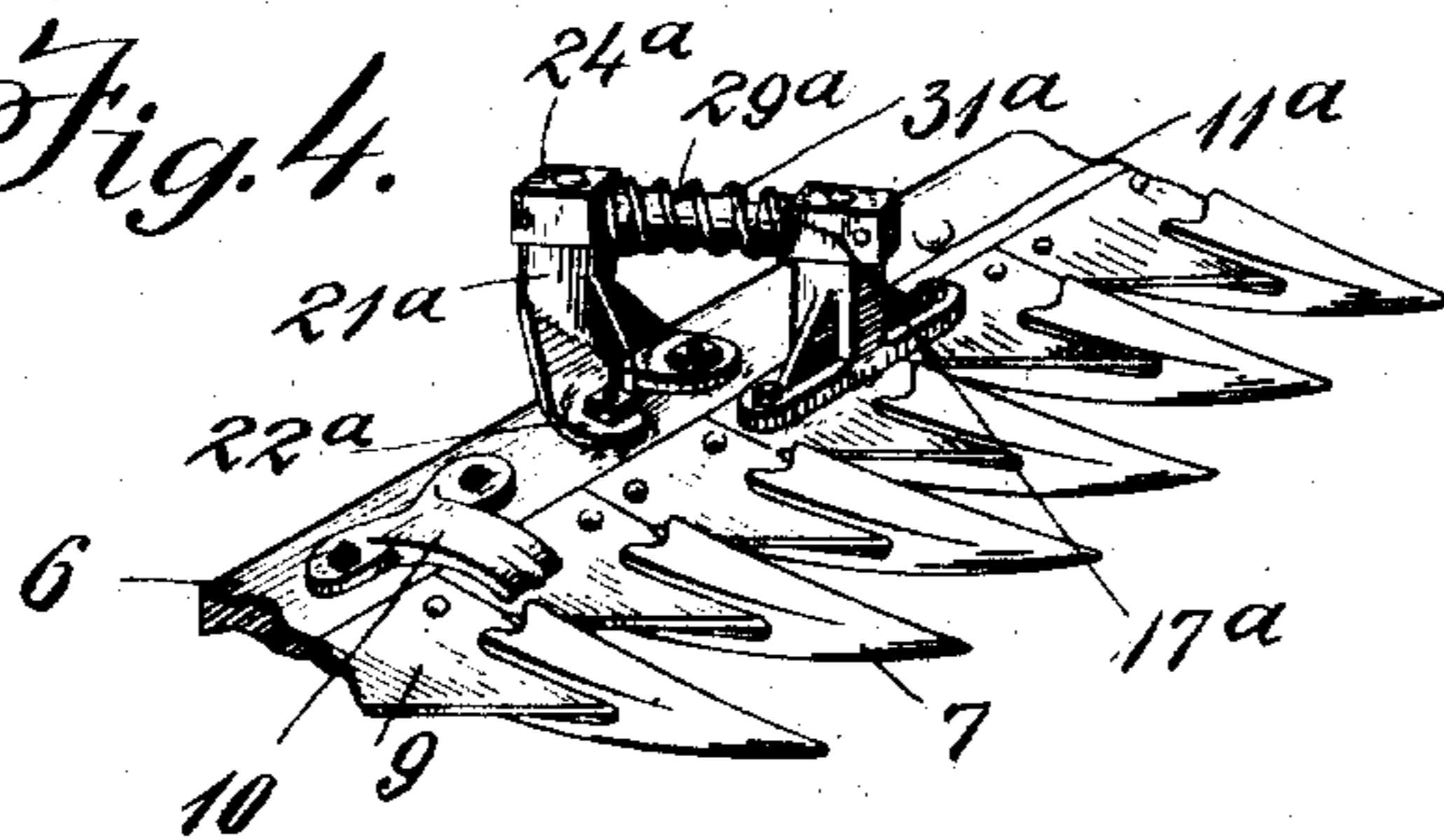
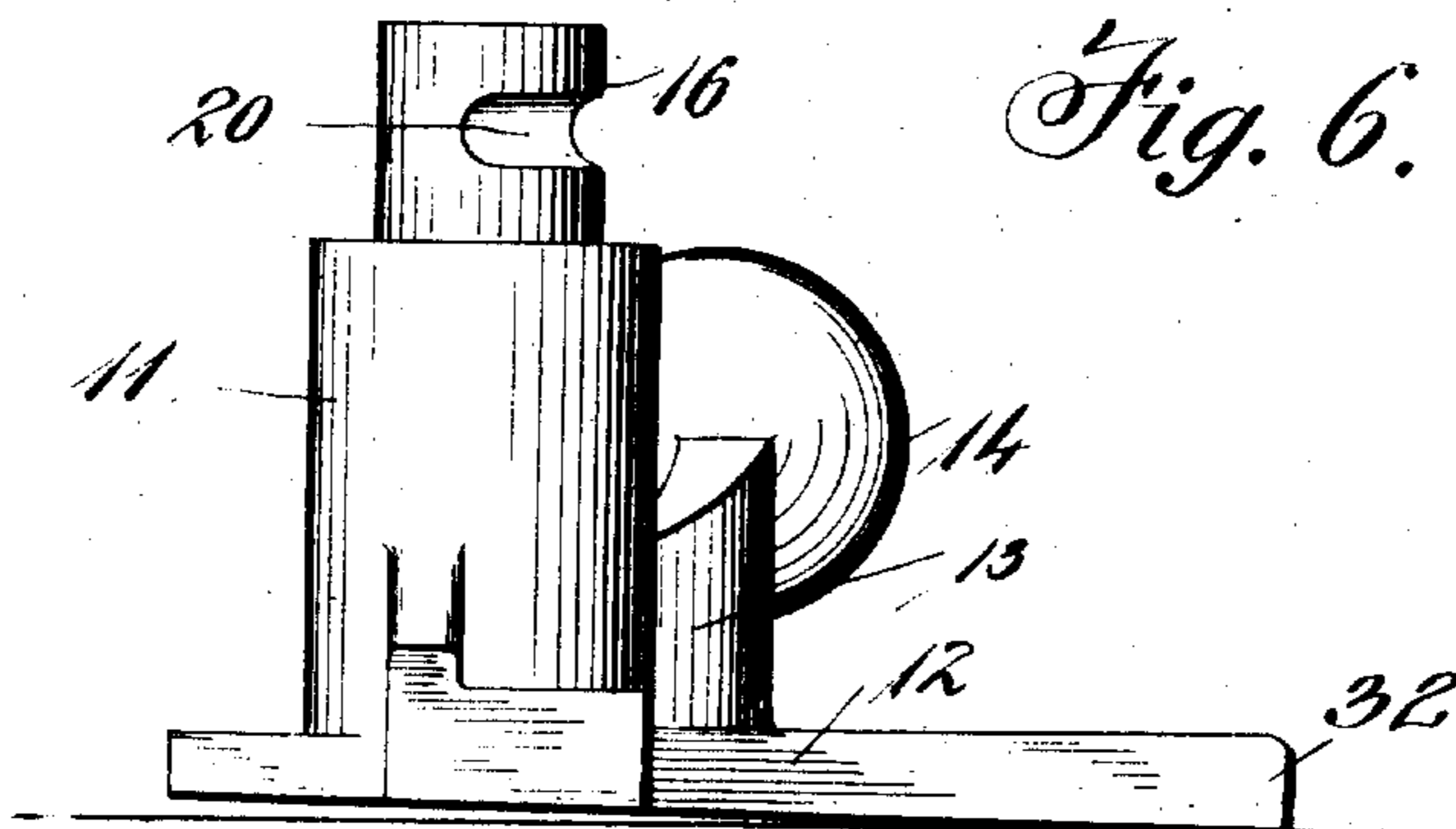


Fig. 6.



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UNITED STATES PATENT OFFICE.

SPENCER DAVIS, OF HAZELTON, KANSAS.

CUTTING APPARATUS.

No. 903,273.

Specification of Letters Patent.

Patented Nov. 10, 1908.

Application filed January 31, 1908. Serial No. 413,523.

To all whom it may concern:

Be it known that I, SPENCER DAVIS, a citizen of the United States, residing at Hazelton, in the county of Barber and State of Kansas, have invented certain new and useful Improvements in Cutting Apparatus, of which the following is a specification.

In my U. S. Patent No. 816,650, dated April 3, 1906, there is disclosed an invention relating to the cutting apparatus of harvesters, having for its object to produce a shear cut by the blades and also to make them self sharpening, by having blades which are tilted so that their cutting edges cross the edges of the ledger plates at an angle.

The present invention is an improvement which operates on the same principle, but which uses different means for producing the same results.

The present invention may be quickly and easily applied to most of the standard mowing machines, and is able to operate in a manner somewhat more efficient than old devices for the same purpose.

By means of the present invention the knives secured to the cutter bar are caused to press closely against or upon the ledger plates of the guard fingers, springs being used to effect the pressure and to allow the knives to pass over the edges of the ledger plates, which cooperate with the edges of the knives to produce the cut.

The present invention is illustrated in the accompanying drawings, in which

Figure 1 is a top plan view of the cutter bar, with the parts in one position. Fig. 2 is a similar view with the parts in another position. Fig. 3 is a perspective view showing the devices at the heel of the cutter bar. Fig. 4 is a perspective view showing the devices at the outer end of the cutter bar. Fig. 5 is a vertical section across the parts shown in Fig. 4. Fig. 6 is a detail in end elevation of one of the parts shown in Fig. 3.

Referring specifically to the drawings, the finger bar is indicated at 6, the guard fingers at 7, the reciprocating cutter bar at 8, and the knives at 9, these parts being of the usual or ordinary construction, as well as clips 10 under which the cutter bar travels and which assist in holding the same in place.

At its heel or inner end the cutter bar is provided with a post 11 projecting upwardly from a base piece 12 which is bolted to the cutter bar. The base 12 extends lengthwise along the cutter bar a sufficient distance to

afford room for several bolts, to connect the same firmly to the cutter bar. The base plate is strengthened by a rib 13 which terminates in a ball 14, which is connected to the well known socket of the pitman 15, by means of which the cutter bar is reciprocated. At the top the post 11 is reduced, as indicated at 16, forming a circular pin or wrist which receives the head 17 of a bolt 18, the head having an eye or hole in which the pin fits; and the bolt is free to turn, to a limited extent, on the pin, resting upon the shoulder at the top of the post. The bolt is held on the post by means of a cross pin 19 which is inserted horizontally through the head and through a semi-circular groove 20 formed in the side of the bearing 16.

Mounted upon the heel of the finger bar, directly behind the parts above described, is a post 21 having an angular base piece 22 which is bolted to the finger bar, preferably by the same bolts used to connect the first two guard fingers to said bar. At the top the post 21 has a pin bearing 23 in all respects similar to the bearing 16, and said pin 23 receives the square head 24 of a bolt 25, and is fastened thereon by a cross pin 26, as above described. The parts are so constructed that the bolts 25 and 18 register with each other, and they are connected by a sleeve 29 which fits over the adjacent ends of the bolts. The sleeve is fastened to the bolt 25 by a cross pin 30 the ends of which extend beyond the sleeve in order to retain in place a spring 31 which is coiled around the sleeve in compression between the heads 17 and 24 of the bolts.

The inner end of plate 12, under the ball 14, is slightly thicker at its front edge, as indicated at 32, than at its rear edge, and this gives the cutter bar a slight cant or tilt downwardly and forwardly so that the points of the knives are somewhat depressed.

Near the outer end of the finger bar is a device similar in many respects to the parts above described. It has a post 11^a bolted to the cutter bar, and a post 21^a mounted upon the finger bar, with bolts 17^a and 24^a mounted to oscillate upon said posts in the same manner as above described, together with a spring 31^a, a sleeve 29^a and other similar associated parts. The post 21^a is somewhat different in shape, having base parts 22^a set at an angle to each other, and preferably the proper distance apart to receive the attaching bolts of the adjacent guard fingers.

As indicated above, the springs 31 and 31^a are in compression between the heads of the bolts, and by their pressure tend to depress or tilt down the points of the knives. When the cutter bar is reciprocated it is obvious that the distance between the posts will be increased, and that the oscillating bolts will turn upon their pivot pins to accommodate the movement, the bolts 17 and 17^a working in and out in the sleeve 29 and 29^a. Also, when the distance between the posts is increased, the tension of the springs will be decreased accordingly. The posts are so set with respect to the knives and the finger bar that the posts are in line with each other, and consequently closer together, when the points of the knives are midway between the fingers, as shown in Fig. 1: in other words, at the mid-stroke. At either end of the stroke the posts are farther apart, and the knives are in line with the fingers, as shown in Fig. 2. The effect of this is that at mid-stroke the points of the knives are depressed somewhat between the fingers, with their edges resting upon the edges of the ledger plates, and as the cutter bar is reciprocated the edges of the knives ride up the cooperating edges of the ledger plates and in tight contact therewith, the springs, however, easing off a little as the knives reach the end of the stroke, in consequence of the elongation of the springs incident to the increase of distance between the posts. The result of this action is that the edges of the knives and the ledger plates are in slightly crossed planes, and so are held in contact to produce a shear cut, and since only the edges of the blades are in contact, said edges will be automatically sharpened by such contact.

In the drawings, one of the devices is shown at the heel of the cutter bar and another near the outer end thereof, and this will ordinarily be sufficient, but for machines having particularly long bars one or more additional devices may be used, similar to that at the outer end.

I claim:

1. In a cutting apparatus, the combina-

tion of a finger bar, a reciprocating cutter bar thereon, posts projecting upwardly from said bars, and springs between the posts, tending to depress the points of the cutters carried by the cutter bar.

2. In a cutting apparatus, the combination of a finger bar, a reciprocating cutter bar thereon, posts projecting upwardly from said bars and having bearings at the upper ends, bolts mounted on said bearings and having a connecting sleeve, and springs coiled around said bolts, in compression between said posts.

3. In a cutting apparatus, the combination of a finger bar, a cutter bar thereon having knives the points of which are normally depressed between the fingers, and springs between the bars, tending to depress said points the tension of the springs being greater when the knives are between the fingers, and lesser when the knives are in alignment therewith.

4. In a cutting apparatus, the combination of a finger bar, a reciprocating cutter bar thereon, posts projecting upwardly from said bars, the posts being directly opposite each other at mid-stroke, when the knives are between the fingers, and at either side of each other when the knives are in line with the fingers, and an extensible connection between the upper ends of the posts, including springs in compression therebetween.

5. In a cutting apparatus, the combination of a finger bar, a reciprocating cutter bar thereon, opposite posts projecting upwardly from said bars respectively and having upright bearing studs at the top, an extensible connection between said posts, arranged to oscillate laterally upon said bearings when the cutter bar is reciprocating, and including a spring in compression between the posts.

In testimony whereof I affix my signature, in presence of two witnesses.

SPENCER DAVIS.

Witnesses:

ALBERT W. MOORE,
HENRY H. BROWN.