

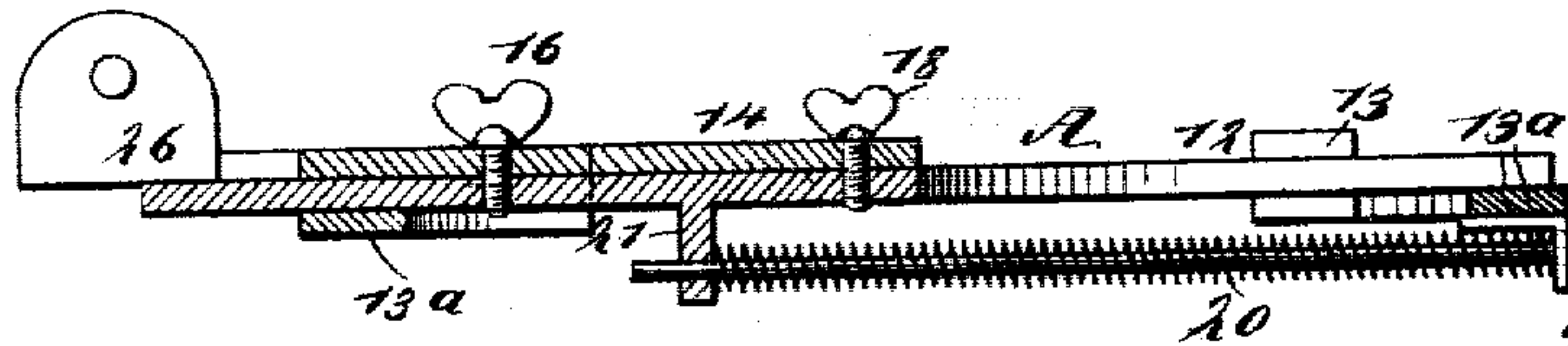
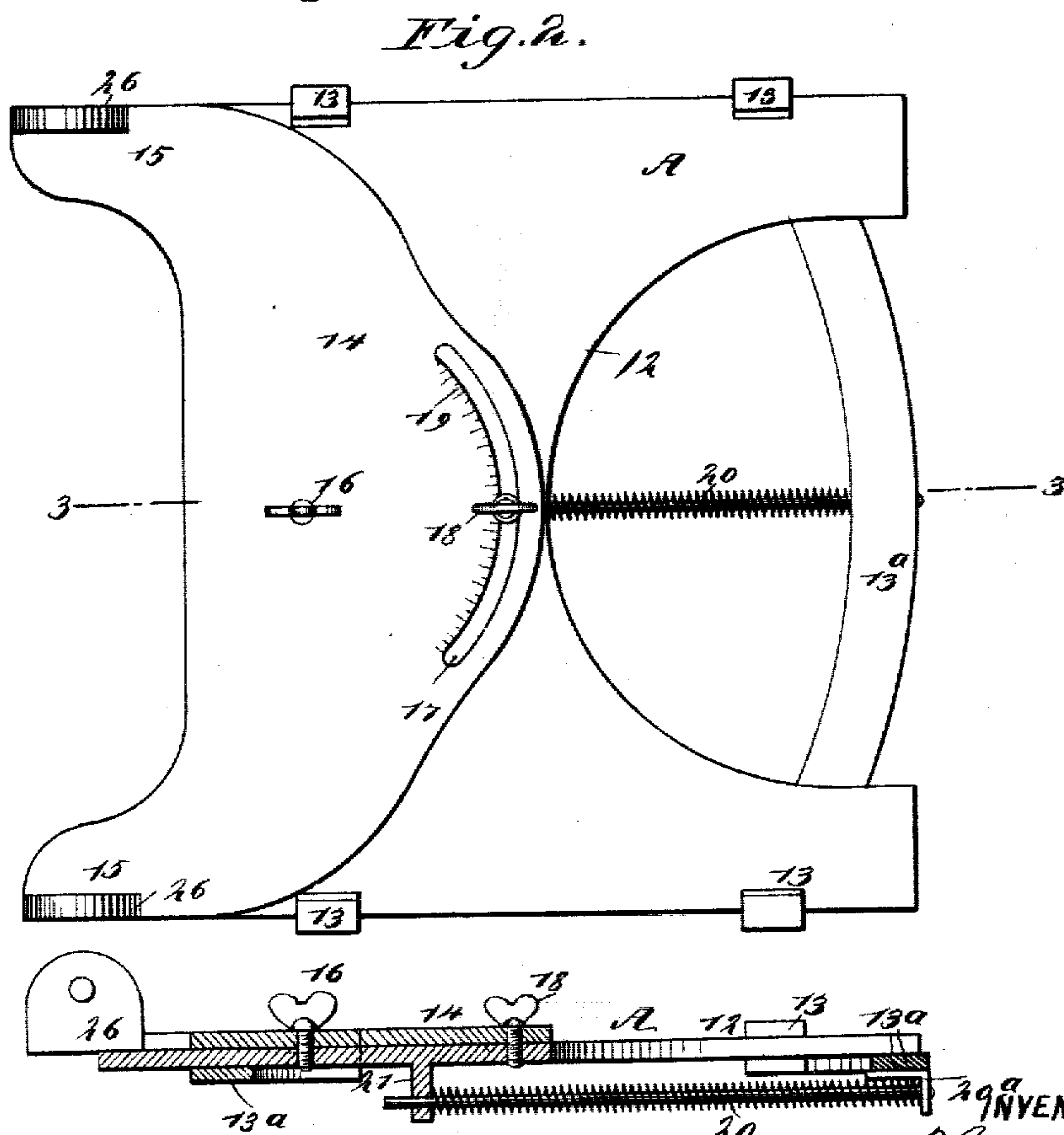
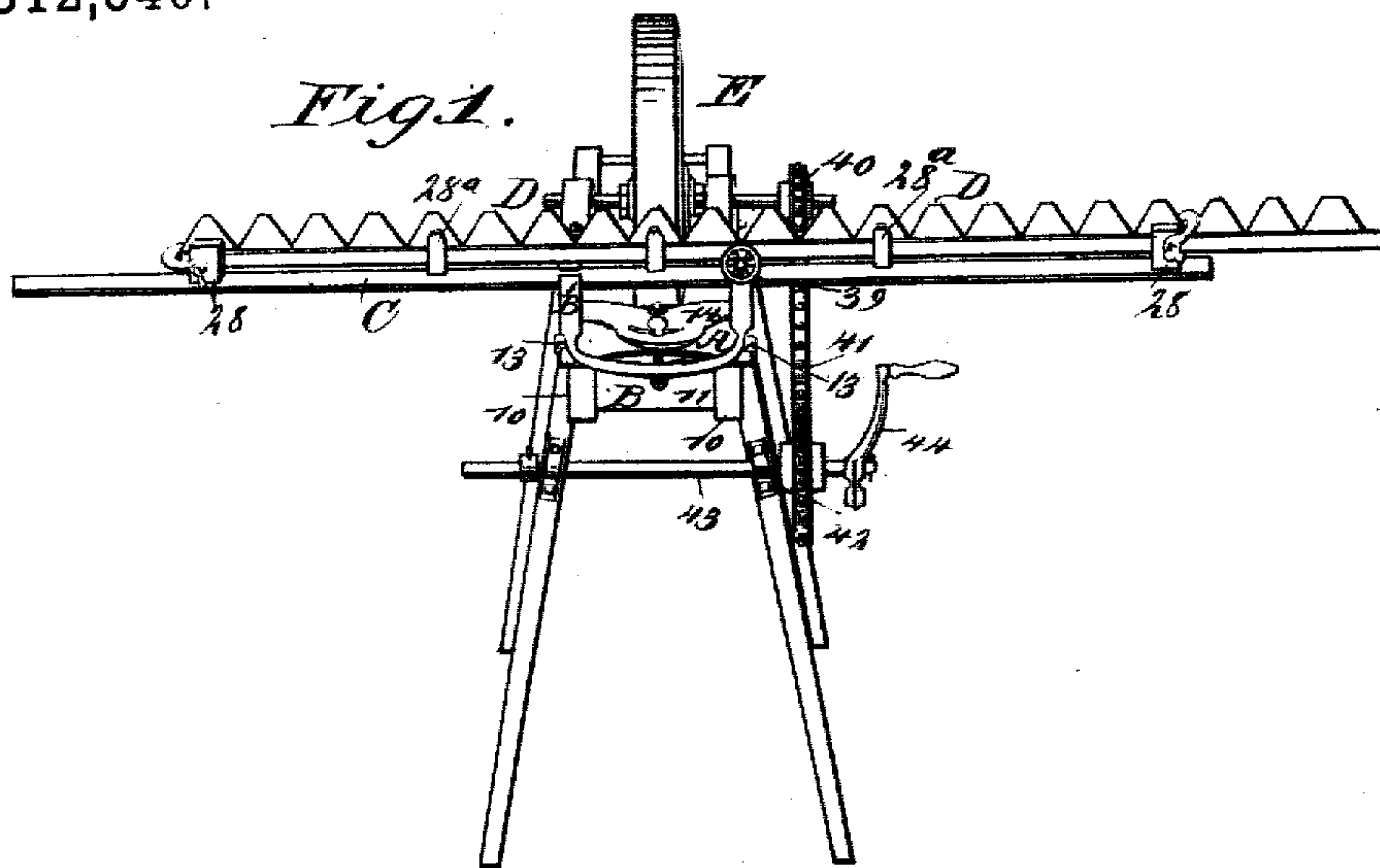
(No Model.)

3 Sheets—Sheet 1.

T. GORDON.
SICKLE GRINDER.

No. 512,546.

Patented Jan. 9, 1894.



WITNESSES.
C. Sedgwick
E. M. Clark

Fig. 3.

INVENTOR
T. Gordon
BY
Kynn & Co
ATTORNEYS

(No Model.)

3 Sheets—Sheet 2.

T. GORDON.
SICKLE GRINDER.

No. 512,546.

Patented Jan. 9, 1894.

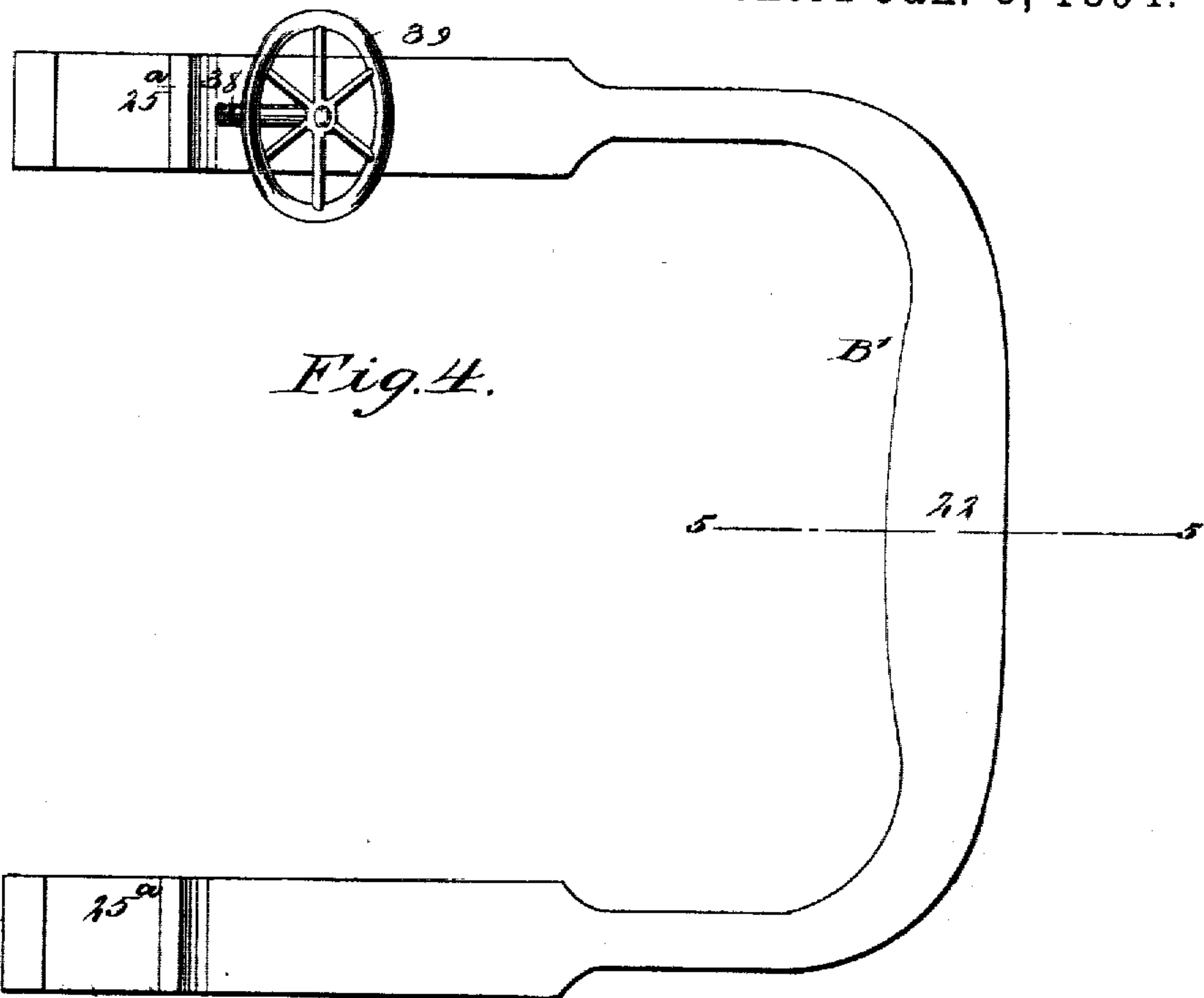


Fig. 4.

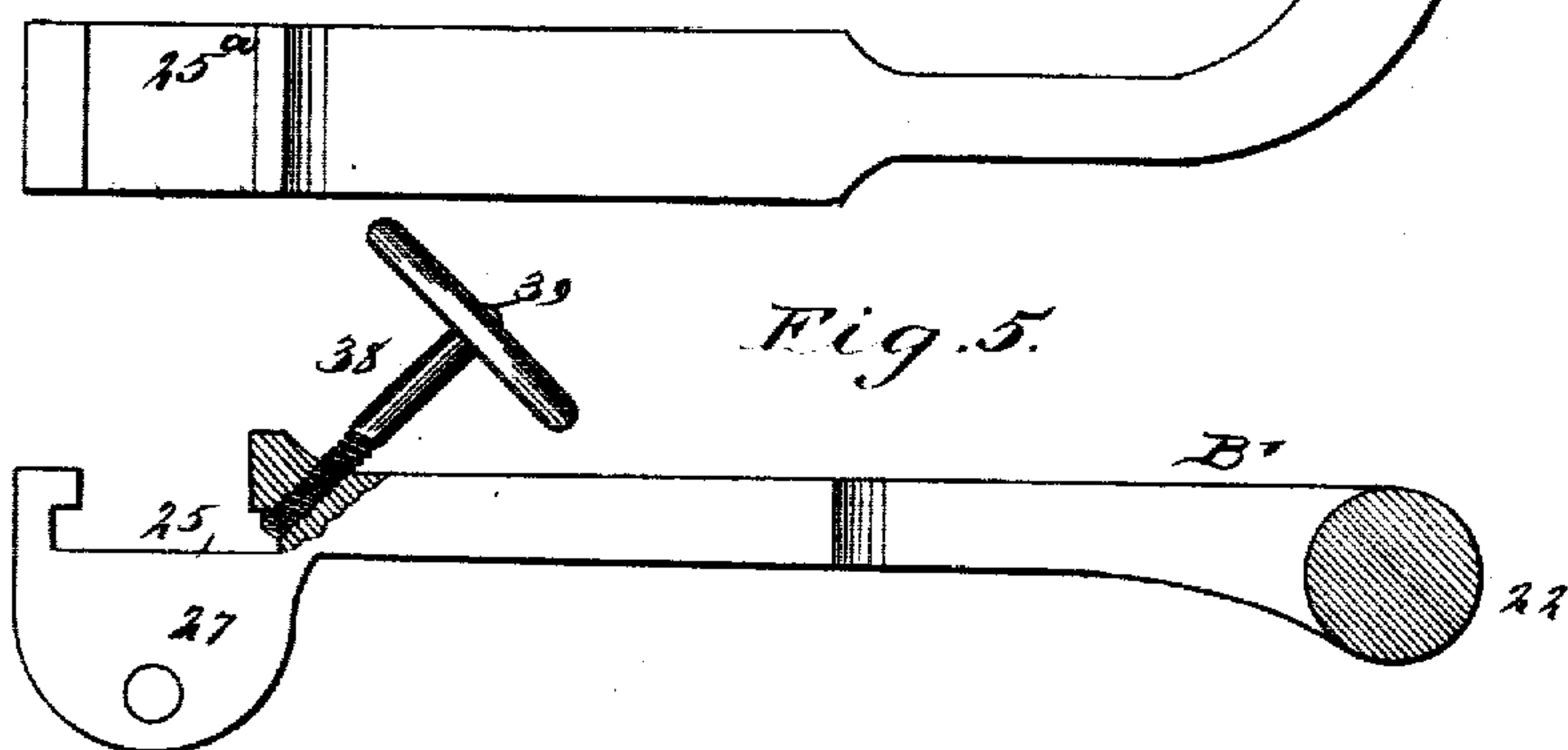


Fig. 5.

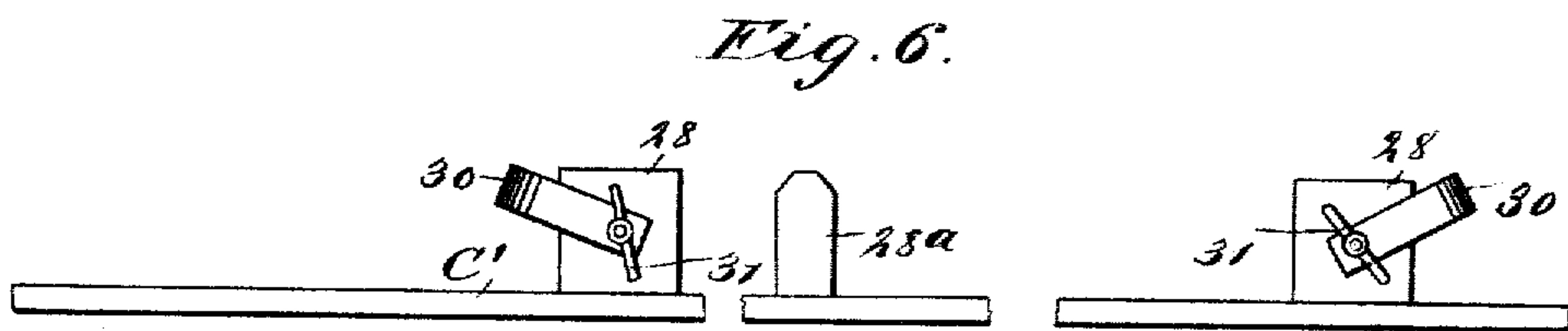


Fig. 6.

WITNESSES.
C. Sedgwick
E. M. Clark

INVENTOR.
T. Gordon
BY
Munn & Co
ATTORNEYS

No Model.)

3 Sheets—Sheet 3.

T. GORDON.
SICKLE GRINDER.

No. 512,546.

Patented Jan. 9, 1894.

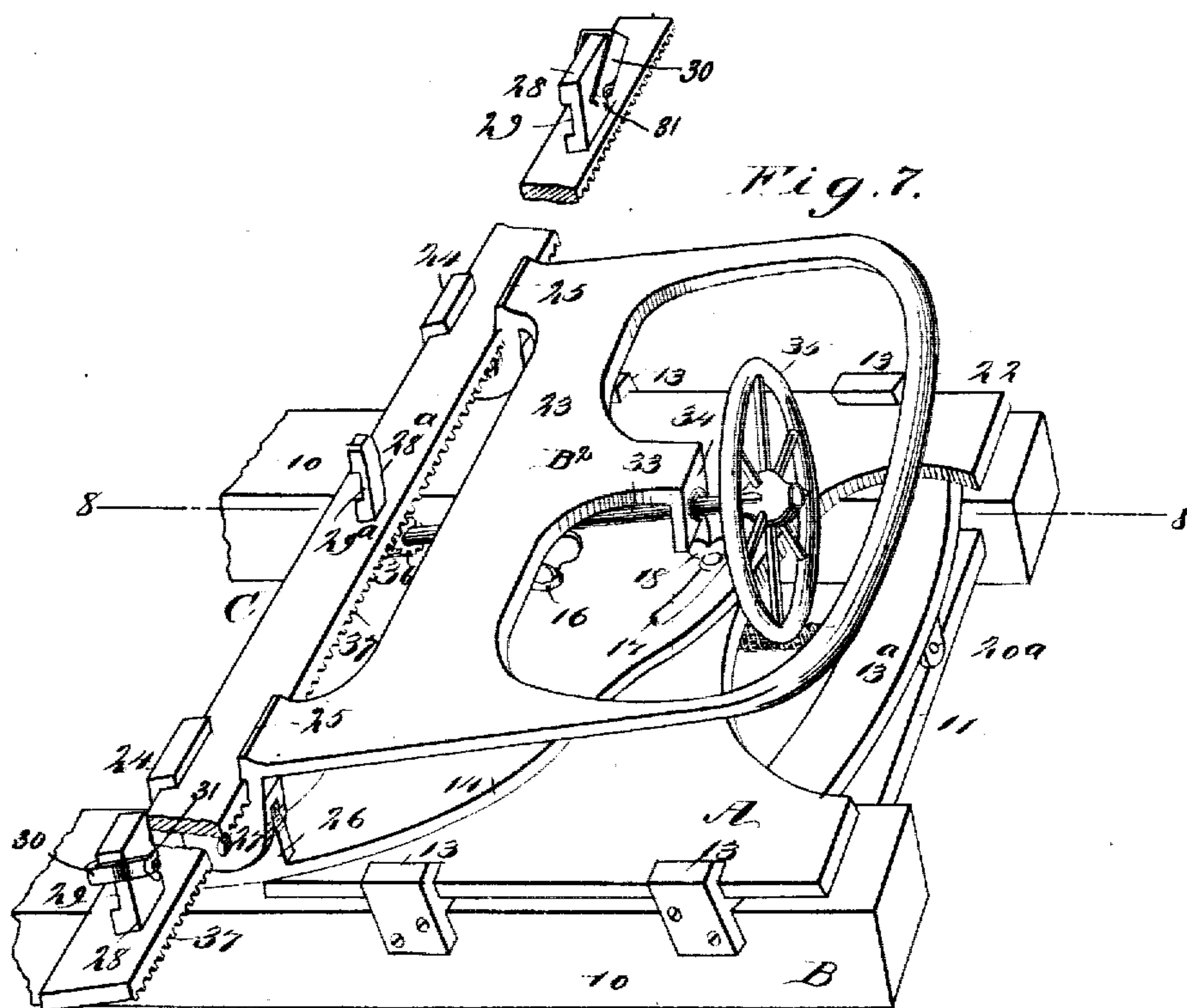


Fig. 8.

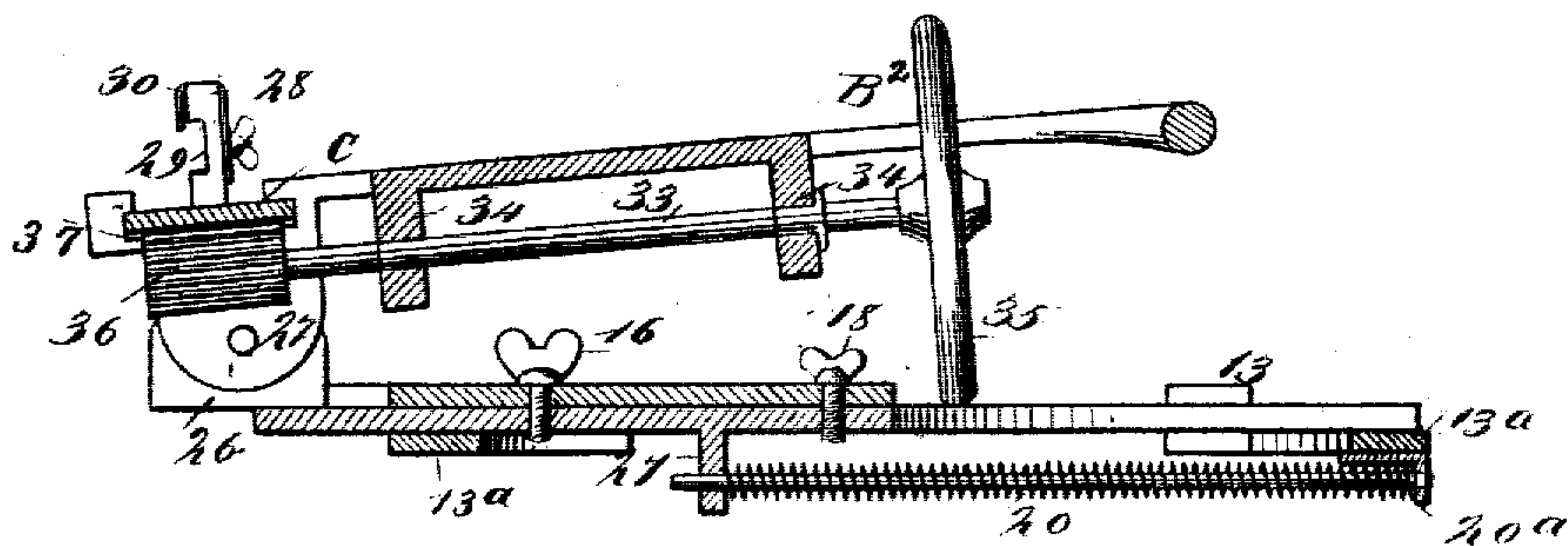
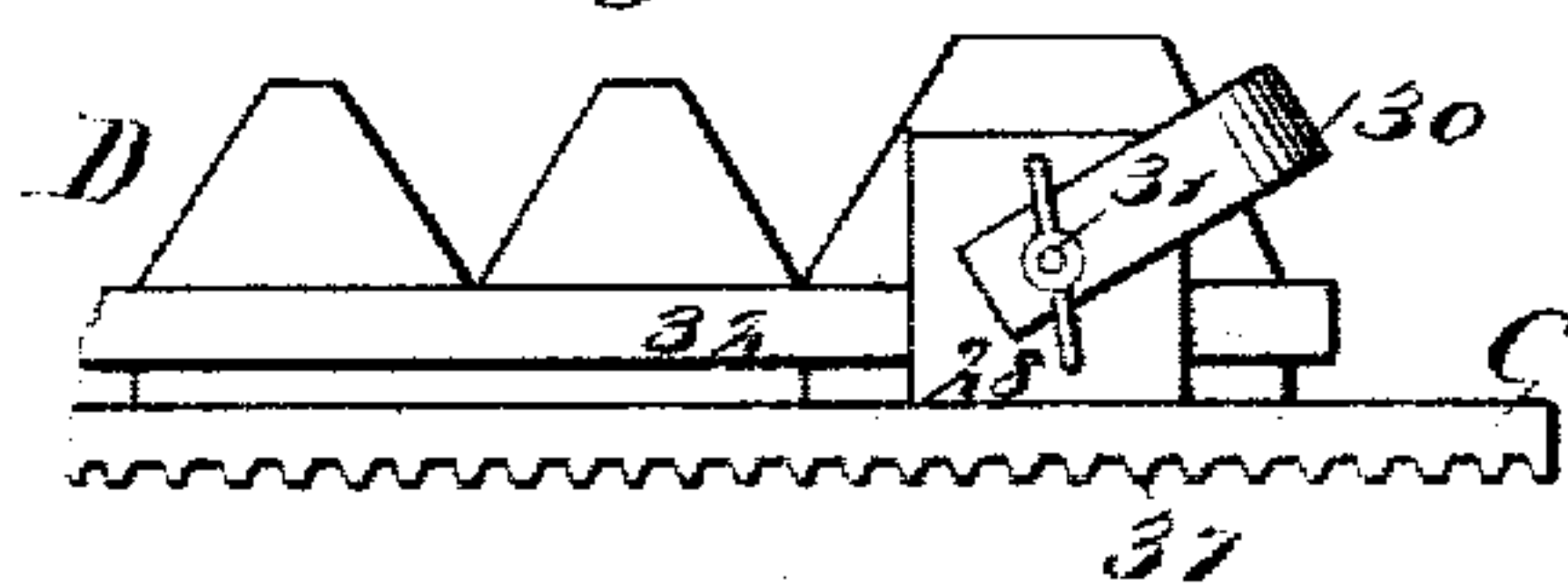


Fig. 9.



WITNESSES,
C. Sedgwick
E. M. Clark

INVENTOR:
P. Gordon
BY *Munn & Co*
ATTORNEYS

THE NATIONAL LITHOGRAPHING COMPANY.
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS GORDON, OF SOUTH BEND, WYOMING.

SICKLE-GRINDER.

SPECIFICATION forming part of Letters Patent No. 512,546, dated January 9, 1894.

Application filed July 5, 1893. Serial No. 479,638. (No model.)

To all whom it may concern:

Be it known that I, THOMAS GORDON, of South Bend, in the county of Laramie and State of Wyoming, have invented a new and
5 Improved Sickle-Grinder, of which the following is a full, clear, and exact description.

My invention relates to an improvement in sickle grinders, and it has for its object to provide a device capable of being attached to
10 the frame of an ordinary grind-stone, and of being used in connection with it, which grinder when used will preserve each and every section of the sickle uniformly true from heel to top.

15 A further object of the invention is to provide a sickle grinder which will be simple, durable and economic in construction, and capable of being manipulated by persons unskilled in the art.

20 Another feature of the invention is to so construct the machine that the sickle will be supported in proper position against the stone, being prevented from swinging away from it, and whereby also the carrying bar of the sickle
25 may be fed to the right or to the left to whatever degree may be required.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed
30 out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the
35 views.

Figure 1 is a perspective view of a grind-stone and its stand, illustrating the application of the invention thereto. Fig. 2 is a plan view of the base and adjusting plate of the
40 machine. Fig. 3 is a vertical section taken practically on the line 3—3 of Fig. 2. Fig. 4 is a plan view of one form of adjusting frame. Fig. 5 is a vertical section through the said frame, taken practically on the line 5—5 of Fig.

45 4. Fig. 6 is a broken rear elevation of the sickle carrying bar. Fig. 7 is a perspective view of the machine complete, and illustrating the application of it to an adjusting frame of slightly different construction than that shown in Fig.

50 4. Fig. 8 is a vertical section taken practically on the line 8—8 of Fig. 7; and Fig. 9 is a partial rear elevation of the sickle carrying

bar, illustrating a portion of a sickle supported upon and locked to the bar.

In carrying out the invention the base plate 55 A, is supported upon a frame B, which frame may comprise a portion of the frame of a grind-stone, if in practice it is found desirable, as shown in Fig. 1, and it usually consists of two parallel side beams 10, connected at their
60 outer ends by a cross bar 11; but the device may be located upon the frame of the grind-stone in any suitable or approved manner, one of its sides facing the periphery of the stone. The base plate A, is usually provided in its
65 outer side with a recess 12, and it is adapted to slide upon the frame B from the outer in direction of the inner side of the frame, or vice versa; and to that end guide cleats 13, are formed upon the ends of the cross bars 13^a,
70 the cross bars serving to support the base plate in a measure, while the cleats extend over the top of the base plate and serve as guides therefor. The cleats are secured upon the beams 10 of the grind stone frame in any
75 suitable or approved manner. A bed 14, is located upon the base plate A, as shown best in Fig. 2. This bed is preferably made somewhat semi-circular upon its inner edge, forming at each end of its inner edge horizontal
80 ears 15. The inner portion of the bed is preferably of a width corresponding to that of the base plate, and the ears extend beyond the inner edge of the base. The bed is adjustably connected with the base plate through
85 the medium of a set screw 16, or its equivalent, passed through the central portion of the bed, ordinarily nearer its inner than its outer edge, and into a suitable aperture in the base plate. By this means the set screw
90 16 serves as a pivot for the bed, and by tightening the screw the bed may be held in any position to which it may be laterally adjusted.

As a further means of adjustment, a segmental slot 17, is produced in the central portion of the bed nearer the outer than the inner face, as is likewise best shown in Fig. 2, and a set screw 18, is passed through this slot and is screwed into the base. The slot 17, is provided at one of its sides with a scale 19,
100 said scale being adapted to indicate how far either to the right or to the left the bed may be moved in order to obtain the proper beveled settings for different sized sections of the

sickles. The proper setting of the machine to the beveled edge of the sickle to be operated upon is readily obtained in this manner, and when once obtained and the bed is set, 5 no further change is necessary until the opposite side of the section is to be ground; then the bevel for the other side of the section is found by shifting the bed to the other side and securing it in position by means of both 10 of the set screws 16 and 18.

The base A is kept fed to the grind-stone by means of a spring 20, which is connected with a bracket 20^a, projected ordinarily from the outer cross bar 13^a of the grind-stone 15 frame; and the spring is likewise secured to a lug 21, or its equivalent, formed upon the under side of the base, as shown in Fig. 3, the spring acting as a resisting force to the action of the stone when in contact with the section 20 of the sickle being ground.

An adjusting frame is pivotally connected with the bed. The said adjusting frame may be of any approved shape, as for example a U-shaped frame B', as shown in Fig. 4, or a 25 D-shaped frame B² as illustrated in Fig. 7. The outer or curved portion 22 of the frame in this event serves as a handle or grip for the hand of the operator, since this frame is adapted to be manipulated by hand; and the 30 straight or inner section 23, when the D-frame B² is used, is provided at each end of the inward extension 24, and in these extensions longitudinally aligning slide ways 25 are made, the slide ways being under cut at each 35 side, and said slide ways are adapted to receive and have slide vertically therein a sickle carrying bar C. When a U-frame B' is employed, the slide ways are produced in the extremities of its straight sections or mem- 40 bers, as shown in Figs. 4 and 5, in which they are designated as 25^a. The pivotal connection between the adjusting frame B' and the bed is effected by projecting upward from the ears 15 of the bed, lugs 26, and projecting 45 downward from the extensions 24 of the adjusting frame lugs 27; and ordinarily the lugs of the adjusting frame are bifurcated, as shown in Fig. 7, receiving the lugs of the bed, and a pivot pin is passed through the two en- 50 gaging lugs.

The sickle bar C, is adapted to receive and hold in position the sickle D to be ground, the sickle being shown in position in Figs. 1 and 9. To that end posts 28 are erected upon 55 the carrying bar, one for example near each end, and these posts are provided with recesses 29 in their inner faces, and with yokes 30, pivotally connected at their outer ends, the yokes being clamped in whatever position they may be set by means of set screws 31, or like devices. At predetermined dis- 60 tances between the end posts 28 angular intermediate posts 28^a, are placed upon the sickle carrying bar, and have recesses 29^a in their inner faces, the intermediate posts being adapted to support the sickle bar intermediate of its ends and thus prevent the bar

springing away from the stone during the process of grinding. When placing the sickle bar D in position the cross bar 32 thereof is 70 made to enter the recesses in the posts 28 and 28^a and the clamps of the former posts are carried over the ends of the sickle bar, or any one of its teeth, thereby preventing end movement of the bar.

The sickle carrying bar may be manipulated in different ways, as for example as shown in Figs. 7 and 8, a revolving shaft 33, may be employed, journaled in bearings 34 75 produced on the frame 2, the D-frame being used. This shaft is provided at its outer end with a hand wheel 35 to facilitate turning it, and at its inner end the shaft carries a pinion 36, and the said pinion meshes with teeth 37 80 formed upon the under face of the sickle-carrying bar. Thus by turning the wheel 35 the pinion is revolved and the carrying bar is carried the desired distance either to the right or to the left. It is intended that one revolution of the shaft shall carry the sickle to 85 the right or to the left the length of one section.

Instead of operating the sickle-carrying bar through the medium of the shaft 33, said bar may be and in many instances is preferably 95 operated by hand, that is, slid by hand either to the right or to the left. In this event the under face of the carrying bar C' is smooth as shown in Fig. 6, although it may be rough- 100 ened to a greater or less extent; and after the bar has been adjusted it is locked or held in its adjusted position by means of a set screw 38, operated by a hand wheel 39, or its equivalent, a set screw being located just back of 105 each slide way, as shown in Figs. 1, 4 and 5, and the screws are made to enter the slide ways in such a manner that the said screws may be carried to a firm contact with the sickle carrying bar. In use the face of the 110 stone E, is maintained perfectly square across its full face, and the sections of the sickles when being ground pass over and across the entire face surface of the stone. The machine while constructed especially for the 115 purpose of grinding mower sickles, can be and is adapted to the uses of an ordinary grind-stone. When the machine, however, is attached to a grind-stone stand, a pulley 40, is located upon a trunnion or the shaft of the 120 stone, and the said pulley is connected by a chain or other belt 41, with a second pulley 42, located upon a shaft 43, journaled in the frame of the grind stone below the lower edge of the stone, and the shaft 43 may be 125 revolved by foot power, by means of a motor, or by hand; in the latter event a crank 44, is secured to the shaft 43, and the crank may be operated without in the least interfering with the movements of the grinding 130 attachment.

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

1. In a sickle grinder, an adjustable bed, a

rocking frame carried by the bed, a sickle carrying bar held to slide in the rocking frame, locking devices adapted for engagement with the sickle and located upon the sickle carrying bar, and mechanism for locking the sickle-carrying bar in a fixed position, as and for the purpose specified.

2. In a sickle grinder or like machine, the combination, with a laterally adjustable bed, and a rocking frame supported by the bed, of a sickle carrying bar having sliding movement in the rocking frame, an adjusting device carried by the frame and engaging with the bar, and clamps located upon the bar and adapted as supports for the sickle, as and for the purpose specified.

3. In a sickle grinder or like machine, an adjustable bed, a rocking frame supported by the bed, a sickle carrying bar having sliding movement in the sliding frame, an adjusting mechanism carried by the frame and engaging with the bar, and a clamping mechanism located upon the sickle carrying bar and adapted to receive and hold a sickle in engagement with said bar, and means, substantially as shown and described, for laterally adjusting the rocking frame, as and for the purpose set forth.

4. In a sickle grinder or like machine, the combination, with a sliding spring-controlled base, a bed plate adjustably pivoted upon the base, and a rocking frame supported by the bed plate, of a sickle carrying bar provided with clamps and having sliding movement in the rocking frame, an adjusting shaft located in the rocking frame, and a rack and pinion connection between the sickle carrying bar

and the adjusting shaft, as and for the purpose set forth.

5. In a sickle grinder or like machine, the combination, with a movable base, a bed adjustably located upon the base, a rocking frame carried by the bed, and a sickle carrying bar having sliding movement in the frame, of a hand shaft located in the rocking frame and having a driving connection with the sickle carrying bar, sockets located upon the sickle carrying bar and adapted to receive the sickle, and clamps connected with sundry of the sockets, as and for the purpose specified.

6. In a sickle grinder, the combination with a sickle holding bar, of yokes supported from the bar above the same and adapted to embrace a sickle, said yokes being pivoted to swing in the vertical plane and in the direction of the length of the bar, and means for locking the yokes in position, substantially as described.

7. The combination with a grindstone, of a base plate mounted to slide toward and from the grindstone, a spring normally pressing the base plate in the direction of the grindstone, a handled bed plate carried by the base plate and pivoted for movement over the face of the latter, a rocking frame pivoted on the bed plate, and a sickle carrier consisting of a sliding bar seated in guides on the rocking frame, and provided with clamping devices for the sickle, substantially as described.

THOMAS GORDON.

Witnesses:

JOSEPH G. PRATT,
HENRY G. HAY.