

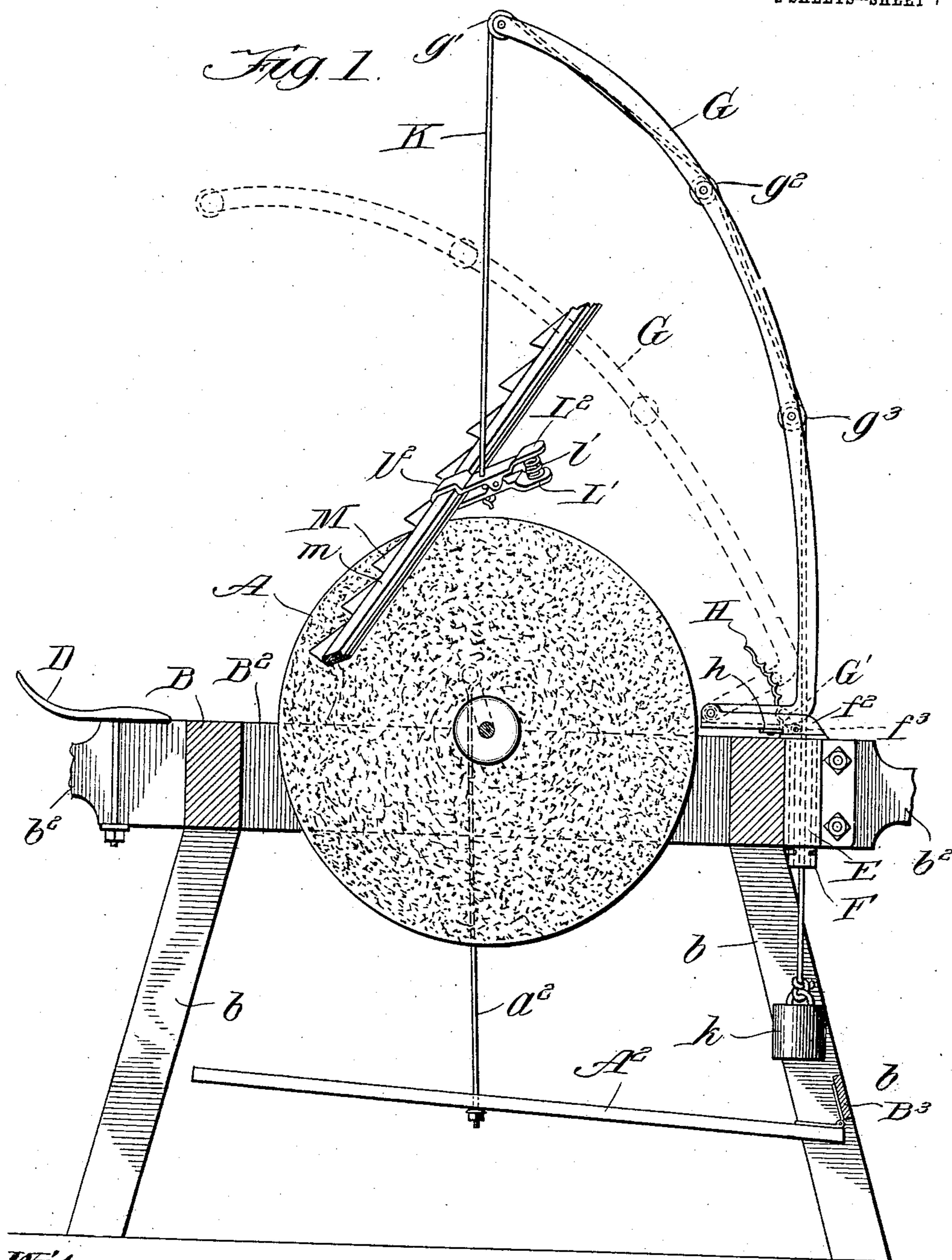
No. 869,983.

PATENTED NOV. 5, 1907.

W. C. RARIG.  
SICKLE SUPPORT FOR GRINDSTONES.

APPLICATION FILED DEC. 6, 1906.

2 SHEETS--SHEET 1



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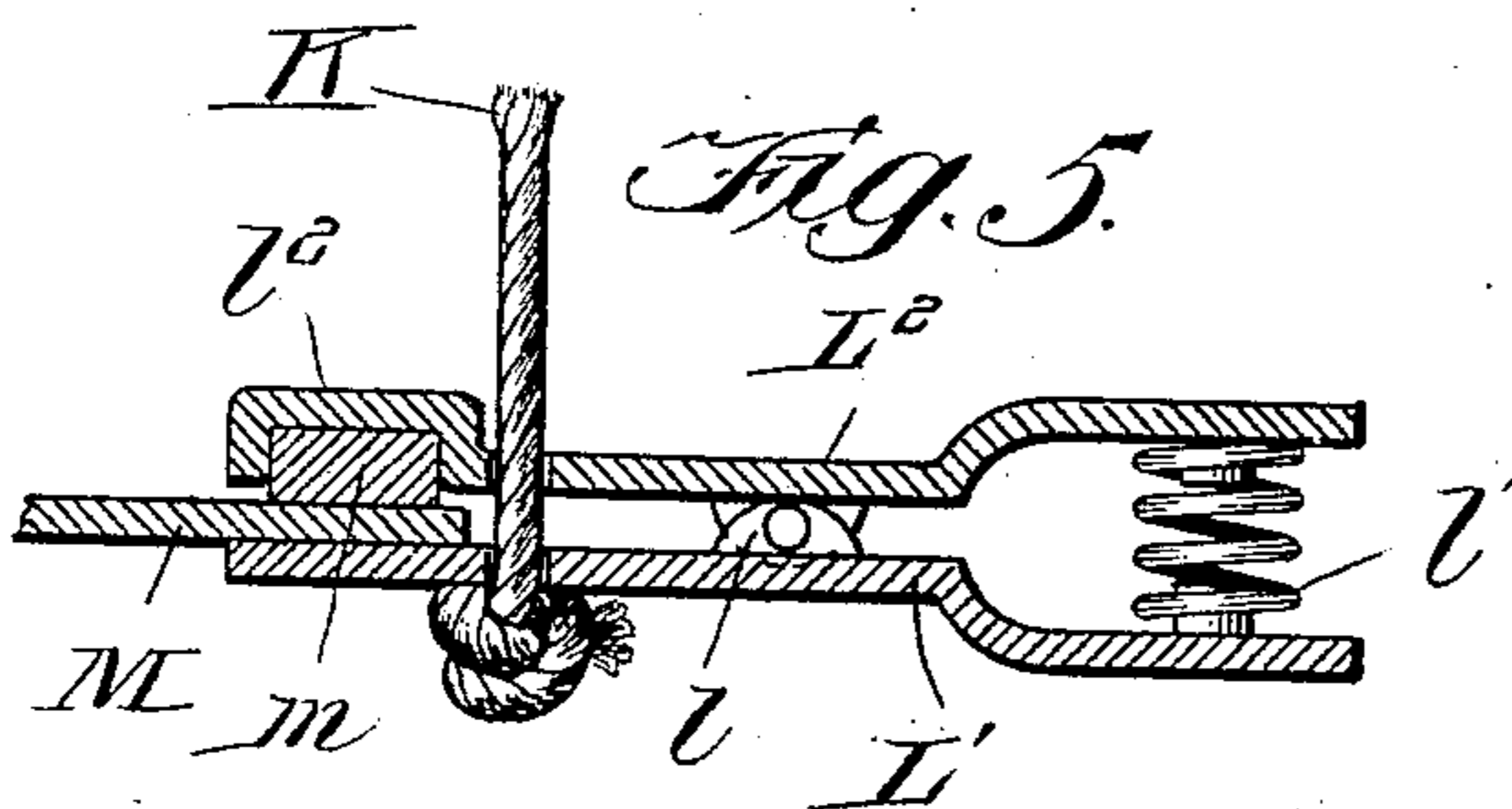
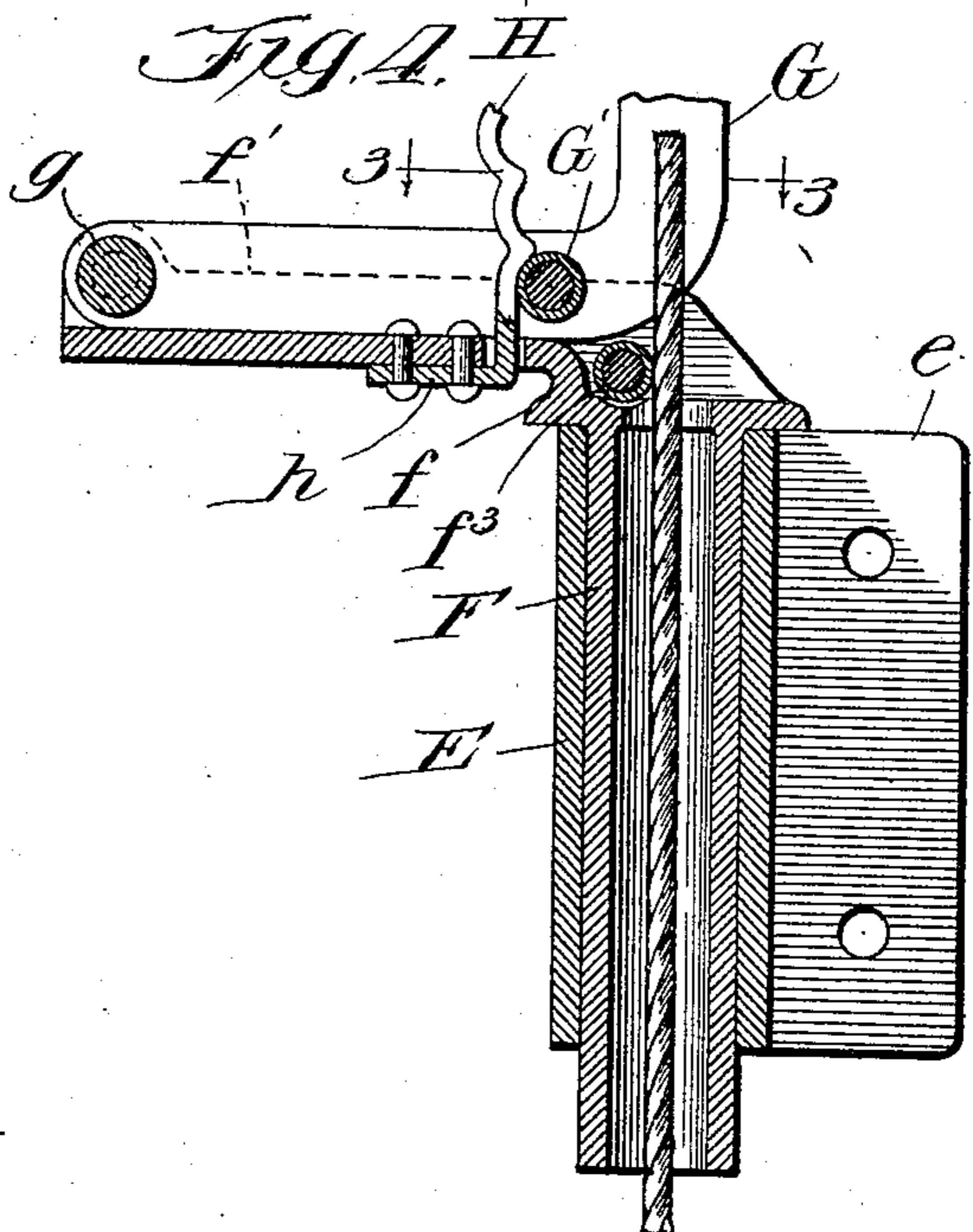
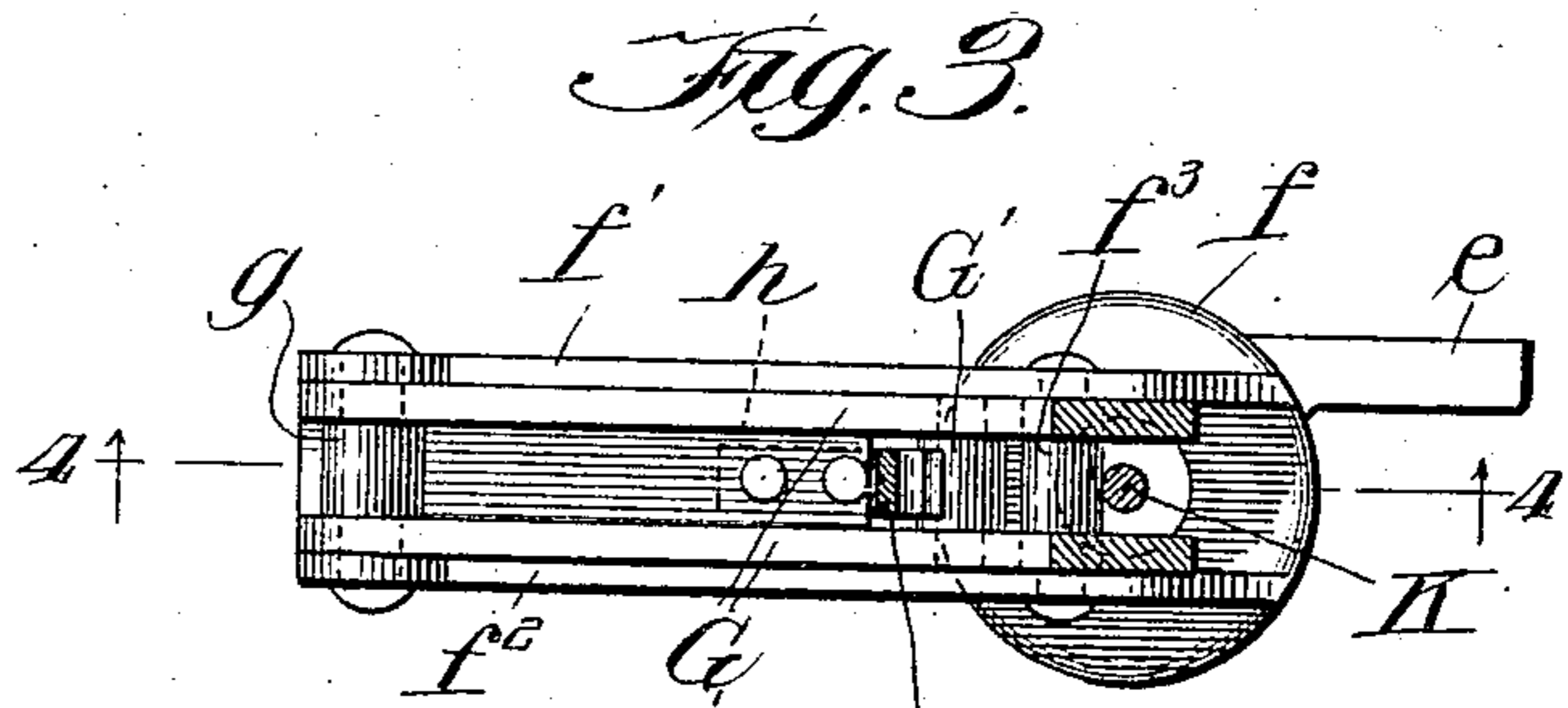
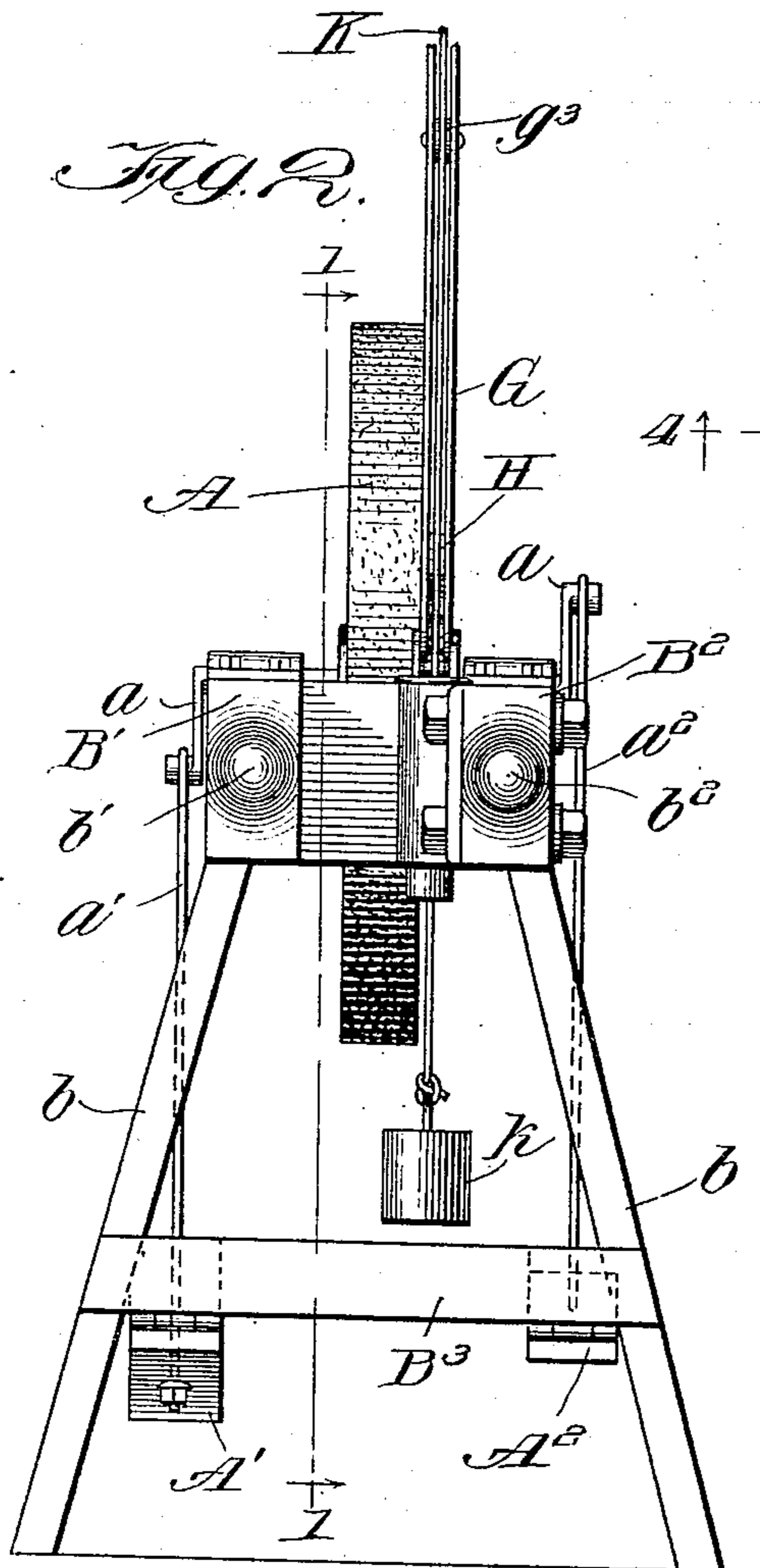
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

WELDEN C. RARIG, OF OGDEN, UTAH.

## SICKLE-SUPPORT FOR GRINDSTONES.

No. 869,983.

Specification of Letters Patent.

Patented Nov. 5, 1907.

Application filed December 6, 1906. Serial No. 346,543.

*To all whom it may concern:*

Be it known that WELDEN C. RARIG, a citizen of the United States, residing at Ogden, county of Weber, State of Utah, has invented a certain new and useful  
5 Improvement in Sickle-Supports for Grindstones, and declares the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings,  
10 which form a part of this specification.

My invention relates in general to a grind stone attachment for supporting articles in position to be ground and more particularly to a support for mower and reaper sickles.

15 The sickles of mowers and reapers are of such weight and are so unwieldy that in order to grind them upon ordinary grind stones the services of two persons are necessary, one to turn the grind stone, and the other to hold the sickle in proper position.

20 The primary object of my invention is to provide a grind stone attachment for so supporting the sickle of a mower or reaper that its weight will not be imposed upon the operator and so that it may be readily adjusted to present the various cutting edges to the grinding surface, thereby enabling a single person to conveniently and efficiently grind the sickle.

A further object of my invention is to provide a sickle support for grind stones which will be simple in construction, inexpensive in manufacture and efficient in  
30 operation.

The embodiment of my invention herein disclosed may be generally described as comprising an upwardly projecting arm supported upon the frame of a grind stone, a base mounted upon the grind stone frame to  
35 rotate about a vertical axis, the lower end of the arm being pivoted to such base to swing in a vertical plane, whereby the upper end of the arm may be located at any desired point in a plane parallel to the axis of the grind stone, a flexible connection guided upon the arm and carrying a weight at one end and at its other end a clamp adapted to be detachably secured to a sickle.

My invention will be more fully described hereinafter with reference to the accompanying drawings in which the same is illustrated as embodied in a convenient and practical form, and in which  
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Figure 1 is a vertical sectional view on line 1—1 Fig. 2; Fig. 2 an end elevation looking from the right in Fig. 1; Fig. 3 a sectional view on line 3—3 Fig. 4; Fig. 4 a sectional view on line 4—4 Fig. 3; Fig. 5 a central sectional view through the clamp for the sickle; and Fig. 6 a sectional view through one of the guide rollers.

The same reference characters are used to designate the same parts in the several figures of the drawings.

Reference letter A indicates a grind stone of any suitable material and construction.  
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B indicates the supporting frame upon which the grind stone is rotatably mounted.

B' and B<sup>2</sup> indicate the side bars of the supporting frame upon which the axial shaft of the grind stone is journaled. The side bars B' and B<sup>2</sup> may be extended  
60 at their opposite ends to form handles g' and b<sup>2</sup> by means of which the grind stone may be conveniently handled.

b, b indicate the legs of the supporting frame.

The axial shaft of the grind stone is provided with  
65 crank arms a, a on its opposite ends with which are connected links a' and a<sup>2</sup>. The lower ends of the links a' and a<sup>2</sup> are connected to treadles A' and A<sup>2</sup> pivotally connected to a cross-bar B<sup>3</sup> of the supporting frame.

D designates a seat supported upon the frame upon  
70 which the operator may sit while applying his feet to the treadles.

My invention is not limited in its application to any particular form of grind stone, but may be used in connection with any ordinary or suitable grind stone. The  
75 form of grind stone illustrated and described is one to which my invention may be conveniently applied.

E designates a tubular support adapted to be rigidly secured to the grind stone frame in any suitable manner, as by means of bolts passing through holes in a  
80 flange e thereof and through registering holes in one of the side bars of the grind stone frame, as clearly shown in Figs. 1 and 2.

Rotatably mounted upon the support F is a base upon which a sickle supporting arm G is pivotally supported.  
85 The base F comprises a tubular portion rotatably supported within the tubular support E. A flange f on the base F overlies the upper end of the tubular support as shown in Fig. 4. The base is provided with a horizontally projecting bracket having side flanges f'  
90 and f<sup>2</sup> between which the lower end of the arm G is pivoted. The arm G is preferably made of two parallel portions between which are carried guide rollers g', g<sup>2</sup>, and g<sup>3</sup>. The journals of the guide rollers serve to unite the two parts of the arm. The lower end of  
95 the arm is provided with a laterally projecting portion of substantially the same length as the flanges f' and f<sup>2</sup> upon the base F.

g indicates a pin extending through registering holes in the flanges f' and f<sup>2</sup> and the two parts of the arm G.  
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H designates a resilient bracket secured to the base F and extending upwardly between the two portions of the arm G. The bracket H may be secured to the base F in any suitable manner, as by means of a portion h thereof underlying and secured by rivets to the  
105 laterally projecting portion of the base. The bracket H is provided with a series of recesses therein adapted to be engaged by a roller G' supported between the two portions of the arm G.

K indicates a flexible connection supported by the  
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guide rollers  $g'$ ,  $g^2$ , and  $g^3$  on the arm G and extending through the tubular portion of the supporting base F. A guide roller  $f^3$ , is also preferably provided upon the supporting base against which the flexible connection

5 bears at a point immediately below the arm.

$k$  designates a weight secured to the end of the flexible connection K at a point below the supporting base F. A clamp is carried by the other end of the flexible connection for detachably supporting a sickle. This

10 clamp may be conveniently made as shown in Fig. 5 in which  $L'$  and  $L^2$  indicate the jaws of the clamp which are pivotally united by interposed ears  $l$ .  $V$  indicates a spring between the two portions of the clamp for oscillating the same to grasp a sickle. The

15 flexible connection K extends through holes in the two parts of the clamp and is knotted below the lower member of the clamp. The upper member of the clamp  $L^2$  is provided with a recess conforming to the strip  $m$  of the sickle M.

20 The manner of using and operation of my invention are as follows: The sickle which is to be ground is secured intermediate of its ends to the clamp by oscillating the jaws of the clamp. By extending the flexible connection K through both members of the clamp and

25 forming a knot below the lower member the weight of the sickle tends to keep the clamp tightly engaged therewith. The weight  $k$  counterbalances the weight of the sickle so that the sickle may be easily moved without taxing the strength of the operator. The operator sits upon the seat D and operates the treadles  $A'$  and  $A^2$  while he holds the sickle in position for the cutting edges thereof to engage the grind stone. It is desirable in order that the sickle may be most efficiently

30 supported that the upper end of the supporting arm G should be adjustable in a plane transverse to the grind stone. When the sickle is ground from its left end the arm G is swung to the right of the grind stone a distance corresponding to the distance between the end of the sickle and the supporting clamp. As the grinding of

40 the sickle continues from the left towards the right the arm is gradually swung towards the grind stone until the center of the sickle is ground after which it continues to swing in the same direction until the right of the sickle is reached, when the upper end of the arm occupies a distance beyond the left of the grind stone corresponding to the distance between the supporting

45 clamp and the right end of the sickle. As the grinding of the sickle progresses the inclination of the supporting arm G is varied by oscillating the same about its supporting base. The arm is retained in any desired position in a vertical plane passing through its axis of rotation by means of the resilient bracket H engaging the roller  $G'$ . When the arm is swung into a position at either side of the grinding wheel in order to

55 grind the ends of the sickle, the arm is oscillated so that it will lie in a plane extending substantially through the axis of rotation of the grind stone. As the arm is swung gradually towards the grind stone it is oscillated so as to occupy a more upright position relatively to its base. By oscillating the supporting arm upon its base and by rotating the base relatively to the supporting frame of the grind stone, the upper end of the arm may at all times occupy such a position as to facilitate the grinding of each particular cutting surface of

60 the sickle.

From the foregoing description it will be observed that I have invented an improved means for supporting a sickle while being ground, by means of which a single person may conveniently and efficiently grind the sickle owing to the weight of the sickle being assumed by the supporting means and owing to the support being so adjusted as to readily locate the cutting surfaces of the sickle knives successively in position to engage the grind stone.

70 While I have described more or less precisely the details of construction, I do not wish to be understood as limiting myself thereto, as I contemplate changes in form, the proportion of parts, and the substitution of equivalents, as circumstances may suggest, or render expedient without departing from the spirit of my invention. Nor do I wish to be understood as limiting the use of my invention to grinding sickles, as obviously it may be used for supporting any cutting instrument in position to be ground upon a grind stone.

85 Having now fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The combination with a grind stone, of an upright crane, means for rotatably supporting said crane adjacent the grind stone, and a flexible member depending from the end of said crane and having means at its lower end for supporting a sickle.

2. The combination with a grind stone, of an upright sickle supporting crane, a base casting in which said crane is rotatably supported, and a flexible member depending from said crane removably secured to the sickle at the middle thereof.

3. The combination with a grind stone, of a sickle support mounted upon the frame of the grind stone, a flexible connection guided upon and depending from said support, means for removably securing one end of said connection to a sickle, a counter balance secured to the other end of said connection, and means for adjusting said support relatively to the grind stone frame.

4. The combination with a grind stone, of a sickle supporting arm, a base mounted upon the supporting frame of the grind stone to rotate about a vertical axis, means for pivotally supporting said arm upon said base to swing in a vertical plane, and a flexible member depending from the end of said arm for supporting a sickle.

5. The combination with a grind stone, of a sickle support mounted upon the frame of the grind stone, means for adjusting said support relative to the grind stone frame, a flexible connection guided upon and depending from said arm, means for detachably securing one end of said connection to a sickle, and a counter balance secured to the other end of said connection.

6. The combination with a grind stone, of a sickle supporting arm, a base mounted upon the supporting frame of the grind stone to rotate about a vertical axis, means for pivotally supporting said arm upon said base to swing in a vertical plane, a flexible connection guided upon and depending from said arm, means for detachably securing one end of said connection to a sickle, and a counter balance secured to the other end of said connection.

7. The combination with a grind stone, of a sickle supporting arm, a base mounted upon the supporting frame of the grind stone to rotate about a vertical axis, a pair of laterally projecting flanges on said base between which a laterally projecting portion of said arm is pivoted, means for retaining said arm in adjusted positions relatively to said base, and means for supporting a sickle from the upper end of said arm.

8. The combination with a grind stone, of a sickle supporting arm, a base mounted upon the supporting frame of the grind stone to rotate about a vertical axis, a pair of laterally projecting flanges on said base between which a laterally projecting portion of said arm is pivoted, means for retaining said arm in adjusted positions relatively to said base, a resilient bracket secured to said base and having a series of notches therein, an element on said arm

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adapted to engage said notches to retain said arm in adjusted positions relatively to the base, and means for supporting a sickle from said arm.

5 9. The combination with a grind stone, of a sickle supporting arm, a tubular support secured to the frame of the grind stone, a base having a depending tubular portion rotatably supported within said tubular support, a pair of laterally projecting flanges on said base between which said arm is pivoted, and means for retaining said arm in  
10 adjusted positions relatively to said base.

10 10. The combination with a grind stone, of a sickle supporting crane, means for rotatably supporting said crane adjacent the grind stone, a flexible member depending from the upper end of said crane, and a clamp secured to said  
15 flexible member comprising two members between which a sickle is removably supported.

11. The combination with a grind stone, of a sickle supporting arm, means for rotatably supporting said arm upon the supporting frame of the grind stone, a flexible connection guided upon and depending from said arm, a clamp 20 comprising two members having registering holes through which said connection passes, said connection having an enlargement below the clamp to prevent the detachment of the clamp therefrom, and a counter balance secured to the other end of said flexible connection from said clamp. 25

In testimony whereof, I sign this specification in the presence of two witnesses.

WELDEN C. RARIG.

Witnesses:

A. A. WENGER,  
W. E. ROBINSON.