

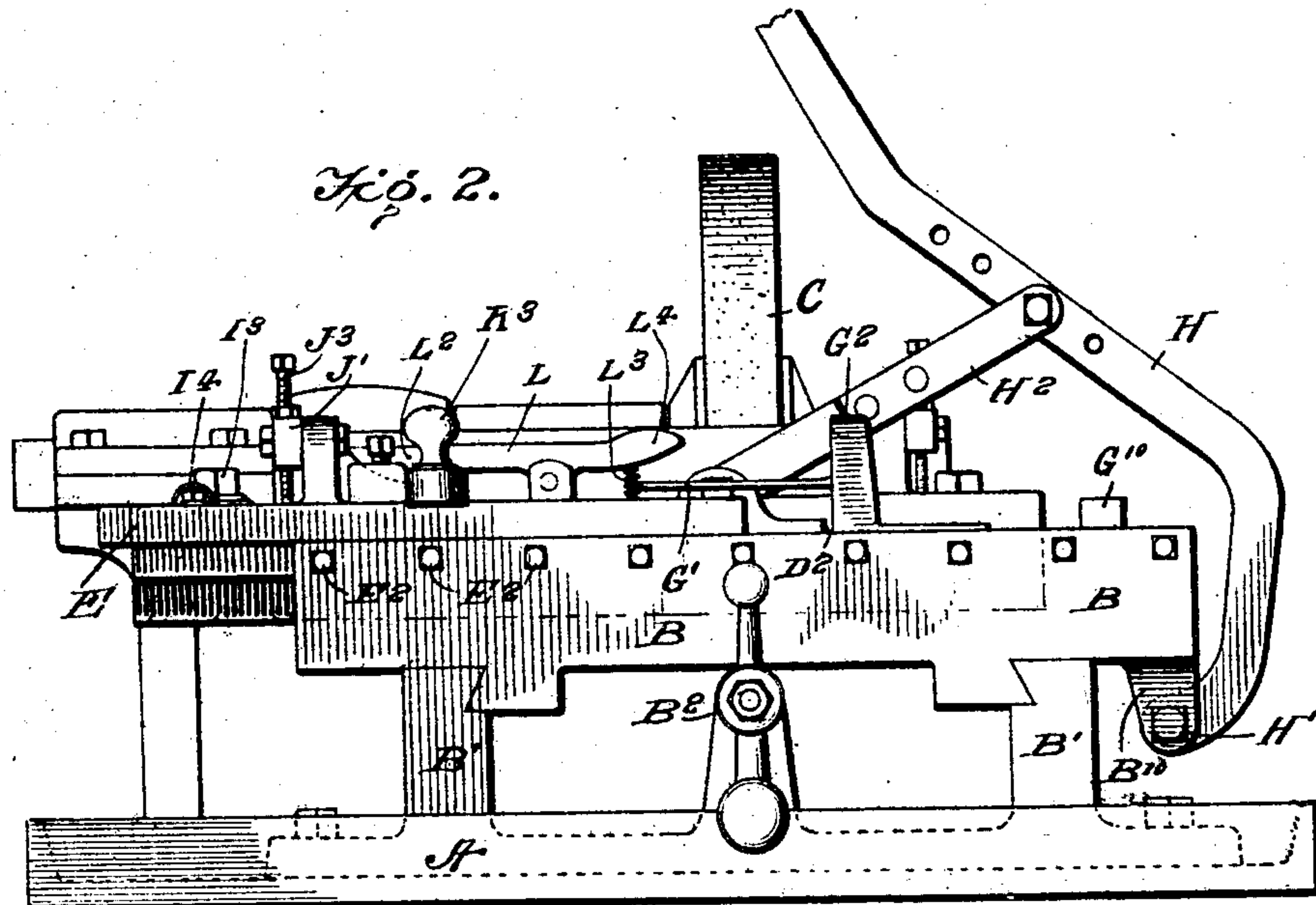
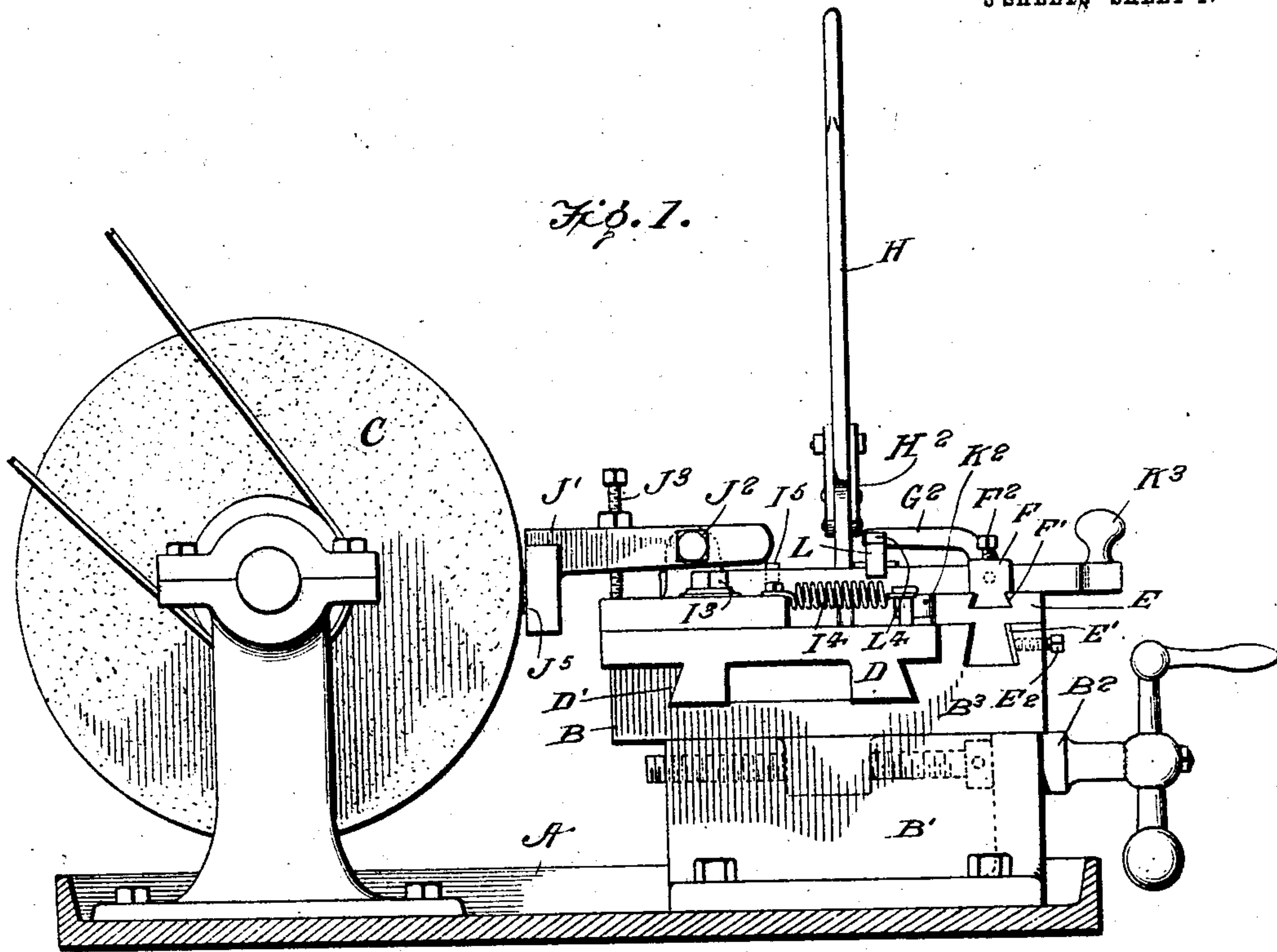
No. 884,162.

PATENTED APR. 7, 1908.

L. A. JONES.
MACHINE FOR GRINDING AND POLISHING.

APPLICATION FILED OCT. 1, 1907.

3 SHEETS—SHEET 1.



WITNESSES

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Fig. 4.

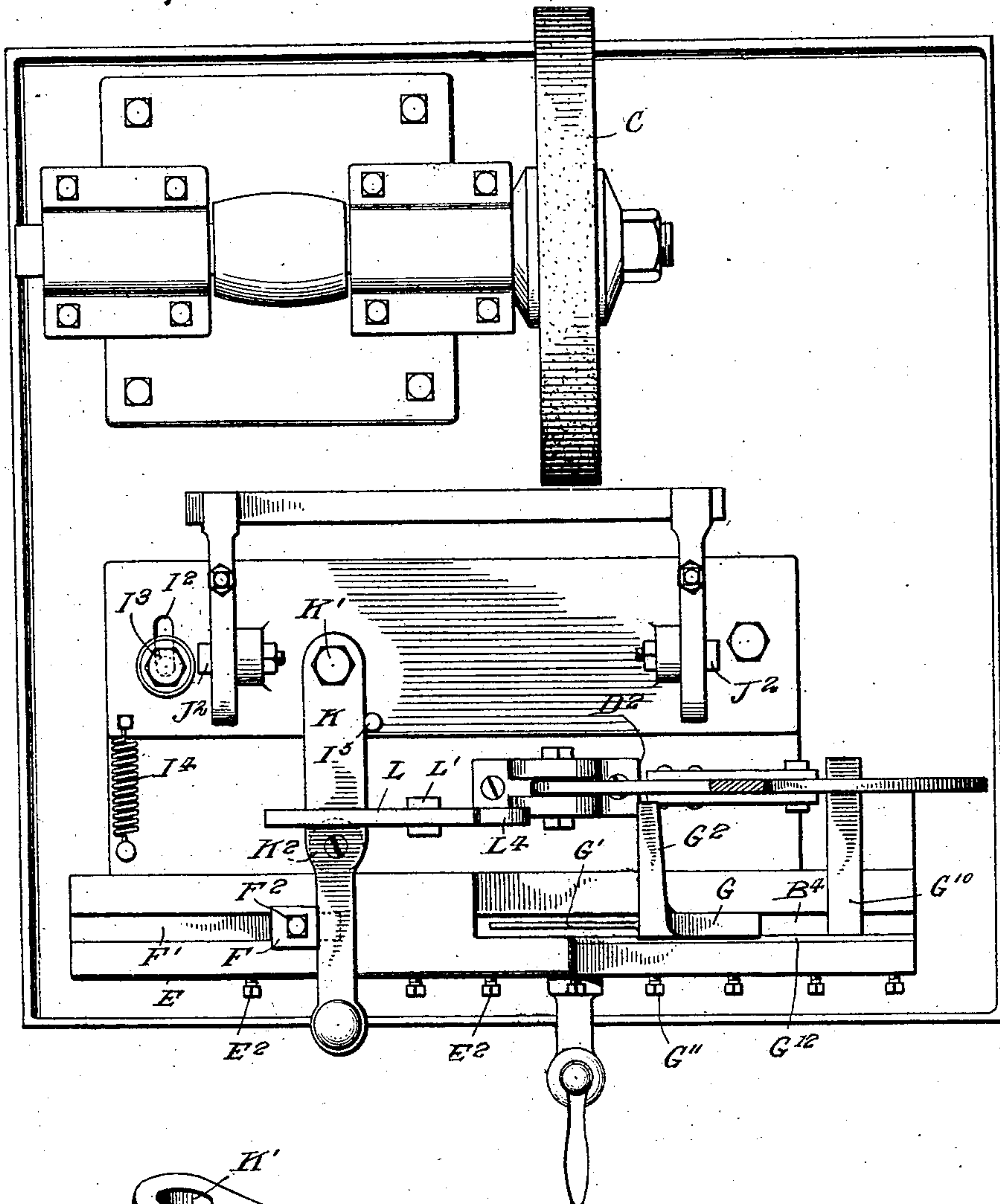
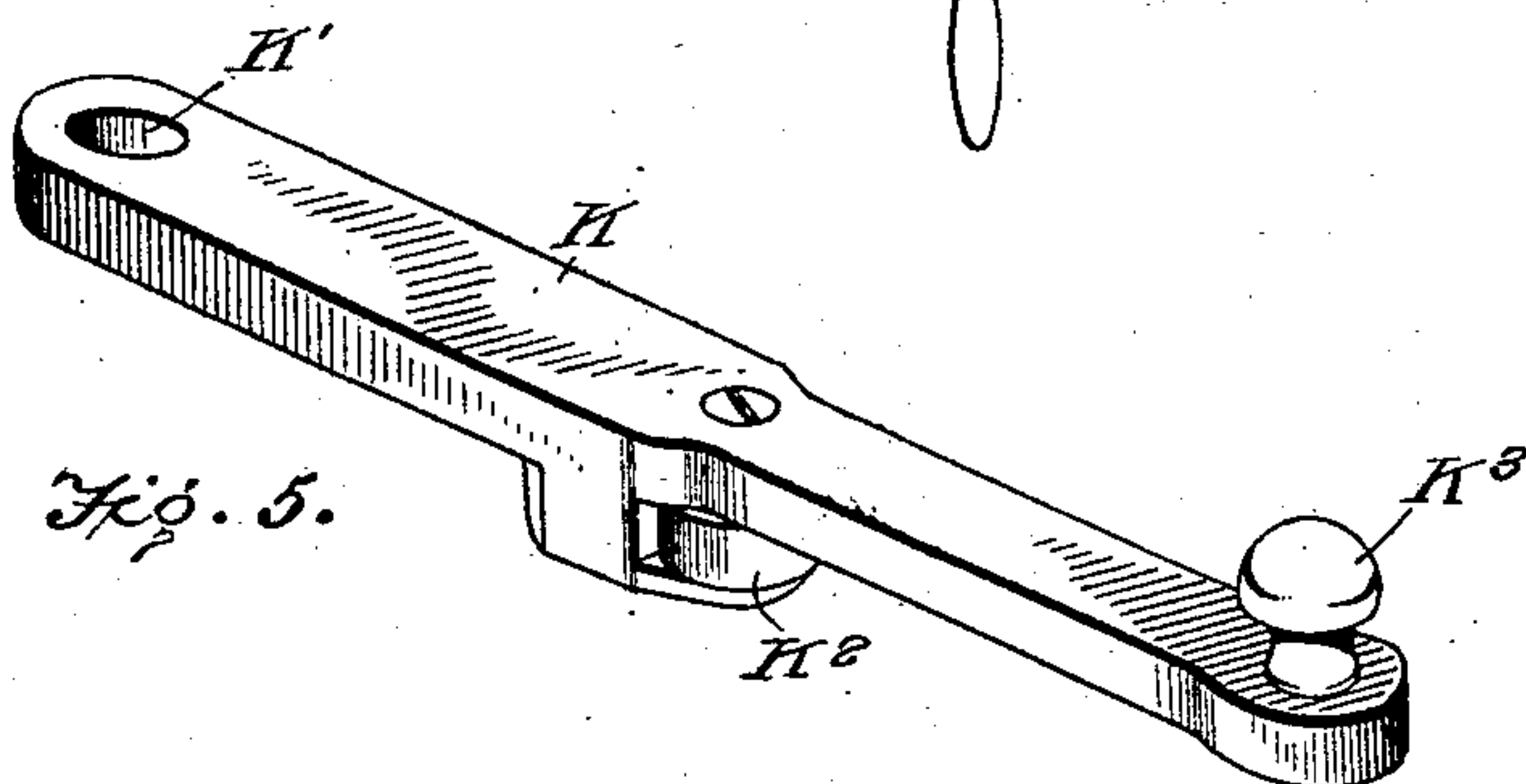


Fig. 5.



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MACHINE FOR GRINDING AND POLISHING.

No. 884,162.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed October 1, 1907. Serial No. 395,324.

To all whom it may concern:

Be it known that I, LAWRENCE A. JONES, a citizen of the United States, and a resident of Clyde, in the county of Sandusky and State of Ohio, have invented certain new and useful Improvements in Machines for Grinding and Polishing, of which the following is a specification.

My invention is an improvement in machines for grinding and polishing and is especially adapted for grinding and polishing knives, being in the nature of a cutlery grinder; and the invention consists in certain novel constructions and combinations of parts as will be hereinafter described and claimed.

In the drawings Figure 1 is an end view of the machine. Fig. 2 is a front elevation thereof, the main lever being in the position to which it is moved for beginning the grinding operation. Fig. 3 is a top plan view of the machine, parts being broken away with the parts in the position they assume at the conclusion of the cutting operation or when the holder is in position for the reception or removal of the blade. Fig. 4 is a top plan view of the machine with the parts in the position shown in Fig. 2. Fig. 5 is a detail view of the connecting or lock lever, and Fig. 6 is a detail perspective view showing the work holder and including the carrier plate thereof.

In carrying out my invention I employ a machine base A on which are mounted rails B' extending from front to rear and receiving the carriage B which may be adjusted on its rails B' toward and from the grinding or polishing device C by means of the screw B², this permitting the adjustment of the work holding devices toward and from the grinding and polishing devices, as may be desired in the operation of the invention. This main carriage B is provided with transverse ways D' for a transversely movable carriage D and in front of said carriage D the main carriage is provided with an upwardly projecting portion B³ which is provided with a transversely extending way or track E' for a laterally movable front frame E which may be secured in any lateral adjustment in its way E' by screws E². This frame E extends about one-half the width of the machine and to the right of said frame E the front portion B³ of the main support B is grooved in its upper side at B⁴ receiving the tripping device G and the adjustable stop G¹⁰, said parts G and G¹⁰ being secured in any suitable adjust-

ment by means of screws G¹¹ operating against the pressure plate for the trip G¹² as will be understood from Figs. 3 and 4 of the drawings. The front frame E supports adjustably a stop block F adjustable in a groove F', and having a screw by which it may be held in any desired adjustment. The groove B⁴ is formed as before described in the main support for the parts G and G¹⁰. The tripping device G is adjustably held as before described so it can be moved laterally, the said tripping device G being spaced apart from the stop F and provided with a rod or extension G' projecting toward the said stop F in position to engage the connecting or lock lever at the conclusion of the operating movement of the work holder, as more fully described hereinafter. The stop G is also provided with the rearwardly projecting arm G² to engage and release the latch device presently described. The carriage B supports the front frame E in a plane slightly above the upper surface of the carriage D, as shown in Fig. 1.

The carriage D may be moved in its supports transversely from side to side in front of the grinding and polishing device C by means of the main lever H, pivoted at H' to lugs B¹⁰ depending from the main support B and extending thence upwardly and connected by a link H² with a work holding carriage D, so the lever H may be moved between the positions shown in Figs. 3 and 4 to slide the work holding carriage D laterally, as desired in the operation of the invention. The work holding carriage D is provided on its upper face with a shoulder or projection D² which abuts the stop G¹⁰ when the parts are in the position shown in Fig. 3 and limits the movement of the carriage to the right as will be understood from said Fig. 3 of the drawings. The work holding devices are mounted on the carriage D and comprise a carrier plate I pivoted at I' near one end of the carriage D so the rear edge of the carrier plate I may be swung toward and from the grinding and polishing devices C, the swinging end of the plate I being provided with a slot I² and a bolt I³ operating therein to limit the movement of the plate I, and a spring I⁴ connecting the swinging end of the plate I with its carriage D and operating to readjust the plate I to the position shown in Fig. 3 from that shown in Fig. 4 at the end of the operating stroke of the machine. The work holding devices proper are mounted on

the carrier plate I and may be of the construction shown or of any other suitable construction. As shown, the work holder comprises a bar J to receive the knife blades and
 5 carried by the levers J' pivoted at J² on lugs mounted on the plate I and having adjusting screws J³ by which the bar J may be raised or lowered. In connecting the blades with the
 10 bar J the latter may have a pin or stud J⁴, to enter one of the rivet holes in the tang of the blade and the edge of the blade may be rested against a stop J⁵, and the adjusting devices J³ permit the holder to be moved up and
 15 down from the position opposite the center of the wheel C.

A connecting or lock lever K is pivoted at one end K' to the carrier plate I and extends
 20 forward over the carriage D and the framing, being provided between its ends with a roller K² to bear against the rear edge of the top frame E and extends thence over the said
 25 frame E between the stop F and the projection G' on the tripping device G and is provided at its front end with a knob K³ by which it may be operated by hand. This
 30 lock lever K abuts the stop F on the main frame and also abuts a stop I⁵ on the slide plate of the work holder when the parts are
 35 in the position shown in Fig. 4, the stop I⁵ on the plate I preventing any movement of the front end of the lever K toward the right from the position shown in Fig. 4 so that the
 40 strain exerted upon the lever K toward the right will operate to move said lever and also move the slide plate with the carriage D toward the right. In effecting such movement
 45 of the lever K, I provide a latch L, pivoted at L' on the carriage D and shouldered at L² to engage with the lever K, the shoulder L² being
 50 at one end of the latch L and the other end of the latch L being pressed upwardly by a spring L³, and adapted at L⁴ to ride under the arm G² of the tripping device in order to
 55 release the latch at L² from engagement with the lever K when the carriage D reaches the position shown in Fig. 3, in order that the lever K may at such time be readjusted to the
 60 position shown in Fig. 3 by the movement of the carrier plate I to the position shown in Fig. 3 by the action of its spring I⁴. In effecting this operation, the projection G' of the tripping device G is useful in engaging
 65 the front end of the lever K and throwing the same off its dead center, resulting from the location of the pivot K' and the roller K².

When the parts are in the position shown in Fig. 3 the blade may be applied to or removed from the holder J. If now, the main
 70 lever be thrown to the position shown in Fig. 2, it will bring the parts to the position shown in Fig. 4, when the grinding or polishing movement may be carried out by moving the
 75 lever H from the position shown in Fig. 2 to the right or to the position shown in Fig. 3.
 80 When the parts assume the position shown in

Fig. 4, the latch L will engage with the lever K and form a positive connection for holding the plate I in the position shown in said Fig. 4, and in fixed relation to the carriage D. If,
 85 now, the carriage D be moved to the right by the operation of the lever H, the carrier plate I and the holder will be correspondingly moved and the blade will be moved across the grinding or polishing device C until it has
 90 reached the end of its stroke. At the end of the movement of the carriage D to the right, the tripping device G by its arm G² will operate upon the end of the latch L and release
 95 such latch from engagement with the lock lever K after which the projection G' of the tripping device will engage the lever K and tilt the same off its dead center so the plate I and the lever K may be forced to the position
 100 shown in Fig. 3 by the tension of the spring I⁴. It will be noticed that the front frame E forms at E¹⁰ a track upon which the wheel on the connecting or lock lever operates in the movement of said lever between the positions
 105 shown in Figs. 3 and 4. It will also be noticed that I support the work holding devices on the carrier plate, which is pivotally mounted on the work holding carriage and is
 110 spring actuated in one direction away from the grinding and polishing devices and is moved toward said devices by the connecting or lock lever having a movable bearing against a relatively fixed track and is pivotally connected with the carrier plate whereby
 115 it may adjust the carrier plate toward and from the grinding or polishing devices in the operation of the invention.

I claim—

1. The combination in an apparatus substantially as described of a carriage, a carrier plate pivotally mounted thereon, a spring
 120 for actuating said plate in one direction, means whereby the carriage may be moved, a lock lever pivoted to the carrier plate, and a relatively fixed track facing the carrier plate and forming a bearing for the lever, substantially as set forth.

2. The combination with a carriage, of a carrier plate movable with the carriage and having a swinging movement independent thereof, a lock lever pivoted to the carrier
 125 plate, and means on the carriage for holding the lock lever in fixed relation to the carrier plate in certain positions of the parts, substantially as set forth.

3. The combination of a carriage and supports therefor, a work holder having a carrier plate pivotally mounted on the carriage and movable therewith and having a swinging movement independent of the carriage, a
 130 connecting or lock lever pivoted to the carrier plate and extending over the carriage, a track facing toward the carriage and forming a bearing for said lever, a stop on the carrier plate for engagement by the lever, a latch mounted on the carriage and engaging with

the lever whereby to hold the latter against the carrier stop, means for moving the carriage, and devices for releasing the latch, substantially as set forth.

5 4. The combination in a machine for grinding or polishing, of a carriage, a work holder comprising a plate pivotally mounted on the carriage, a spring for actuating the carrier plate in one direction, a connecting or
10 lock lever pivoted at one end to the carrier plate, a relatively fixed track with which said lever is movably engaged, a relatively fixed stop for engagement by said lever as the carriage is moved, means for moving the
15 carriage, and latch devices between the carriage and the lever and engaging with the lever, substantially as set forth.

5. The combination with the carriage, a support on which the carriage is movable laterally, a carrier plate movable laterally with the carriage and also having a swinging movement independent of the carriage, a
20 lock lever pivoted to the carrier plate and extending forwardly therefrom, a track on the support and facing toward the carrier plate, and a roller on the lock lever and bearing against said track, substantially as set forth.

6. The combination of a carriage, a carrier plate pivoted to the carriage and swinging thereon, a lock lever pivoted to the carrier plate and extending forwardly therefrom and having a roller and an extension in advance thereof, a support for the carriage having in advance of the carrier plate a track
30 forming a bearing for the roller of the lock lever, a stop on the carrier plate for engagement by the lock lever, and a latch on the carriage for holding the lock lever in engagement with said stop.
40

7. The combination of a work holder having a carrier plate, a carriage, a pivotal connection between the carriage and the carrier plate, a spring connecting the carrier plate with the carriage, a lock lever pivoted at one end to the carrier plate, and provided between its ends with a roller and with an extension in advance of said roller, a relatively fixed stop for engagement by said extension, a track forming a bearing for the roller, a latch mounted on the carriage and movable into and out of engagement with the lock lever, means for adjusting the latch out of engagement with the lever, and means for
50 moving the carriage.
55

8. The combination of the carriage, a carrier plate mounted on the carriage and movable therewith and having a movement independent of said carriage, a lock lever pivoted to the carrier plate and having in advance thereof a roller, a stop projection on the carrier plate for engagement by said lock lever, a latch on the carriage for holding the lock lever in engagement with said stop, a track
60 fixed relative to the carriage and forming a

bearing for the roller of the lock lever, and means supported independently the carriage for releasing the latch from engagement with the lock lever, substantially as set forth.

9. The combination of the sliding carriage, 70 a work holder having a carrier plate pivoted at one end to the carriage and swinging at its other end upon the carriage, a spring for readjusting the carrier plate, a lever pivoted to the carrier plate, a track forming a bearing 75 for said lever, a latch forming a detachable connection between the lever and the carriage and movable into and out of engagement with the lever, a tripping device for releasing the latch from engagement with the lever, and means for operating the carriage, 80 substantially as set forth.

10. The combination with the carriage and work holder having a carrier plate movable with and independent of the carriage, of 85 a lock lever connected with the carrier plate, latch devices between the lever and the carriage, and means fixed relatively to the carriage whereby to shift the lock lever off dead center, substantially as set forth. 90

11. The combination with the carriage and work holder having a carrier plate pivotally mounted on the carriage, a spring for actuating the carrier in one direction, a lock lever pivoted to the carrier plate, a stop on 95 the carrier plate for limiting the movement of the lever in one direction, a latch on the carriage and forming a detachable connection between the same and the lever, and a tripping device supported independent of the carriage for releasing the latch from engagement with the lever, substantially as set forth. 100

12. The combination of the carriage, a carrier plate pivoted thereto, a lock lever pivoted at one end to the carrier plate, a stop 105 on the carrier plate for engagement by the lock lever, a stop supported independent of the carriage and carrier plate and engaging the opposite sides of the lock lever from the stop on the carrier plate, a track forming a 110 bearing for the lock lever, means for operating the carriage, and interlocking devices between the carriage and the lock lever, substantially as set forth.

13. The combination of the carriage, a 115 work holder having a carrier plate and movable with and independent of the carriage, a lock lever pivoted to the carrier plate, a stop on the carrier plate and engaging one side of the lock lever, a stop engaging the opposite 120 side of the lock lever, means for securing said stop in any desired adjustment, means for moving the carriage and interlocking device between the carriage and the lock lever, substantially as set forth. 125

14. The combination with the carriage and a work holder having a carrier plate movable with and independent of the carriage, a lock lever pivoted to the carrier plate and extending over the carriage, a latch supported 130

on the carriage and movable into and out of engagement with the lock lever, and a trip device supported independent of the carriage and adapted to release the latch from engagement with the lock lever, and means for securing the tripping device in any desired adjustment, substantially as set forth.

15. The combination with the carriage, and means for moving the same, of a work holder mounted on the carriage and compris-

ing a carrier plate, a bar to receive the work, and lever arms connected with said bar and pivotally mounted on the carrier plate and adjusting devices operating in connection with said lever arms, substantially as set forth.

LAWRENCE A. JONES.

Witnesses:

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