

No. 873,894.

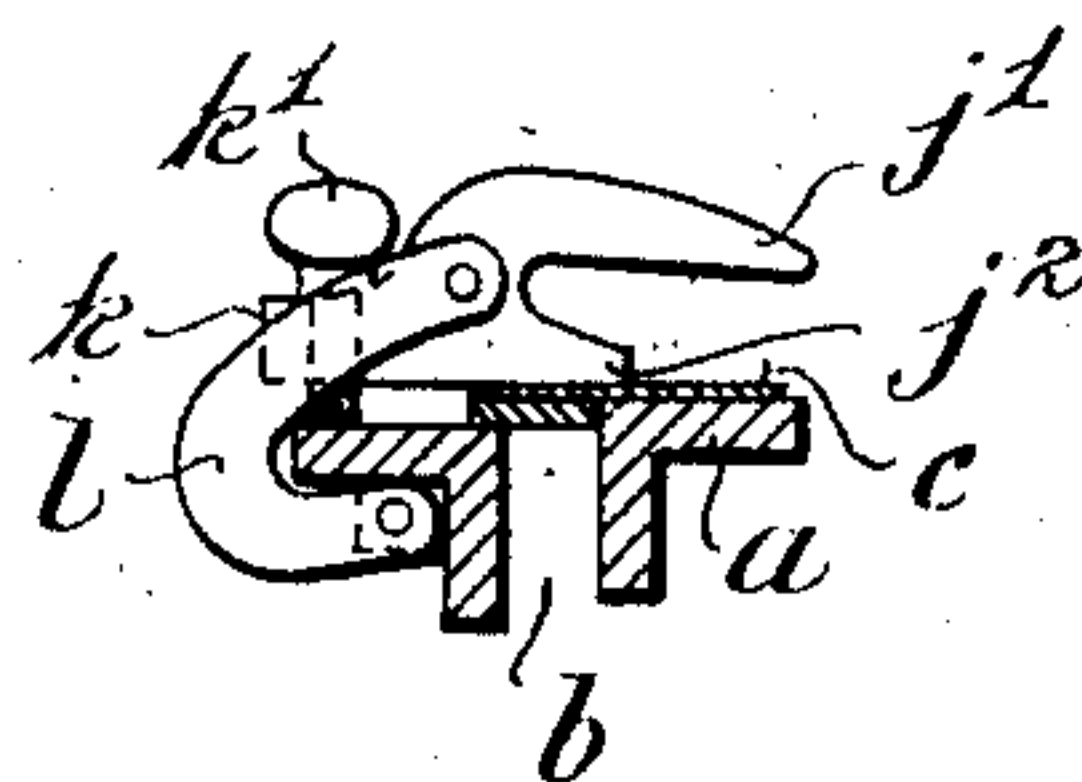
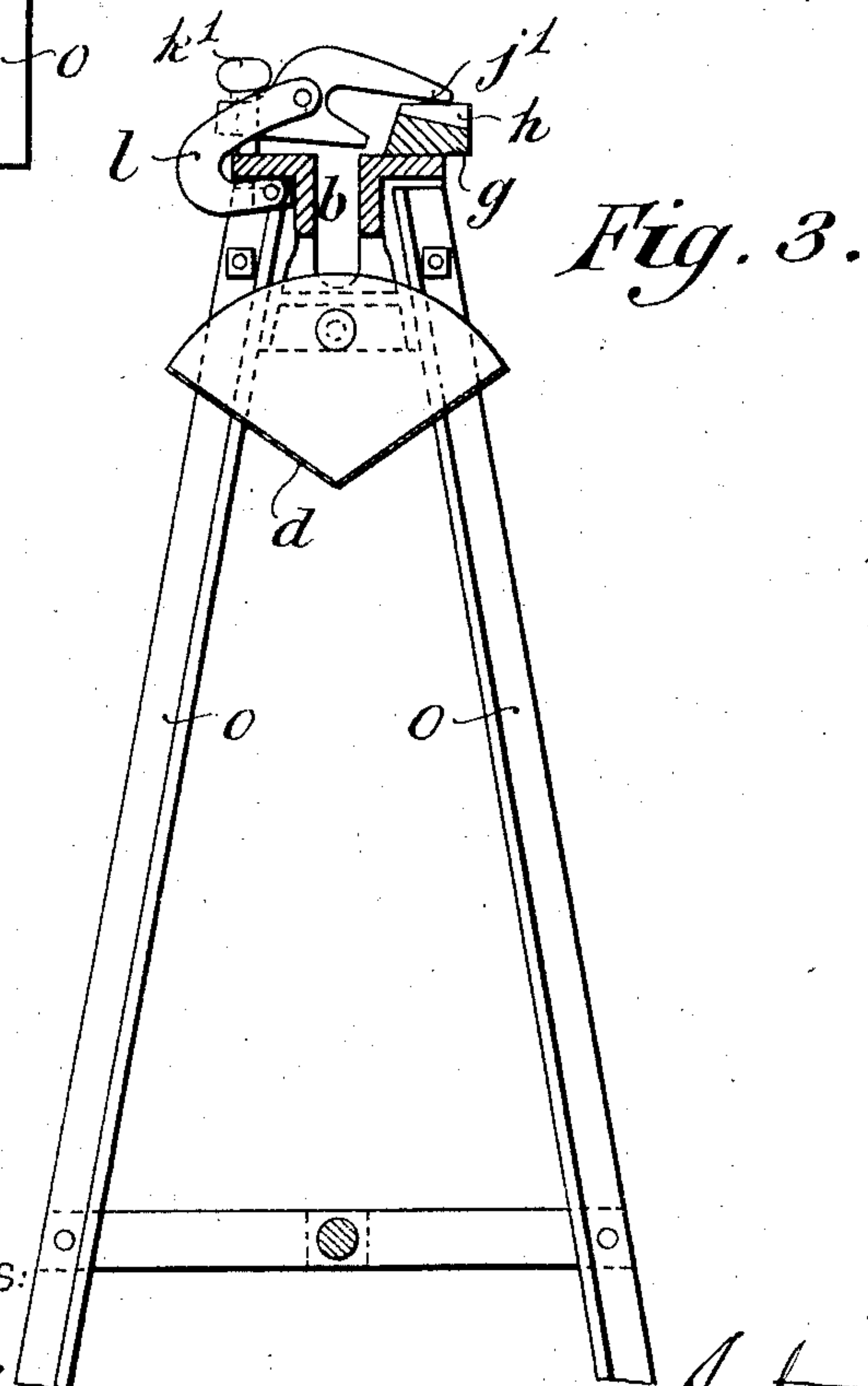
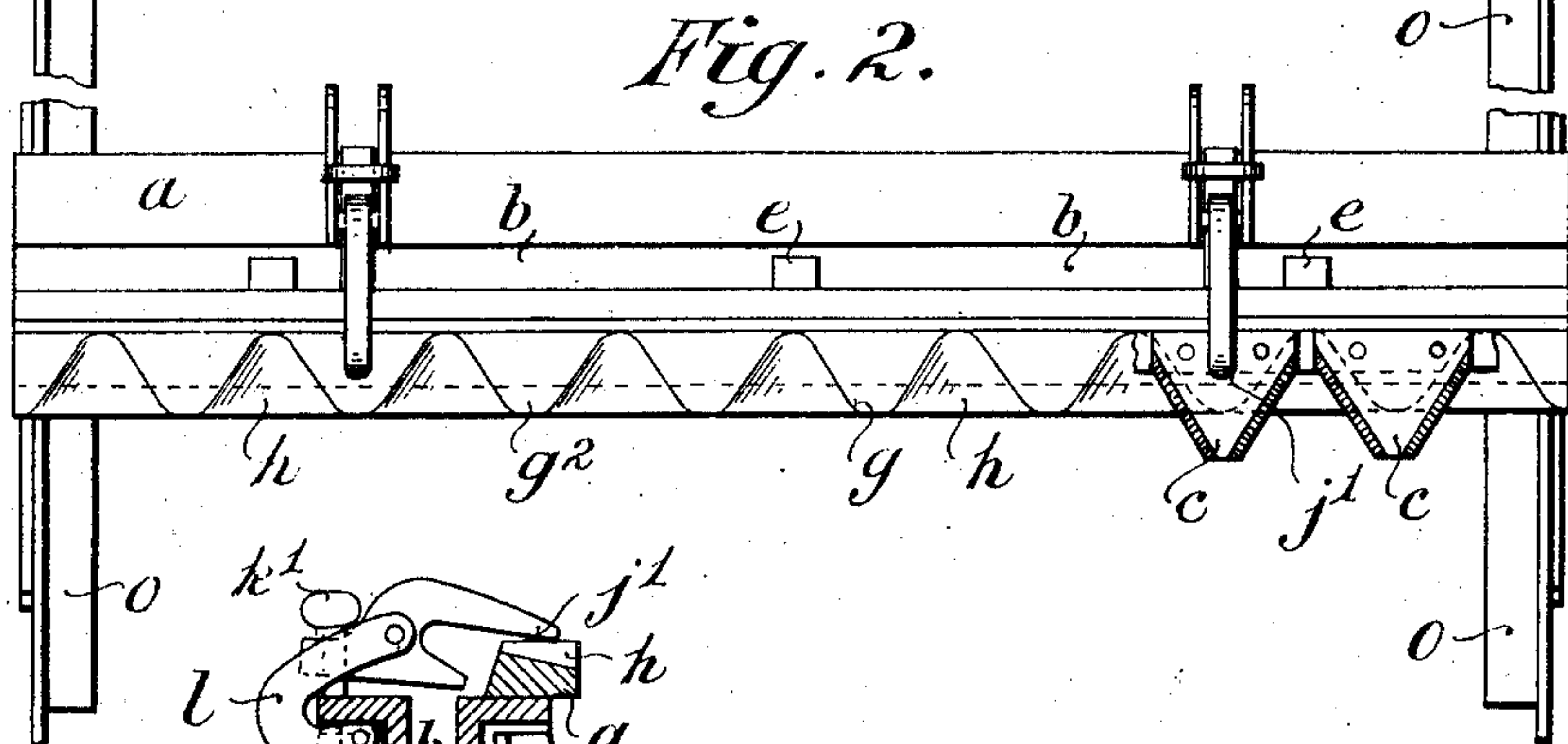
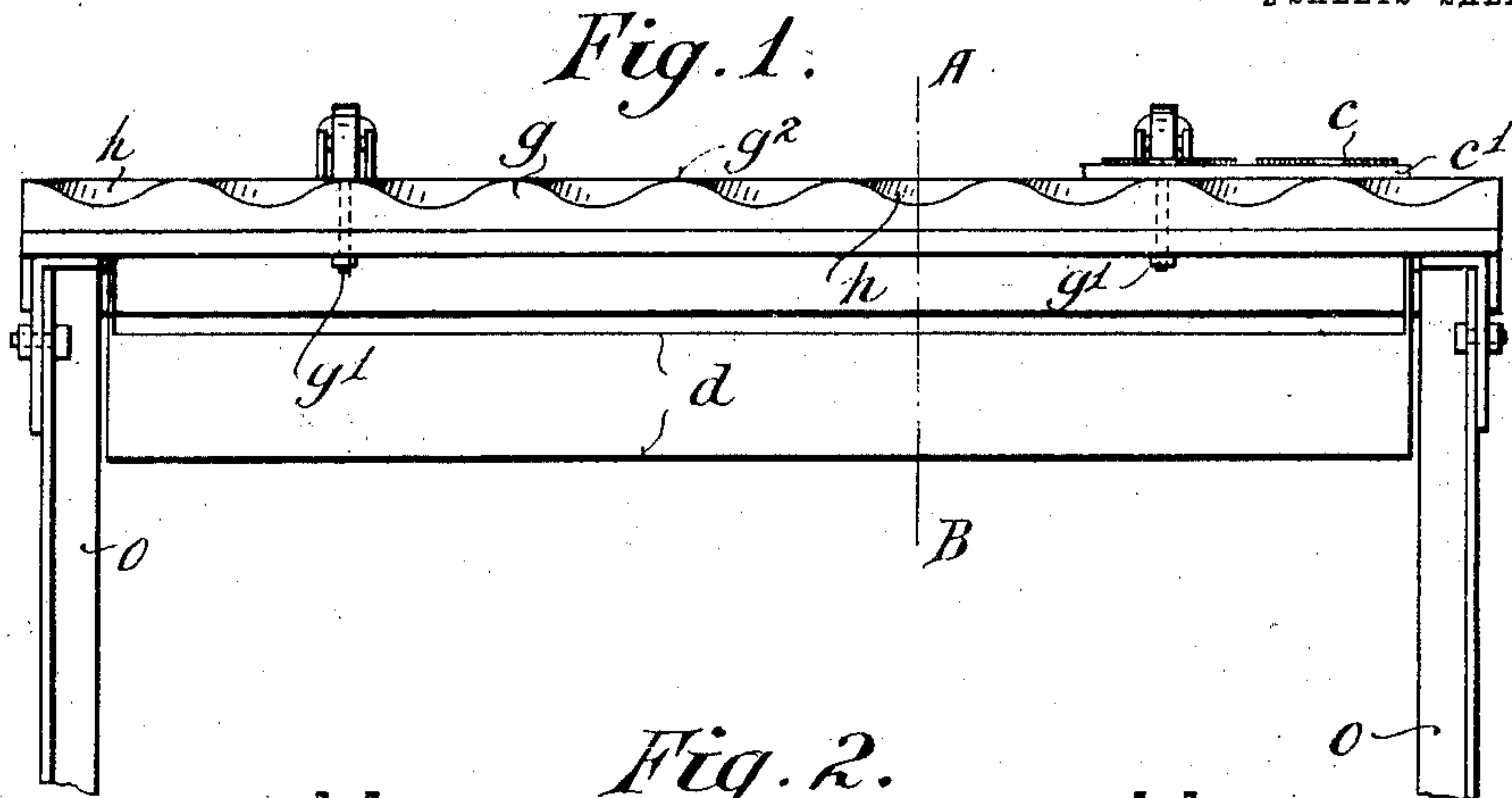
PATENTED DEC. 17, 1907.

W. RAWLINSON.

APPARATUS FOR SHARPENING, REMOVING, AND REPLACING CUTTER SECTIONS.

APPLICATION FILED FEB. 9, 1907.

2 SHEETS—SHEET 1.



*Fig. 6*

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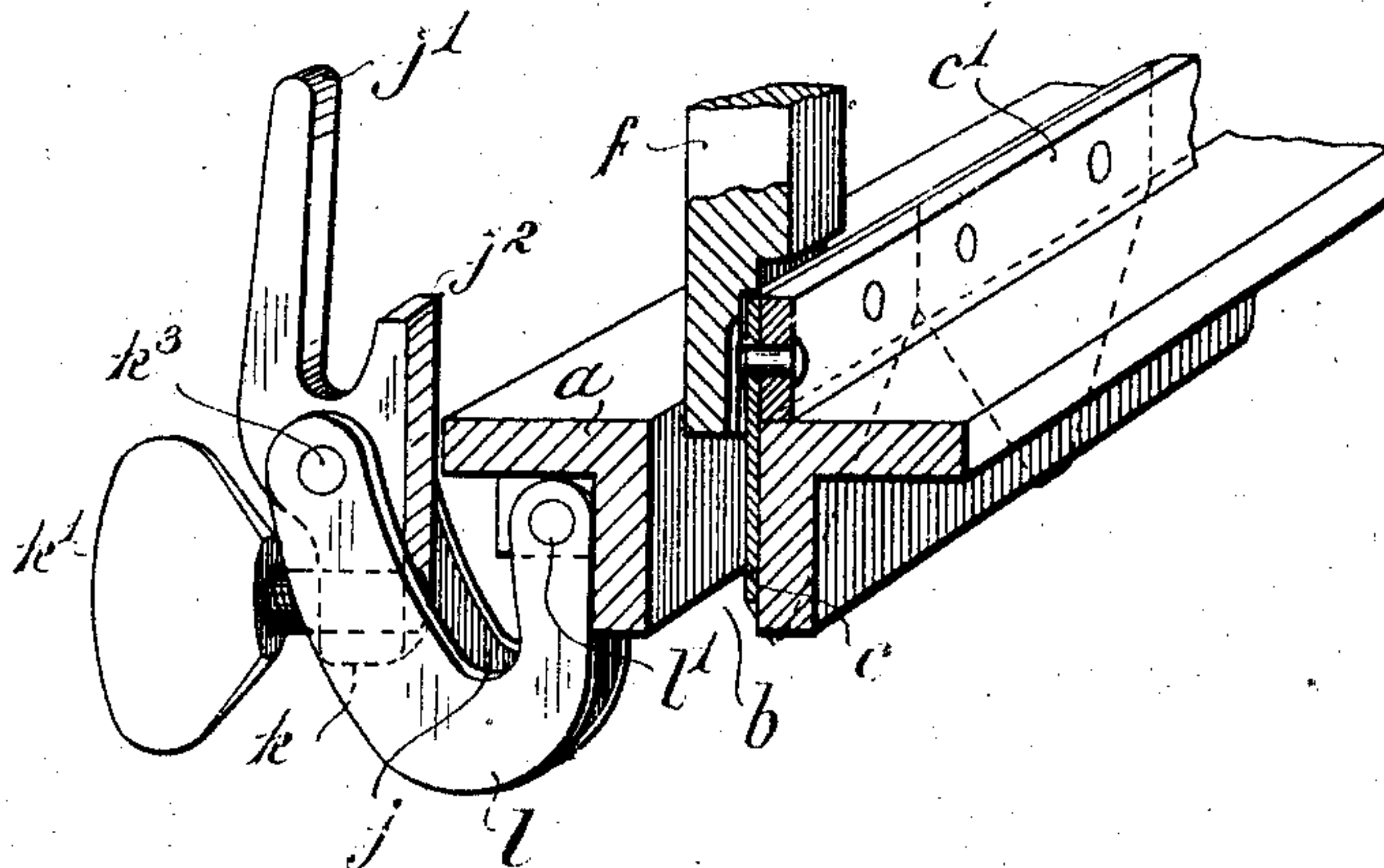
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## APPARATUS FOR SHARPENING, REMOVING, AND REPLACING CUTTER SECTIONS.

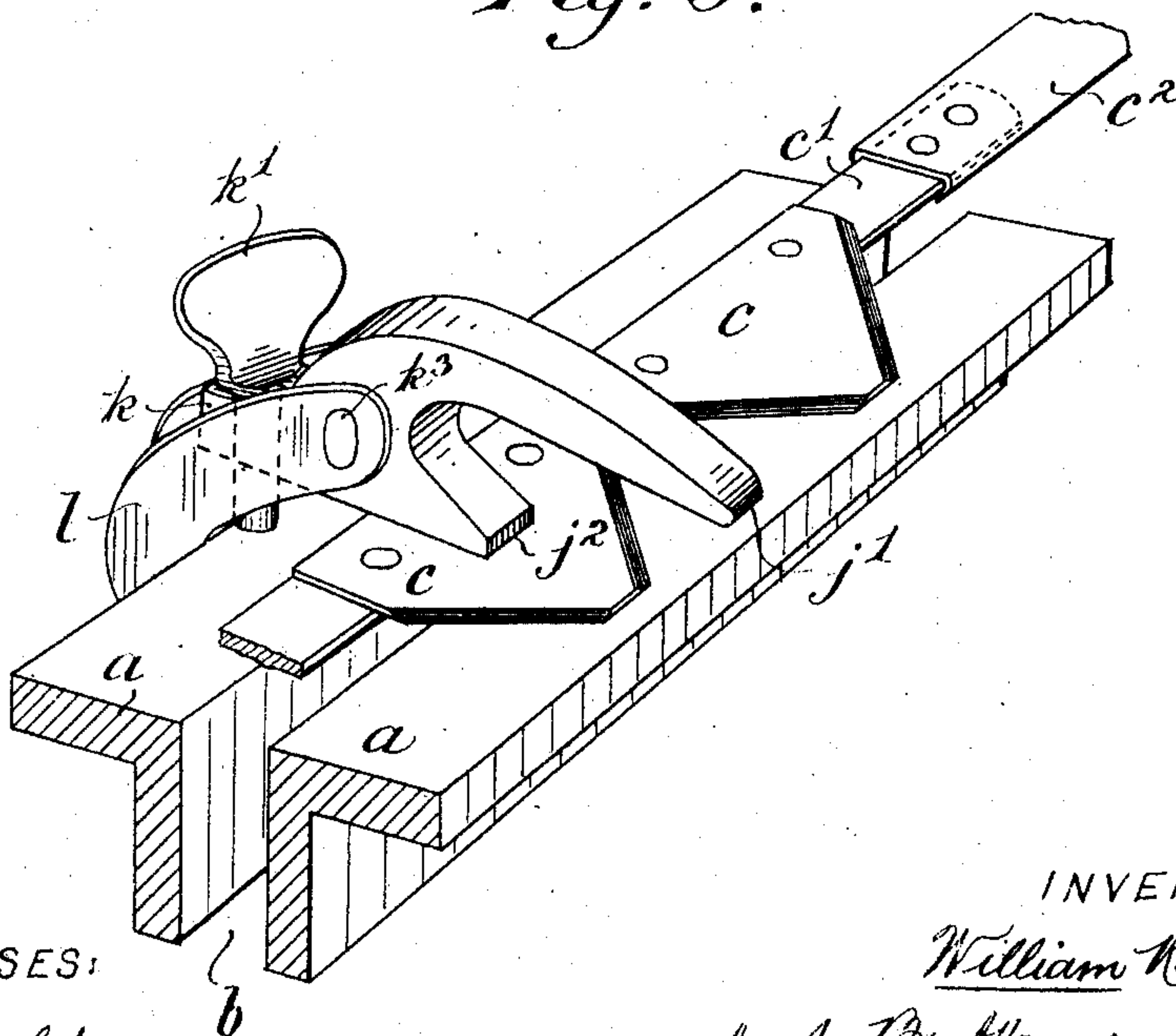
APPLICATION FILED FEB. 9, 1907.

2 SHEETS—SHEET 2.

*Fig. 4.*



*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

WILLIAM RAWLINSON, OF EAST HAM, ENGLAND.

APPARATUS FOR SHARPENING, REMOVING, AND REPLACING CUTTER-SECTIONS.

No. 873,894.

Specification of Letters Patent.

Patented Dec. 17, 1907.

Application filed February 9, 1907. Serial No. 356,629.

*To all whom it may concern:*

Be it known that I, WILLIAM RAWLINSON, of 65 Lancaster road, East Ham, Essex, England, have invented a certain Improved Apparatus for Sharpening, Removing, and Replacing Cutter-Sections, of which the following is a specification.

This invention has for its object to provide an apparatus which may be termed a combination tool for use in the operations of sharpening, removing and replacing the knife plates or sections of mowing and reaping machines and binders.

The apparatus consists of a stand having a bed plate so constructed that the knife sections can rest in a trough slot or groove with the knife back supported in such manner that by means of a suitable tool which will engage the knife section without touching the back, the blades may be struck and removed by shearing the rivets which hold them to the back the bed plate also serves as a means whereby the blades may be again riveted to the knife back. To allow of the knife sections being sharpened the bed plate is fitted in suitable position with a bar or support, hereinafter called the "knife rest" on which the knife sections and the back may be supported and that part of the "knife rest" which comes between the sharp edges of the sections is suitably recessed or cut away to allow of a file or other sharpening instrument being used upon the blades and in order that the knife sections and back as a whole may be held securely in position during sharpening a special form of clip is provided which is suitably pivoted or otherwise connected to the bed plate that it can be moved to position to clamp the knife plate in position. The said clip is also provided with a second clamping part which will serve to firmly clamp the knife back and sections upon the bed plate in such position that the knife head which holds the knife as a whole to the mowing or other machine is detached by shearing the rivets with a suitable tool which may be the same tool as that used for detaching the knife section. These clamps are preferably arranged that they can be moved out of the way without being detached when the apparatus is used for detaching or replacing the knife sections or any riveting operations which may be necessary. The bed plate on one side of the slot may be

arranged as the knife rest for sharpening or the knife rest may consist of a bar like member resting on one side of the bed plate and made detachable by bolts or arranged to be removed out of the position on hinges to enable the knife section to be clamped when detaching the head. Beneath the bed plate a suitable trough like tool container will be fitted and which will also serve to receive the sections as they fall from the knife plate when they are detached therefrom. The whole will be mounted on suitable legs so as to form a stand having the bed plate at a height convenient for use.

I have illustrated one form of the invention in the accompanying drawings where:—

Figure 1 is a side elevation of the apparatus; Fig. 2 is a plan of Fig. 1 showing parts of a knife in position for sharpening; Fig. 3 is a sectional end elevation on line A—B of Fig. 1; Fig. 4 is a sectional perspective view showing how the apparatus is used for shearing off the knife blades; Fig. 5 is a perspective view showing how the apparatus may be used for holding the knife blades for shearing off the rivets which hold the head of the knife back; Fig. 6 is a similar view to Fig. 3 showing a modification.

In the drawings *a* is the bed plate formed of two angle iron parts as shown or otherwise made with a central slot or guide *b* in which the knife sections *c* are placed as shown in Fig. 4 when it is required to detach them from the knife back *c'*, the knife back being supported on the bed plate to one side of the slot so that the said knife sections can be struck off by means of a tool *f* such as shown in Fig. 4, the detached sections passing through the slot *b* into the trough *d* beneath. In order that the blades may be kept to one side of the slot projections *e* are formed on one side thereof whereby the slot can be of sufficient width to admit the tool *f* and form a guide therefor while it is held and struck by the hammer.

*g* is the knife rest resting on one side of the bed plate and detachably secured thereto by bolts as indicated at *g'*. This knife rest is formed with flat parts *g''* somewhat in the form and preferably slightly of less size than the shape of the knife section, the spaces between the flat parts where the knife blades are to rest being recessed or cut away as at *h* to admit of the passage of a file over the edges of the



knife blades for the purpose of sharpening the same. Two knife sections *c c* are shown in position for sharpening in Fig. 2 and they are held in this position by means of noses *j'* of clamps *j*. These clamps *j* are formed with additional noses or clamping parts *j<sup>2</sup>* which are adapted for use as shown in Fig. 5 to clamp the knife along the middle of the bed plate to allow of the head being detached. When used for this purpose the knife rest *g* is detached. It will be seen that when the knife rest is in use the nose *j'* comes into contact therewith before the nose *j<sup>2</sup>* comes against the bed plate and when the nose *j<sup>2</sup>* is in use the raised knife rest is detached so that the two clamping operations will not interfere with one another. The clamp *j* is formed with a rearward extension *k* through which is passed a clamping screw *k'* which bears downward upon the bed plate and the clamp is pivotally mounted as at *k<sup>3</sup>* between arms *l* which extend over the edge of the bed plate and back and underneath same and are fastened to the bed plate by a pivotal connection *l'*. The pivot *k<sup>3</sup>* being between the noses and the clamping screw causes the screwing down of the clamp to clamp the noses upon the knife back when in the respective position. By pivoting the clamp and arms *l* as a whole beneath the bed plate at *l'* the whole clamp and arms can be moved out of position as shown in Fig. 4 without being detached from the apparatus and thereby allow of the knife sections being detached and the clamps returned to the other operation when required. The clamps are also kept turned back when it is desired to use the stand as a support for riveting the sections on the knife back which as will be seen can be readily done by using the bed plate as a riveting block, the knife back and sections being placed in position. If it is required to hold the knife sections in place during the riveting operation the clamps may be employed for this purpose and the knife back and sections lying in somewhat the same position as shown in Fig. 2 with the knife rest *g* removed or not as may be required. If the knife rest is made of metal it need not be removed but if it is made of wood as will generally be the case it will be removed and the riveting operation performed on the bed plate beneath. The trough *d* beneath the bed plate while serving as mentioned for receiving the detached knife sections can also be used for holding tools and the like.

Fig. 6 shows a modified form of bed plate which is particularly adapted for use in removing or shearing off the carrying links *c<sup>2</sup>* at ends of the back *c'*. In this construction the sides of the bed plate *a* are made at different levels so that the back *c'* lies upon the lower part and the knife sections *c* are supported by the higher part.

While the bed plate may be made to rest upon a bench if required it is preferably formed with legs as shown at *o* so as to form a complete stand in itself.

What I claim and desire to secure by Letters Patent is:—

1. The improved apparatus for use in sharpening, removing, and replacing the knife plates or sections of mowing and reaping machines and the like comprising the combination of a bed plate having a longitudinal slot therein, said slot being adapted to receive the knife blades while the back is supported on the bed plate during the operation of detaching the sections, a knife rest formed with alternating flat parts and intervening recesses corresponding to the position of the knife sections and the gaps between same, said recesses allowing of the passage of a tool for sharpening the knife sections, swinging clamps formed with two noses one nose for clamping the knife to the knife rest and the other for clamping the knife to the bed plate as and for the purpose set forth.

2. The improved apparatus for use in sharpening, removing and replacing the knife plates or sections of mowing and reaping machines and the like comprising the combination of a bed plate having a longitudinal slot therein, said slot being adapted to receive the knife blades while the back is supported on the bed plate during the operation of detaching the sections, a knife rest formed with alternating flat parts and intervening recesses corresponding to the position of the knife sections and the gaps between same, said recesses allowing of the passage of a tool for sharpening the knife section, a clamping block formed with two noses one for clamping the knife to the knife rest and the other for clamping the knife to the bed plate, a rearward extension to said clamping block, a clamping screw extending through said extension and bearing on the bed plate, a swinging arm pivoted at one end to said clamping block between the clamping screw and the clamping noses and pivoted at the other end to the bed plate whereby said clamp and arm may be swung from off the top of the bed plate when required substantially as set forth.

3. In apparatus for the purpose described, the combination with a plate adapted to support a knife-back, said bed plate having a slot in which the knife blades rest while being detached from the knife back, of a clamping block adapted to press a knife back against said bed plate, and a swinging arm pivotally connected to said clamping block and to the bed plate whereby the said clamp can be swung entirely clear of the top of the bed plate when required, substantially as set forth.

4. In apparatus for the purpose described the combination of a longitudinally slotted



bed plate, a knife rest formed with flat parts  
with intervening recesses, and clamps formed  
with two noses one for clamping the knife  
plates on the knife rest and the other for  
5 clamping the knife to the bed plate, sub-  
stantially as and for the purpose set forth.  
In witness whereof, I have hereunto signed

my name in the presence of two subscribing  
witnesses.

WILLIAM RAWLINSON.

Witnesses:

ROBERT M. SPEARPOINT,  
H. D. JAMESON.