

No. 665,655.

Patented Jan. 8, 1901.

W. G. GASS.
CLIP FOR STENTER FRAMES.

(Application filed May 15, 1900.)

(No Model.)

3 Sheets—Sheet 1.

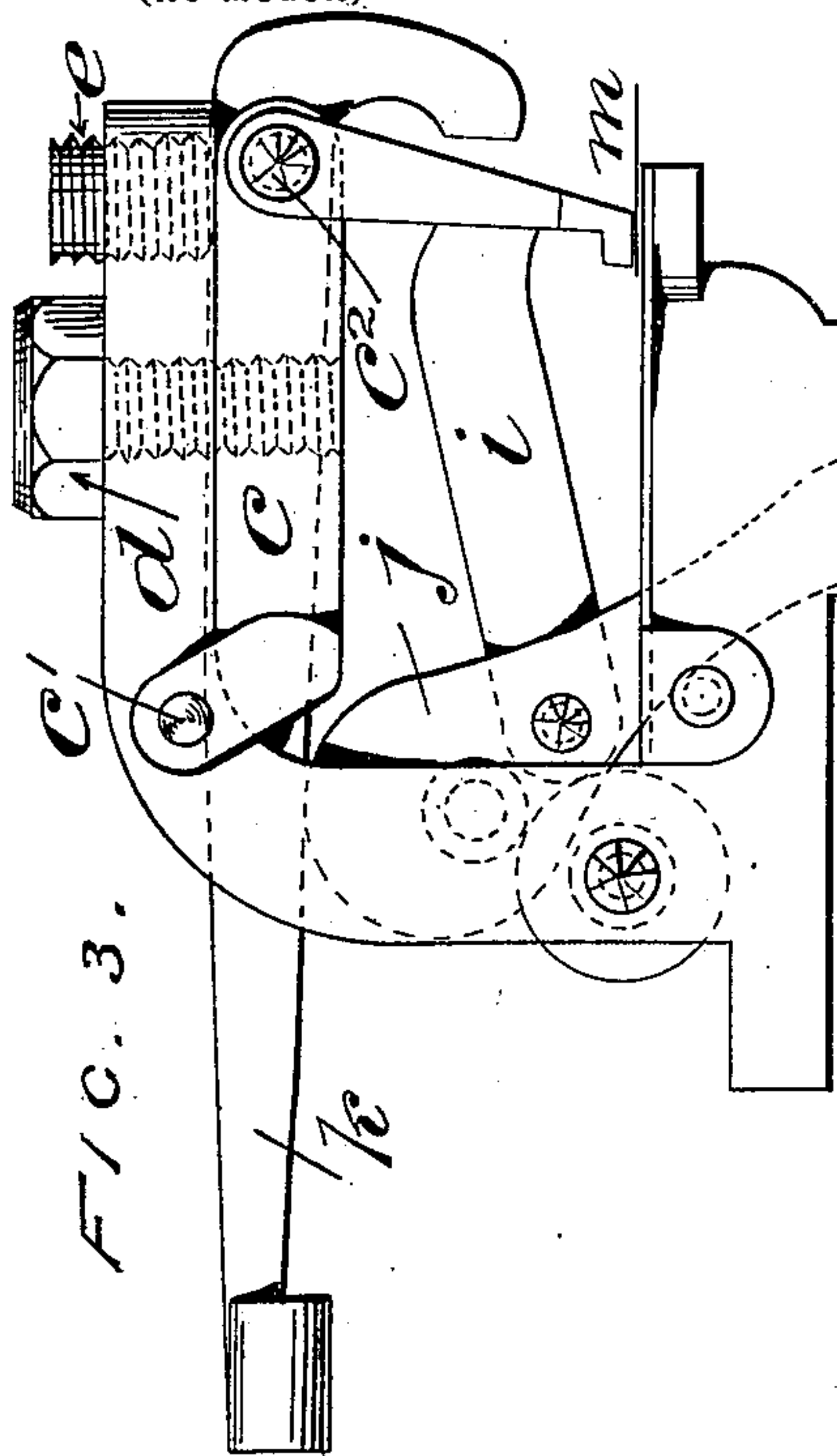


FIG. 4.

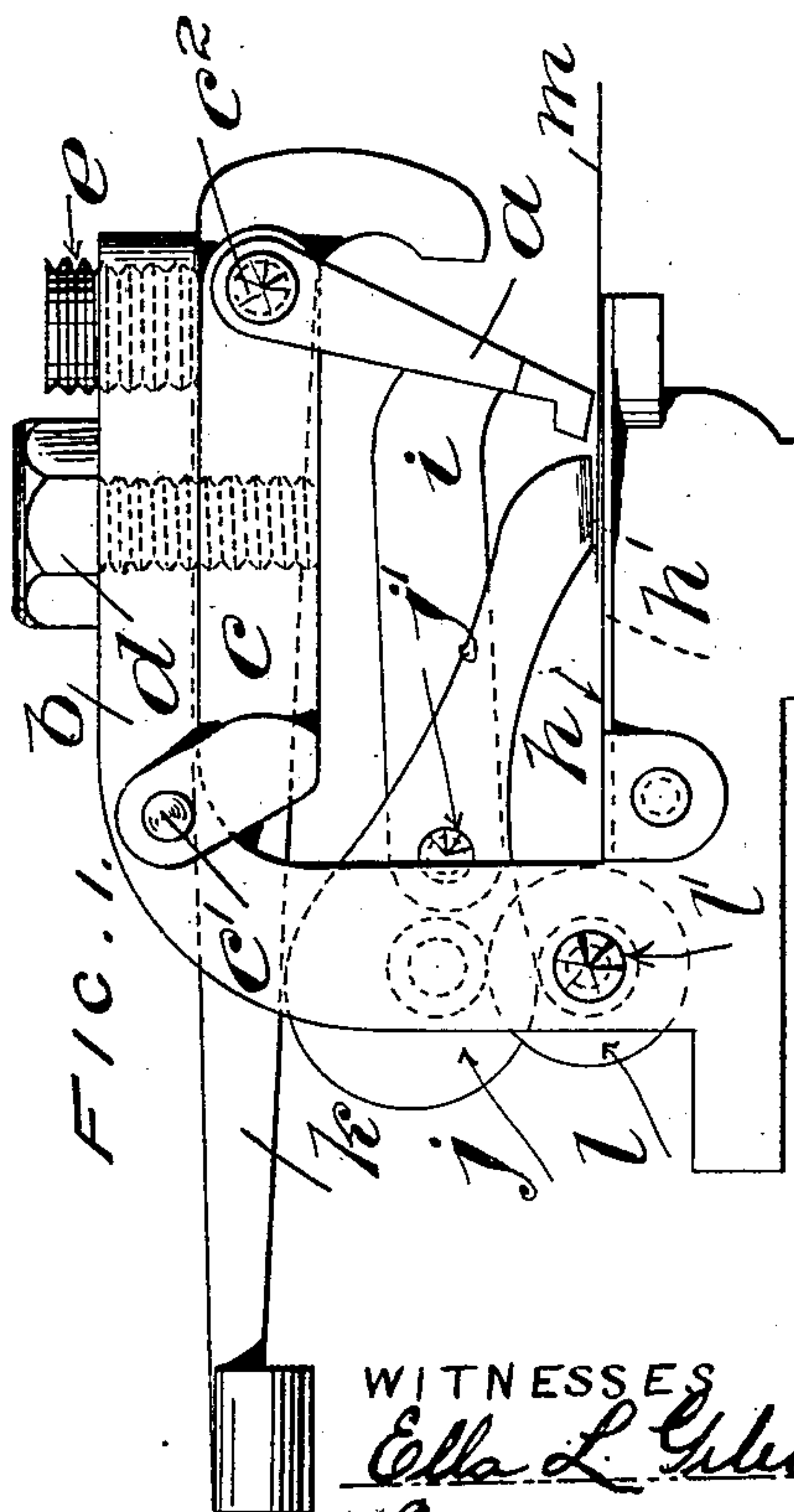
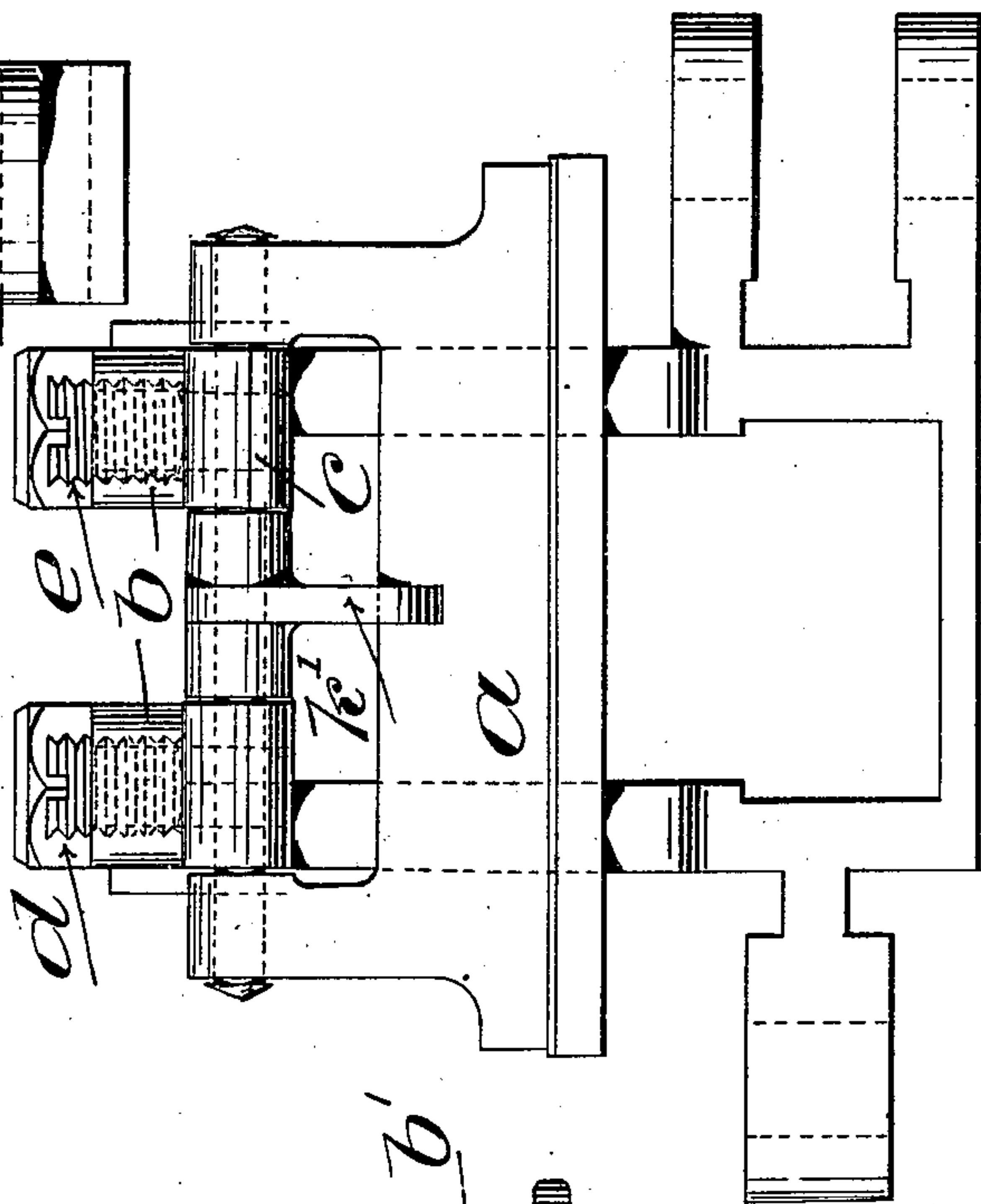
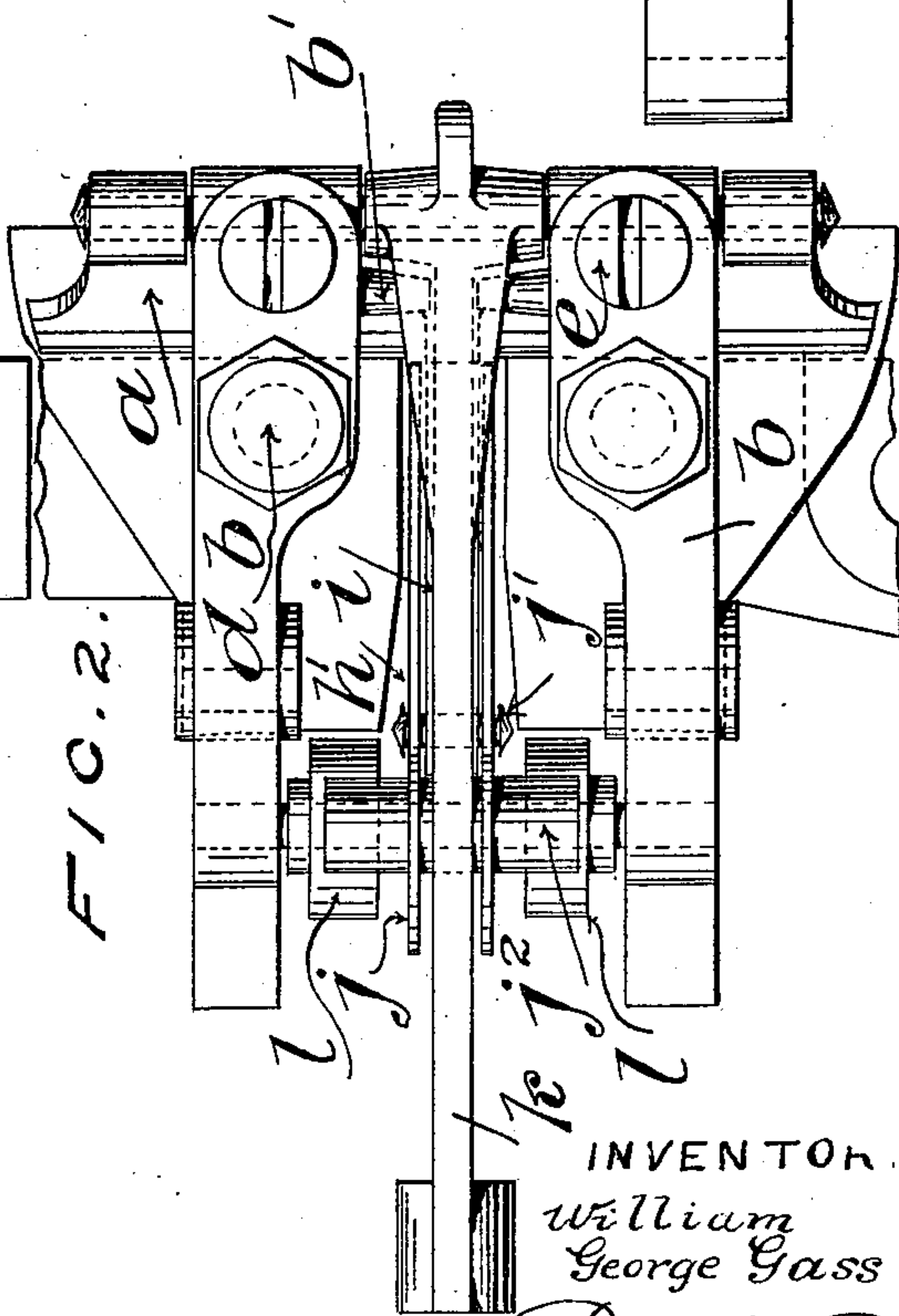


FIG. 2.



WITNESSES

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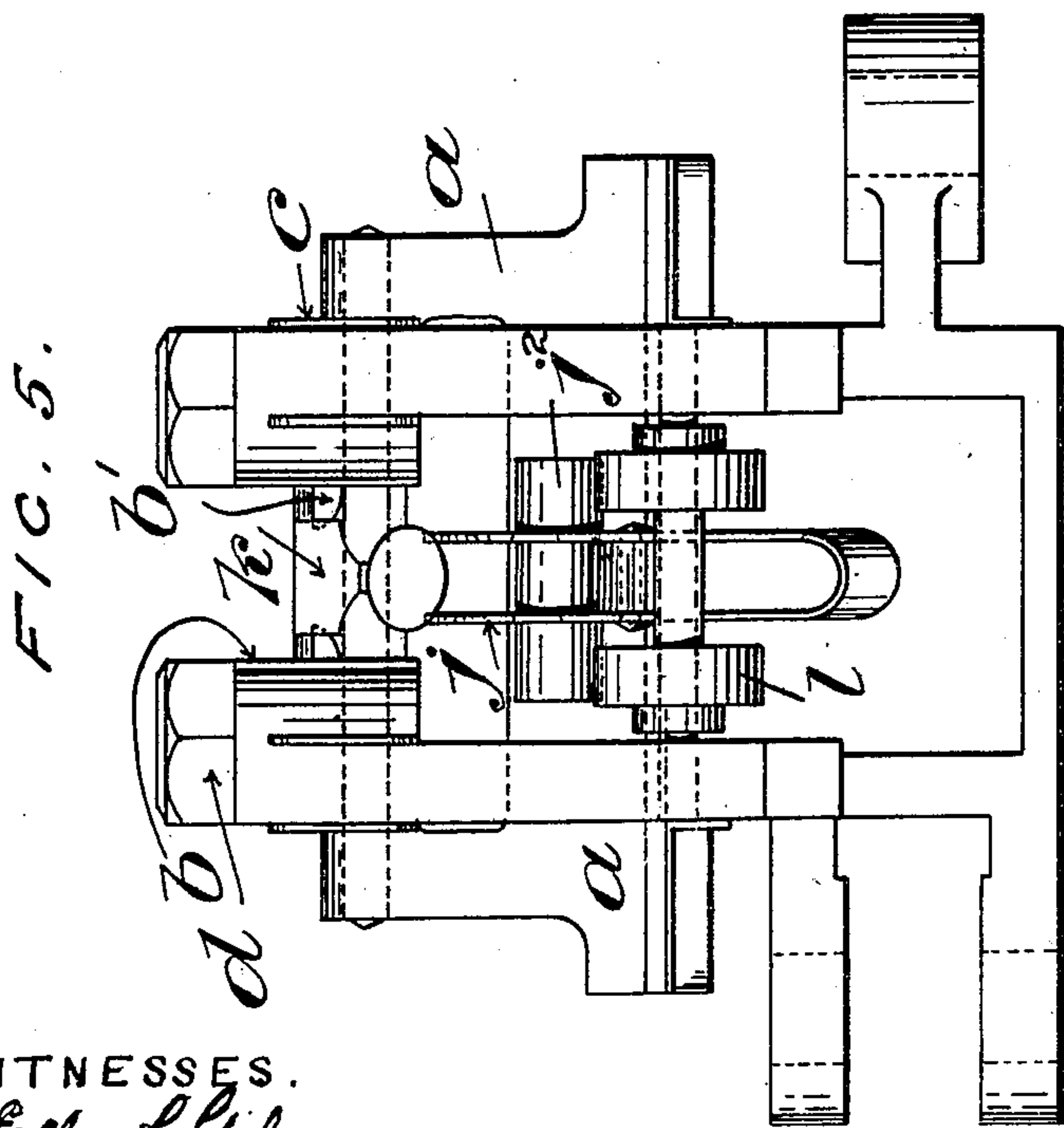
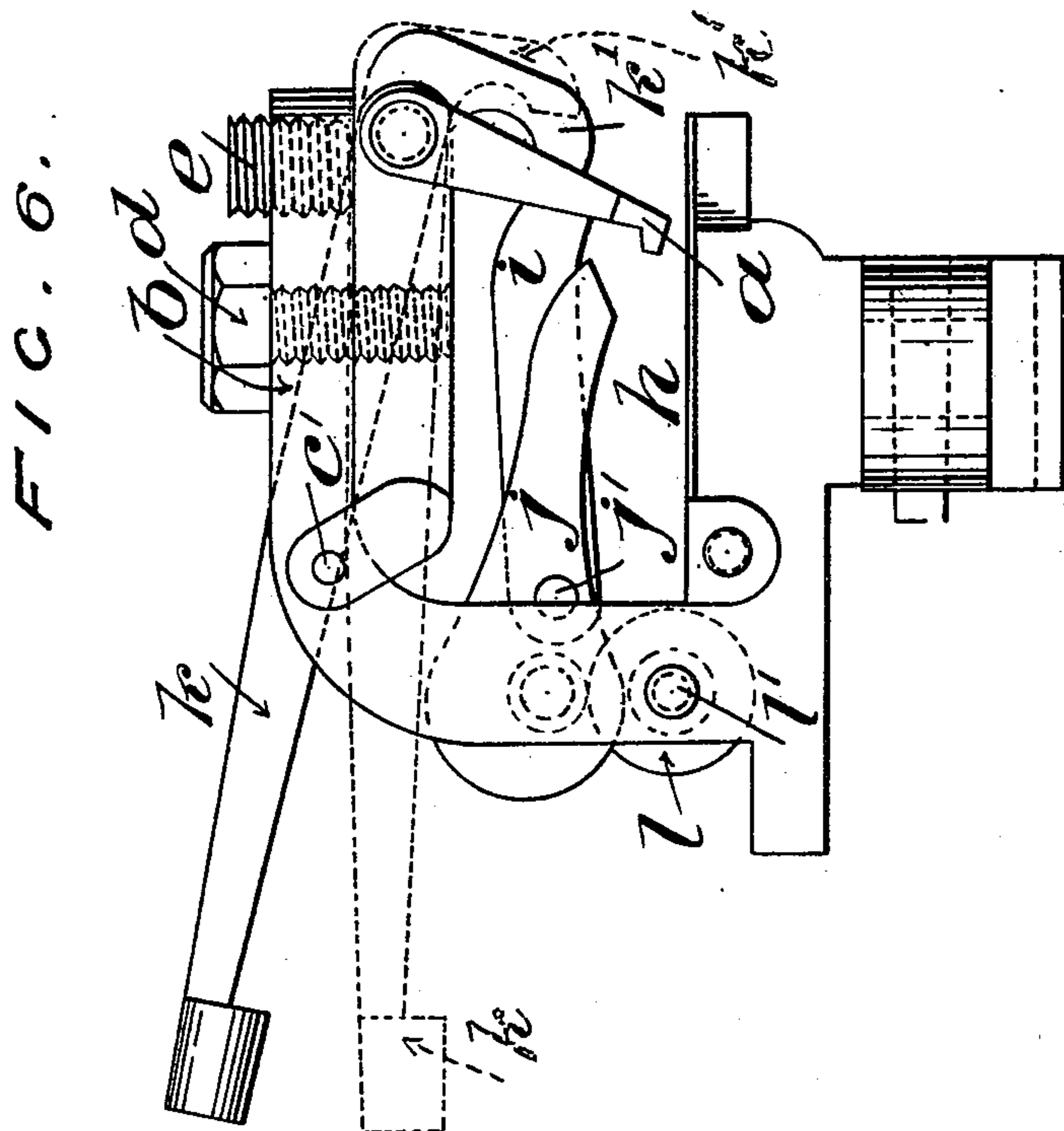
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3 Sheets—Sheet 2.



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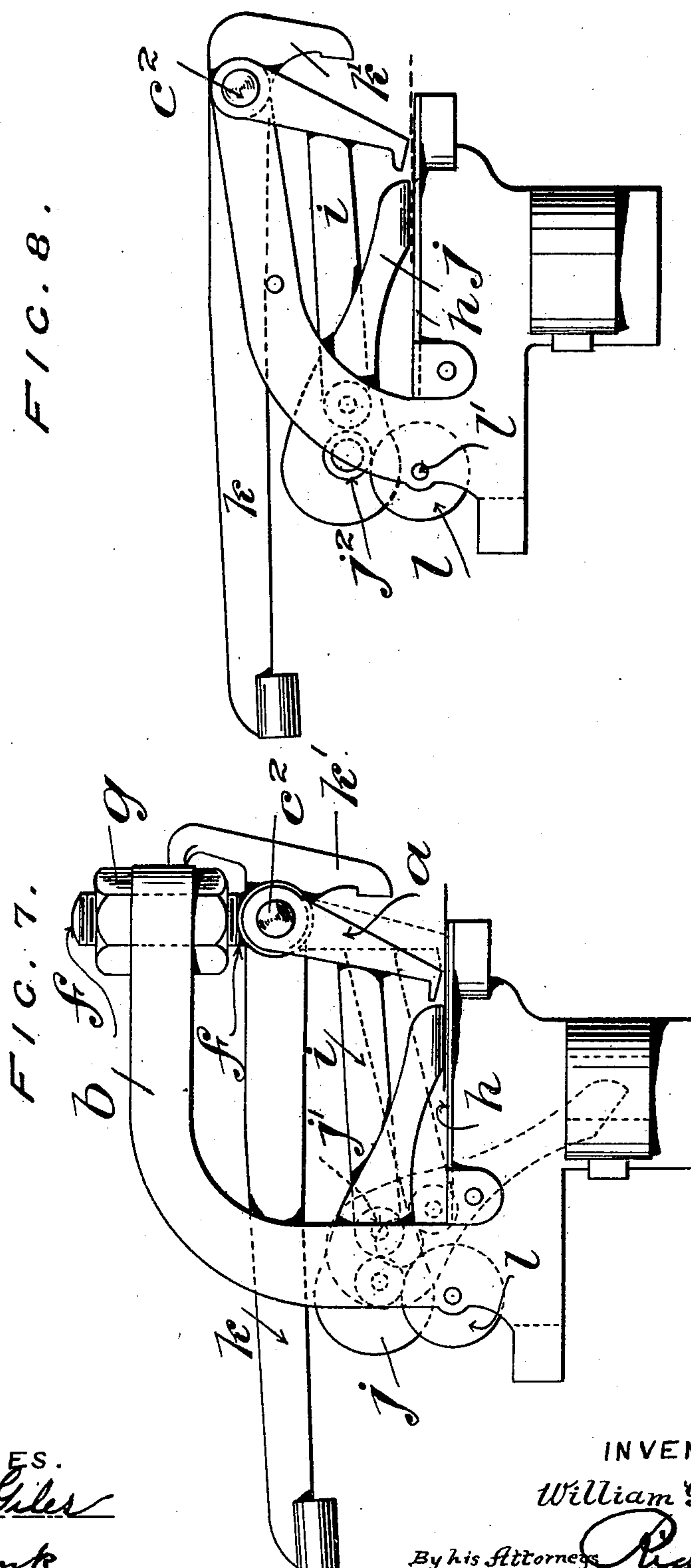
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

WILLIAM GEORGE GASS, OF BOLTON, ENGLAND.

CLIP FOR STENTER-FRAMES.

SPECIFICATION forming part of Letters Patent No. 665,655, dated January 8, 1901.

Application filed May 15, 1900. Serial No. 16,761. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GEORGE GASS, engineer and machinist, a subject of the Queen of Great Britain and Ireland, residing at the Atlas Foundry, Nelson street, Bolton, in the county of Lancaster, England, have invented certain new and useful Improvements in Clips for Stenter-Frames, (for which I have made applications for patents in Great Britain, Nos. 1,507 and 1,509, dated the 24th of January, 1900,) of which the following is a specification.

My said invention relates to improvements in clips or holders for stenter-frames used for stentering or stretching textile fabrics, as is well understood.

The invention has reference more particularly to the so-styled "self-acting" or "self-feeding" clips, which are so constructed as to automatically grip and hold the fabric at a set or known distance from the edge or selvage.

My invention will be clearly understood from the following description when read in conjunction with the annexed three sheets of drawings, in which—

On Sheet 1 Figure 1 shows a side elevation of a stenter clip and link with the swinging jaw supported and carried in accordance with my invention. Fig. 2 is a plan of Fig. 1. Fig. 3 is a view similar to Fig. 1, but with the swinging jaw lowered so as to grip the fabric. Fig. 4 is a front view of the swinging jaw and parts. On Sheet 2 Fig. 5 is a back view of Fig. 3. Fig. 6 is a view showing the feeler and swinging jaw raised clear of the cloth-plate by operating a novel form of releasing-lever constructed and arranged in accordance with my invention. On Sheet 3 Fig. 7 shows a modification. Fig. 8 shows a further modified form of my invention.

Under the first part of my invention instead of pivoting the swinging jaw *a* to the overhanging arms *b* I provide the overhanging arms *b* with additional or secondary arms *c*, which are arranged to receive and support the swinging jaw *a*. These secondary arms are pivoted or secured at one end by means of pins or the like *c'*, which pass through both the secondary and main arms, as clearly

shown in Figs. 1 and 2. To support the outer ends of the secondary arms *c* and to secure the same firmly to the main arms *b*, I employ bolts *d*. These bolts *d* are screwed into and engage both the main and secondary arms and act so as to rigidly support the secondary arms at all times. In order to further assist in setting up and obtaining an accurate adjustment of the secondary arms *c*, I employ set-screws *e*, which are screwed into the main arms *b*, so that their lower ends press on or bear against the secondary arms *c*. By the provision of these bolts and set-screws the distance between the main and secondary arms can be adjusted at will, and on such adjustment being effected the parts are by the same means firmly secured together, so that to all intents and purposes the main and secondary arms become one. The swinging jaw *a*, which may be of the ordinary or usual construction, is carried from the secondary arms *c* on a pin or center *c'*, so as to be free to move as the feeler or finger falls or is raised. This method of centering the swinging jaw *a* is not material and forms no part of my invention.

As a modification of my invention and in cases where the construction of the clip does not permit of a secondary arm being employed in order to obtain the necessary adjustment, I may support the swinging jaw by means of screwed bolts. This construction is shown in Fig. 7. Under this arrangement the swinging jaw or gripper *a* is centered at *c'* in eyebolts *f*, which pass through the overhanging arms *b* at a suitable point. The eyebolts *f* are adjusted by means of nuts *g* or their equivalent, such nuts being readily operated, so as to raise or lower the eyebolts *f* and correspondingly affect the center on which the jaw or gripper *a* swings.

By varying the distance between the main and secondary arms *b c* or by adjusting the eyebolts *f* the center on which the swinging jaw moves is correspondingly raised or lowered, so that the nipping pressure on the fabric can be regulated or varied to just such an extent as may be required.

A further advantage following the use of a swinging arm or gripper adjustably carried

in accordance with my invention lies in the fact that any wear of the parts may be compensated for. In addition to this either side of the jaw may be independently adjusted or set up, so that an even pressure or nip on the fabric is obtained throughout the whole length of the swinging jaw or gripper.

In cases where the clips have to work at a high temperature—as, for instance, in stentering-machines used for drying—I may place spring-washers or the like under the set-screws, bolts, or the like, which secure the adjustable parts, so as to prevent any of such parts working loose.

Beneath the overhanging arms *b* a cloth-plate *h* is arranged, over which the fabric is fed, as is usual. The swinging jaw or gripper *a*, which may be centered on an adjustable or fixed center *c*², (see Fig. 8,) is formed with or carries a backwardly-extending arm *i*, to which is pivoted at *j*¹ the feeler or finger *j*. This feeler or finger is lightly constructed and may be formed from a strip of sheet metal bent to embrace the end of the arm *i*, as clearly shown in Figs. 1 and 2. The long end of the feeler or lever *j* is arranged to rest at times on the fabric, so as to sustain the swinging jaw or gripper clear of the cloth. In the body of the cloth-plate *h* a slot or passage *h'* is cut, through which the feeler *j* would fall unless supported by the fabric. The shorter end of the feeler which projects beyond the pivot-pin *j*¹ is heavily overweighted or balanced by means of pins or the like *j*², the effect of which is to cause the feeler to lie against or cling closely to the arm *i* of the swinging jaw when the latter is raised by means of the lever *k*, as clearly shown in Fig. 6.

At the back of the clip I mount two bowls or rollers *l*, so as to be free to revolve on a pin or stud *l'*, the projecting pins *j*² of the feeler resting on such bowls or rollers when the swinging jaw is held out of action by the fabric. With a clip constructed as above described when the fabric *m* is resting practically across the full width of the cloth-plate the swinging jaw is supported by means of the feeler *j*, one end of which bears upon the rollers *m*, while the other end is supported by the fabric lying across the slot *h'* in the cloth-plate *h*, as clearly shown in Fig. 1. With the feeler so disposed a compound leverage is set up, or, in other words, the parts are so nicely balanced as that the amount of resistance necessary to support the end of the feeler *j* is reduced to a minimum and may be practically said to be non-existent. When, however, the fabric is withdrawn from beneath the feeler *j*, so as to uncover the slot *h'*, the feeler *j* falls, turning on its center *j*¹, so that the whole weight of the parts operates to rapidly close the swinging jaw and so secure a firm nip on the fabric. (See Figs. 3 and 5.)

A clip such as I have described is extremely sensitive and efficient in action, the pressure of the feeler being so small as to permit of the clip being used with safety even on the most delicate fabric.

When using a number of links connected together in endless-chain fashion and caused to move along a fixed path, it is usual to provide cams arranged to act on levers forming part of the swinging jaw, whereby such swinging jaw may be raised to permit of the cloth being inserted or removed from the clip. According to my invention I employ a separate lever or arm for this purpose, formed with a projecting finger or nose *k*, the lever or arm being wholly independent of the swinging jaw. The said lever or arm extends sufficiently far back to permit of its being operated by cams in the usual manner and is or may be pivoted on the stud or center, which supports the swinging jaw. The lever *k* is guided in coming to rest by means of pins or paps *b'*, cast on the projecting arm *b*. A lever *k* so arranged in accordance with my invention throws no weight on the swinging jaw, so that the same is rendered much more sensitive and certain in action. In addition to this a lever so formed with a projecting nose *k'* prevents the swinging jaw being pulled too far in case of accident or by too great a strain on the fabric being stretched.

I declare that what I claim is—

1. In combination, in a clip for stenter-frames, the cloth-plate, a supporting-arm, a swinging gripper-arm supported therefrom and an adjustable connection between said supporting-arm and gripper-arm, whereby said gripper-arm may be adjusted toward or from the cloth-plate and set in the desired position, substantially as described.

2. In combination in a clip for stenter-frames, a supporting-arm, a secondary arm pivoted to the supporting-arm, means independent of the pivot for adjusting and rigidly holding the secondary arm in relation to the supporting-arm and the gripper-jaw carried by the secondary arm, substantially as described.

3. In combination in a clip for stenter-frames, a supporting-arm, a secondary arm pivoted to the supporting-arm, means for adjusting the secondary arm in relation to the supporting-arm and the gripper-jaw carried by the secondary arm, said adjusting means including the set-screw *e* and the bolt *d*, substantially as described.

4. In combination in a clip for stenter-frames, the supporting-arm, a gripper-jaw having an arm *i* connected therewith, a feeler *j* pivoted to the arm *i* and having a weighted end and rollers for supporting said weighted end, substantially as described.

5. In combination in a clip for stenter-frames, the supporting-arm, a gripper-jaw

having an arm *i* connected therewith, a feeler
j pivoted to the arm *i* and having a weighted
end with projecting pins and rollers for sup-
porting said weighted end by engaging said
5 pins, substantially as described.

6. In combination with the support, the
gripper-jaw pivotally connected to the sup-
port and a lever *k* having a nose to engage
the jaw to lift the same, said lever being in-

dependent of the gripper-jaw, substantially as
as described.

In witness whereof I have hereunto set my
hand in presence of two witnesses.

WILLIAM GEORGE GASS.

Witnesses:

JOSHUA ENTWISLE,
ALFRED YATES.