

No. 776,092.

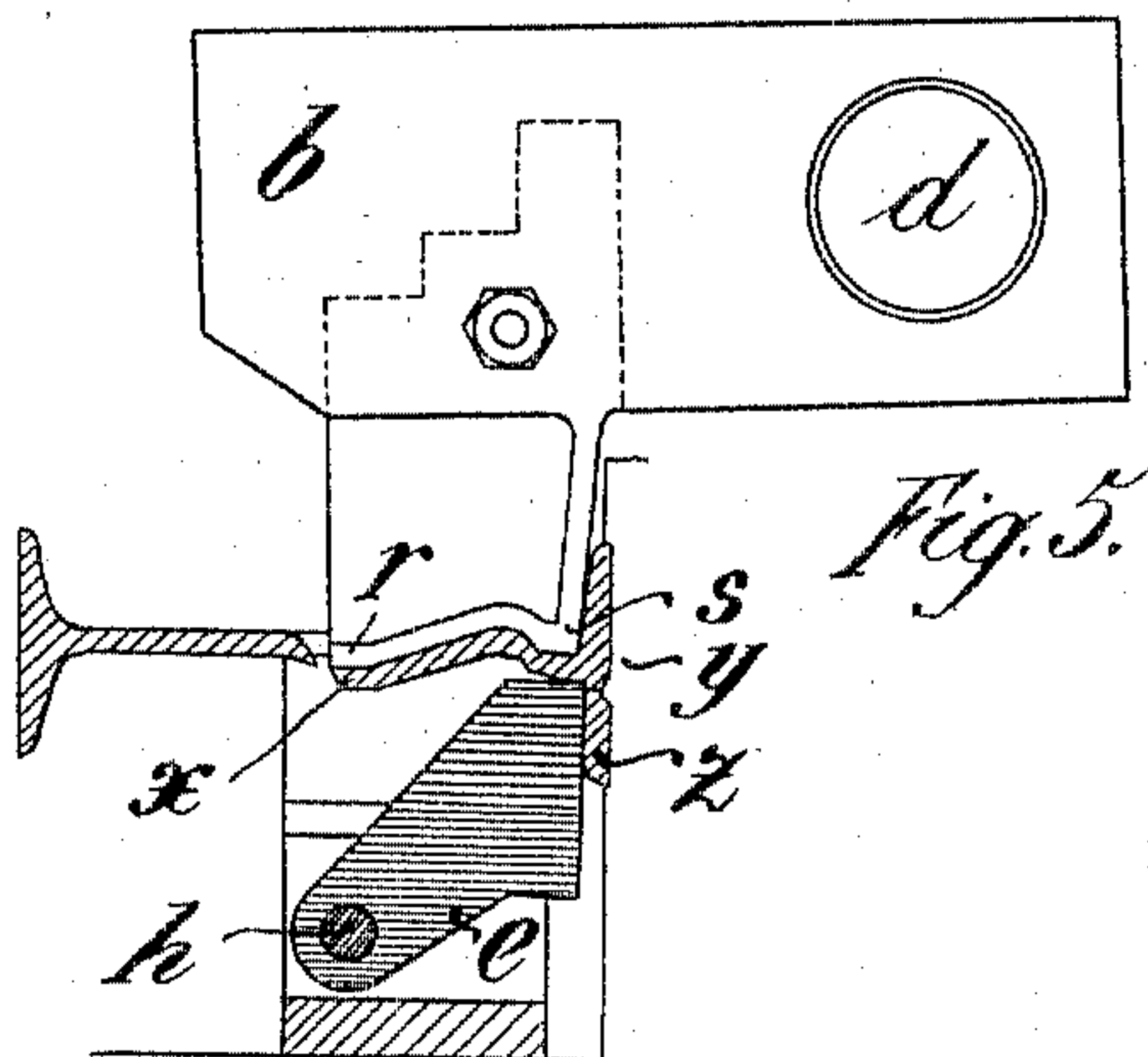
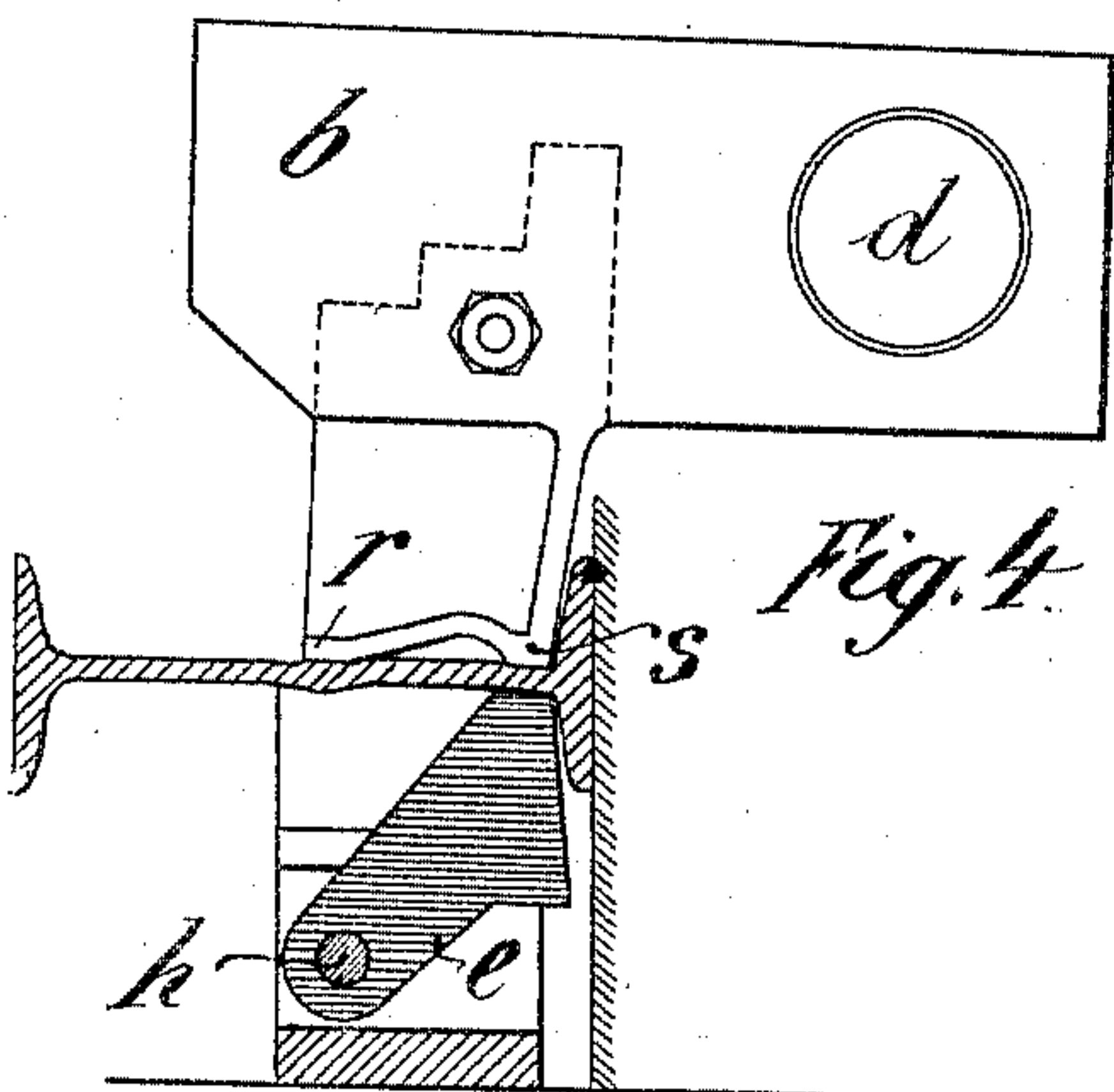
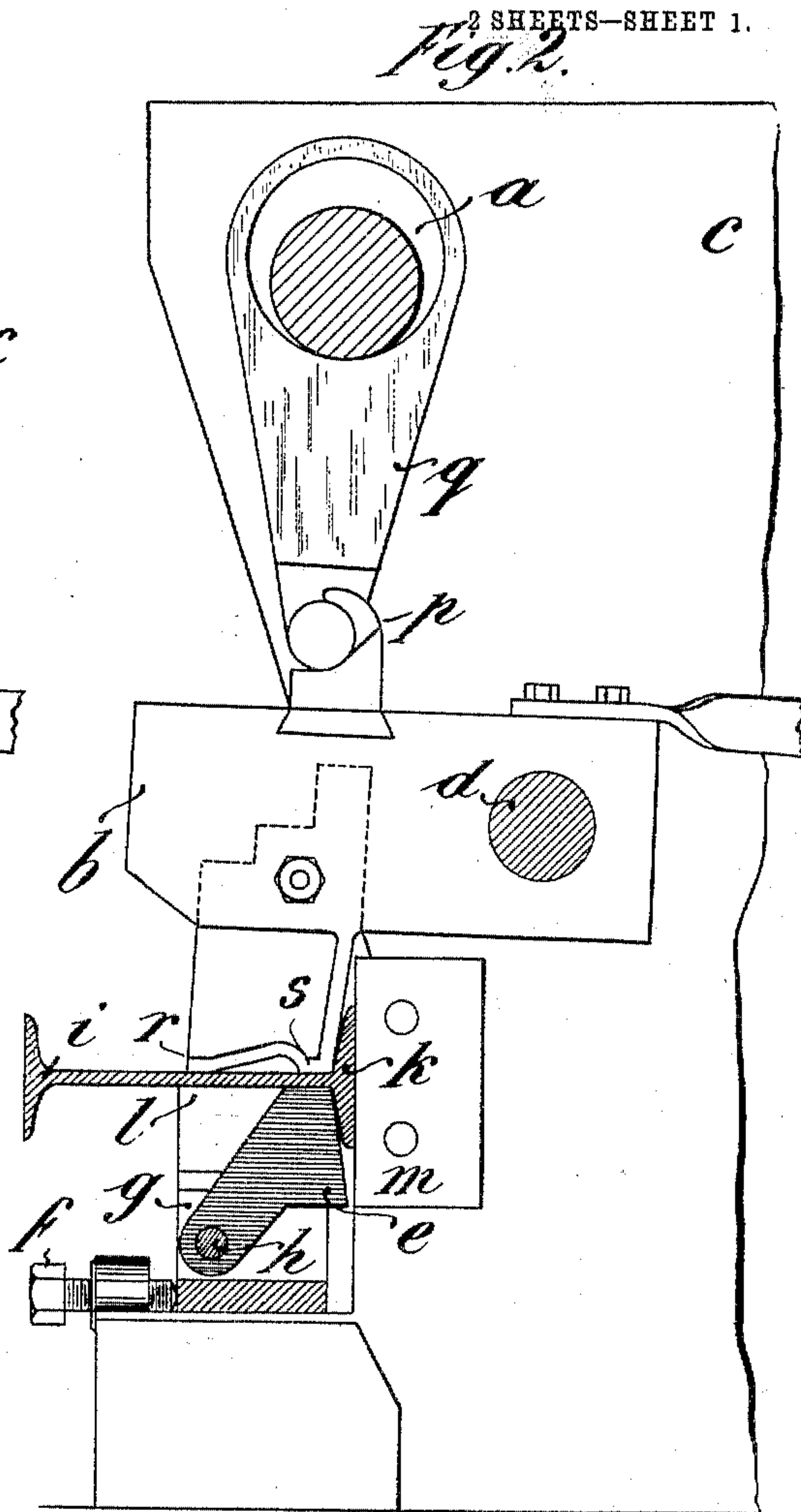
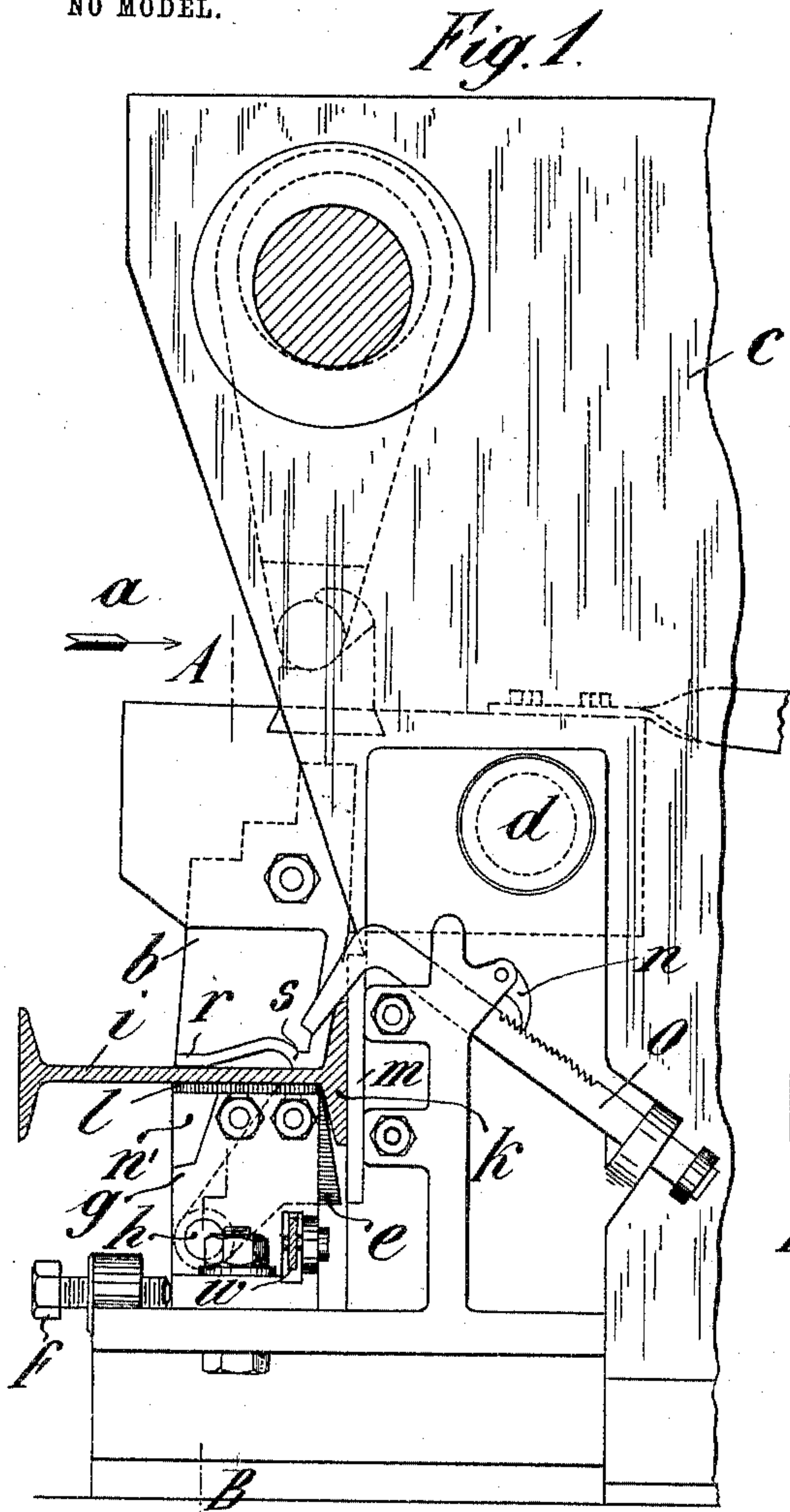
PATENTED NOV. 29, 1904.

R. SCHLEGELMILCH.
SHEARS FOR CUTTING I OR OTHER ANGLE IRON.

APPLICATION FILED FEB. 4, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
Jno. O. Adams
O. Knight, Jr.

Inventor
Robert Schlegelmilch
By *Knight Bros* attys

No. 776,092.

PATENTED NOV. 29, 1904.

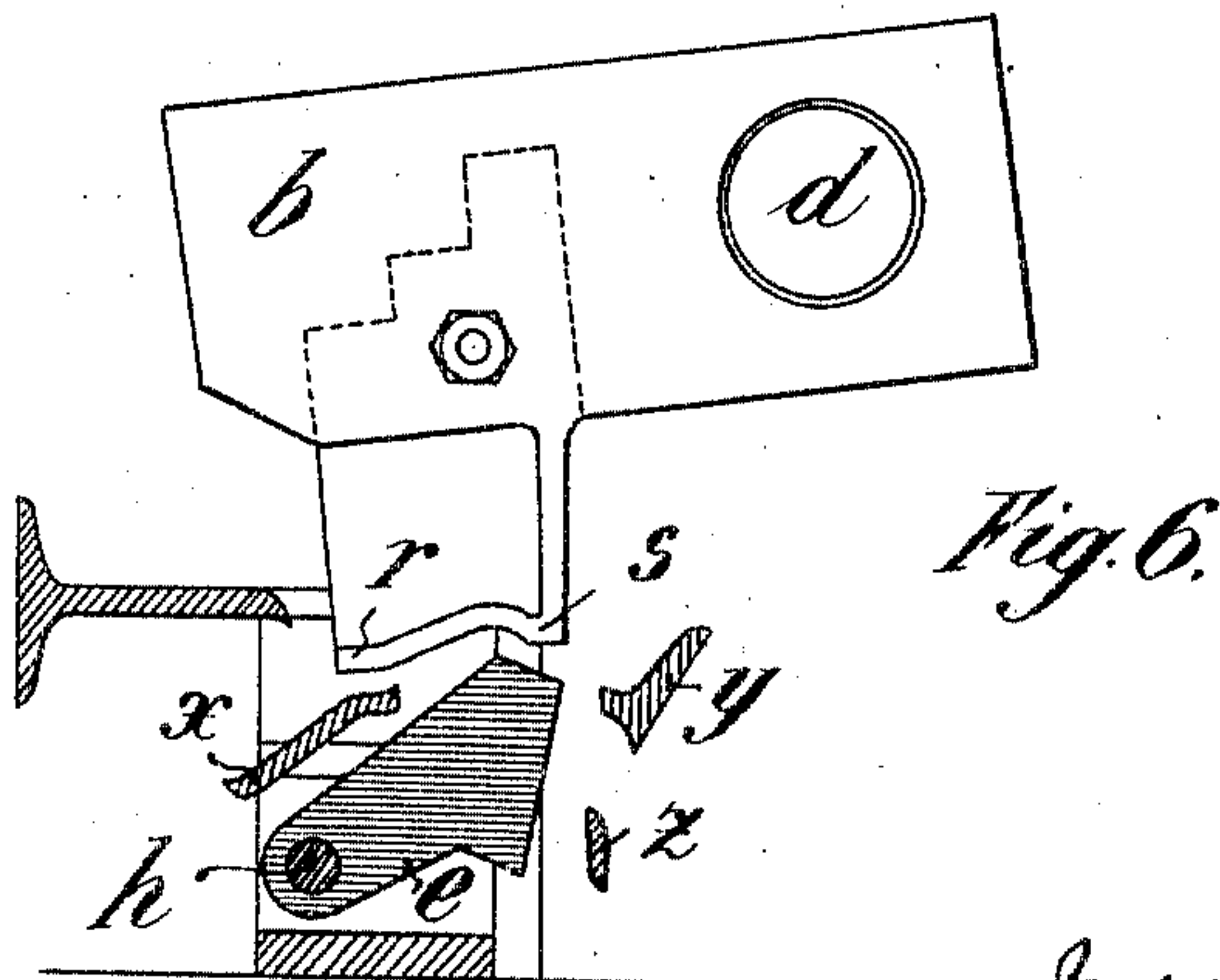
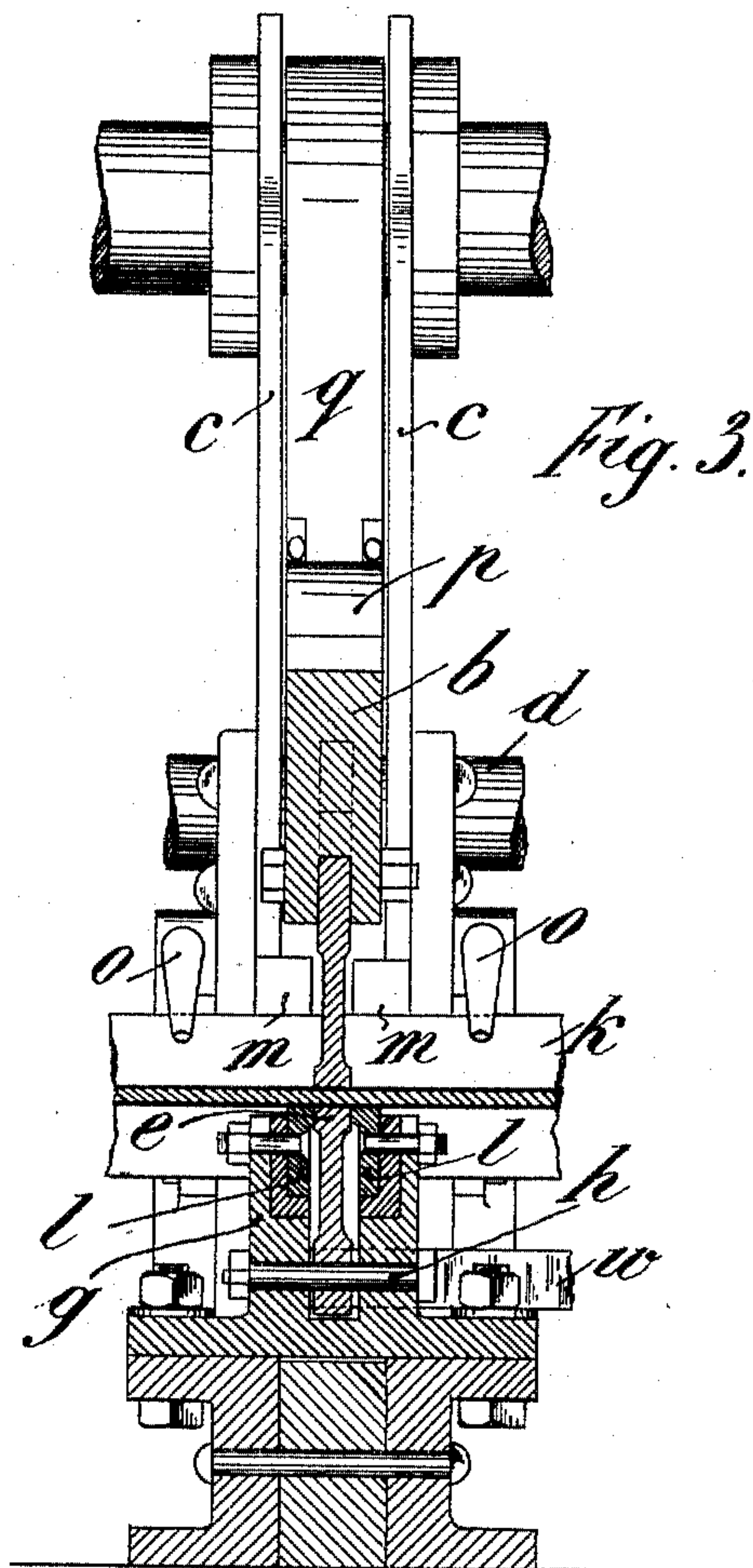
R. SCHLEGELMILCH.

SHEARS FOR CUTTING T OR OTHER ANGLE IRON.

APPLICATION FILED FEB. 4, 1904.

NO MODEL.

2 SHEETS—SHEET 2



Witnesses
Jno Adams
O. Knight Jr.

Inventor
Robert Schlegelmilch
E. Knight Bros attys.

UNITED STATES PATENT OFFICE.

ROBERT SCHLEGELMILCH, OF ARTERN, GERMANY, ASSIGNOR OF ONE-HALF TO ACTIEN-MASCHINENFABRIK "KYFFHÄUSERHÜTTE," VORM. PAUL REUSS, OF ARTERN, GERMANY.

SHEARS FOR CUTTING T OR OTHER ANGLE IRON.

SPECIFICATION forming part of Letters Patent No. 776,092, dated November 29, 1904.

Application filed February 4, 1904. Serial No. 192,000. (No model.)

To all whom it may concern:

Be it known that I, ROBERT SCHLEGELMILCH, manager, a subject of the King of Prussia, Emperor of Germany, and a resident of Artern, Germany, have invented certain new and useful Improvements in Shears for Cutting T or other Angle Iron, of which the following is a specification.

This invention relates to improvements in those shears for cutting T and other angle iron and the like which comprise an oscillating upper knife and two fixed lateral and two fixed lower counter-knives, the said knives being not chisel-like but stamp-like in their action, so that the oscillating knife strikes a strip or piece out of the iron, and thus causes the division of the latter.

According to the present invention the support of the lower knives is provided with a recess in such a manner that only the counter-knives have to be exchanged in order to cut angle-iron of different heights, and there is arranged between the lower knives an additional oscillating adjustable knife adapted to abut against the lower half of the flange of the iron and to be operated by the strip pushed out by the upper knife. The working surface of the upper knife is curved so that the strip is torn. This subdivision of the strip considerably facilitates the work and reduces the wear of the shears, more particularly since with all the operative parts the shear-pressure is almost exclusively directed against the surface of the work.

One form of the invention is illustrated in the annexed drawings, in which—

Figures 1 and 2 are sectional side views, the front wall being removed in Fig. 2 to show the interior more clearly. Fig. 3 is a longitudinal section on the line A B of Fig. 1 seen in the direction of the arrow *a*. Figs. 4 to 6 represent the movable knives in three different positions.

The upper knife *b* is pivoted at *d* in the frame *c*, and the lower knife *e* is pivoted at *h* in the support *g*, which is adjustable by means of screws *f*. The T or other angle iron to be

divided rests on the lower knives *l*, fixed to the support *g*, and its flange *k* abuts against the lateral knives *m*. For holding the work in the shears hooks *o*, pivoted to the frame, adjustable by means of pawls *n*, and adapted to engage over the flange *k*, can, for instance, be used.

The knife-support *g* is provided in front with a recess *n'*, so that only the knives *l* require to be exchanged to allow of cutting T-irons and the like of different heights. This is important in view of the fact that the lower knife is also pivoted in the support *g*. The latter can be so adjusted by means of the screws *f* that the right-hand working surface of the knife *e* is as close as possible to the flange *k*. As already mentioned, the working surface of the upper knife is curved on the side directed toward the web *i*, so that at first the two projecting parts *r* and *s* thereof enter the said web. The right-hand working surface of the upper knife is, on the other hand, approximately parallel with the surface of the flange *k*.

The upper knife is operated in the known manner by means of the cam *a*; but in order to allow of lifting the said knife simultaneously with the continued rotation of the cam after the cutting action the knife is provided with a finger *p*, which engages the cam-rod *q*. The return movement of the lower knife is preferably produced by means of the lever *w*, pivoted to the frame and extending underneath the said knife.

The action of the shears is as follows: When the angle-iron has been placed into the apparatus in the manner shown in Figs. 1 to 3 and the downward movement of the upper knife is produced by means of the cam *a*, the projecting parts *r* and *s* of the upper knife first enter the web in the manner shown in Fig. 4. The downward displacement of metal thus produced naturally causes the lower knife to oscillate to the right, so that its right-hand working surface partly penetrates the flange. The further downward movement of the upper knife causes the strip to be torn into three

parts x , y , and z , which fall apart, as shown in Fig. 6, when the two knives reach their end positions. The tearing of the flange into the two parts y and z must necessarily occur, since the part s of the upper knife and the upper working surface of the lower knife grip that part of the web directly adjacent to the flange k , and the shorter leverage of the lower knife causes its utmost point to describe a smaller arc than the part s of the upper knife. When one half of the angle-iron has been cut through, the latter is turned round and the other half is cut.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. Shears for cutting **T** and other angle iron comprising an oscillating upper knife with stamp-like action, two fixed lateral counter-knives and two fixed lower counter-knives, with an oscillating lower knife arranged between said fixed lower knives and adapted to be operated by the upper knife and to push a strip out of the lower half of the flange of the work, and means for adjusting the lower oscillating knife with regard to the lateral knives, substantially as described.

2. Shears for cutting **T** and other angle iron comprising an oscillating upper knife with stamp-like action, two fixed lateral counter-knives and two fixed lower counter-knives, with an oscillating lower knife arranged between said fixed lower knives and adapted to be operated by the upper knife and to push a strip out of the lower half of the flange of the work, the pivot of said lower oscillating knife being adjustable with regard to the lateral

knives by means of screws, substantially as described.

3. Shears for cutting **T** and other angle iron comprising an oscillating upper knife with stamp-like action, two fixed lateral counter-knives and two fixed lower counter-knives, with an oscillating lower knife arranged between said fixed lower knives and adapted to be operated by the upper knife and to push a strip out of the lower half of the flange of the work, the pivot of said lower oscillating knife being adjustable with regard to the lateral knives by means of screws, the upper knife being curved in such a manner that the said knife comes gradually into action and causes the strip to be torn, substantially as described.

4. Shears for cutting **T** and other angle iron comprising an oscillating upper knife with stamp-like action, two fixed lateral counter-knives and two fixed lower counter-knives, with an oscillating lower knife arranged between said fixed lower knives and adapted to be operated by the upper knife and to push a strip out of the lower half of the flange of the work, the pivot of said lower oscillating knife, carrying also the lower counter-knives, being adjustable with regard to the lateral knives, said pivot being provided with a recess so that only the lower counter-knives need be exchanged for cutting iron of different sizes, substantially as described.

The foregoing specification signed at Berlin this 13th day of January, 1904.

ROBERT SCHLEGELMILCH.

In presence of—

WOLDEMAR HAUPT,
HENRY HASPER.