

F. E. LIEBIG & R. LUDEWIG.  
 ROTARY SHEARS.  
 APPLICATION FILED MAY 7, 1908.

924,251.

Patented June 8, 1909.

Fig. 2

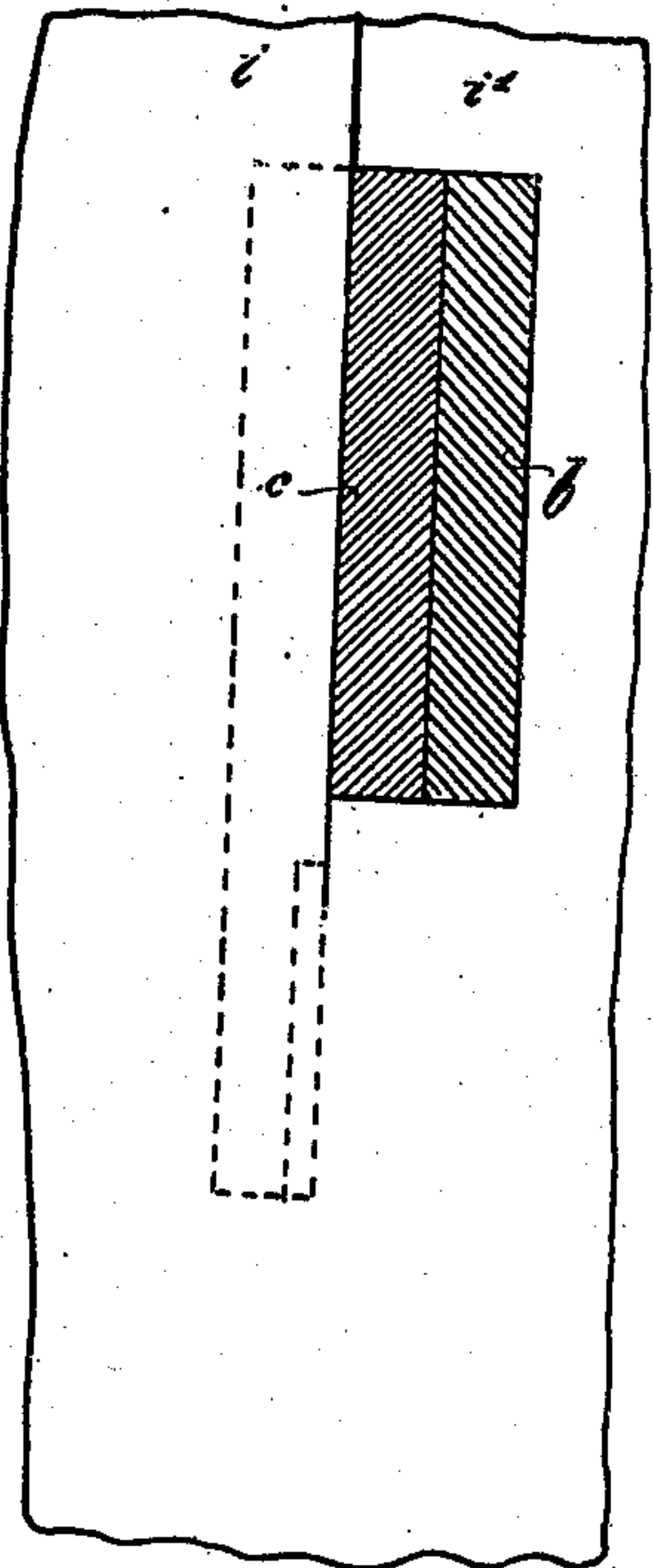


Fig. 1

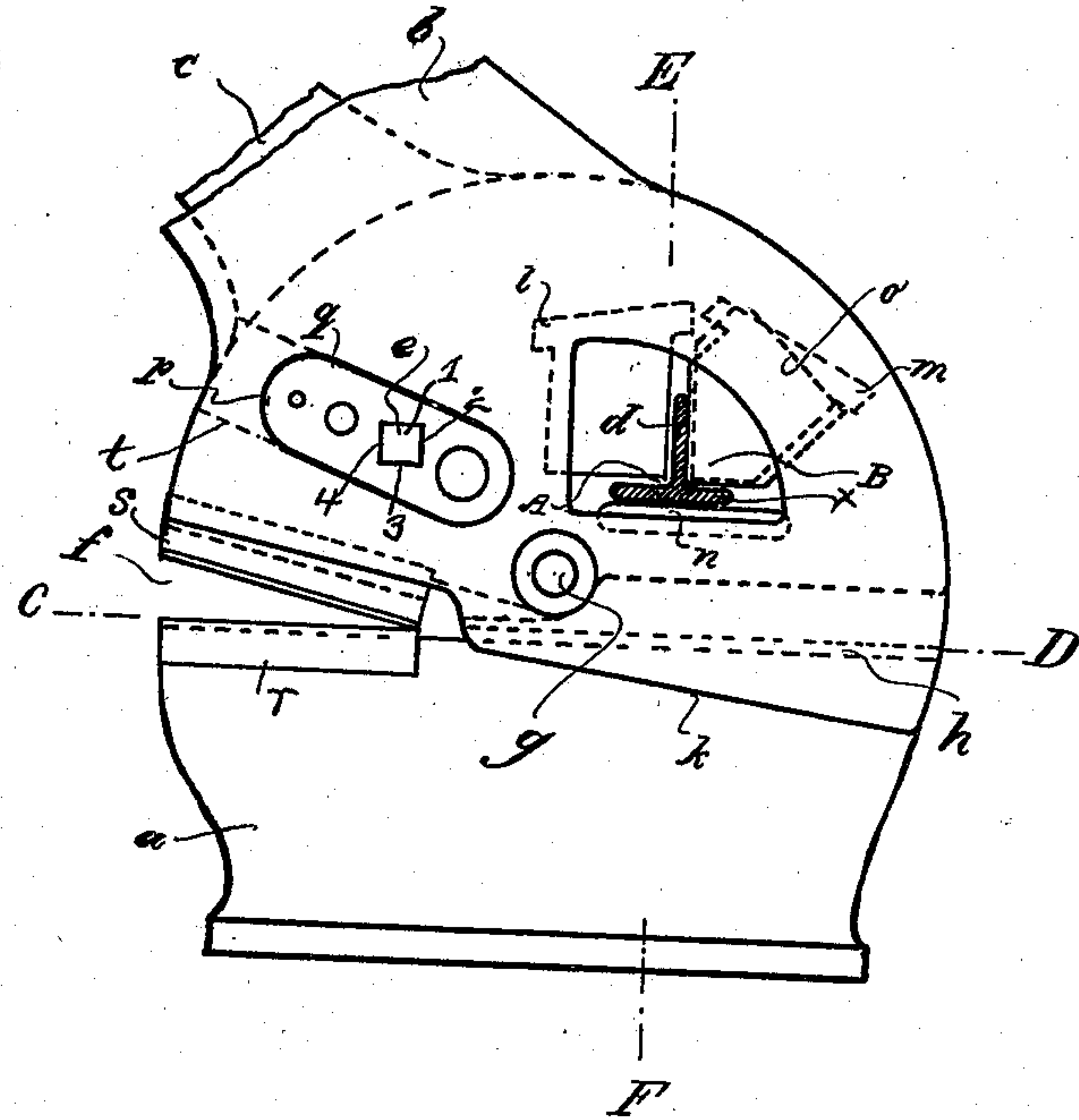
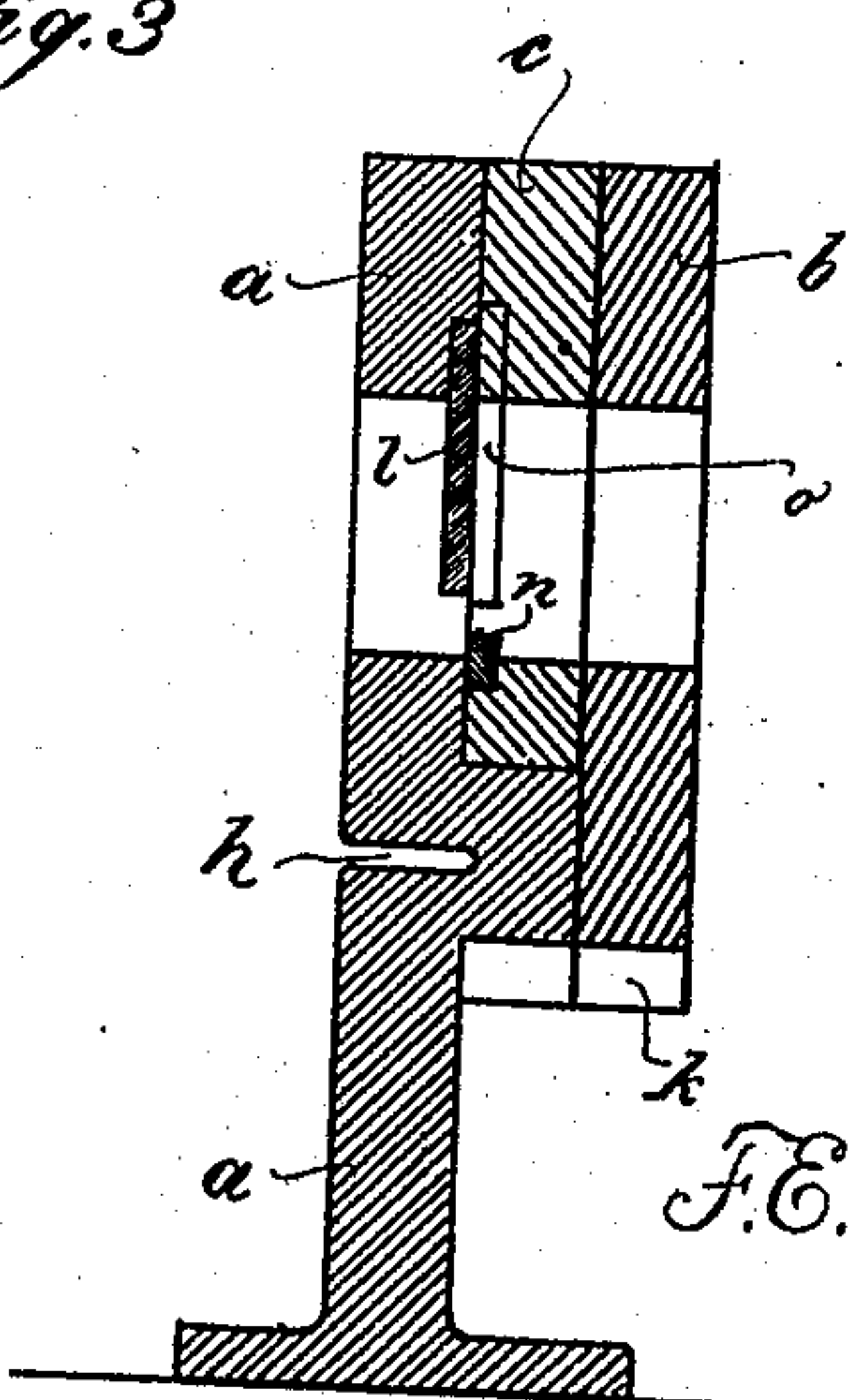


Fig. 3



Witnesses  
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# UNITED STATES PATENT OFFICE.

FRIEDRICH EUGEN LIEBIG AND RUDOLF LUDEWIG, OF DRESDEN, GERMANY.

## ROTARY SHEARS.

No. 924,251.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed May 7, 1908. Serial No. 431,517.

*To all whom it may concern:*

Be it known that we, FRIEDRICH EUGEN LIEBIG and RUDOLF LUDEWIG, both subjects of the German Emperor, and residing at Dresden, Germany, have invented certain new and useful Improvements in Rotary Shears, of which the following is a specification.

The subject of our invention is an improved, universal rotary shears, which will cut not only shaped-iron of various sections, but also round, square and flat bars, and plates of any desired length.

Machines have already been constructed for shearing long plates, but such shears cannot be used for shaped iron. And, again, prior so-called universal machines suitable for shearing both plates and shaped iron can be employed only for short plates and not for those of any considerable length.

The invention is illustrated in the accompanying drawing, in which—

Figure 1 is a front elevation, Fig. 2 a horizontal section, on the line C—D of Fig. 1. Fig. 3 is a vertical section on the line E—F of Fig. 1.

The shears consists of a standard *a*, which in connection with the cover *b* forms a casing, and of the rotary part *c*, which turns in the casing, all in well known manner.

The shearing member comprises, as ordinarily, three cutting devices: one *d* for T and L iron; the second *e* for bars of round and square sections, and the third *f* for flat bars and plates.

The cover *b* turns on the shaft *g*, which passes through the entire casing. The rotary part has the form approximately of a semicircle, resting on its diameter. In this manner space is obtained for a groove *h* in the casing, and the possibility is presented of large metal plates of any length being cut. In operation, the one of the lengths severed by the cut enters the groove *h*, the other, which, as is well known, is somewhat downwardly depressed, passes along the line *k*, and in this manner the metal plate can be steadily fed forward.

We employ only four knives, viz the

knives *l*, *m* in the standard and the knives *n*, *o* in the rotary part. The two knives *l*, *m* work with sliding motion and are brought up to the inverted T iron *x* in such manner that the knife *l* exactly fits into the angular space A and the knife *m* into the space B. The knife *n*, on the other hand, lies parallel with the base of the bar *x*, while the fourth knife *o* fits closely into the angular space B. When the rotary part *c* executes its eccentric motion the lower knife *n* will move past the knives *l*, *m* and will cut the bar *x* from below. The knife *o* only moves past the knife *m* and cuts through the upright web of the bar *x*.

We provide a chamber or housing *t* to accommodate loose knives *p*, *q*. The chamber is downwardly inclined so that the knives lie firmly in position without requiring any fastening. In this manner the knives can be drawn out, or pushed in, or turned over, as desired, so that they may be provided with four cutting edges 1, 2, 3, 4 which can be brought into operation in succession as each preceding one becomes blunt. The knife *s* is of ordinary shape, but the knife *r* is beveled, so that miter and other oblique cuts can be made.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:—

In a machine of the character described, the combination of a standard and a rotary member mounted thereon, the standard being provided with a chamber above the axis of the rotary member extending downwardly and inwardly from the edge in substantially radial direction, and a knife having four cutting edges adapted to be placed in said housing to be retained by its own weight, being also removable and reversible to bring any desired edge into action.

In testimony whereof we affix our signatures in presence of two witnesses.

FRIEDRICH EUGEN LIEBIG.  
RUDOLF LUDEWIG.

Witnesses:

PAUL ARRAS,  
CLARE SIMON.