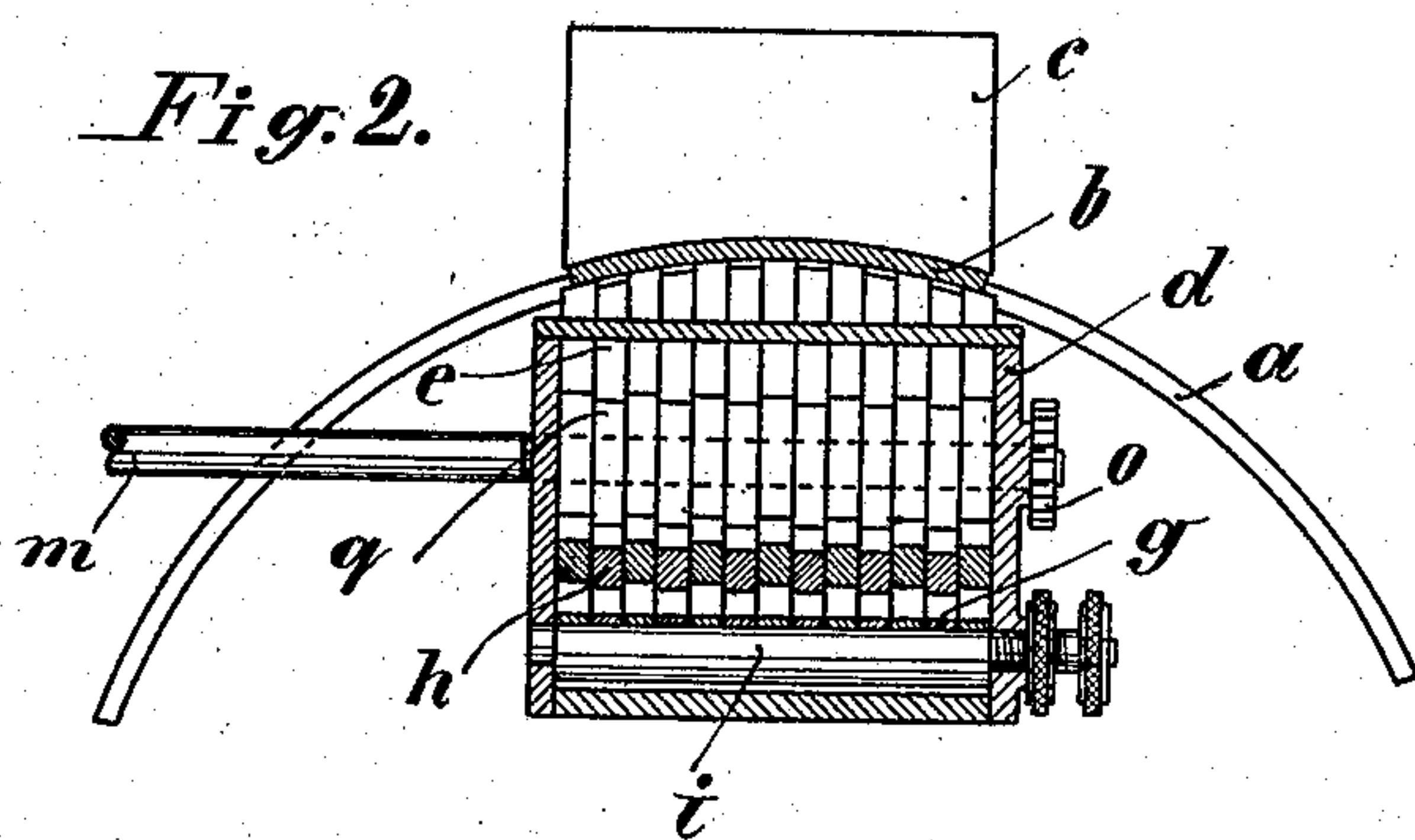
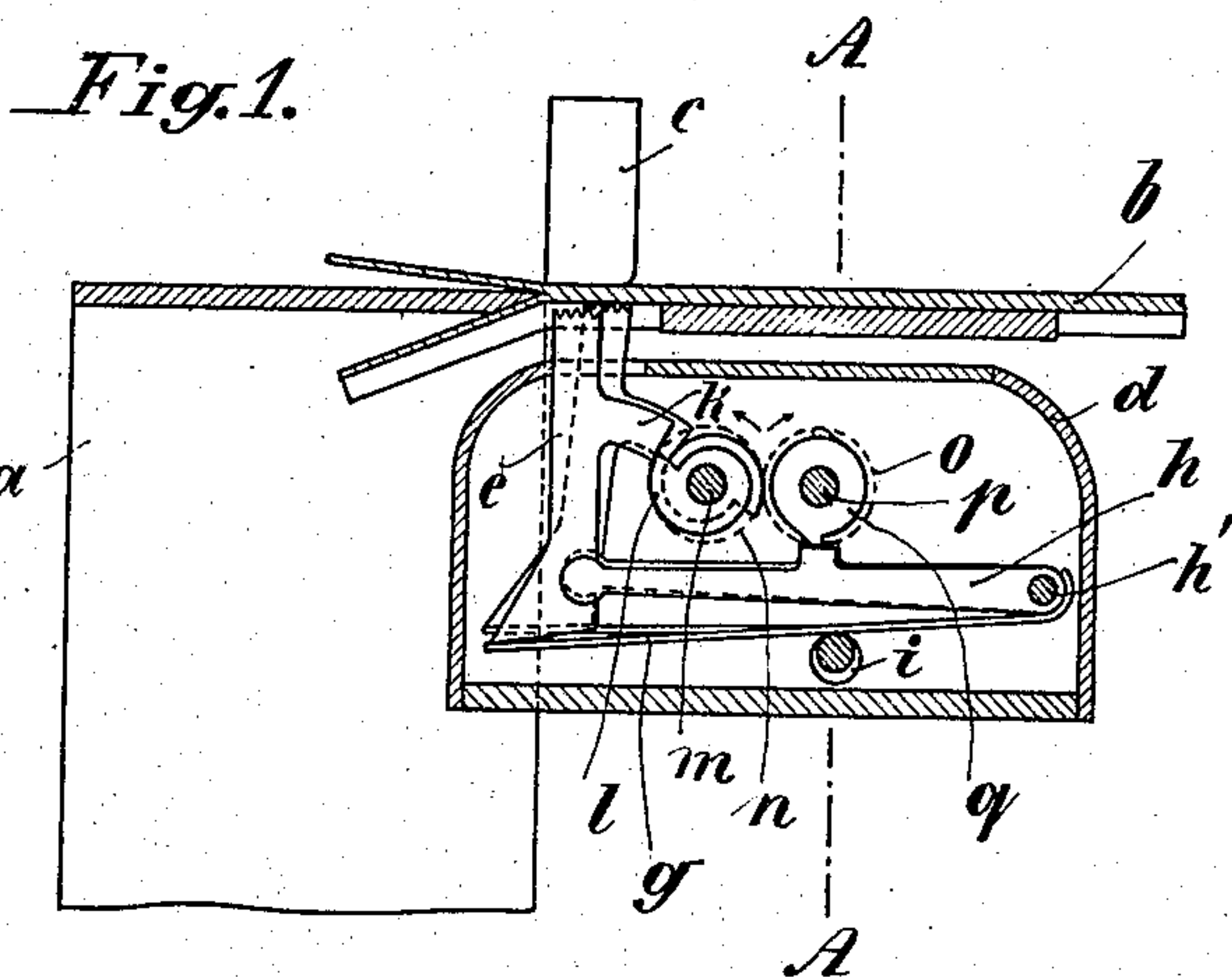


C. A. HIRTH.
 FEED MECHANISM.
 APPLICATION FILED MAY 8, 1908.

899.981.

Patented Sept. 29, 1908.



Witnesses:
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UNITED STATES PATENT OFFICE.

CARL ALBERT HIRTH, OF CANNSTATT, GERMANY.

FEED MECHANISM.

No. 899,981.

Specification of Letters Patent.

Patented Sept. 29, 1908.

Application filed May 8, 1908. Serial No. 431,715.

To all whom it may concern:

Be it known that I, CARL ALBERT HIRTH, a subject of the German Emperor, residing at Cannstatt, Stuttgart, in the German Empire, have invented a new and useful Improvement in Feed Mechanism, of which the following is a specification.

The invention relates to feed mechanism for splitting and cutting machines, especially for leather splitting and leather skiving machines, and serving to replace the feed rollers formerly used, its object being to support the work and push it continuously forward right up to the cutting blade.

The device consists of two or more groups of grippers which act alternately on the material to be fed, in the known manner. Such grips have been used in sewing machines but the present arrangement differs inasmuch as the intermittent feed is now replaced by a continuous feed. The action of the grippers is such that one or several of them support the work and push it right up to the cutting blade. In this final position the grippers sink and return empty to their initial position, to be then brought into contact with the work afresh.

The drawings illustrate a typical form of the feed mechanism, Figure 1 being a longitudinal section, and Fig. 2 a section taken on the line A—A of Fig. 1.

The feed mechanism comprises a number of levers *e* which are fluted or toothed on their upper edge in order to act as grippers, and are mounted side by side, but are operated independently of one another. The motion is imparted in such a way that one half of the grippers *e* are brought into contact with the work at a different time from the other half of the grips, so that when the first set of grippers is removed from contact with the work the second set support it alone until the first set of grippers again comes into contact with the work. The movement of the feeding grippers is effected in such a manner that these grippers, the fluted edge of which is above, move forward towards the cutting edge of the knife in a horizontal plane, and at a speed corresponding to that of the cutting operation; they then drop out of contact with the work, and move backward empty, into the working position again, away from the cutting blade.

The grippers may be mounted in the following manner: Each gripper *e* is pivoted on the circular end of a simple lever *h* and is

pressed by a spring *g* against the material or work *b* and the guide *c*. The levers *h* are pivoted upon a shaft *h'* carried by the frame *d*. The spring *g* is attached to the lever *h* near its point of rotation and rests on a non-circular rod *i*, by turning which the tension of the spring can be increased or diminished. The forward movement of the grippers *e* is effected by cams *l*, acting on lugs *k* of the grippers, the common shaft *m* of the cams being operated from outside. The shaft *m* is connected by pinions *n*, *o* with the shaft *p*, which carries cams *q* for acting on the levers *h*.

The device acts through the grippers *e* being turned about the ends of the lever *h* by the rotation of the cams *l*, in the direction indicated by the arrow, toward the annular knife *a*, until a recess in the cams releases the lugs *k* of the grippers *e*, whereupon the grippers *e* swing back under the influence of the springs *g*. Just before the release of the lug *k* the lever *h* was depressed by the cam *q*, thus displacing the center of rotation of the grippers *e* downward as well. This movement is represented in Fig. 1 for the front gripper. The gripper *e* has now moved away from the material *b* so that it can swing back into the right hand idle position without hindrance by the material. As soon as this has taken place the cam *q* releases the lever *h* again so that it can be raised by the spring *g*, the gripper *e* being pressed against the material *b*, once more and moved toward the left by the cam *l*, carrying the material along with it: this applies to the rear gripper shown in Fig. 1.

To render the forward movement of the material continuous, two or more sets of grippers are used, in such a manner that while one set of the grippers is returning to its initial position, another set keeps moving the material forward. The simplest method of effecting this is by connecting the odd and even numbered grippers into separate sets. The time consumed in the backward travel of the grips should be less than that occupied by the forward stroke, in order to avoid any dead point in the forward movement. At least one set of grippers is always engaged in moving forward, but for the most part the others are also sharing this movement. If the grippers *e* are mounted close together side by side, they guide one another, so that a special guide is superfluous. The thickness of the grippers can therefore be so far re-

duced as to prevent any injury arising to the material through the work being supported only at single points.

What I claim is:

5 1. In a feed mechanism the combination of a plurality of grippers adapted to engage with the work, levers pivotally connected to said grippers so that an oscillating movement of said levers moves said grippers suc-
10 cessively into and out of engagement with the work, means for successively oscillating said levers, means for successively moving the grippers forward when in engagement with the work, and means for successively mov-
15 ing said grippers backward when out of engagement with the work.

2. In a feed mechanism the combination of a plurality of sets of grippers adapted to engage with the work, levers pivotally con-
20 nected to said sets of grippers so that an oscillative movement of said levers successively move said sets of grippers into and out of engagement with the work, means for simulta-
25 neously oscillating the levers common to one set of grippers in one direction, and those common to the other set in the opposite di-
rection whereby said sets of grippers are brought successively into engagement with the work, means for successively moving said
30 sets of grippers forward when in engagement with the work, and means for successively moving said sets of grippers backward when out of engagement with the work.

3. In feed mechanism the combination of
35 a frame, levers pivoted upon said frame, a plurality of sets of grippers each of which is pivotally mounted upon one of the levers, means acting upon the levers for moving the grippers successively into and out of engage-

ment with the work, means acting upon the grippers to move same forward and back-
ward successively, and means for insuring that the forward movement of each set of grippers shall take place when it is in en-
40 gagement with the work and that the back-
ward movement of same shall take place
45 when it is out of engagement with the work.

4. In feed mechanism the combination of a frame, levers pivoted upon said frame, a plurality of sets of grippers each gripper be-
50 ing pivotally mounted upon one of the levers, cams acting upon the levers to move the grippers successively out of engagement with the work, cams acting upon the grippers to move
55 same forward, and means acting simulta-
neously upon the grippers and the levers to move the said grippers backward and after the levers are released by their cams to move the grippers into engagement with the work.

5. In feed mechanism the combination of
60 a frame, levers pivoted upon said frame, two sets of grippers, each gripper being pivotally mounted upon one of the levers, cams acting upon the levers to move the grippers out of
65 engagement with the work, cams acting upon the grippers to move same forward, and springs each acting simultaneously upon a gripper and its lever to move the former back-
ward and out of engagement with the work upon the cams releasing the grippers and
70 their levers.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CARL ALBERT HIRTH.

Witnesses:

SWAN RIES,
ALFRED HUMMEL.