L. A. MAYLE.

DIE CLEARING DEVICE.

APPLICATION FILED NOV. 26, 1915.

1,283,250.

Patented Oct. 29, 1918.

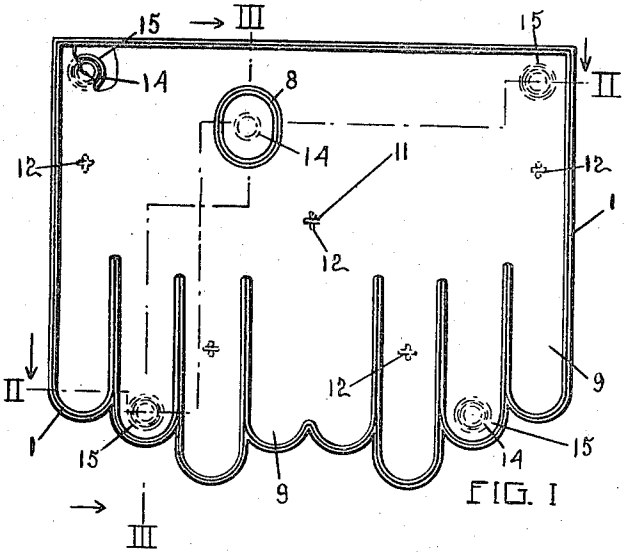



FIG. 1

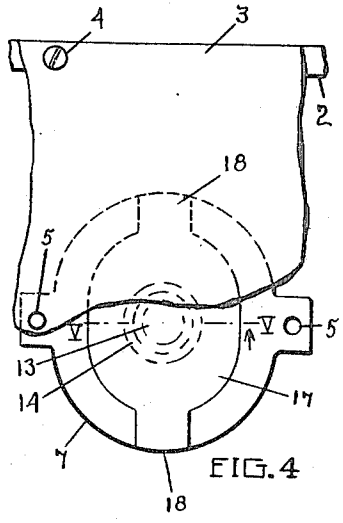



FIG. 4

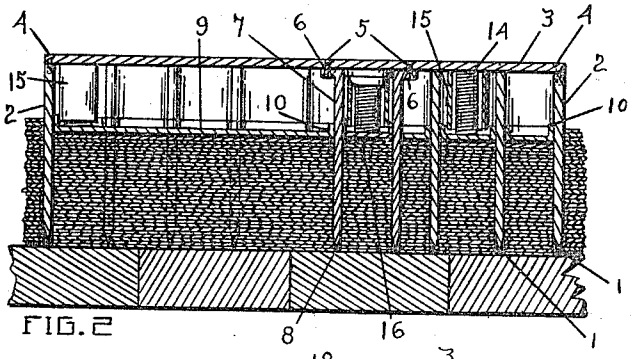



FIG. 2

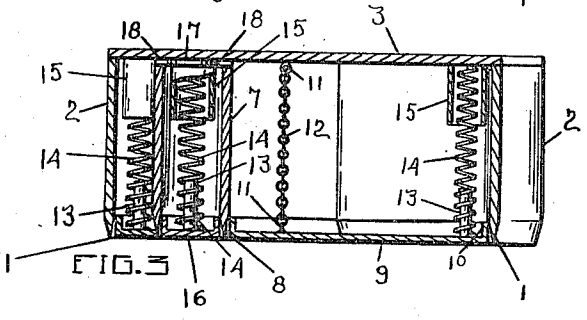



FIG. 3

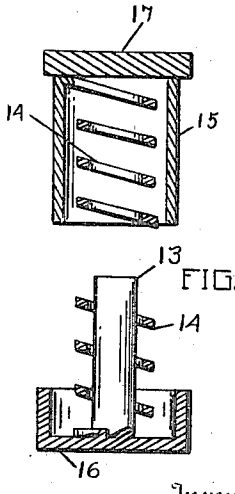



FIG. 5

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# UNITED STATES PATENT OFFICE.

LOUIS A. MAYLE, OF FREMONT, OHIO.

## DIE-CLEARING DEVICE.

1,283,250. Specification of Letters Patent. Patented Oct. 29, 1918.

Application filed November 26, 1915. Serial No. 63,390.

*To all whom it may concern:*

Be it known that I, LOUIS A. MAYLE, a citizen of the United States of America, residing at Fremont, Sandusky county, Ohio, have invented new and useful Die-Clearing Devices, of which the following is a specification.

This invention relates to die clearing and freeing mechanism.

This invention has utility in ejecting cut material from its cutting die, especially in multiple fabric operations.

Referring to the drawings:

Figure 1 is a bottom plan view of a die equipped with the invention herein;

Fig. 2 is a section on the line II—II Fig. 1, looking in the direction of the arrow and showing the device in compressed cutting position;

Fig. 3 is a section on the line III—III Fig. 1, looking in the direction of the arrow;

Fig. 4 is a fragmentary plan on an enlarged scale of the supplementary or thumb hole die; and

Fig. 5 is a partial section on the line V—V Fig. 4.

The primary or major die has the cutting edge 1 and the upstanding wall 2 therefrom. The die in this instance is shown as a glove die, such as is used in the manufacture of canvas gloves for cutting many thicknesses of such material. Anchored to the portion of the upstanding wall 2 remote from the cutting edge 1 of the die is the pressure receiving member 3 held in position as to the die by flat head screws 4 flush with the pressure receiving face of this member 3. By thus closing the pressure receiving side of the die with a member 3 approximating the contour of the cutting edge of the die, die stiffness is increased and there is, by means of the screw holes 5 for the screws 6, provision of attaching means for the supplemental or thumb die 7 which has its endless upstanding wall terminate in the cutting edge 8 similarly to the cutting edge 1 for the wall 2.

Opposing the pressure receiving member 3 is the relatively movable ejector member 9 approximating the contour line of the cutting edge 1. This ejector member 9 has adjacent to the cutting edge 1 an annular flange or upstanding means 10 extending toward the member 3 effective to maintain register of the member 9 in the die 2 against shifting under the cutting edge of the die to injure such cutting edge. This flange 10 coacts directly with the die wall adjacent the cutting edge. Eyes 11 rigidly fixed in the opposing faces of the members 3, 9, serve to hold the chain 12 therebetween as a means limiting the extreme spacing of the members. Flanging of the ejector member 9 gives it a rigidity of form under extreme pressure and still permits a light weight member to be used, thus in normal die wall height permitting full charge or cutting capacity of the die to occur.

Welded to the ejector member 9 may be stems 13 about which may be disposed the square cross section helical spring 14 extending within a cylinder 15 alined with the stem 13 and welded to the pressure receiving member 3. The extent of the stem 13 and cylinder 15 is less than the travel distance of the ejector member and is such that the spring 14 therebetween may not buckle, while the flattened spring 14 and the short extent of the members 13, 15, permit close compression as these members 13, 15, move into telescoping relation. This flattened section spring also has rigidity and expansion power ample to eject the material upon the lifting of the die or removal of the cutting pressure from the pressure receiving member, whereby there is a compact die having a great travel range for giving an effective ejecting.

To care for the ejection action in the supplementary die 7, the spring 14 is not left loose as to the stem and cylinder but is welded thereto, thereby providing means limiting the extreme spacing of the ejector member 16 from the opposing pressure receiving member 17.

The cylinder 15 may be brazed to the ejector member 17, while the stem 13 may be brazed to the ejector member 16. The member 17 has ears 18 entering seats in the die wall 7 coacting to fix this ejector device in the die 7 when this die 7 is connected by the screws 6 to the primary pressure receiving member 3.

What is claimed and it is desired to secure by Letters Patent is:

1. A die having a cutting edge, a wall upstanding therefrom, a pressure receiving member anchored to said wall remote from the cutting edge, an ejector member approximating the contour of the cutting edge

of the die, means including a helical spring between the ejector member and pressure receiving member normally maintaining the members spaced, a cylinder surrounding one end of the spring, and a stem in the other end of the spring, said stem and cylinder normally longitudinally spaced from each other and movable toward each other for telescoping in spring compression to preclude buckling of the spring, permitting ejector member travel greater than the distance between the cylinder and stem and greater than half the distance between the ejector member and pressure receiving member.

2. A die having a cutting edge, a wall upstanding therefrom, a pressure receiving member mounted upon the wall remote from the cutting edge, an ejector member opposed to the pressure receiving member, and means wholly intermediate of the members guiding and directing compression and ejection travel of the ejector member within the die walls, said means including a spring of flattened cross-section intermediate of the members, and relatively telescoping guide means for the spring, one of said guide means being outside of the spring.

3. A die having a cutting edge, a wall upstanding therefrom, a pressure receiving member mounted upon the wall remote from the cutting edge, an ejector member opposed to the pressure receiving member, and means wholly intermediate of the members guiding and directing compression and ejection travel of the ejector member within the die wall, including a chain limiting the extreme spacing of the members.

4. A die having a cutting edge, a wall upstanding therefrom, a pressure receiving member mounted upon the wall remote from the cutting edge, an ejector member opposed to the pressure receiving member, relatively telescoping guide means, a spring connected thereto and interfitting therebetween, and a chain limiting the extreme spacing of the members.

In witness whereof I affix my signature.

LOUIS A. MAYLE.

Witnesses:

JACOB A. GABEL,

JOSEPH T. SCHWARTZ.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."