

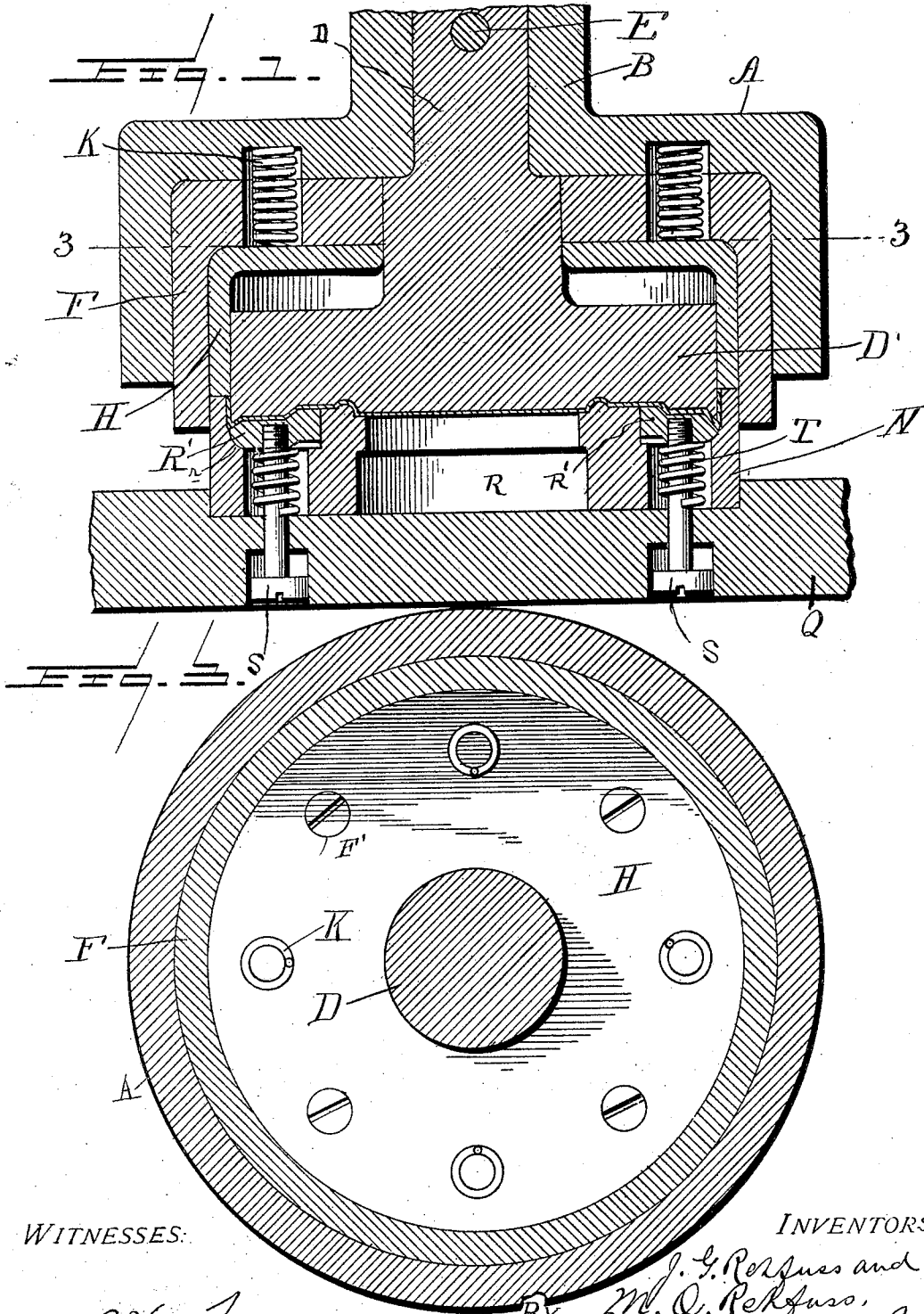
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PATENTED AUG. 29, 1905.

J. G. & M. O. REHFUSS.
DIE PUNCHING APPARATUS.

APPLICATION FILED JULY 11, 1903. RENEWED MAR. 13, 1905.

2 SHEETS—SHEET 1.



WITNESSES:

a. L. Hough
Nellie V. Price.

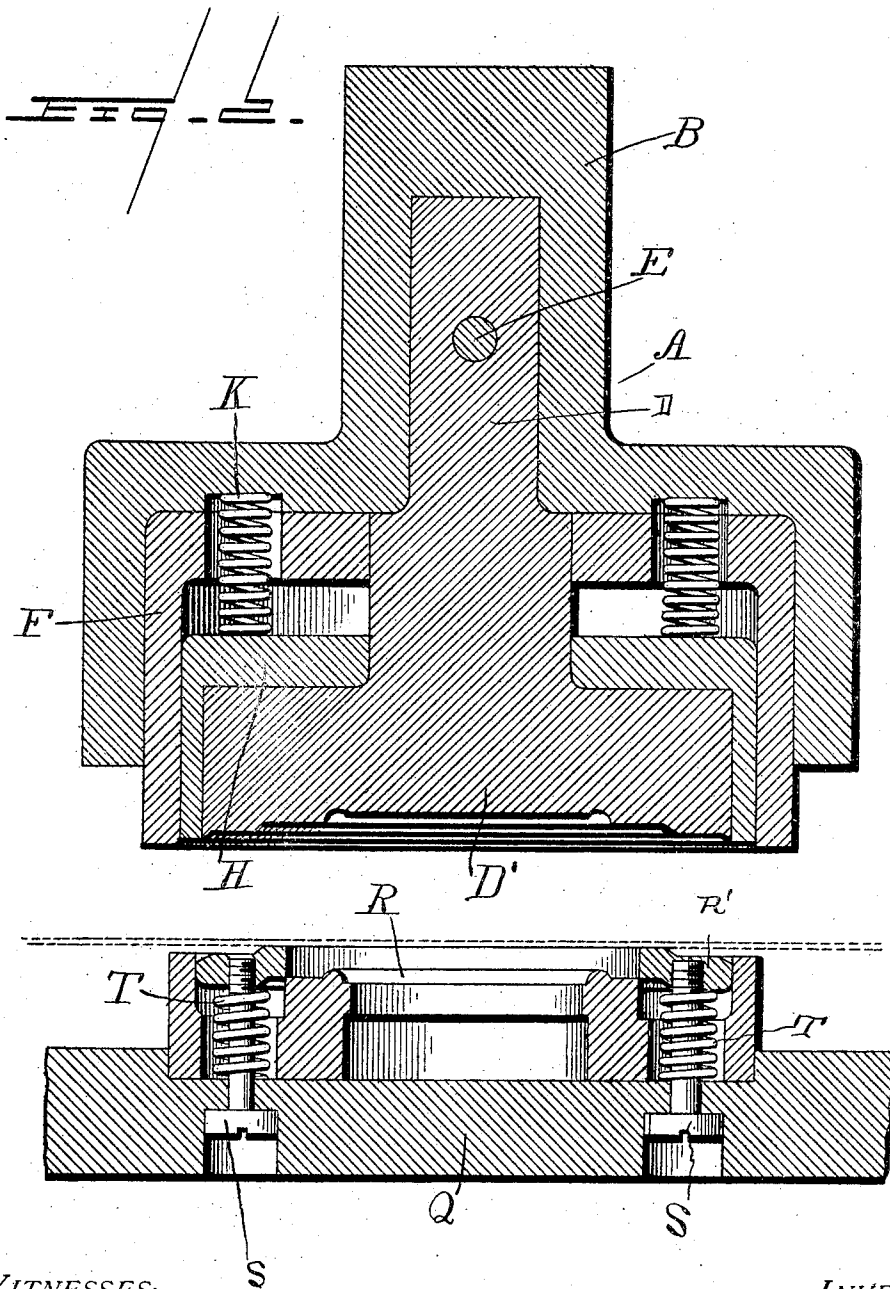
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2 SHEETS—SHEET 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN G. REHFUSS AND MARTIN O. REHFUSS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO THE BUREAU CAN AND MANUFACTURING COMPANY OF DELAWARE.

DIE-PUNCHING APPARATUS.

No. 798,530.

Specification of Letters Patent.

Patented Aug. 29, 1905.

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To all whom it may concern:

Be it known that we, JOHN G. REHFUSS and MARTIN O. REHFUSS, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Die-Punching Apparatus; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in punching-dies designed especially for use in cutting out and forming tops and bottoms for cans, and comprises means whereby the top and bottom are forced from the dies automatically as the latter separate.

More specifically, the invention consists in the provision of a stationary holder and former fixed thereto, with a die surrounding the former and fixed to the holder, and in the provision of a stripping member surrounding the cutting-die, adapted to cooperate with a yielding former which is mounted in a suitable holder and so arranged that as the formers separate the top or bottom is automatically stripped or released from the latter.

The invention consists, further, in various details of construction and arrangements of parts, which will be hereinafter fully described and then specifically defined in the appended claims.

Our invention is illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this application, and in which—

Figure 1 is a vertical section through the dies embodying our invention, showing the same in the act of cutting and forming a top or bottom. Fig. 2 is a similar view of the parts separated. Fig. 3 is a sectional view on line 3 3 of Fig. 1.

Reference now being had to the details of the drawings by letter, A designates a holder having a hollow shank portion B, in which the shank portion D of the former D' is held by means of a pin E.

F designates a cutting-out member or die,

which is provided with a central apertured portion fitting over the enlarged diameter of the shank D and is held to the holder in which it is seated by means of screws F'. Also encircling the enlarged portion of the shank D is a stripper or can top or bottom releaser H, which surrounds the former D' and is yieldingly mounted inside of the cutting member F. Springs K are interposed between the stripping member and the holder A, each spring being seated in a recess in said holder and passing through an aperture in the cutting member F, there being four of said springs shown in Fig. 3 of the drawings. The releasing or stripping member H is normally held in contact with the rear face of the former D by means of the springs K and yields when the upper die is forced against the lower die, about to be described, to allow a top or bottom to be cut and stamped, and when pressure is released from the upper die and the two dies separate said stripping member is adapted to release the top or bottom from the die.

A stationary holder Q is provided having a sectional die or former made up of two parts R and R', the former of which is mounted within said holder and is stationary, while the latter is mounted upon springs T, which bear between the bottom of a recess in the holder Q and the under face of the section R' of the former, said springs being mounted about the adjusting-screws S, countersunk in apertures in the holder Q and held by threaded connection with said section R'. The circumference of the section N has a shoulder ν , adapted to limit the lower throw of the section R', and surrounding the two sections of the former carried by the holder Q is a flange-forming die N, which is seated in a recess in the holder Q, and its inner circumference is adjacent to the outer circumference of the section R'. By the adjustment of the screws T the tension of the springs bearing between the holder Q and the section R' may be regulated.

In operation when a piece of tin is placed over the section R' on the under former the same is in readiness to be acted upon by the upper former and cutting-die, and as the former D' is driven down by the holder A in the manner illustrated in Fig. 1 of the drawings a top or bottom will be cut from the

sheet of tin by the two telescoping cutting members N and F, and the former D', forcing the blank thus severed from the sheet against the movable section R', will cause the latter to be depressed until the under face thereof comes in contact with the shoulders r on the stationary section of the member N, after which the blank will be formed in the manner illustrated in Fig. 1 of the drawings, and at the same time the inner circumference of the cutting member N will form a flange to the top or bottom by forcing the outer marginal edge of the blank up about the circumference of the former D', as clearly shown in Fig. 1 of the drawings. When the dies come together, the stripping member H is thrown back into the chambered portion of the cutting member F, the springs being under tension, and when the two dies are separated said springs will throw the stripping member H to its normal position, thus releasing the top or bottom from the dies, and after the tops or bottoms are separated from the dies they may be removed from between the latter by any suitable mechanism.

While we have shown a particular construction of apparatus embodying our invention, it will be understood that we may alter the same in various details, if desired, without departing from the spirit of the invention.

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

1. A die-cutting apparatus comprising a stationary holder, a sectional former mounted thereon, said former comprising a stationary and a movable part, a cutting member surrounding the sectional former and spaced apart therefrom, and having an annular shoulder on its inner circumference, combined with a movable former, and means for releasing a can top or bottom from the formers, as set forth.

2. A die-cutting apparatus comprising a stationary holder, a sectional former supported by said holder, an annular shoulder about the circumference of the fixed section of said former, a cutting member surrounding the sectional former and having a recess on its inner face, headed screws secured to the movable part of the sectional former and guided through apertures in said holder, springs mounted about said screws and bearing between said holder and the movable part of

the former, combined with a movable former and cutting member, and means for releasing a can top or bottom from the formers, as set forth.

3. A die-cutting apparatus comprising a stationary holder, a sectional former carried thereby, one portion of said former being fixed and the other yielding, a cutting member positioned about the sectional former and having a shoulder adapted to limit the throw in one direction of the movable part of said former, combined with a movable holder, a former fixed to said movable holder, a cutting member secured to the movable holder, and a yielding member carried by the movable holder, as set forth.

4. A die-cutting apparatus comprising a stationary holder, a former mounted thereon made up of sections, one of which is fixed and the other movable, a cutting member surrounding said sectional former, having a shoulder on its inner face adapted to limit the throw in one direction of the movable part of said former, combined with a movable holder, a former fixed thereto, a die-cutting member secured to said movable holder, and a spring-actuated member intermediate said former and die-cutting member carried by the movable holder, as set forth.

5. A die-cutting apparatus comprising a stationary holder, recessed upon its upper face, a sectional former mounted in said recessed portion, one section of the former being stationary and the other movable, a cutting member surrounding said sectional former and seated in said recess, the inner face of said cutting member having a shoulder adapted to limit the throw of one section of said former, screws secured to the movable section of the former guided in apertures in said holder, and adapted to adjust the movable section of the former, combined with a movable holder, a fixed former secured thereto, a cutting member carried by the movable holder, and a spring-actuated releasing member surrounding the former which is fixed to said movable holder, as set forth.

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

JOHN G. REHFUSS.
MARTIN O. REHFUSS.

Witnesses:

HENRY PENNINGTON,
DAVID MCBURNEY.