(No Model.) 2 Sheets—Sheet 1.

# F. H. RICHARDS.

## MECHANISM FOR CREASING ENVELOPE BLANKS.

No. 343,854. Patented June 15, 1886.

Fig. 1

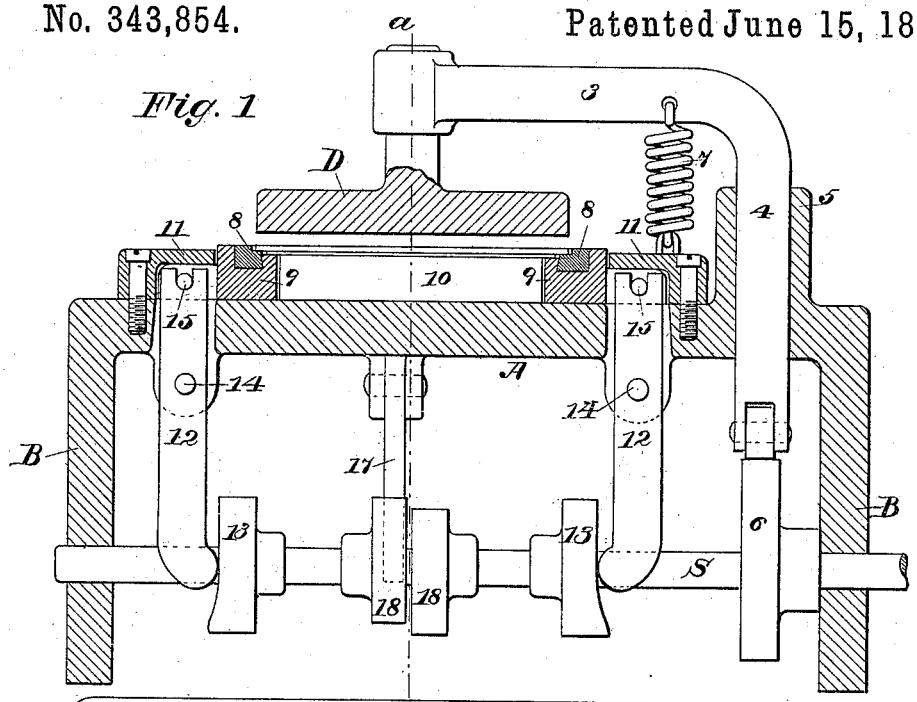
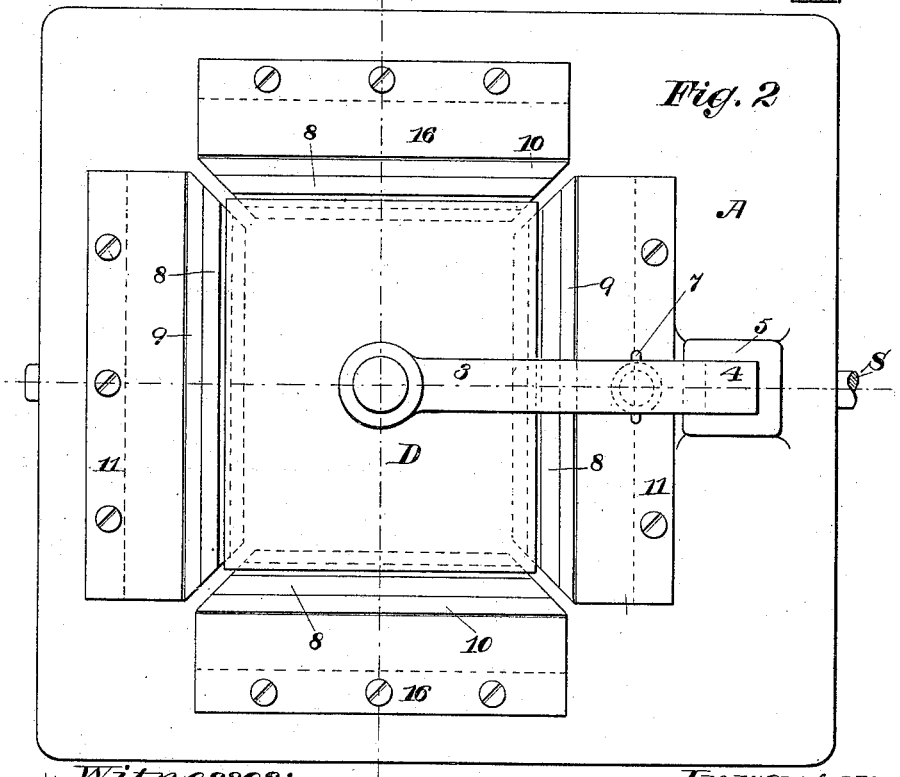



Fig. 2

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Inventor:
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(No Model.) 2 Sheets—Sheet 2.

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## MECHANISM FOR CREASING ENVELOPE BLANKS.

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Fig. 3

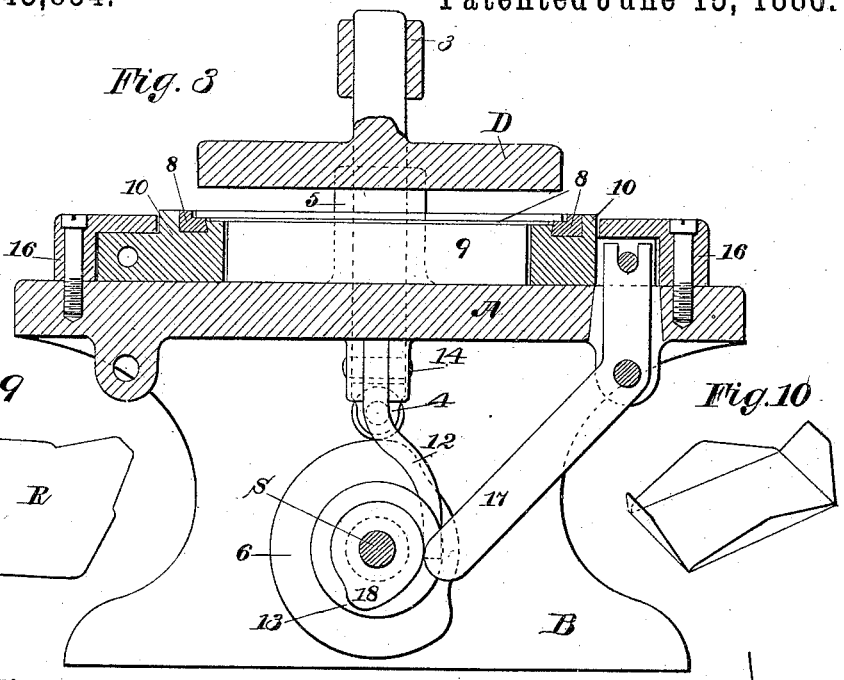



Fig. 9

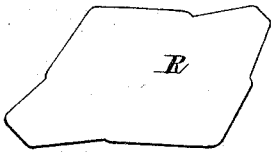



Fig. 10



Fig. 4

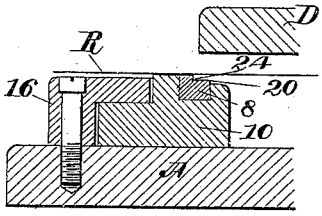



Fig. 5

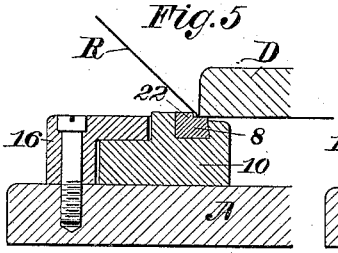



Fig. 6

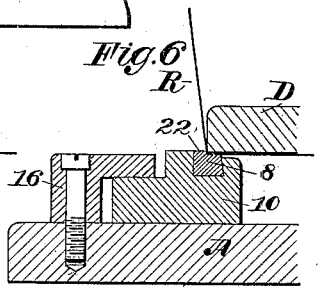



Fig. 7

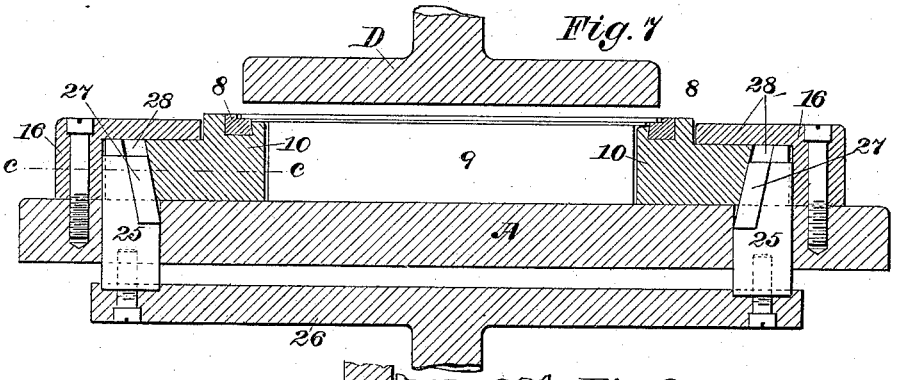
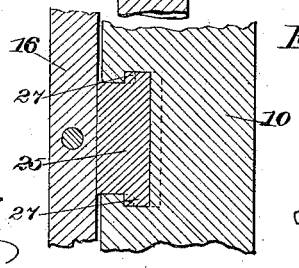



Fig. 8

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# UNITED STATES PATENT OFFICE.

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## MECHANISM FOR CREASING ENVELOPE-BLANKS.

SPECIFICATION forming part of Letters Patent No. 343,854, dated June 15, 1886.

Application filed September 14, 1885. Serial No. 177,084. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS H. RICHARDS, a citizen of the United States, residing at Springfield, in the county of Hampden, State of Massachusetts, have invented certain new and useful Improvements in Mechanism for Creasing Envelope-Blanks, of which the following is a specification.

This invention relates to improvements in mechanism for creasing envelope and other blanks of paper or similar material, the object being to furnish such a mechanism adapted to be used in and constitute a part of that class of envelope-machines in which the blanks are creased in their folding lines prior to the folding operation.

To this end the invention consists in the combinations hereinafter described and claimed.

In the drawings accompanying and forming a part of this specification, Figure 1 is a vertical longitudinal section of a mechanism embodying my improvements. Fig. 2 is a top view of the same. Fig. 3 is a vertical section in line *a a*, Figs. 1 and 2. Fig. 4 is an enlarged view of a part of Fig. 3, showing the parts as situated at the beginning of the creasing operation. Fig. 5 is a view similar to Fig. 4, showing the parts when said operation is partly performed. Fig. 6 is similar to Figs. 4 and 5, showing the parts at the close of said operation. Fig. 7 shows a modified construction of the mechanism. Fig. 8 is a vertical section in line *c c*, Fig. 7, same part.

Similar characters designate like parts in all the figures.

The frame-work supporting the mechanism consists of a top plate, A, sustained by ends B B, which have formed in them bearings for a driving-shaft, S, that is provided with cams for operating the upper and lower creasing-dies. Said upper die is designated by D, and is carried by an arm, 3, of slide 4, which is adapted to have a vertical reciprocating movement in bearing 5, being raised by cam 6 and drawn down by spring 7. The construction of the cam may be modified, if desired, so as to move the slide in both directions, as it is obviously immaterial to my invention what means are selected to operate the die. The lower die is a composite one, each side being made separate from the others. In this the die proper consists of four bars, 8, usually made of leather and supported in four sides, 9 9 10 10, which slides are supported so as to simultaneously have, after the upper die has been brought down onto said bars 8, a closing movement derived from suitable operative mechanism. This peculiar action is indeed the chief characteristic of my present invention.

In the first six figures of drawings I have shown one way of supporting the slides so they may be operated as described. Side slides, 9 9, are each held in place by a cap, 11, fixed to the frame and are operated by a lever, 12, from cam 13, said levers being pivoted to the frame at 14 and to their respective slides at 15. The end slides, 10 10, are similarly held in place by caps 16, and are operated by similar pivoted levers, 17, from cams 18. It will be understood these several cams are supposed to be constructed so as to impart the proper motions, as hereinafter described, to the upper die and to the slides of the lower die. It should be noted also that bars 8 have a lower part, 20, and a higher part or ledge, 22, forming between them an angle, 24, Figs. 4 and 5. This shape may, however, be varied considerably without seriously affecting the efficiency of the mechanism.

The operation of my invention will be understood by referring to Figs. 4 to 6. A sheet of paper, R, is first placed on the lower die, as in Fig. 4, resting on bars 8. The upper die is then brought down to the paper and presses it down against surface 20, as in Fig. 5, at a little distance from ledge 22. On now continuing the motion of the cams, the slides 9 9 10 10 are moved toward each other, as clearly indicated by Fig. 6, closing the ledge 22 up against the side of the upper die and pressing the paper into angle 24. This operation being simultaneously performed on the four sides, the blank (shown plain in Fig. 9) is folded up, as shown in Fig. 10, without tearing or breaking the paper.

The aforesaid slides 9 9 10 10 are not necessarily operated by means of levers. In Figs. 7 and 8 is illustrated a way of doing so by means of wedge-pointed slides, these being supposed to be operated by suitable cams or the like devices. According to this plan the frame A has openings through which slides 25 are

adapted to have a vertical reciprocating movement. A horizontal bar, 26, is attached to their lower ends as a means for effecting said movement, this bar being supposed to be operated by a cam or the like. On the inner side at the upper end these slides 25 are inclined and provided with inclined wings 27, fitting inclined grooves 28, formed in slides 10. Thus by moving up slides 25 slides 10 are moved toward each other, and vice versa.

Having thus described my invention, I claim—

1. The combination, in a blank-creasing mechanism, of an upper die, a lower die consisting of a series of separate sides, substantially as described, and means, substantially as described, operating to first bring down the upper onto the lower die, and then close the lower one onto the upper one, substantially as set forth.

2. The combination of die D, slides 9 9 10 10, each having a bar, 8, rabbeted, substantially as described, caps 11 16, levers 12 17, cams 13 18, and means, substantially as described, for operating the die D, substantially as set forth.

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