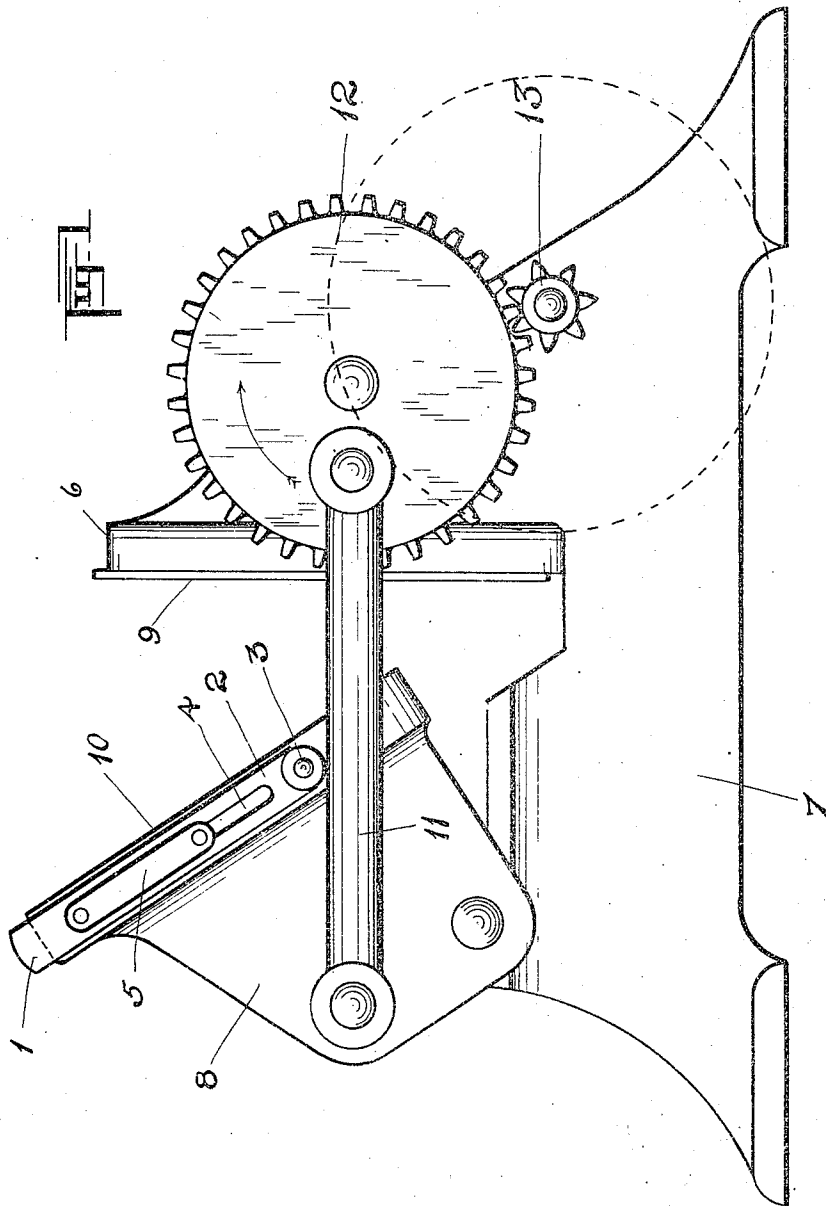


S. B. BLANCHARD, D. B. UHL & F. W. KOCH.
GUARD FOR CUTTING MACHINES.
APPLICATION FILED JULY 26, 1909.

956,564.

Patented May 3, 1910.

3 SHEETS-SHEET 1.



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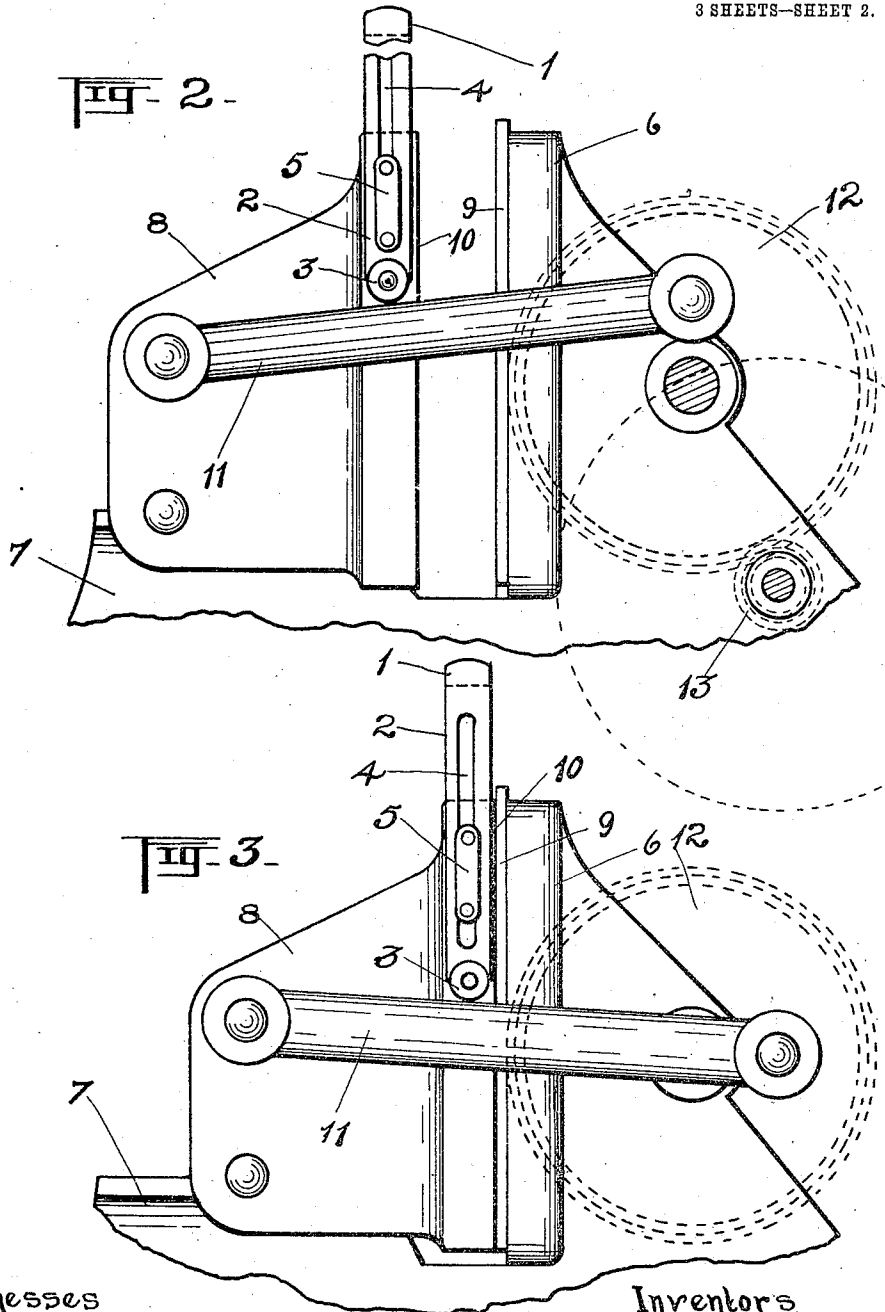
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

FIG. 4.

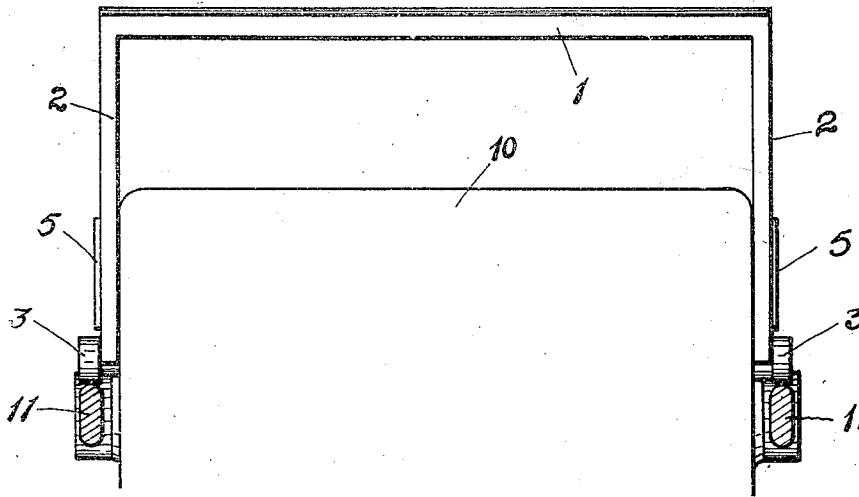
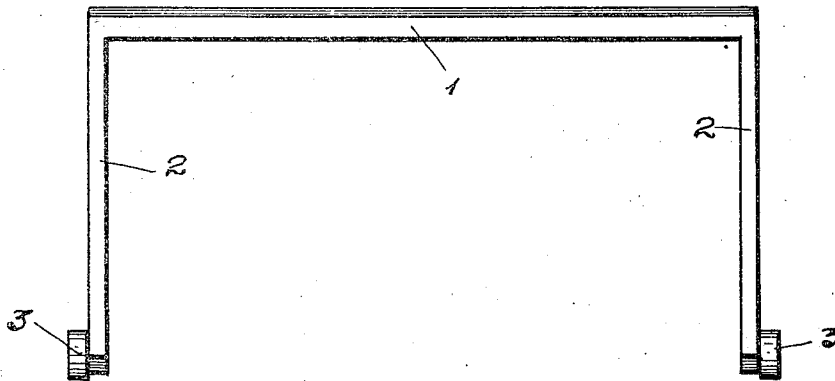


FIG. 5.



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UNITED STATES PATENT OFFICE.

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FREDERICK W. KOCH, OF GRAND RAPIDS, MICHIGAN; SAID UHL AND SAID KOCH
ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO DANIEL K. IDE.

GUARD FOR CUTTING-MACHINES.

956,564.

Specification of Letters Patent.

Patented May 3, 1910.

Application filed July 26, 1909. Serial No. 509,713.

To all whom it may concern:

Be it known that we, SAMUEL B. BLANCHARD, residing at Grand Rapids, DANIEL B. UHL, residing at Grandville, and FREDERICK W. KOCH, residing at Grand Rapids, in the county of Kent, State of Michigan, citizens of the United States, have invented new and useful Improvements in Guards for Cutting-Machines, of which the following is a specification.

Our invention relates to a guard for cutting machines, or similar machinery, for the purpose of protecting the hand and arm of the operator from accidental injury.

In the form in which we have shown it, it is adapted for use in connection with cutting machines such as are commonly used for cutting blanks from paper board to make paper boxes; but it is obvious that it is adapted to any machine which has jaws or dies, one of which swings and moves toward the other.

The object of the invention is accomplished by the mechanism which, in the selected form, is shown in the accompanying drawings.

Figure 1 is a side view of a paper blank cutting machine having this device attached, and at a point just as the closing stroke is commencing. Fig. 2 shows the same parts when the closing stroke is about half completed. Fig. 3 shows the same with the jaws completely closed. Fig. 4 shows the guard in its raised position and in relation to the adjacent parts, and Fig. 5 is a separate view of the guard itself detached.

1 represents the horizontal cross bar of the guard and 2 2 are the vertical end arms of the guard carrying the horizontal bar. At or near their lower ends these vertical arms carry pins or lugs 3 3, and, for ease of operation, these may be in the form of rollers, as indicated especially in Figs. 4 and 5. These pins or rollers are suitably attached to the guard arms 2 and rise and fall with the latter in their operation. These end guard arms 2 2 are provided with longitudinal slots 4 4, and passing through these longitudinal slots and rigidly attached to the moving jaw, are the guides 5 5 upon which the guard arms ride in their vertical motion relative to the jaw.

6 represents the fixed jaw, 7 the main frame or bed, and 8 the movable jaw.

9 and 10 show respectively the opposing faces of the two jaws which may carry knives or dies, or any suitable means for cutting or impressing the material. The movable jaw is, in this form of construction, given its reciprocating swinging and sliding motion by means of the crank arm 11 pivotally connected at one end to the jaw, and at the other end to the face of the gear 12, which, in turn, is operated by the driving gear 13. Obviously, as the gear 12 is rotated in the direction of the arrow, as shown in Fig. 1, and starting from the position there shown, the jaw will first be swung forward on its lower pivot to the position shown in Fig. 2, and then will slide forward upon and in connection with any suitable means provided therefor to the position shown in Fig. 3, when the cutting or stamping operation is complete; and then as the revolution of the gear continues, this operation will be reversed, and, at the end of the complete revolution, the parts will again be in the position shown by Fig. 1.

The guard, composed of the horizontal top bar and the end arms, and sliding loosely on the guides 5, will, by gravity, assume its lowermost position, and the horizontal bar 1 will rest upon the upper edge of the face plate 10. This will be its natural position, and it will maintain that position until the parts reach the position shown in Fig. 1. Then, as they advance to the position shown in Fig. 2, the roller 3 will come in contact with and ride upon the arm 11, and, in the continuing operation, will rise, carrying with it the guard, until the guard takes the position indicated in Figs. 2, 3 and 4.

In the working of this machine the operator naturally stands in front of the same, that is, at the left in Fig. 1, and with his hand places upon the face plate 10, when the jaw is open, the paper or other material to be operated upon. It is thus apparent that if for any reason he does not withdraw his hand as the jaws close, the guard will rise, and will automatically lift the operator's hand and arm out of the space between the approaching jaws. It will thus be impossible for the operator to have his hand between the two jaws at the time they come together, or for a brief space of time theretofore, and accidental crushing or cutting of the hand becomes practically impossible.

Having thus described our invention, what we claim to have invented, and desire to secure by Letters Patent, is:

1. A guard for cutting machines and similar devices having a movable jaw, such guard comprising an arm-lifting bar, guides upon the moving jaw and carrying the arm-lifting bar and means carried by the main frame making contact with the guard as the moving jaw closes, whereby the guard bar is moved across the position of the operator's arm.
2. In a cutting machine, or similar device having a movable jaw, the combination with the moving jaw of a guard arm carried thereby, guides loosely connecting such jaw and such arm, whereby the arm may rise and fall upon the jaw and means contacting with such guard as the jaw closes, thereby lifting the guard bar across the position of the operator's arm.

3. In a cutting machine, or similar device having a moving jaw, the combination of such moving jaw with a guard arm slidable thereon and rising and falling upon such jaw, means carried by such guard arm for making contact with the operating crank arm and a crank arm pivoted at one end to the moving jaw and at the other end to the driving mechanism, whereby, upon each revolution of the driving mechanism, the guard is made to rise and fall upon the moving jaw.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

SAMUEL B. BLANCHARD.

DANIEL B. UHL.

FREDERICK W. KOCH.

Witnesses:

A. C. DENISON,

MARY S. TOOKER.