

LOCKING LATCH.

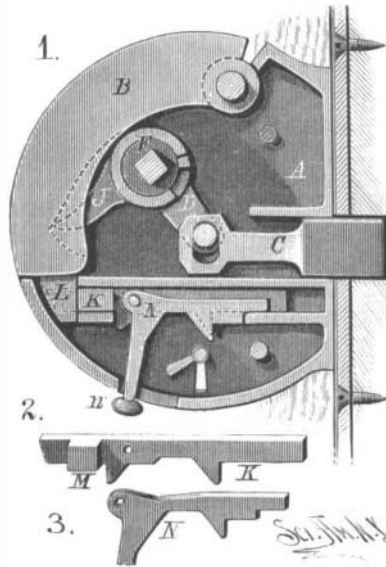
The lock casing is composed of a fixed section, A, and a movable section, B, pivoted to the top. The bolt, C, slides in suitable guides in the casing, and its inner end is provided with a slot through which a pintle passes, which is on the end of an arm, D, secured to a nut through which passes a knob bolt, so that by turning the knob the bolt will be moved inward or outward. The nut is surrounded by a collar having a notch in its upper edge, into which a tooth projecting from the nut passes. The collar is provided with a downwardly projecting arm, J, which passes into a recess in the inner surface of the hinged part, B, of the casing, which is made solid, so as to be as heavy as possible.

The latch bolt, K, slides between guide ridges projecting from the inner surface of the back of the lock casing, and is provided with downwardly projecting lugs, shown in Fig. 2, that strike against the ends of the ridges and limit the movement of the bolt in the direction of its length. The part, B, of the casing is furnished with a loop at its lower end, into which the end of the bolt, K, passes when the hinged part is lowered; a block, M, on the bolt prevents it from being forced through the loop too far. To the latch bolt is pivoted an elbow-shaped tumbler, N, Fig. 3, one arm of which passes through a slot in the bottom of the lock casing. The horizontal arm of the tumbler is made with a beveled recess for receiving the bit of the key, and with an offset in its lower edge a short distance from the end. In Fig. 1 the parts of the lock are in such a position that the door cannot be opened, for if the knob be turned, the end of the arm, J, will strike the part, B, of the casing, which cannot be raised, as the end of the bolt, K, is passed through the loop, L. In order to release the hinged part, B, the tumbler, N, must be raised either by a key or by hand, and then pushed toward the outer edge of the lock casing, thereby withdrawing the latch bolt from the loop.

The bolt cannot be moved outward without raising the tumbler, since the offset comes in contact with the lower ridge; when the bolt is moved inward, the bottom edge of the tumbler slides on the ridge and drops automatically, thereby locking the bolt in place. When the latch bolt is in its forward position, the knob, E, may be turned, when the part, B, will be raised by the arm, J, and the bolt, C,

AUTOMATIC MACHINE FOR CUTTING PAPER AND CARDBOARD.

Machines for trimming paper, cardboard, etc., such as generally employed, offer the inconvenience that, although they perfectly perform the office for which they are designed, they require long and tiresome maneuvering. It is necessary, in fact, for the workman, after determining the position of his pile of paper, to tighten up the press by means of a hand wheel in order to hold the material in place,

**NYSWONGER'S LOCKING LATCH**

and afterward (when the machine is not run by a motor) to actuate by hand the winch that moves the knife carrier through a train of gearing.

The Lhermite machine, shown in the accompanying engraving, is designed to suppress such inconveniences, while at the same time giving a larger product than machines of ordinary construction do, owing to the successive maneuvers that their mechanism requires.

actuate the connecting rod and the lever of the blade carrier.

When it is desired to use the machine, the pile of paper or cardboard is first squared up, and then the workman presses with his foot upon a pedal, which, through the intermedium of a series of levers, causes the descent of a gauge which is situated in the interior of the press plate. The object of this gauge is to determine accurately the line of the cut and to facilitate the placing of the paper upon the table. After this the driving belt is shifted to the fast pulley, and this sets in motion the gearings, which cause the revolution of a shaft that is placed beneath the table, and that carries a cam at each extremity.

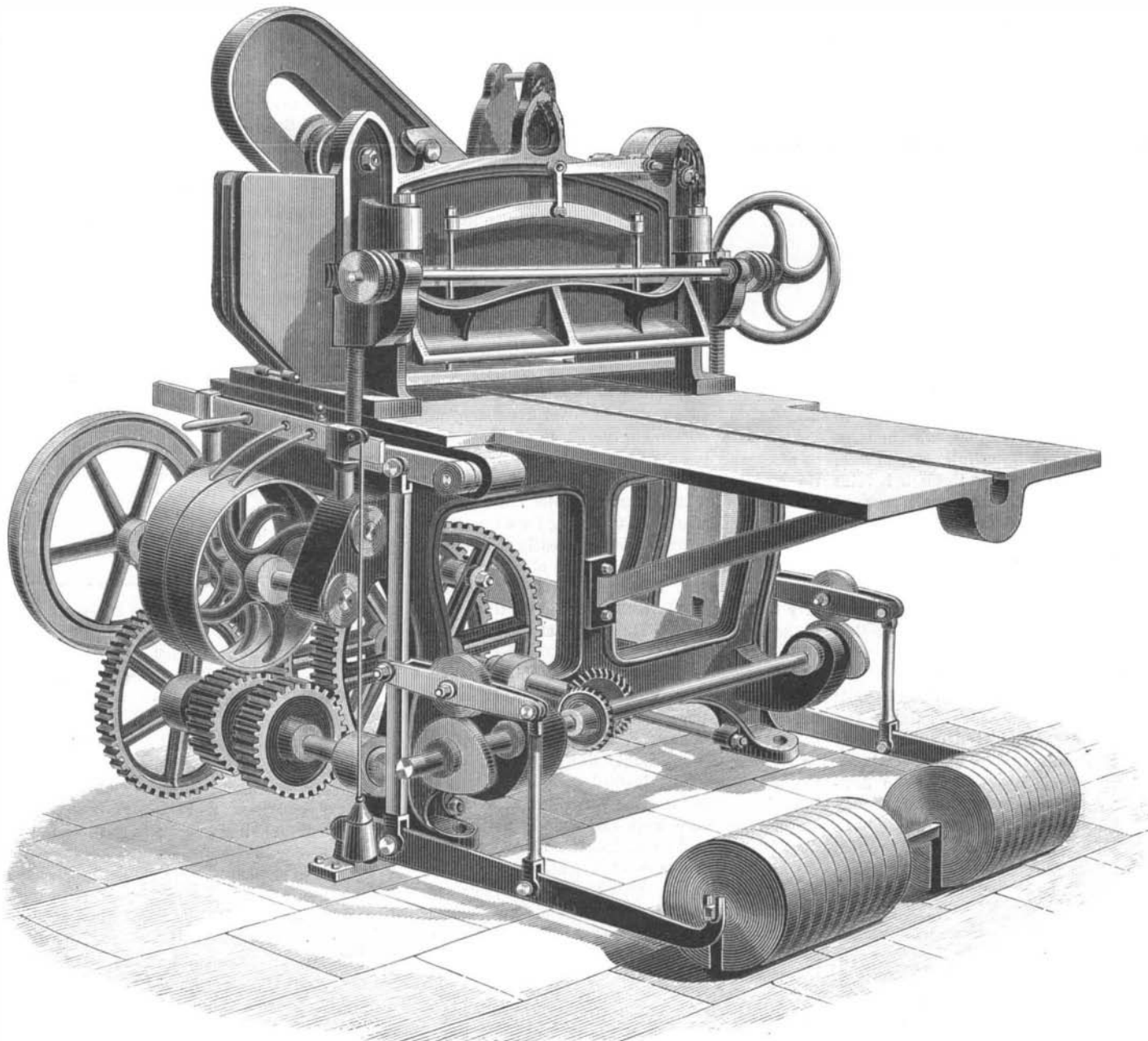
These two cams support, each of them, a roller mounted in the center of a cross piece which is itself connected by rods with a large horizontal lever that pivots upon a fixed point at the base of the frame.

This lever and the one symmetrical with it carry at their forked extremities an iron bar provided with a certain number of iron rings that form a counterpoise which may be varied at will.

At the moment the machine is set in motion the cams allow the rollers, and likewise the counterpoises, to descend, and the effect of this is to produce a tractive stress upon two vertical connecting rods, which act through their upper extremities upon two levers that are connected with the press plate by means of nuts that receive two screws mounted upon the extremities of the plate. The press is thus locked automatically, and the driving pulley, continuing its motion, causes the descent of the blade, which cuts the paper and at once ascends again. At this moment the cams lift the counterpoises, and consequently the press plate, and the machine stops alone by means of a small counterpoise which is attached to the extremity of a cord that draws the belt shifter toward the loose pulley.

The operation being finished, the machine is ready to begin another cutting, and it is then only necessary to place the paper in position and set the machine running again.

As the piles of paper, cardboard, etc., to be cut are necessarily of variable height, the press plate had to be made adjustable at will with respect to the levers that actuate it. To effect this the press is provided with two endless screws that are united by a horizontal shaft which carries a hand

**AUTOMATIC MACHINE FOR CUTTING PAPER AND CARDBOARD.**

moved inward. When the arm is released the weighted hinged part, B, drops into its normal position, and the bolt, C, is pushed outward. As the lock requires no spring, its construction is materially simplified.

This invention has been patented by Mr. Elijah Nyswonger, of Hanford, Cal.

A new anti-rvivisectionist organ called the *Champion* is about to appear in England.

This machine consists of a table supported by two cast iron standards strengthened by cross braces. Upon this table are mounted two cheeks, between which slides in sloping slots the knife carrier. This latter is guided by two rollers which revolve upon axes that are fixed to the extremities and to the upper part of the cheeks.

The pulley that receives the driving belt is mounted upon one of the sides of the machine, and transmits motion, through a series of gearings, to two toothed wheels which

wheel. These screws gear with two pinions that are provided with helicoidal teeth and that are keyed upon the traction screws of the press plate.

Upon acting on the hand wheel, these two screws are caused to revolve in the nuts which they carry at their lower part, and which are connected with the upper levers of the locking apparatus. The operator can thus regulate the height of the press above the table according to the height of the pile of paper.—*Annales Industrielles*