(No Model.)

S. Y. BUCKMAN.

MACHINE FOR CUTTING SHEET METAL PLATES.

No. 530,322. Patented Dec. 4, 1894.

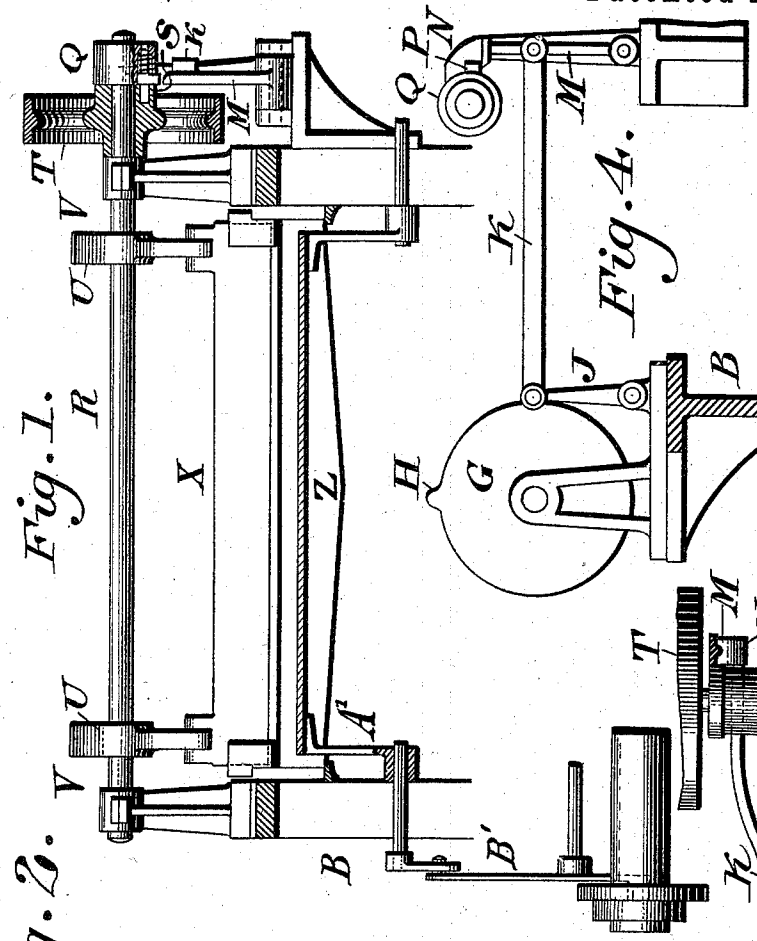

Fig. 1.

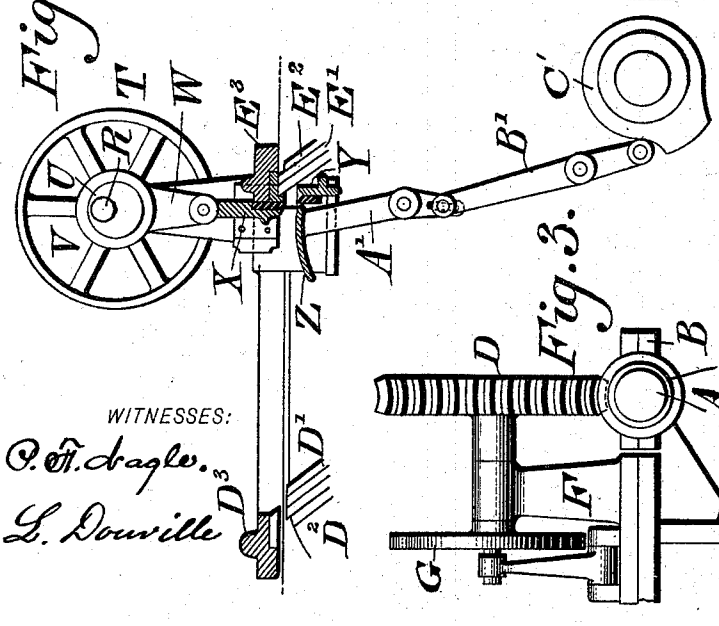

Fig. 2.

Fig. 3.

Fig. 4.

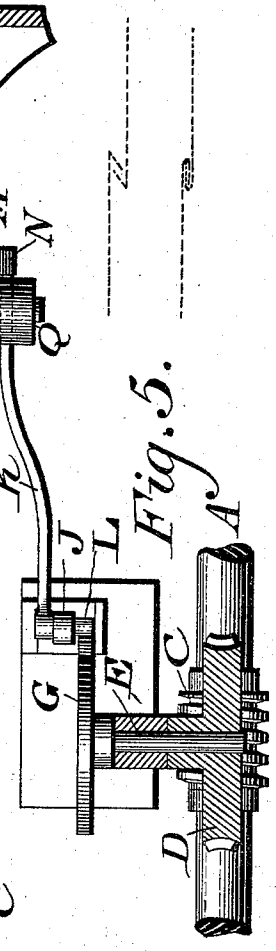

Fig. 5.

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MACHINE FOR CUTTING SHEET-METAL PLATES.

SPECIFICATION forming part of Letters Patent No. 530,322, dated December 4, 1894.

Application filed June 13, 1894. Serial No. 514,408. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL Y. BUCKMAN, a citizen of the United States, residing at Pottstown, in the county of Montgomery, State of Pennsylvania, have invented a new and useful Improvement in Machines for Cutting Sheet-Metal Plates, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in the machine for edging sheet metal plates, for which Letters Patent of the United States, No. 451,265, were granted to me on the 28th day of April, A. D. 1891, and consists of means whereby such plates may be trimmed, so as to be of uniform length prior to the complete edging-operation.

Figure 1 represents a transverse vertical section of a portion of a cutting machine embodying my invention. Fig. 2 represents a longitudinal section thereof. Figs. 3 and 4 represent side elevations of other portions thereof. Fig. 5 represents a partial top view and partial horizontal section of a feature shown in Figs. 3 and 4.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings: A designates a shaft which is mounted in any suitable manner on the frame B of the machine, and carries a worm C, with which engages the worm wheel D on the shaft E, the latter being mounted on the standard F, and has keyed or otherwise secured to it the wheel G, on whose periphery is a lug or projection H.

Rising from the frame of the machine, and pivoted thereon, is an arm J, to whose upper end is pivoted a link K, the pivot L of said arm J and link K, projecting laterally so as to form a stud which is located adjacent to the periphery of the wheel G, so as to be engaged by the lug H thereon. The end of the link K, opposite to the arm J is pivoted to the swinging arm M, whose bearings are on the frame of the machine and which has a wedge-shaped head N thereon, said head being adapted to engage with the lug P on the clutch Q, which is mounted on the shaft R, whose bearings are on the frame of the machine, said clutch being connected with said shaft by means of a feather, so as to be rotated by the same, and is capable of receiving sliding motions thereon, the inner side of said clutch having thereon a pin S, which is adapted to enter an opening in the pulley T, which is loosely mounted on the shaft R, said pulley being adapted to have a belt or band passed around the same for communicating power to the shaft R, when the clutch Q is engaged with said pulley.

Secured to the shaft R are eccentrics U, which are encircled by yokes V on whose peripheries are the crank arms W to which is pivoted the cutter head X.

Y designates the bed knife which is located below the cutter head X, and has adjacent to it the supporting bed Z, which is carried by a radial arm A′ whose bearings are on the frame of the machine, and which is engaged by the lever B′, to which motion is imparted by the cam C′ whose axis is on the frame of the machine, the bed Z thus receiving motions in opposite direction, or to and from the bed knife Y.

The operation is as follows: A plate of metal is subjected to the actions of the folder and clamp D′, D^2, and E′, E^2, so as to form bends on the edge thereof, similar to those set forth in the patent hereinbefore referred to. It will here be noticed that plates vary in size, and thus there is irregularity in the bending and uniting of the same. It is therefore necessary to trim the plates, whereby they are of uniform length. When a plate is fed forward it is supported by the swinging bed Z at the side of the bed knife Y, and sustained on said bed, while the cutter head X descends, thus trimming the edge of the plate, after which the bed Z makes its return motion, and the cutter head is raised. There is now an interval between the trimming operations, whereby the plate may be advanced to the folder and clamp E′, E^2. This is accomplished by the stoppage of the shaft R, it being evident that as the arm M is advanced, its head engages with the lug P, thus forcing the clutch Q laterally from the pulley T, allowing said pulley to rotate without operating the shaft R. When the arm M describes its motion in the opposite direction, its head recedes from the lug P, when the spring S′ on the shaft R bears against the clutch Q and forces the latter into engagement with the pulley T, thus causing the rotation of the shaft R, and the descent

of the cutter head X, it being evident that in the meanwhile another plate has had its edge bent, and said plate is being advanced to the bed knife Y, and supported on the bed Z, so that the edge of the plate is in position to be trimmed, as in the previous case.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A trimming attachment to an edging machine, consisting of a rising and falling cutter connected with a rotatable shaft, a swinging bed plate, a stationary bed knife, mechanism for imparting an intermittent motion to said shaft and cutter, and separate mechanism for imparting an intermittent motion to said bed plate, said parts being combined substantially as described.

2. A trimming attachment to an edging machine, consisting of a rising and falling cutter connected with a rotatable shaft, a loose driving pulley and a clutch mechanism on said shaft, mechanism substantially as described for disengaging said clutch from said pulley, a spring for engaging said clutch and pulley, a stationary bed knife, and a swinging bed plate, said parts being combined substantially as described.

3. A trimming attachment to an edging machine, consisting of a rising and falling cutter, a rotatable shaft to which said cutter is attached, a driving pulley loosely mounted on said shaft, a clutch mechanism on said shaft, mechanism substantially as described for intermittently disengaging said clutch and pulley, a spring for engaging said clutch and pulley, a stationary bed knife, a bed plate mounted on a swinging arm and independent mechanism for intermittently operating said arm, said parts being combined substantially as described.

4. The shaft A, the gearing C, D, the shaft E, the wheel G with the projection H, the arm J and the link K with the stud L, the arm M with wedging head N, in combination with the clutch Q with the projection P, the loose pulley T, the shaft R which carries said clutch and pulley, the cutter head X and mechanism on said shaft for raising and lowering said head, substantially as described.

5. In a trimming attachment to an edging machine a clutch, a swinging arm with a head engaging said clutch, a rotatable shaft with a wheel having a lug thereon, an arm pivotally connected by a rod with said swinging arm, the pivotal connection of said pivoted arm and rod being adapted to be engaged by said lug, said parts being combined substantially as described.

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