G. L. KNIGHTS.

BEADING, MOLDING, AND CUTTING MACHINE.

APPLICATION FILED MAR. 29, 1911.

1,085,568. Patented Jan. 27, 1914.

2 SHEETS—SHEET 1.

Fig. 2.

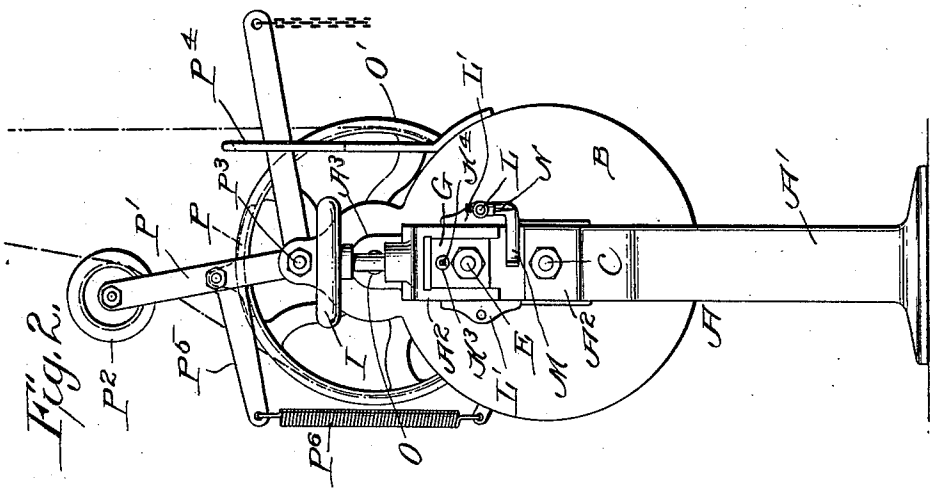
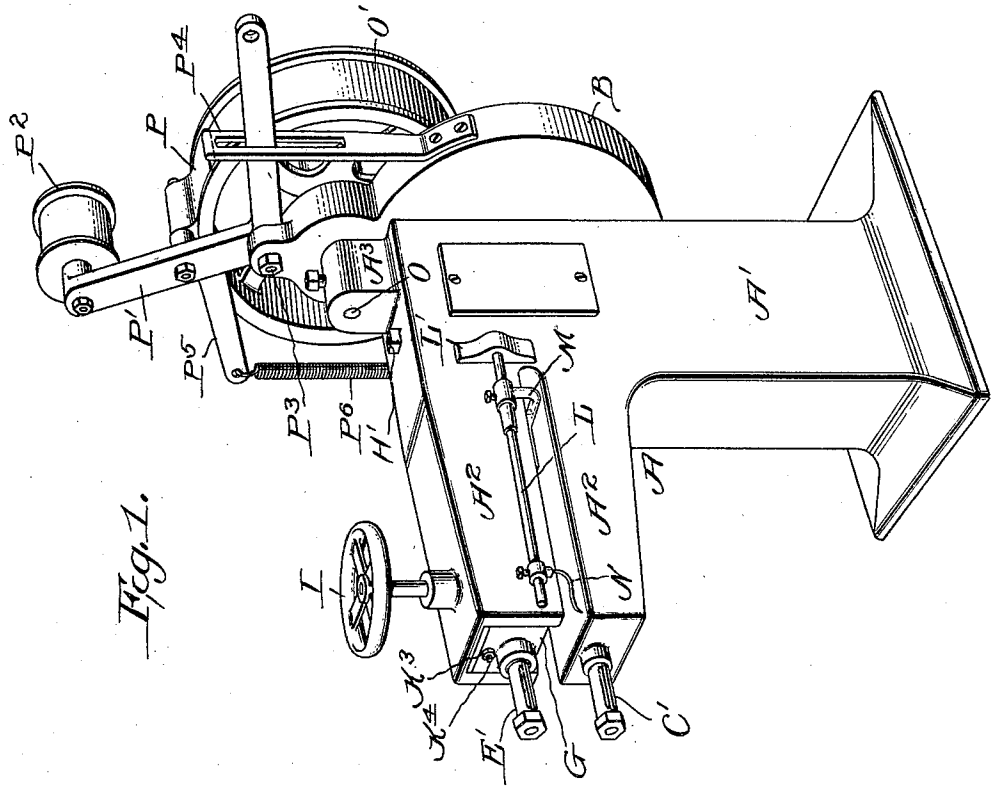


Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 3.

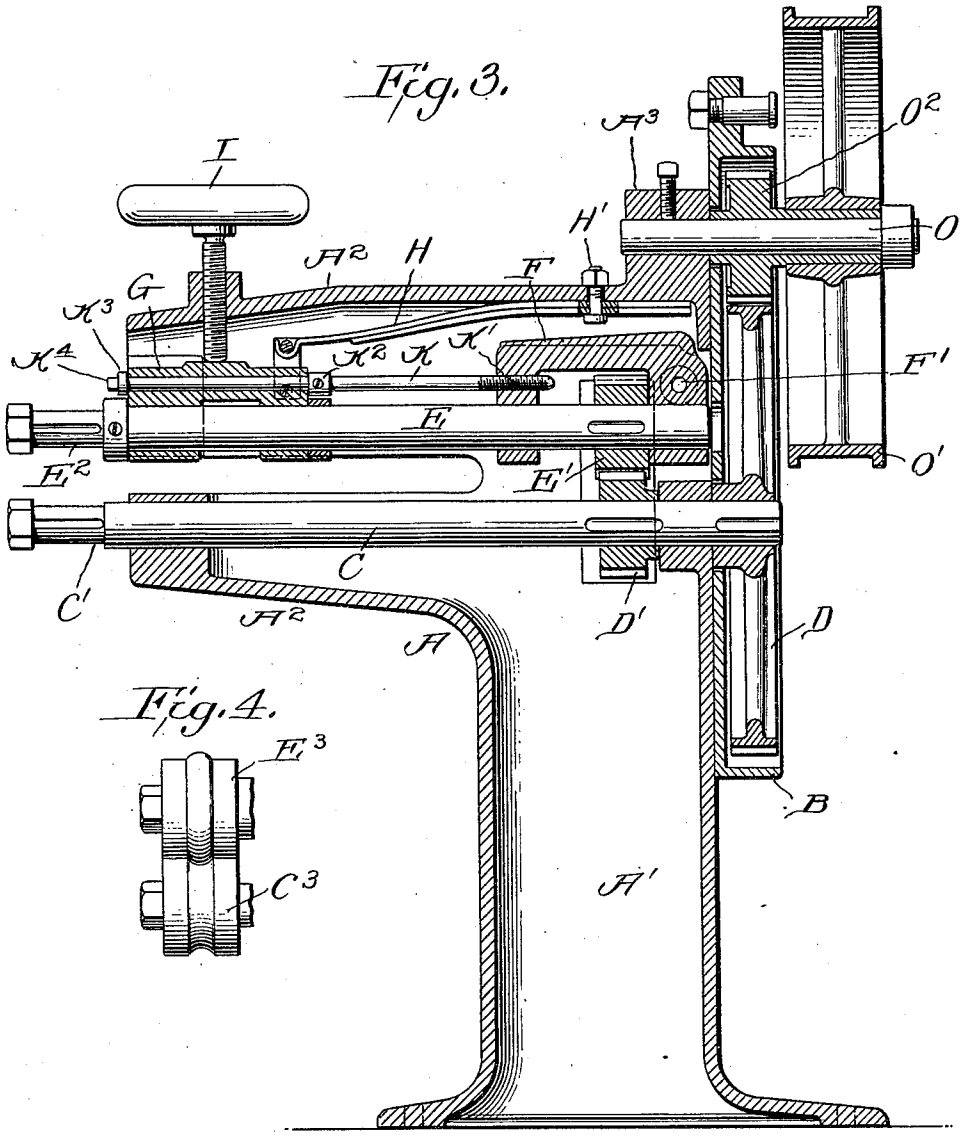
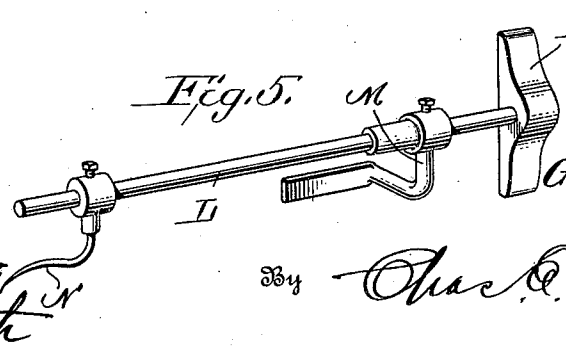


Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE L. KNIGHTS, OF AMESBURY, MASSACHUSETTS, ASSIGNOR TO PETTINGELL MACHINE CO., OF AMESBURY, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

BEADING, MOLDING, AND CUTTING MACHINE.

1,085,568. Specification of Letters Patent. Patented Jan. 27, 1914.

Application filed March 29, 1911. Serial No. 617,581.

To all whom it may concern:

Be it known that I, GEORGE L. KNIGHTS, a citizen of the United States, residing at Amesbury, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Beading, Molding, and Cutting Machines, of which the following is a specification.

This invention is a novel construction of beading, molding, and cutting machine and can also be utilized as a folding machine for folding over the edges of metal around the reinforcing wire, such as ordinarily employed in mud guards for automobiles and carriage metal body work.

The object of the invention is to provide an exceedingly simple and efficient machine by means of which molding and beading can be quickly and easily formed in sheet metal and a still further object is to provide for the accurate manipulation of the various parts.

A still further object of the invention is to provide for the quick and easy adjustment of the various parts.

With these various objects in view, my invention consists in the novel features of construction and combination of parts all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming a part of this specification: Figure 1 is a perspective view of a machine constructed in accordance with my invention. Fig. 2 is a front view of the same. Fig. 3 is a sectional elevation. Fig. 4 is a detail view of the beading rolls. Fig. 5 is a detail perspective view showing the guide and gage used in connection with the machine.

In all of these figures, I have omitted the forming or beading rolls from the ends of the shaft for the clearness of illustration.

In carrying out my invention, I employ a cast metal frame or body A comprising a pedestal base A′ and the hollow parallel arms A^2 and within the hollow pedestal and arms are arranged substantially all of the working parts of the device. A gear case B is arranged upon the rear of the pedestal for the purpose of containing the driving gears hereinafter referred to. A horizontal shaft C is journaled in the lower hollow arm extending through the forward end of said arm as shown at C′ while at the rear end it extends through the pedestal and carries the large gear D. The shaft also has a small gear D′ keyed thereon adjacent the rear end but within the hollow pedestal, said gear D′ meshing with a similar gear E′ keyed upon the upper rotary shaft E. This upper shaft E is supported at its rear end in a hanger F pivoted within the hollow casing as shown at F′. The forward end of the shaft E is journaled in a hanger G, which hanger is supported by means of a stout laminated spring H fastened at H′ by means of a bolt to the top portion of the casing, the tendency of said spring H being to move the hanger G and consequently the forward end of the shaft E upwardly and this upward movement is arrested and the position of the roll determined by means of the hand wheel and screw I, said screw working through the upper forward end of the upper arm as most clearly shown and bearing upon the top of the hanger G. A rod K passes longitudinally through this hanger and is threaded at its rear end as shown at K′ and engages the hanger F in which the rear end of the shaft E is journaled and by turning this shaft K by means of a suitable wrench, the shaft E can be shifted longitudinally so as to change the position of the roll E^3 arranged upon the end E^2 of said shaft. The roll E^3 together with the roll C^3 are fastened upon the ends of the shafts E and C, respectively, in the usual or any approved manner. A collar K^2 is fastened upon the rod K, just to the rear of the hanger G and the forward end is formed in a shoulder K^3 and squared end K^4, so that by turning the said rod to either the right or to the left the shaft E will be moved in or out inasmuch as the hanger G is moved in or out and the shaft E while turning freely within this hanger is fixed therein so far as longitudinal movement is concerned. A gage rod L is fastened at its rear end in a suitable boss L′ and extends parallel with the upper arm just above the lower edge thereof and this gage rod preferably extends to the forward end of the machine and is adapted to carry the gage M and guide N, the gage M serving to act as a stop for the material fed between the rolls and the guide N can be used as a guide or marker in shaping the bead or mold. The gage M and guide N, it will, of course be understood, are secured by means of suitable set screws after having once been adjusted. The casing is formed with an enlargement

A^3 at the upper end, in which is fixed a shaft O, upon which is mounted a grooved pulley O′, which is fast with the gear O^2, mounted also upon the shaft O and which meshes with the large gear D, so that when the pulley O′ is driven the small gear or pinion O^2 will transmit the power to the large gear D, which in turn rotates the lower shaft C and by means of the gears D′ and E′ the upper shaft E is caused to move in unison with the lower shaft C and in this way, the rolls E^3 and C^3 are driven in opposite directions. By means of the hand nut and screw I, and the adjusting rod K, the relative positions of the said rolls can be regulated or gaged with absolute accuracy.

In order to provide for the steady running of the machine, I preferably employ a friction brake P, carried by the arm P′, which also carries a belt tightening pulley P^2 at its upper end. The arm P′ is in the form of an elbow lever pivoted at P^3 at the upper end of the gear casing, the opposite end of said arm working in a guide P^4 and adapted to receive a pull rod or chain, which is preferably connected with the foot lever so that by rocking the arm P′, the belt will be tightened and the pulley O′ driven, the rocking movement of the arm P′ being sufficient to release the brake shoe P, which is provided with an arm P^5, to which is connected the coil spring P^6 so that the moment pressure is relieved from the foot lever, this spring P^6 will act to throw down the arm P^5 bringing the brake shoe P into contact with the pulley and at the same time, the arm P′ is shifted so as to carry the pulley P^2 away from the belt thereby stopping the machine.

By means of a machine constructed as herein shown and described I am able to form beading or molding upon sheet metal of every description and by the employment of cutters can quickly and easily cut the metal with a perfectly smooth edge and by means of folders arranged upon the ends of the shafts can fold in the wire used around the edges of mud guards, fenders and so forth.

While I have shown and described my invention as a power machine, it will of course be understood that the same broad principle can be utilized for a hand machine, the power being applied to the small gear by means of a suitable crank.

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

1. In a machine of the kind described, the combination with the horizontal shafts suitably mounted and driven, a pivoted hanger in which the rear end of the upper shaft is journaled, a spring supported hanger in which the forward end of said shaft is journaled, a hand wheel and screw adapted to bear upon said spring supported hanger and a rod working through the spring supported hanger and having a threaded end working in the pivoted hanger, the upper shaft and rod having collars upon opposite sides of the forward hanger whereby the turning of the rod will move the hanger and upper shaft longitudinally.

2. In a machine of the kind described, the combination with a casing, of a lower shaft arranged therein, a hanger pivoted in the casing, a spring supported hanger arranged in the casing adjacent the forward end thereof, an upper shaft journaled in said pivoted and spring supported hangers, adjustable means for maintaining the spring supported hanger in position together with means carried by the spring supported and pivoted hangers for adjusting said spring supported hanger and upper shaft longitudinally and means for rotating said shafts.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."