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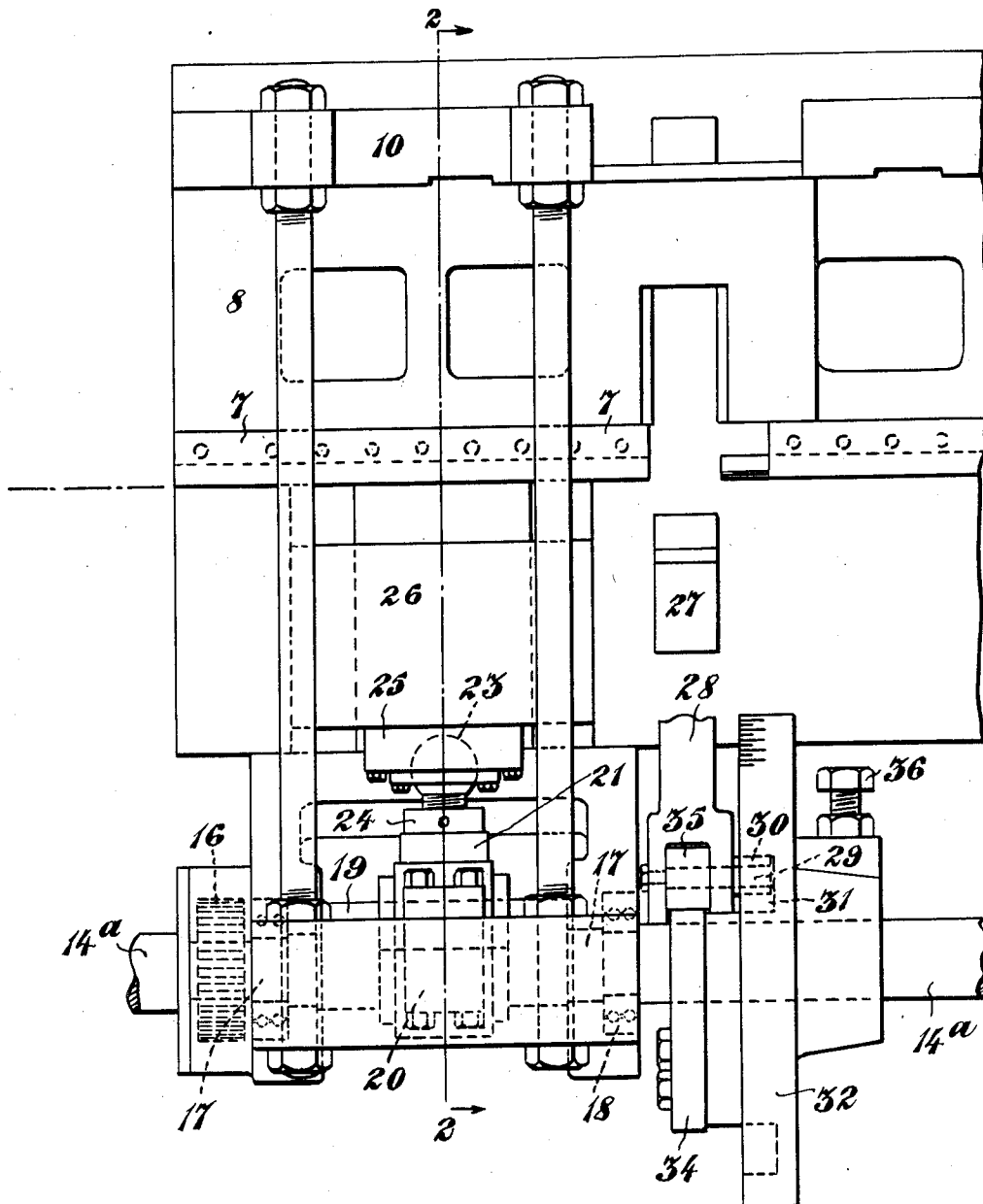
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WIRE OR STRIP BLANKING MACHINE

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2 Sheets-Sheet 1

Fig. 1.



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WIRE OR STRIP BLANKING MACHINE

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2 Claims. (Cl. 164—106)

This invention has reference to improvements relating to wire or strip blanking machines and is concerned more particularly with wire and strip blanking machines of the kind in which the tools are carried by slides adapted for reciprocation in horizontal planes.

It has been the more general practice heretofore to manufacture articles from strip metal by submitting the strip to a sequence of stamping or pressing operations, and the present invention is differentiated therefrom in that the strip is drawn from a supply and positively fed in a horizontal direction between a battery of dies and tools and/or formers and tools which come into operation successively in a definite sequence to fashion the article to the desired shape and configuration.

According to the present invention a metal strip is positively fed in a horizontal direction between dies and tools arranged to operate successively in a determined sequence, said dies and tools being either mounted in adjustable holding means or being adjustably mounted themselves so as to enable strips of varying dimensions to be dealt with.

Further according to the present invention there is provided a device for incorporating in wire or strip blanking machine of the kind hereinbefore referred to, comprising a projection on the tool-carrying slide which engages within a cam groove internally formed in an adjustable disc member having a graduated periphery, the graduations whereon co-operate with a fixed index, the adjustment of the cam groove relatively to the aforesaid projection affording means for determining the timing of the slide and determining the initial setting of the tool.

Still further according to the present invention there is provided a wire or strip blanking machine of the kind hereinbefore referred to, wherein the drive is transmitted to a shaft carrying an eccentric on which is mounted a sleeve having connection to a crank which in turn is connected through a universal joint to the slide, said crank being longitudinally adjustable within the aforesaid sleeve.

A convenient embodiment of the invention will now be described in its application to a construction of wire or strip blanking machine in which the tools are carried by slides adapted for reciprocation in horizontal planes.

For example, a convenient embodiment of the invention will now be described in its application to a method and means particularly suited for producing from sheet metal the small metal

parts utilized in the manufacture of switches or other components of a like sheet metal character.

In order that this invention may be clearly understood and readily carried into practice, reference may be had to the appended explanatory sheets of drawings, upon which:—

Figure 1 is a fragmentary plan view of a wire or strip blanking machine constructed according to the present invention.

Figure 2 is a transverse section taken on line 2—2 of Figure 1.

Figure 3 is a vertical sectional elevation taken on line 3—3 of Figure 2.

Figure 4 illustrates in elevation the cam groove and graduated disc hereinafter referred to.

According to the said embodiment of the invention the strip metal is drawn from a drum and positively fed in a horizontal direction through mechanism to be described hereinafter by a positive feeding means of known construction.

Perforations of the strip are effected by punches in conjunction with dies and the bending and shaping by formers in conjunction with movable tools.

The strip is passed through the cavity 1 disposed between dies or formers 2 and 3, the upper and lower edges 4 and 5 of which are inclined and seated respectively upon correspondingly inclined surfaces on the ram slide 6 and on the underside of the plate 7 which is bolted to a horizontally disposed arm 8 adjustably mounted by means of a screw 9 on an upright 10 projecting from the bed of the machine. The dies or formers 2 and 3 abut against a spacing piece 11 appropriately located by the arm 8 and bed 6 so as to enable the said dies or formers to withstand the pressure applied by the punches or tools. The openings 12 and 13 in the dies communicate on their rear side with the chute 14 by means of which the metal punched or cut out is passed to a receptacle. The dies or formers may be bolted in position or secured in any appropriate manner. The strip is positively fed through the slot 1 in a horizontal direction as previously stated.

The punches or tools which are to co-operate with the dies or formers are adjustably mounted in holders to which the requisite motion is imparted at predetermined intervals of time.

Four tools may be employed and these are timed to come into operation successively at definite intervals so that the strip is submitted to the whole of the operations necessary to give the de-

sired formation thereto in its passage through the machine.

When it is desired to adapt the machine for working with a strip of different dimensions dies and/or formers corresponding to the strip in question are employed and locked in the machine by varying the position of the adjustable arm 8 to accommodate the said dies or formers, the tools to be employed in conjunction therewith being correspondingly adjusted in their holders.

It will be appreciated that the method of forming the dies or formers and the provision of the aforementioned oppositely inclined surfaces in the bed of the machine and in the adjustable arm enable the dies or formers of varying dimensions to be accurately positioned in and firmly secured to the machine.

The means for forcing the wire or strip metal through the slot 1 is not illustrated or described, but any well known mechanism may be used, power being taken from one of the driven shafts.

14^a is a driving shaft having a pinion 15 which meshes with a pinion 16 fixed on one end of a transversely disposed shaft 17 rotatably mounted in ball races 18 in the frame of the machine. This transverse shaft 17 is formed intermediate its end with an eccentric section 19 (see particularly Figure 2) on which is freely mounted a sleeve 20, said sleeve 20 having a protuberance 21 which is internally tapped for the reception of a screw-threaded crank 22 having a ball extremity 23 and a locking nut device 24. The ball extremity 23 is adapted to operate in a cavity provided in a protuberance 25 on the ram slide 26, it being appreciated that in the operation of the apparatus the ram slide 26 is reciprocated, the connecting rod 22 providing for minute adjustment thereof. Further the sleeve 20 may be adjusted along the eccentric 19 as may be desired to suit various requirements.

A further feature of the present invention resides in the slide 27 attached to the connecting

rod 28 which is provided with a laterally projecting pin 29 carrying a roller 30, which engages with a cam groove 31 (see particularly Figure 4) internally formed in a face of a vertically disposed disc 32 which is adjustable by means of a set pin 36 upon the shaft 14^a. The outer periphery of this disc 32 is graduated and adapted to co-operate with a fixed index and it will be appreciated that by rotation of the member 32 the set of the cam groove 31 is varied and the effective stroke of the parts 28 and 27 variously adjusted. 34 is a cam which corresponds to the cam groove 31 and is engaged by a roller 35 mounted upon the pin 29.

What I claim as my invention and desire to secure by Letters Patent is:

1. A wire or strip blanking machine, comprising two superficially disposed dies or formers having an intermediate slot and inclined upper and lower edges, an upright upon the bed of the machine, a horizontally disposed arm adjustably mounted upon said upright, a plate carried by said arm engaging the upper edges of said dies or formers, an inclined face on the bed engaging the lower edges of said dies or formers, and a substantially horizontally slidable ram or punch for operating upon the strip.

2. In a wire or strip blanking machine, the combination with the bed of the machine, of an upright thereon, a horizontally disposed adjustable arm mounted on said upright, means for securing said arm in its adjusted position, a plate carried on the free end of said arm in an inclined position, two superficially disposed dies or formers having between them an intermediate slot for the introduction of the blank and having inclined upper and lower edges bearing respectively on said plate and an inclined face on said bed, a movable tool for operating on said blank, and a means for actuating said movable tool.

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