E. D. HOWARD.

CUTTER MECHANISM FOR ADDRESSING MACHINES.

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1,203,342.

Patented Oct. 31, 1916.

Fig. 1.

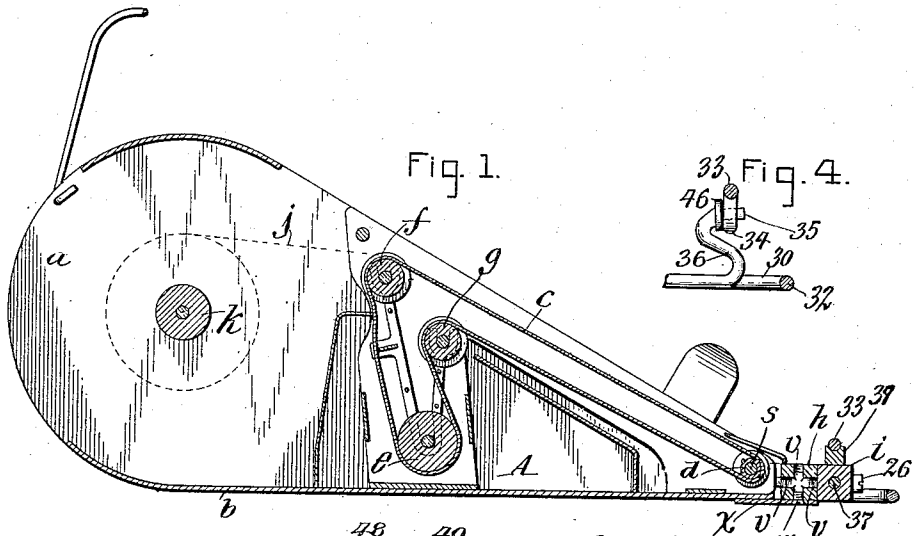


Fig. 4.

Fig. 2.

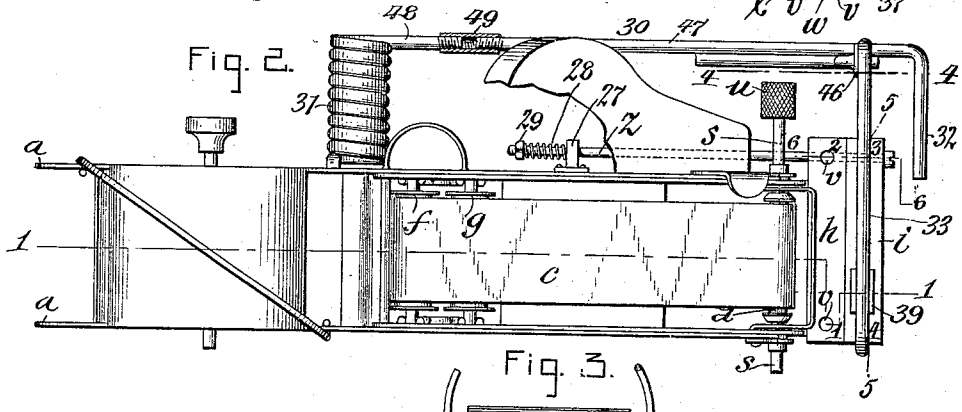


Fig. 3.

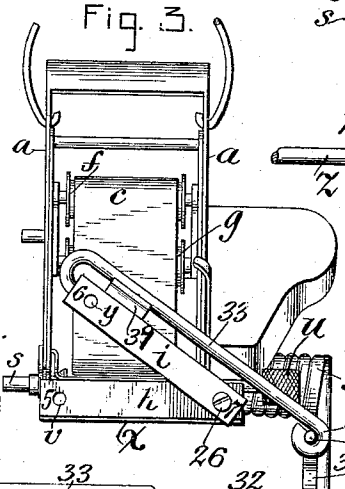


Fig. 6.

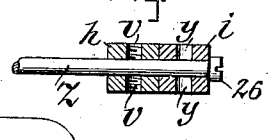


Fig. 9.

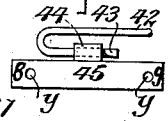


Fig. 7.

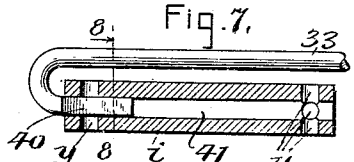


Fig. 8.

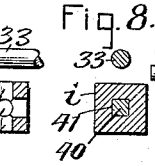
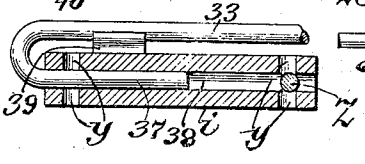


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWARD D. HOWARD, OF BUFFALO, NEW YORK.

CUTTER MECHANISM FOR ADDRESSING-MACHINES.

1,203,342. Specification of Letters Patent. Patented Oct. 31, 1916.

Application filed August 9, 1913. Serial No. 783,938.

To all whom it may concern:

Be it known that I, EDWARD D. HOWARD, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Cutter Mechanism for Addressing-Machines, of which the following is a specification.

This invention relates to a cutter mechanism which is more particularly designed for an addressing machine of that type in which a strip or band of paper bearing different addresses on successive portions thereof is placed upon a belt which is coated with paste and then moved forwardly by the latter step by step to a cutting device which operates to sever the strip or band into short sections each of which bears an address and presses the same against the article to be addressed, such as a newspaper or the like.

One object of this invention is to provide improved means for keeping the movable blade firmly in engagement with the fixed blade of the cutting mechanism.

A further object of this invention is to provide improved means for detachably connecting the operating arm with the movable cutter blade.

A still further object of this invention is to provide the cutter blades with a plurality of cutting edges so as to permit each blade to be shifted into different positions for presenting different cutting edges thereof to the working position and thereby enable the blade to be used for a longer period before grinding its cutting edges.

In the accompanying drawings: Figure 1 is a vertical longitudinal section of an addressing machine embodying my invention. Fig. 2 is a top plan view thereof, partly in section. Fig. 3 is a front elevation of the same. Fig. 4 is a fragmentary vertical longitudinal section taken in line 4—4, Fig. 2. Fig. 5 is a fragmentary vertical transverse section, on an enlarged scale, taken in line 5—5, Fig. 2. Fig. 6 is a fragmentary vertical longitudinal section, on an enlarged scale, taken in line 6—6, Fig. 2. Fig. 7 is a vertical transverse section similar to Fig. 5 but showing a modified construction of the means for connecting the operating arm with the movable cutter blade. Fig. 8 is a vertical section taken in line 8—8, Fig. 7. Fig. 9 is a fragmentary front elevation showing another form of the means for connecting the operating arm with the movable blade of the cutter mechanism.

Similar characters of reference indicate corresponding parts throughout the several views.

In its general organization this machine comprises a body or main frame having two upright longitudinal side walls *a*, *a* and a horizontal bottom plate *b* connecting the lower edges of the side walls, a paste reservoir A arranged in the frame, a paste belt *c* which has a front loop extending forwardly and a rear loop which extends downwardly into the paste reservoir, a feed roller *d* mounted on a shaft *s* journaled on the front part of the frame and receiving the front turn of the paste belt, a lower weight roller *e* around which the lower turn of the paste belt passes, an upper intermediate guide roller *f* which is engaged by the central part of the underside of the upper stretch of the paste belt, a lower intermediate roller *g* which engages with the central part of the underside of the lower stretch of the paste belt, a fixed rear cutter blade *h* mounted on the front end of the frame immediately in front of the feed roller, and a vertically swinging movable front cutter blade *i* arranged in front of the fixed blade and coöperating with the latter for producing a shearing cut on the strip or ribbon of paper *j* which is fed by the paste belt forwardly between the cutter blades. Upon turning the feed roller the paste belt is moved forwardly with its upper stretch and backwardly with its lower stretch, whereby all parts of the paste belt are successively carried downwardly around the weight roller and to the paste in the reservoir. In this manner the paste belt becomes coated with paste and deposits the same on the underside of the address strip which is unwound from the arbor *k* mounted on the rear part of the machine and passes forwardly over the paste belt in engagement therewith. At its outer or left hand end the feed shaft *s* is provided with the usual button or thumb piece *u* for turning the same manually.

The fixed and movable blades of the cutter mechanism are preferably provided with a plurality of cutting edges so as to enable different cutting edges of both blades to be associated, thereby permitting the worn edges of the same to be replaced by others which are sharp and thus enable these

blades to be used a much longer time before they have to be ground for re-sharpening the same. In the construction shown in Figs. 1, 2, 3, 5 and 6 the fixed and movable blades of the cutter mechanism are of oblong form and square in cross section so that each blade is provided with four longitudinal corners and two cutting edges or faces on the opposite side of each corner. Each of these blades is so mounted that the same can be turned about its longitudinal axis for presenting one set of four sides of its longitudinal corners successively to the opposing cutter blade and the same can also be reversed end for end and again turn successively about its longitudinal axis for presenting the other four sides of its four corners to the opposing cutter blade so that in effect eight different changes are possible with each cutter blade, each of which enables a new cutting edge to be presented. In order to thus enable both of the cutter blades to be turned about their axes and also turned end for end the rear or fixed cutter blade *h* is provided at its right and left hand ends with screw threaded openings *v* each of which extends from one side of the cutter blade to the other, the corresponding openings at one end intersecting each other and being arranged at the same distance from the adjacent end of the cutter blade as the openings at the opposite end of the cutter blade are arranged from the respective end of the blade. The fixed cutter blade rests upon a shelf projecting forwardly from the lower part of the main frame and is detachably secured thereto by means of screws *w* passing through the openings in this shelf and into the corresponding vertical openings at opposite ends of the fixed cutter blade. By this means the fixed cutter blade may be secured by means of the screws *w* in all of the different positions into which this blade may be placed by turning the same about its axis and also by reversing this cutter blade end for end.

For the purpose of enabling the operator to select the desired cutting edges or corners of the cutter blades which are to be placed in the working position each of these cutter blades is provided with a distinctive mark at each end of each side, such as numbers, as shown in the drawings, although any other suitable designation may be employed if desired. By this means the operator may know which particular cutting edges have been in use or worn and what other cutting edges are still new or unworn and therefore available for use before necessitating regrinding of the cutter blades.

The movable cutter *t* is provided at its opposite ends with pairs of openings *y*, each of these openings extending from one side of the movable blade to the opposite side and the two openings at the same end of the blade intersecting each other and being arranged the same distance from the corresponding end of the blade as the openings at the opposite end of this blade. The movable blade may be pivoted to the fixed blade by means of a pintle or rod *z* passing horizontally and lengthwise through the corresponding horizontal openings at the left hand ends of the fixed and movable cutter blades, as shown in Figs. 2, 5 and 6. By this means the movable cutter blade may also be turned about its axis and also turned end for end for presenting its different cutting edges or sides in the manner described with reference to the fixed cutter blade and still permit of pivotally mounting this movable cutter on the fixed cutter by the same pintle or pivot rod. The two cutter blades may be drawn firmly against each other for producing a clean cut upon the strip of paper which is fed between the same, one of the means for accomplishing this purpose consisting in providing the front end of the pivot rod with a head 26 which bears against the front side of the movable cutter blade while the rear part of this rod is slidingly mounted in a bracket 27 projecting laterally from the adjacent part of the frame and this rod is constantly pulled rearwardly by means of a spring 28 surrounding the pivot rod and bearing at one end against the rear side of the bracket 27 while its opposite end bears against a screw nut 29 on the pivot rod. This spring tends constantly to draw the movable cutter blade rearwardly so as to avoid any slack between the same and insure a clean cut. By tightening the screw nut 29 the tension of the spring 28 may be regulated as required to produce the required result.

Various means may be employed for producing a rocking or oscillating movement of the front blade relative to the rear blade, the means, however, which are shown in the drawings are suitable and comprise a longitudinal operating lever 30 arranged along the left hand side of the main frame and pivotally connected at its rear end with the main frame by means of a spring 31 which latter also operates to yieldingly hold the operating lever in its depressed position. At its front end the operating lever is provided with an abutment or bearing finger 32 which preferably projects laterally inward from the lever.

33 represents an operating arm which is mounted on the front or movable cutter blade and pivotally connected with the operating lever. The connection between the operating arm and lever is preferably effected by means of a pivot eye 34 arranged on the left hand or outer end of the operating arm which projects beyond the left hand side of the axis of the front cutter blade, and a pivot pin 35 secured to or formed on a

standard 36 rising from the operating lever and engaging with said pivot eye. Normally the front end of the operating lever as well as the left hand end of the operating arm relatively to the frame is depressed, thereby causing the right hand end of the operating arm and the front blade to be elevated, as shown in Fig. 3, in which position of the parts the operator is free to move the address strip forwardly between the cutter blades. Upon pressing the front end of the operating lever downwardly upon the article to be addressed by engaging the abutment finger therewith the movable cutter blade will be caused to swing downward relative to the fixed blade and sever the projection portion of the address strip and press the latter upon the article to be addressed. Inasmuch as this section of the strip has been previously coated on its underside with paste it will adhere to the article to be addressed when pressed against the same.

The connection between the right hand or inner end of the operating arm and the movable cutter blade is made detachable so as to permit this blade to be freely turned about its axis or reversed end for end as desired for presenting new cutting edges or faces of the same to the working position. In the construction shown in Figs. 1, 2, 3 and 5 for this purpose the inner or right hand end of the operating arm is provided with a reversely bent coupling shank 37 which extends downwardly and rearwardly from the operating arm and engages with the inner end of a longitudinal opening 38 extending axially through the movable cutter blade from one end thereof to the other. The coupling shank and the opening 38 are preferably cylindrical for convenience in manufacture, as shown in Figs. 1 and 5, but in order to hold the operating arm in the proper position relatively to the front cutter blade and prevent this arm from tipping transversely relatively thereto a stop device is provided which may consist of a stop block 39 secured to the underside of the inner part of the operating arm and provided with a flat underside which engages with the upper side of the movable blade. This means of connecting the operating arm with the movable cutter blade permits the latter to be turned about its axis into different positions and also enables the movable blade to be reversed end for end so that either end of the longitudinal opening 38 may be engaged with the coupling shank as desired.

Instead of employing the stop block for preventing the operating arm from becoming displaced transversely relatively to the movable blade this may be accomplished by the means which are shown in Figs. 7 and 8 and which consist in making the coupling shank 40 of the operating arm square in cross section and engaging the same with either end of a corresponding shaped coupling opening 41 extending lengthwise through the central part of the movable cutter blade. In case it is not desired to utilize all of the several edges or faces of the movable cutter blade the operating arm 42 may be provided at its free or right hand end with a reversely or downwardly and rearwardly bent shank 43 which engages removably with an eye 44 arranged on the upper side of the central part of the movable cutter blade 45, as shown in Fig. 9. In such a construction the cutter blade can only be reversed end for end on the operating arm and only the cutting edges, faces or sides adjacent to the front and rear lower corners of this blade are available for use.

In the use of a machine of this character the free or right hand end of the movable blade is liable to spring away forwardly from the rear or fixed cutter blade and thereby produce an imperfect cut of the address strip. In order to overcome this means are provided which will cause the free end of the movable cutter blade to bear closely against the rear cutter blade. To accomplish this purpose the pivot pin 35 is arranged at an angle relatively to the operating arm so that it rises from its rear end toward its front end and the same is provided with an inclined collar or shoulder 46 on its rear part which engages with the rear side of the eye on the operating arm. By this means the pivot pin and shoulder upon moving upwardly with the outer end of the operating arm at the same time produce a forward pressure of this outer end of the operating arm whereby the inner end of this arm together with the corresponding end of the movable cutter blade is pressed backwardly toward the rear fixed blade. Any looseness between the free inner ends of the cutter blades is also taken up by dividing the operating lever into sections 47, 48 and connecting the opposing ends of these sections by means of a right and left hand threaded coupling sleeve or turn buckle 49 engaging with corresponding threads on the opposing ends of the operating lever sections. Whenever any looseness occurs between the movable cutter blade and the fixed cutter blade the operating lever may be elongated by turning the adjusting sleeve in the proper direction, thereby pushing the left hand end of the operating arm forwardly and causing its right hand end to be pressed rearwardly with the movable cutter blade toward the fixed blade.

It will now be evident that by this manner of constructing the cutter blades and holding the same in their proper operative position the machine will always be maintained in the highest state of efficiency for a long time before requiring repairs. Furthermore,

these improvements while adding very materially to the convenience with which the machine may be operated and to the output of the same do not materially increase the cost thereof. Moreover, none of the parts are of delicate construction but are strong and durable and therefore not liable to get out of order.

I claim as my invention:

1. A cutter mechanism comprising a frame, a rear blade which is square in cross section and which is provided at each end with intersecting openings, a shelf projecting forwardly from the frame and provided at opposite ends with openings, screws securing said rear blade to said shelf and passing through the openings of the latter and corresponding openings in the rear blade, a front blade which coöperates with the rear blade and which is square in cross section and is provided at each end with intersecting openings, and a pivot pin or rod adapted to pass through one or another corresponding pair of openings in the ends of said blades for pivotally connecting the same.

2. A cutter mechanism comprising a frame, a rear blade fixed on said frame, a front blade pivoted to swing vertically and coöperating with said rear blade, and means for operating the movable blade comprising a rock arm arranged above the movable blade and having a reversely bent shank engaging with a longitudinal opening in the end of said front blade, and means for holding said arm and front blade in position relatively to each other.

3. A cutter mechanism comprising a frame, a rear blade fixed on said frame, a front blade pivoted to swing vertically and coöperating with said rear blade, and means for operating the movable blade comprising a rock arm arranged above the movable blade and having a reversely bent shank engaging with a longitudinal opening in the end of said front blade and means for holding said arm and front blade in position relatively to each other comprising a stop block secured to the underside of said arm and engaging with the upper side of said front blade.

4. A cutter mechanism comprising a frame, a fixed rear blade, a rocking front blade pivoted on the rear blade, an operating arm secured at its inner end to said front blade and having an eye at its outer end, and an operating lever mounted at its rear end on said frame and provided on its front part with a pivot pin which is arranged at an angle to said lever and engages with said eye.

5. A cutter mechanism comprising a frame, a fixed rear blade, a rocking front blade pivoted on the rear blade, an operating arm secured at its inner end to said front blade, an operating lever having a front section which is pivotally connected with said arm, a rear section mounted on said frame, and means for adjustably connecting said sections.

6. A cutter mechanism comprising a frame, a fixed rear blade, a rocking front blade pivoted on the rear blade, an operating arm secured at its inner end to said front blade, an operating lever having a front section which is pivotally connected with said arm, a rear section mounted on said frame, and means for adjustably connecting said sections comprising a right and left hand threaded adjusting sleeve engaging with corresponding threads on the opposing ends of said lever sections.

Witness my hand this 7th day of August, 1913.

EDWARD D. HOWARD.

Witnesses:
THEO. L. POPP,
ANNA HEIGIS.

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