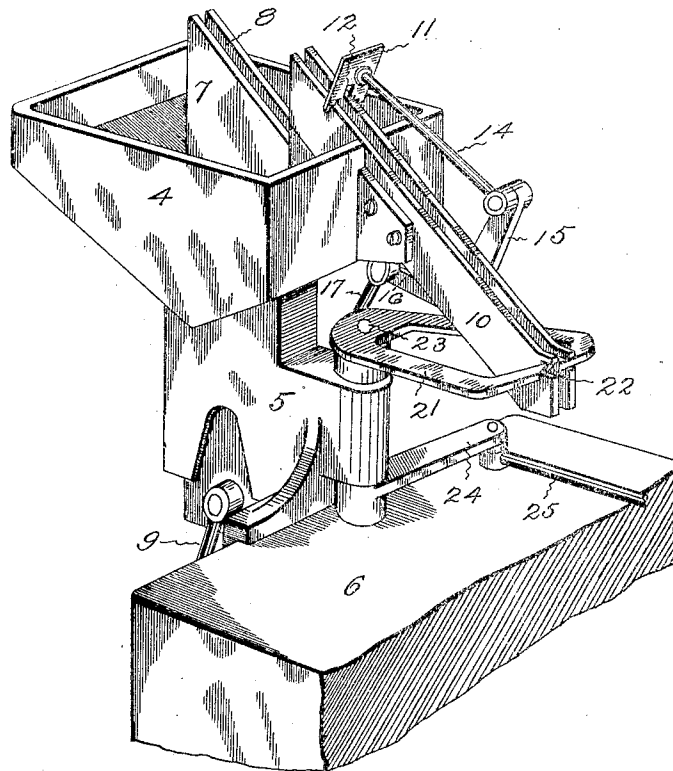


A. C. CAMPBELL.
BLANK FEED MECHANISM.
APPLICATION FILED FEB. 3, 1910.

959,918.

Patented May 31, 1910.
2 SHEETS—SHEET 1.

Fig. 1



Witnesses:

Howard L. Holcomb
Josephine M. Stremper

Inventor:

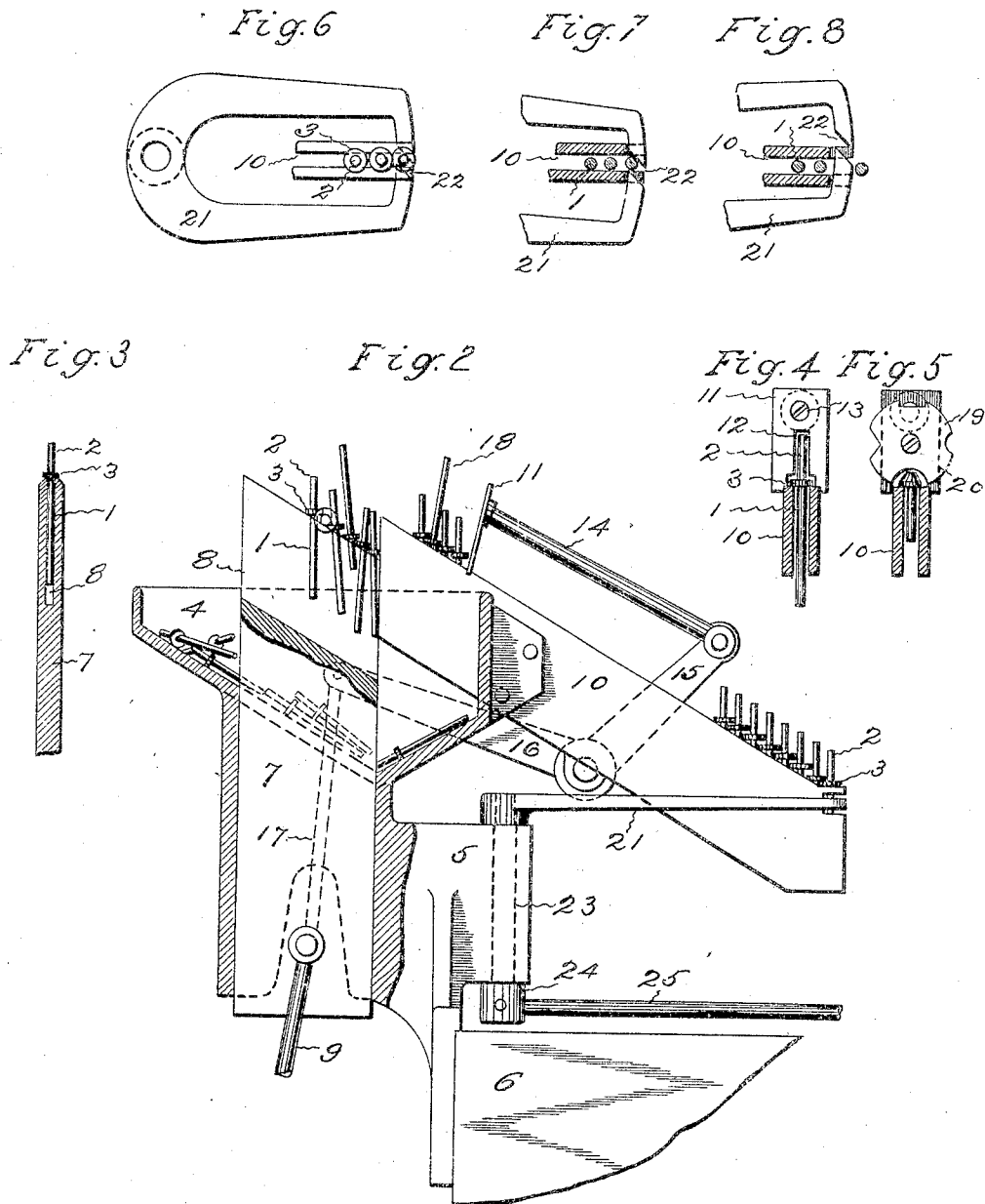
Andrew T. Campbell, by
Harry P. Williams
att

A. C. CAMPBELL.
BLANK FEED MECHANISM.
APPLICATION FILED FEB. 3, 1910.

959,918.

Patented May 31, 1910.

2 SHEETS—SHEET 2.



Witnesses:

Howard I. Holcomb
Josephine M. Strempper.

Inventor:

Andrew C. Campbell, by
Harry P. Williams att.

UNITED STATES PATENT OFFICE

ANDREW C. CAMPBELL, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE E. J. MANVILLE MACHINE COMPANY, OF WATERBURY, CONNECTICUT, A CORPORATION OF CONNECTICUT.

BLANK-FEED MECHANISM.

959,918.*

Specification of Letters Patent.

Patented May 31, 1910.

Original application filed April 23, 1909, Serial No. 492,695. Divided and this application filed February 3, 1910. Serial No. 541,699.

To all whom it may concern:

Be it known that I, ANDREW C. CAMPBELL, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Blank-Feed Mechanism, of which the following is a specification.

This invention relates to a mechanism for automatically feeding metal blanks from a mass to a heading or re-heading machine, and it is particularly applicable for feeding blanks which have been previously, in another machine, upset or swaged and provided between their ends with collars or enlarged sections.

In heading machines it is necessary that the blanks be carried into line with the punch and dies with the proper ends forward, and to insure this the blanks must all be passed down by the feeding mechanism with the correct ends uppermost.

The object of this invention is to provide an automatic mechanism which will take blanks from a promiscuous mass and rapidly feed them to a transfer mechanism, all properly arranged, to be correctly delivered to the heading mechanism, and which will return to the mass in the hopper such blanks as are not presented in the proper manner, that is, those blanks which are not right end up.

Figure 1 of the accompanying drawings shows a perspective view of an automatic feed mechanism which embodies this invention, applied to the end of the bed of a heading machine. Fig. 2 shows a side elevation of the feed mechanism, with the hopper cut in section. Fig. 3 shows a vertical section of the elevator which is arranged in the hopper to lift the blanks into line with the feed track. Fig. 4 shows a section of the feed track and a front view of a comb which permits only those blanks to pass down the track which are the correct end up. Fig. 5 shows a section of the track with a modified form of comb. Fig. 6 shows a plan of the lower end of the feed track and a cut-off which may be used in connection therewith. Fig. 7 shows the ends of the cut-off and a section of the end of the track in a different relation. Fig. 8 shows a similar view with the parts in a still different relation.

The invention is illustrated in the form of a mechanism which is designed to automatically feed hinge pin blanks to a heading machine. Such blanks are previously upset so as to form collars or enlarged sections between the ends. These blanks thus formed are then passed into the header which upsets the proper ends and forms the usual ball shaped heads. It is necessary that these blanks pass down the feed track in such manner that the proper ends will be headed. This invention insures the feeding of the blanks in the correct manner. The blanks which are illustrated, have long sections 1, which form the hinge pins, short sections 2, from which the ball shaped heads are made, and collars or enlargements 3 between these sections. These blanks are deposited in a promiscuous mass in a hopper 4 of any desired size and shape. The hopper shown is supported by a bracket 5 that is attached to the end of the bed 6 of a heading machine. Movable vertically through an opening in the bottom of the hopper is an elevator plate 7, which has a groove 8 in its upper end. This elevator is raised and lowered by means of a rod 9 that may be connected with any operating part of the machine. When the elevator is down, its upper edge is practically flush with the inner face of the bottom of the hopper. When the elevator is lifted, it catches and carries up a few of the blanks. At its uppermost position, the upper edge of the elevator plate forms a continuation of the upper edge of the plates that form the inclined track 10. These plates are secured to the front side of the hopper. The upper end of this track projects into the hopper to the plane of the front edge of the elevator, while the lower end of the track extends out over the bed of the machine.

The blanks are lifted by the elevator in all conceivable positions, some standing with the short ends up, as is desired, some with the long ends up, and others lying crosswise, as shown in Fig. 2. These blanks slide from the elevator down the track, hanging by the collars or enlarged sections. As it is necessary that all should pass down the track right end up, a gate or comb 11 with an opening 12 that will only permit the passage through it of the blanks which are properly positioned, is arranged adjacent to

the upper surface of the track. This comb is shown as fastened by a screw 13 to a stem 14, that is hinged to the end 15 of an angle lever. This lever is pivotally attached to the track, and its other end 16 is connected by a rod 17 with the elevator.

Blanks which are properly positioned will slide down the track through the opening provided in the comb. Such blanks as are not properly positioned, for instance, if wrong end up, as is blank 18 shown in Fig. 2, cannot pass through the opening in the comb, and are consequently retained thereby. When the elevator is lowered for getting another supply of blanks to be lifted to the top of the track, the comb is, by the rod and lever, moved up along the edge of the track and pushes the blank which it has detained and all those above it, off the end of the track into the hopper. When the elevator is lifted with its load of blanks, the comb is retracted to its lower position. The comb may have an opening of any desired shape, depending upon the shape of the heads of the blanks which are to be fed down the track. In case the blanks are for hinge pins, the opening in the comb will be shaped approximately as that shown in Fig. 4. If desired, the comb plate may be provided with a number of openings in its periphery, each having a different shape, as has the comb 19 shown in Fig. 5. This comb plate may be held by a central pivot screw 20, which when loosened will permit the comb to be rotated so that any of the openings may be arranged above the edge of the track.

At the lower end of the track is a cut-off. In the form of feeding mechanism illustrated, the cut-off is in the form of a yoke 21 with an oblique opening 22 in its front end. This yoke is mounted on a rocker shaft 23 which is held by the bracket that supports the hopper. This rocker shaft has a rocker arm 24, that is oscillated by a rod 25 that may be actuated by any suitable part of the mechanism of the heading machine. When the cut-off is in one position, its ends obstruct the lower end of the feed track and prevent blanks from passing therefrom. When the cut-off is moved in another position, the lowest blank is forced by the walls of the oblique slot out of the track, the remaining blanks being held in the track

by one part of the cut-off. The transfer mechanism which receives the blanks as they are forced out of the track by the cut-off is not illustrated herein, as it forms no part of the present invention.

This application is a division of my application No. 492,695, filed April 28, 1909, which application shows one form of transfer mechanism that may be used for carrying blanks delivered by this feed mechanism into line with the punch and dies of a heading machine.

The invention claimed is:

1. A mechanism for feeding blanks having a hopper, a track leading from the hopper, and a clearance comb movable along the upper edge of the track toward and from the receiving end thereof.

2. A mechanism for feeding blanks having a hopper, a track leading from the hopper, a clearance comb movable adjacent to the edge of the track toward and from the receiving end, and an oscillatory cut-off movable across the delivery end of the track.

3. A mechanism for feeding blanks having a hopper, a track leading from the hopper, a clearance comb movable adjacent to the edge of the track toward and from the receiving end, and a cut-off movable across the delivery end of the track.

4. A mechanism for feeding blanks having a hopper, a track leading from the hopper, and an adjustable clearance comb movable along the edge of the track toward and from the receiving end hereof.

5. A mechanism for feeding blanks having a hopper, an inclined track leading from the hopper, a clearance comb movable toward and from the receiving end of the track along its upper edge, and a cut-off movable across the delivery end of the track.

6. A mechanism for feeding blanks having a hopper, an elevator for lifting blanks in the hopper, a track leading from the hopper, a clearance comb movable toward and from the receiving end of the track along its upper edge, and a connection between the comb and the elevator, whereby the elevator and comb move synchronously.

ANDREW C. CAMPBELL.

Witnesses:

JAMES J. CAFFEY,
N. W. CUMMINS.