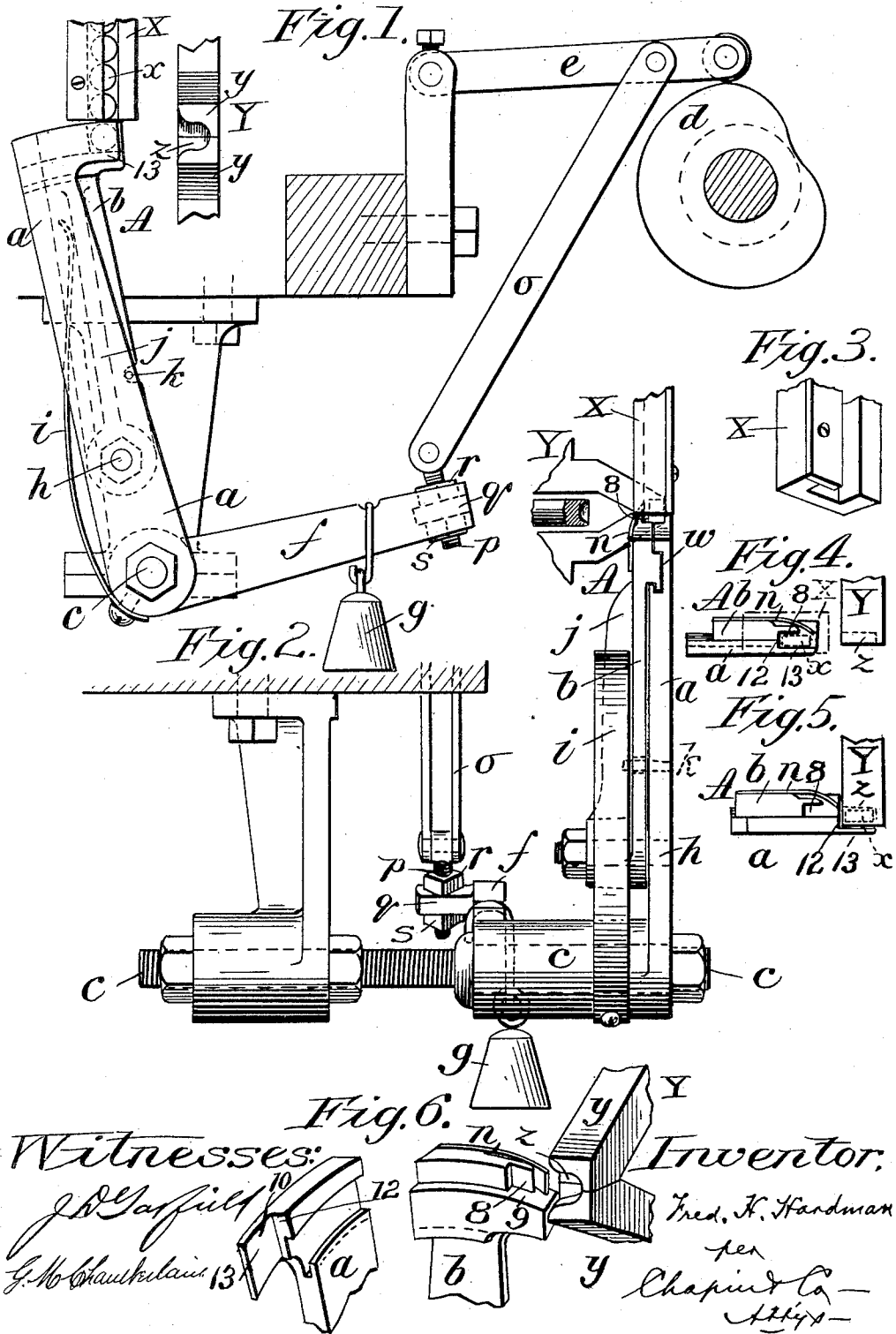


(No Model.)

F. H. HARDMAN.
BLANK CONVEYER.

No. 477,116.

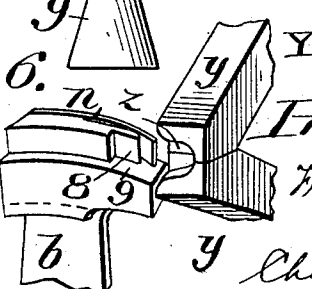
Patented June 14, 1892.



Witnesses:

J. B. Garfield
G. M. Schuchman

Fig. 6.



Inventor:

Fred. H. Hardman.
per
Chapman & Co.
Attys.

UNITED STATES PATENT OFFICE.

FRED. H. HARDMAN, OF BEVERLY, ASSIGNOR TO WALTER E. BENNETT, OF BOSTON, MASSACHUSETTS.

BLANK-CONVEYER.

SPECIFICATION forming part of Letters Patent No. 477,116, dated June 14, 1892.

Application filed August 21, 1891. Serial No. 403,369. (No model.)

To all whom it may concern:

Be it known that I, FRED. H. HARDMAN, a citizen of the United States, residing at Beverly in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Blank-Conveyers, of which the following is a specification.

The object of this invention is to provide improved devices for the reception of blanks or small articles of uniform shape, whether of disk or plinth form, spherical, or otherwise, from a guide-chute and for the conveyance of the blanks or articles for delivery at a receiver or holder therefor, at which receiver or holder the blanks are acted upon by automatic machinery for whatever purpose is expedient, according to the nature of the product which in whole or in part may be composed by the blanks.

The mechanism of this invention has been particularly designed for use in button-making machinery for receiving the blanks from the guide-chute and conveying and delivering them to a suitable receiver or holder which supports them momentarily until they are acted upon by the button-head-forming dies in conjunction with the eye-shank mechanism.

The invention consists in a conveyer mechanism embodying instrumentalities or constructions and combinations of parts, all substantially as will hereinafter more fully appear, and be set forth in the claims.

Referring to the accompanying drawings, in which the present improvements are illustrated, Figure 1 is a side elevation of the conveyer mechanism, and Fig. 2 is an elevation of the same as seen at right angles to Fig. 1. Fig. 3 is a perspective view of a portion of the chute. Figs. 4 and 5 are plan views of parts of the conveyer shown as in different relations to each other and to the part to which the blank is conveyed, and Fig. 6 is a dissected perspective view of the parts shown in Figs. 4 and 5.

In the drawings, X represents the lower portion of the vertical guide-chute down through which the disks or blanks *x* are guided, and Y indicates the part of the mechanism which constitutes the receiver or holder to which the blanks are delivered by the conveyer mech-

anism of this invention, the said receiver being formed with jaws *y y*, having therein the receiving-pocket *z*.

A indicates the conveyer, which will now be particularly or in detail described. The said conveyer comprises two lever-arms *a* and *b*, the former being one member of an elbow-lever pivoted as at *c* to a fixed support and adapted to have a rocking movement in a vertical plane, such movement being secured in the one direction by the cam *d*, acting upon the cam-lever *e*, which is linked to the arm *f* of the said elbow-lever. The weight *g* insures the rocking movement of the elbow-lever in the other direction. The arm *b* is pivoted on the side of the arm *e*, as at *h*, and the extremities of both of said arms are interlocked by a dovetailed or rib-and-groove way engagement, as particularly noted in Fig. 2 at *w*, so that the outer extremities of the arms *a* and *b* may be held closely the one on the other during the movement of the one relative to the other, as is possible under the operations to be hereinafter described.

A spring *i* is applied between the hub of the lever-arm *a* and the web *j*, which is formed on the side of the arm *b*, so as to maintain the said arm *b* against the stop *k*, projected from the side of the arm *a* across the plane of movement of the other arm. The upper ends of both arms *a b* terminate in the even surface, which is slightly curved, as an arc struck from the center of swinging movement *c*, and said upper end lies and has its movement closely under the lower end of the guide-chute. It will be particularly noted that the upper end portion of the arm *b* is formed with an angular niche 8, which is open toward its forward end and is provided with the base 9, which is extended laterally, as particularly seen in Fig. 6. The extremity of arm *a* is also provided with a niche 10, constituted by the rear shoulder 12 and the side lip 13, the said niche being without base or open at its bottom as well as its top. The normal relations of the peculiarly-formed extremities of the arms are indicated in the plan view, Fig. 4, such relations being by the spring *i* maintained at the time that the parts are, as indicated in Fig. 1, under the chute to receive a blank into the

pocket constituted by the then opposed niches of both of said arms. It will be noticed that the said pocket constituted by the said niches is of a width to receive one of the blank disks *x* therein and is open forwardly, the spring-finger *m* being provided on the rear side of the arm *b* to project forwardly and inwardly, as shown, to form a guard or retaining device against the displacement accidentally of the blank from the pocket in the conveyer and yet to constitute no substantial impediment to the expulsion of the blank from the conveyer into the receiver-pocket *z*, which, as clearly indicated in the drawings, is in a plane coincident with that of the conveyer-pocket and of the swinging movement of the conveyer.

The operation will be now clearly understood, for it will be seen that the cam, acting to swing lever-arm *f* downwardly, will throw the lever-arm *a* forwardly and with it the arm *b* for the greater portion of its movement; but it will be noticed that the forward end or nose of the extremity of arm *b* is in the line of the receiver *Y*, while the lip 13 at the extremity of arm *a* is to one side of the end face of said receiver, the shoulder 12 only being extended inwardly across the plane coincident with the end of the receiver. Therefore before the arm *a* has completed its forwardly-swinging movement the arm *b* will come to an abutment against the receiver adjacent the pocket *z* thereof, when the arm *a*, completing its forward movement, (assuming the position relatively to the one *b* indicated in Fig. 5,) will by its shoulder 12 force the blank forwardly, rolling it along on the base-ledge 9, under the pocket, into the conveyer, and into the pocket in the receiver. The arm *a* having retraced its movement partially, the spring-pressed arm *b* resumes its normal position relative to the one *a*, re-establishing the pocket, which is brought on the completion of the return swing of the conveyer under the chute-way. The extremities of the arms *a b* have such an extent from the front to the rear or in the line of the movement of said parts as to constitute an effectual guard against the undue passage of blanks from the chute at the time the conveyer is moving to deliver a blank. The connection between the lever-arm *f* and the link *o*, which connects said arm with the cam-lever *e*, is adjustable, whereby the throw of the elbow-lever may be slightly varied, so that the shoulder 12 may be brought close to but without violent contact with the side of the receiver *Y*, and such connection is made by the eyebolt *p*, to which one end of the link *o* is pivoted, which bolt by its shank passes loosely through a lug *q* of the lever-arm *f* and receives nuts *r* and *s* above and below the lug. The

adjustment is made by loosening the one nut and turning upon the other.

What I claim as my invention is—

1. The combination, with the chute, of a conveyer consisting of a primary member *a* and another member mounted thereon for a movement therewith and also for a movement independently thereof, a pocket in the top of the conveyer, the walls of which are formed by portions of the said members, a stop for limiting the extent of movement of one of said members, whereby the other member in its continued movement advances the rear wall of the pocket constituted thereby for the expulsion of the blank, and means for moving the one member into its normal or pocket-forming relation with the one carrying it on the return movement of the conveyer, and means for imparting a forward-and-backward movement to the primary member, substantially as described.

2. In a conveyer for the purpose substantially as described, the combination, with the arm *a*, adapted to move forward and back, of the arm *b*, mounted thereon, substantially as described, and adapted to move as one with the arm *a* and also to have a limited movement independently with relation thereto parallel with the plane of movement of said arm *a*, the arm *b* being provided in its extremity with the niche 8 and the base-ledge 9 and the arm *a* having the niche constituted by the side lip 13 and rear shoulder 12, and the spring for normally maintaining both arms in their pocket, constituting relations for the purpose set forth.

3. The combination, with a conveyer consisting of the arm *a* and the arm *b*, pivoted on the side thereof, and the spring *i*, and a stop *k*, the arm *b*, having in its upper end the niche 8, with the laterally-extended base 9, and the arm *a*, having the rear shoulder 12 and side lip 13, the spring-finger *n*, applied on the arm *b*, substantially as described, of a receiver adapted to constitute a stop for the movement of the arm *b*, substantially as described.

4. The conveyer comprising the arms *a* and *b*, connected and comprising the pocket, substantially as described, combined with the angular arm *f*, connected to said arm *a*, and the cam *d*, and cam-lever *e*, the link connected to said cam-lever and having an adjustable connection with said arm *f*, substantially as and for the purpose set forth.

FRED. H. HARDMAN.

Witnesses:

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M. A. BIGELOW.