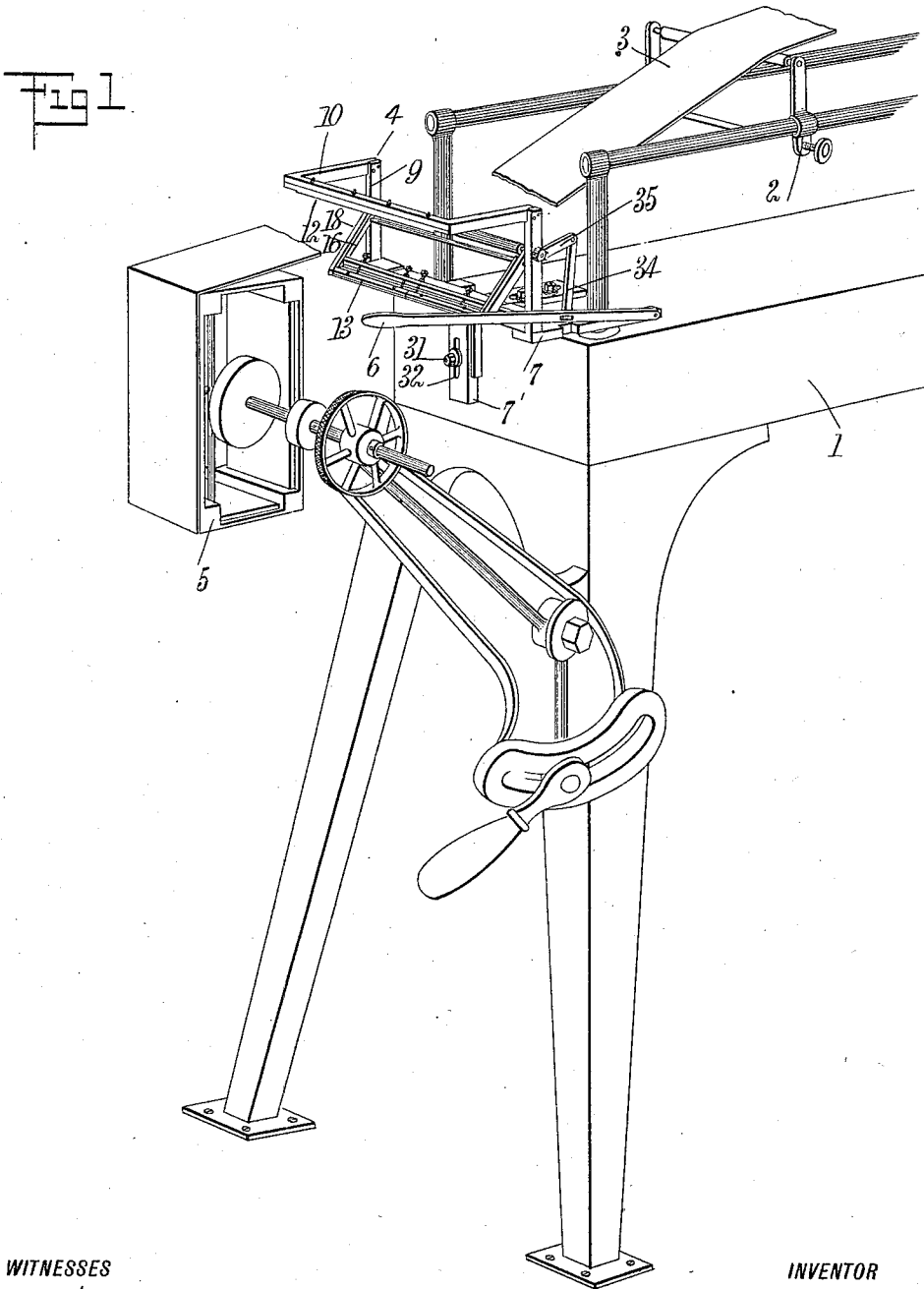


A. BELL.
CUT-OFF FOR BOX COVERING MACHINES.
APPLICATION FILED JAN. 23, 1912.

1,041,409.

Patented Oct. 15, 1912.

3 SHEETS-SHEET 1.



WITNESSES

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A. J. Kitchen

INVENTOR

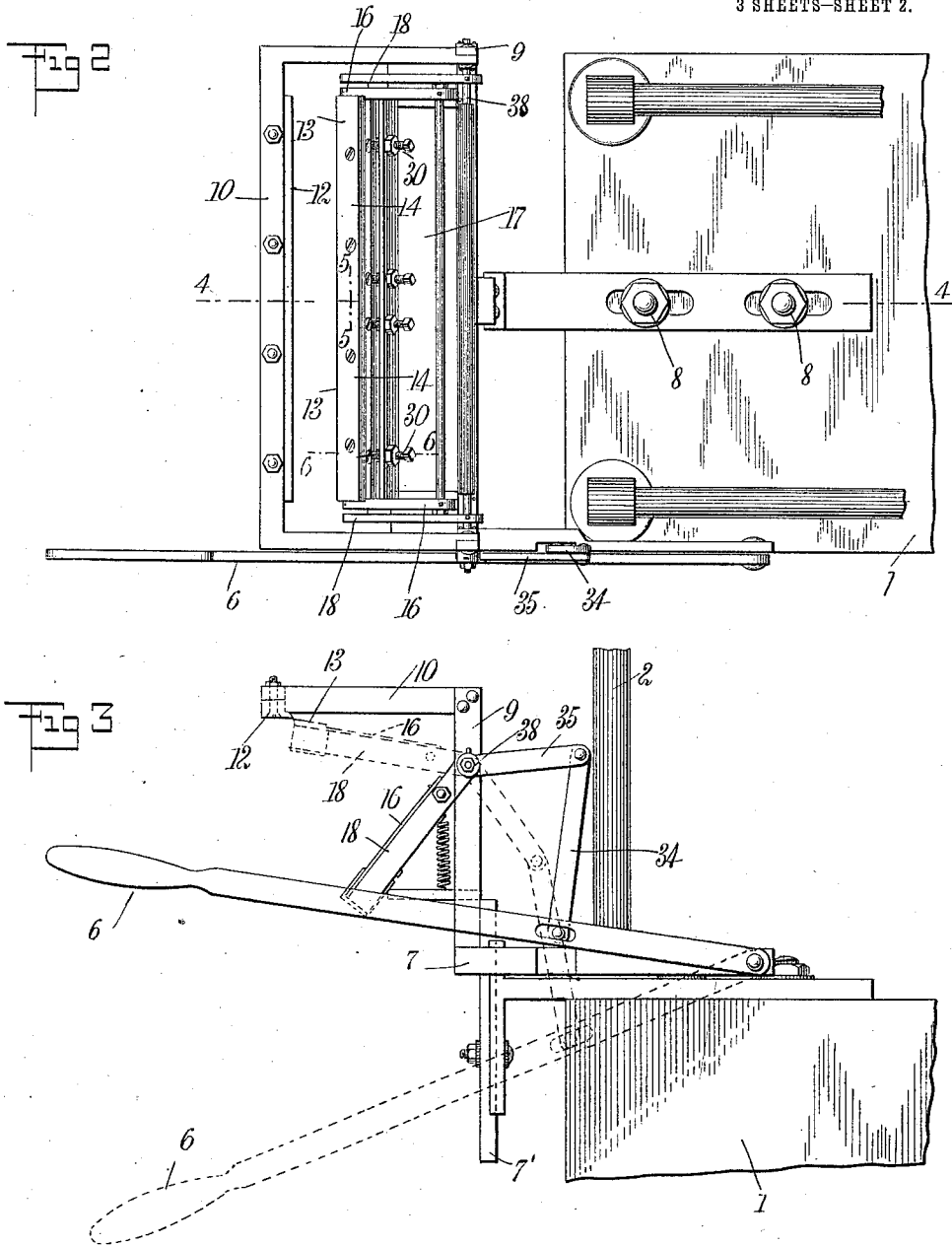
Arthur Bell
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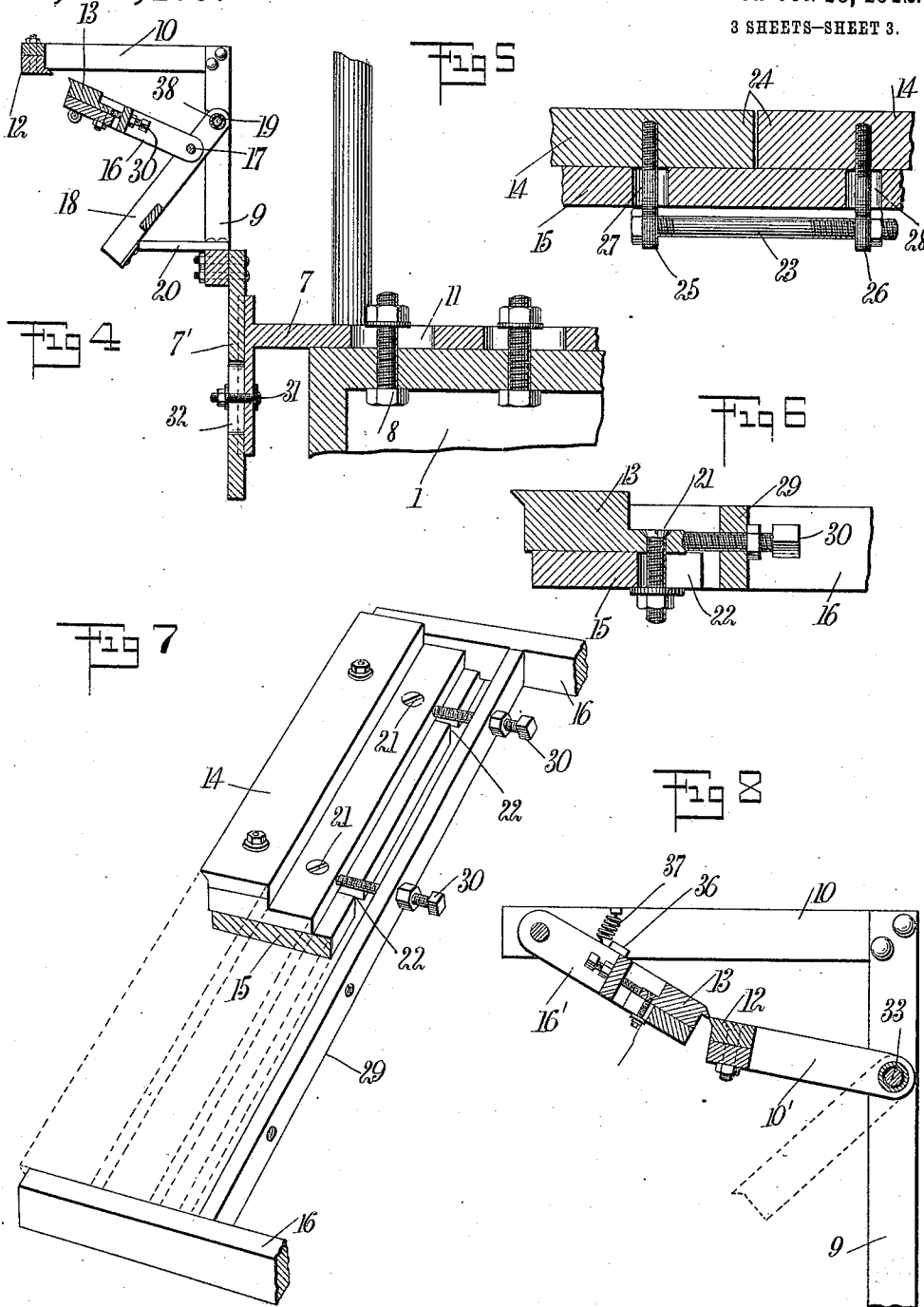
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

ARTHUR BELL, OF JERSEY CITY, NEW JERSEY.

CUT-OFF FOR BOX-COVERING MACHINES.

1,041,409.

Specification of Letters Patent.

Patented Oct. 15, 1912.

Application filed January 23, 1912. Serial No. 672,809.

To all whom it may concern:

Be it known that I, ARTHUR BELL, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Cut-Off for Box-Covering Machines, of which the following is a full, clear, and exact description.

This invention relates to improvements in cut offs for box covering machines or the like, and has for an object the provision of an improved structure whereby the cutting knife will automatically disengage itself and when worn may be adjusted for presenting a substantially even cutting surface.

Another object of the invention is to provide a knife formed in a plurality of sections arranged in a frame associated with adjusting devices designed to adjust the sections as desired for taking up any wear.

A still further object of the invention is to provide an improved cut off structure which may be operated in the usual manner, but will automatically disengage itself by a substantially backward movement of the knife when necessary.

In carrying out the objects of the invention, a supporting frame of any desired kind is provided which is connected to a box covering machine or the like. A stationary knife is held by the frame in position for properly co-acting with a pivotally mounted knife held on a pivotal frame actuated by suitable power means. The pivotally mounted knife is freely pivoted on the pivotally mounted frame so that when the pivotally mounted frame is raised the pivotally mounted knife will engage the stationary knife and in case the knives catch and stick together, the pivotally mounted frame will move downward in the usual manner and cause a withdrawing or backward movement of the pivotally mounted knife whereby the same is quickly disengaged. In forming the pivotally mounted knife the same is formed in a plurality of sections and associated with adjusting members whereby the various sections may be adjusted as desired for presenting proper cutting surfaces to the stationary knife, and thus take up the usual wear and tear.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of one end of a box covering machine with an embodiment of the invention applied thereto, the wrapping paper being broken away for better illustrating the construction; Fig. 2 is an enlarged top plan view of the structure shown in Fig. 1, the paper and box holder being removed; Fig. 3 is a side view of the structure shown in Fig. 2; Fig. 4 is a section through Fig. 2 approximately on the line 4—4; Fig. 5 is an enlarged detail fragmentary sectional view approximately on the line 5—5 of Fig. 2; Fig. 6 is an enlarged fragmentary sectional view approximately on the line 6—6 of Fig. 2; Fig. 7 is an enlarged detail fragmentary perspective view showing part of the swinging knife holder with one of the knives in position; and Fig. 8 is a view similar to Fig. 4, except that the same shows a slightly modified form of the invention.

Referring to the accompanying drawings by numerals, 1 indicates the supporting framework of a box covering machine, and 2 the paper guiding means which is adapted to guide the gummed paper 3 to the cut off 4, from which it passes to the box covering device 5. After a sufficient quantity of paper 3 has been wrapped around the box positioned on the frame 5, the handle 6 of the cut off is operated and the knives of the cut off will sever the paper.

The cut off 4, as clearly shown in Figs. 2 to 7 inclusive, is formed with a frame comprising a supporting base 7 secured in place by bolts 8, a pair of uprights 9, and an upper rigid frame 10. The base 7 is provided with slots 11 for accommodating the bolts 8 so that the cut off may be adjusted toward and from the supporting member 1. Rigidly secured to the outer edge of the frame 10 is a knife 12 which is preferably made integral throughout. The knife 12 is designed to co-act with a knife 13, as shown in dotted lines in Fig. 3, whereby the paper 3 may be severed. The knife 13 is formed into a plurality of sections 14, the drawing showing only two sections, but it will be evident that more than two sections may be used if desired.

The sections 14 are mounted upon a supporting bar 15 rigidly connected with a swinging knife support 16 that is pivotally mounted at 17 to a swinging frame 18 pivotally mounted at 19 to the uprights 9. The frame 18 is provided with a rest 20 for

limiting its downward movement so that it may hold the pivotally mounted knife support 16 in proper position for operation. Each of the sections 14 of the knife 13 is designed to be moved back and forth as desired longitudinally and laterally for providing any desired adjustment. In order to hold the sections 14 in place and yet permit an adjustment longitudinally of their length, belts 21 are passed through the sections and through slots 22 in the supporting bar 15. A suitable washer or nut is provided on the lower end of the bolts 21 for clamping the same tightly in position for preventing movement unless the same is desired. The slots 22 are adapted to permit a transverse movement of the sections 14 to a considerable degree, but usually only a slight movement longitudinally of the sections. The longitudinal movement of the sections 14 is provided so that the bolt 23 (Fig. 5) may draw the ends 24 of the sections tightly together. The bolt 23 is passed through eyelets 25 and 26 screwed into the respective abutting sections 13, and then passed through apertures 27 and 28 formed in the supporting bar 15.

A bracing bar 29 is connected with the knife support 16 and carries a plurality of set screws or bolts 30 designed to bear against the rear of the sections 14. Preferably there are a plurality of the screws 30 arranged opposite each section 14 so that the sections may be adjusted independently for taking up any wear on any part of the sections. The wear usually occurs in the center of the cut off 4 so that an adjustment of the inner ends of the sections 14 is desired before the bodily forward movement of the knife 13 is desirable. A locking nut may be provided for each of the set screws 30 for positively locking the same against movement after the same have been once adjusted.

The base 7 is slidably connected to an extension 7' by means of a bolt 31 fitting into a slot 32 so that the uprights 9 may be adjusted vertically as occasion may require.

In Fig. 8 will be disclosed a slightly modified form of the invention in which similar reference characters will be used for similar parts, and additional reference characters used for additional parts. Referring more particularly to this view, it will be seen that both of the knives 12 and 13 are carried by pivotally mounted supports 16' and 10'. The support 10' is rigidly connected with a shaft 33 to which any desired means is connected for properly swinging the frame back and forth, as for instance the lever 6, link 34, and arm 35 shown in Fig. 1 of the preferred structure. In the modified structure the knife 12 is preferably formed of one piece, while the knife 13 is constructed in a plurality of sections, as heretofore de-

scribed. The support 16' is normally held against a stop 36 by a spring 37 so that the knife 13 will be in proper position for engagement by the knife 12. In case the knives should interlock or stick together, the weight of the knife 12 and its supporting frame 10 will cause the knife support 16' to move down pivotally against the action of the spring 37 and thus release the knife 12. Immediately upon the releasing of the knife 12 the knife support 16' will move back to its original position shown in Fig. 8.

In operation of the preferred form, the paper 3 is drawn through the cut off 4 until a sufficient quantity is secured, and then the lever 6 is depressed. The movement of the lever 6 will cause the link 34 to pull downward the arm 35 which is rigidly secured to a shaft 38. The frame 18 is rigidly secured to the shaft 38 so that upon a downward movement of the lever 6 the pivotally mounted frame 18, the knife 13, and its pivotal support, will be moved up pivotally to the dotted position shown in Fig. 3, which will result in the severing of the paper 3. Upon the release of the lever 6, the frame 18 and parts supported thereby will immediately move downward pivotally. If for any reason the knife 13 should stick to the knife 12 the frame 18 will move downward independently of the pivotally mounted knife support 16, but in this movement will withdraw or move backwardly the pivotally mounted knife support 16 and with it the knife 13, as shown in Fig. 4. This will cause a positive disengagement of the knives whereupon the knife support will fall to its usual position in the frame 18. After the machine has been operated for some time the center of the knife 13 will become worn and in order to cause the knives to properly operate the sections 14 of the knife 13 will be adjusted so that the edge will properly rest with the edge of the knife 12. Of course the knives may be removed and sharpened, or replaced by new ones whenever desired. The replacing by new ones need not be done until the knives have practically worn out as the cutting edge may be continually caused to be positioned in a proper place.

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

1. In a cut off for box covering machines and the like, a stationary knife, a pivotally mounted knife, a pivotally mounted frame carrying said pivotally mounted knife designed to be moved downwardly pivotally independent of said pivotally mounted knife whereby said pivotally mounted knife is given a rearward movement directly away from said stationary knife for disengaging the knives, and means for op-

erating said pivotally mounted frame for forcing said pivotally mounted knife past said stationary knife.

2. In a cut off for box covering machines and the like, a framework, a pivotally mounted frame mounted on said framework, means connected to said pivotally mounted frame for actuating the same, a pivotally mounted knife holder mounted on said pivotally mounted frame, a knife connected to said pivotally mounted knife holder, and a stationary knife co-acting with said pivotally mounted knife, said pivotally mounted frame being designed to move downward pivotally independent of said pivotally mounted knife holder whereby said pivotally mounted knife holder will be drawn to the rear longitudinally for disengaging said knives.

3. In a cut off for box covering machines and the like, a supporting framework, a pivotally mounted frame connected with said framework, means for operating said pivotally mounted frame, an auxiliary frame pivotally connected to said first mentioned frame normally engaging a cross brace on said first mentioned pivotally mounted frame, a knife pivotally mounted on said auxiliary frame, and a stationary knife mounted on said framework, the pivotal mounting of said auxiliary frame on said first mentioned pivotally mounted frame causing said auxiliary frame to be given a longitudinal rearward movement when said first mentioned pivotally mounted frame is lowered independent of the auxiliary frame.

4. In a cut off for box covering machines, a principal knife, a sectional knife co-acting therewith, a support for said sectional knife formed with slots therein, clamping means passing through said slots engaging said support and said sections for clamping said sections to said support, and a plurality of adjustable screws engaging each of said sections for regulating the position of the sections, and means for causing one of said knives to move past the opposite knife when in operation.

5. In a cut off for box covering machines, a stationary knife, a pivotally mounted knife formed into a plurality of sections, means for holding the sections of said pivotally mounted knife together end for end, means for independently adjusting the position of any of said sections, means for moving said pivotally mounted knife past

said stationary knife, and means for causing said pivotally mounted knife to move radially from said stationary knife while moving pivotally in one direction.

6. In a cut off for box covering machines and the like, a stationary knife, a pivotally mounted knife designed to be swung past said stationary knife, and means for causing said pivotally mounted knife to move radially from said stationary knife upon its reverse movement.

7. In a cut off for box covering machines and the like, a stationary knife, a frame for supporting said stationary knife, a swinging frame pivotally mounted on said first mentioned frame and adapted to be moved past said stationary knife, a second frame pivotally mounted on said first mentioned swinging frame, a stop on said first mentioned swinging frame for limiting the swinging movement of said second mentioned pivotally mounted frame in one direction whereby said first mentioned swinging frame may move said second mentioned pivotally mounted frame past said stationary knife, and a knife fixed to said second mentioned pivotally mounted frame, the independent action of said second mentioned pivotally mounted frame causing a substantially radial movement from said stationary knife when the second mentioned knife is moved in a reverse direction past said stationary knife.

8. In a cut off for box covering machines and the like, a stationary knife, an adjustable knife co-acting therewith, a pivotally mounted frame for supporting said adjustable knife, a pivotally mounted support for said pivotally mounted frame, and means for pivotally moving said support and said pivotally mounted frame past said stationary knife whereby said adjustable knife co-acts with said stationary knife, the pivotal mounting of said pivotally mounted frame on said pivotally mounted support causing a substantially radial movement of said adjustable knife from said stationary knife during the reverse movement of the adjustable knife.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR BELL.

Witnesses:

A. L. KITCHIN,
PHILIP D. ROLLHAUS.