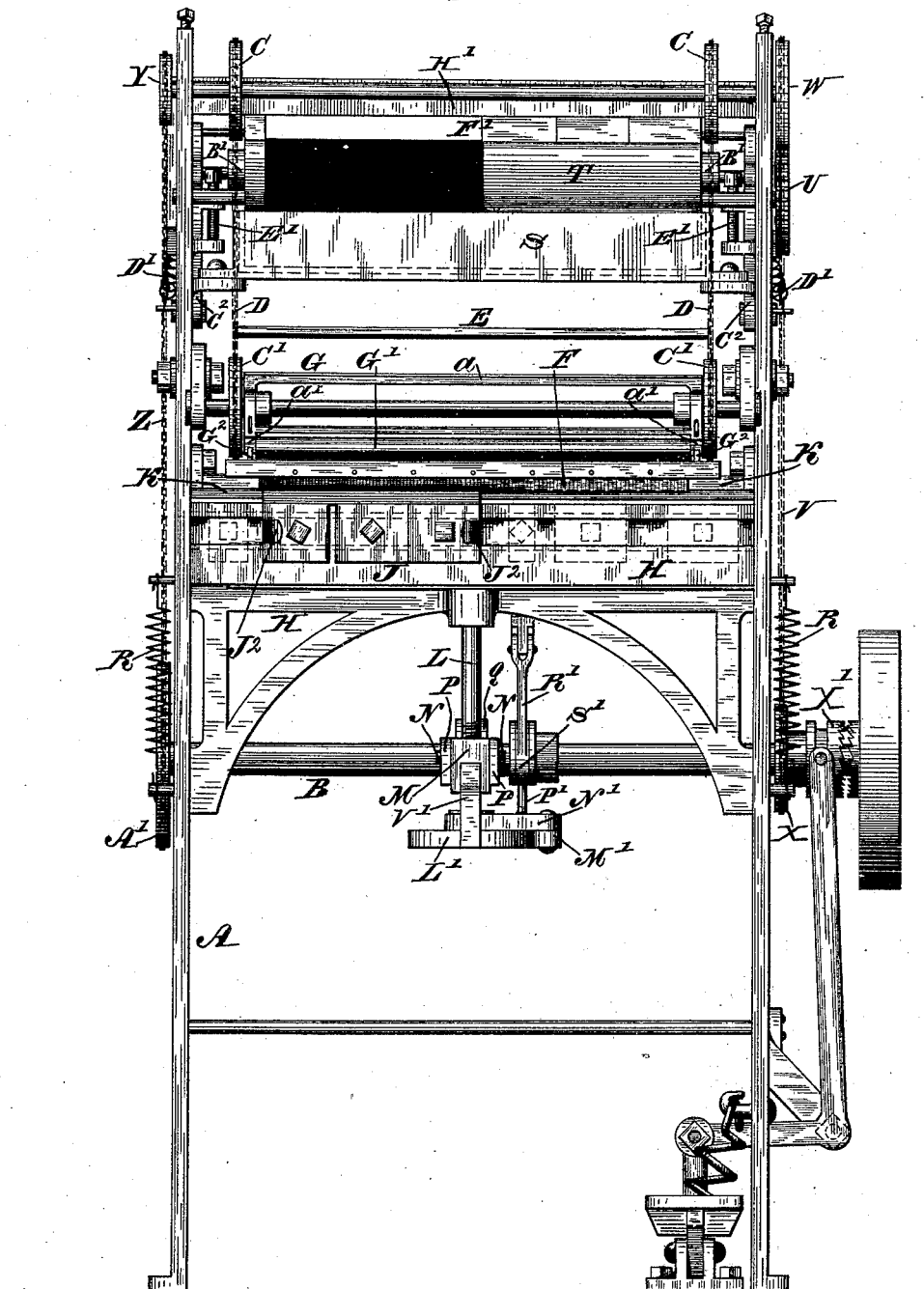


3 Sheets—Sheet 1.

MACHINE FOR AFFIXING FLIES TO PAPER BOXES.

Patented Feb. 11, 1890.

Fig. 1.



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(No Model.)

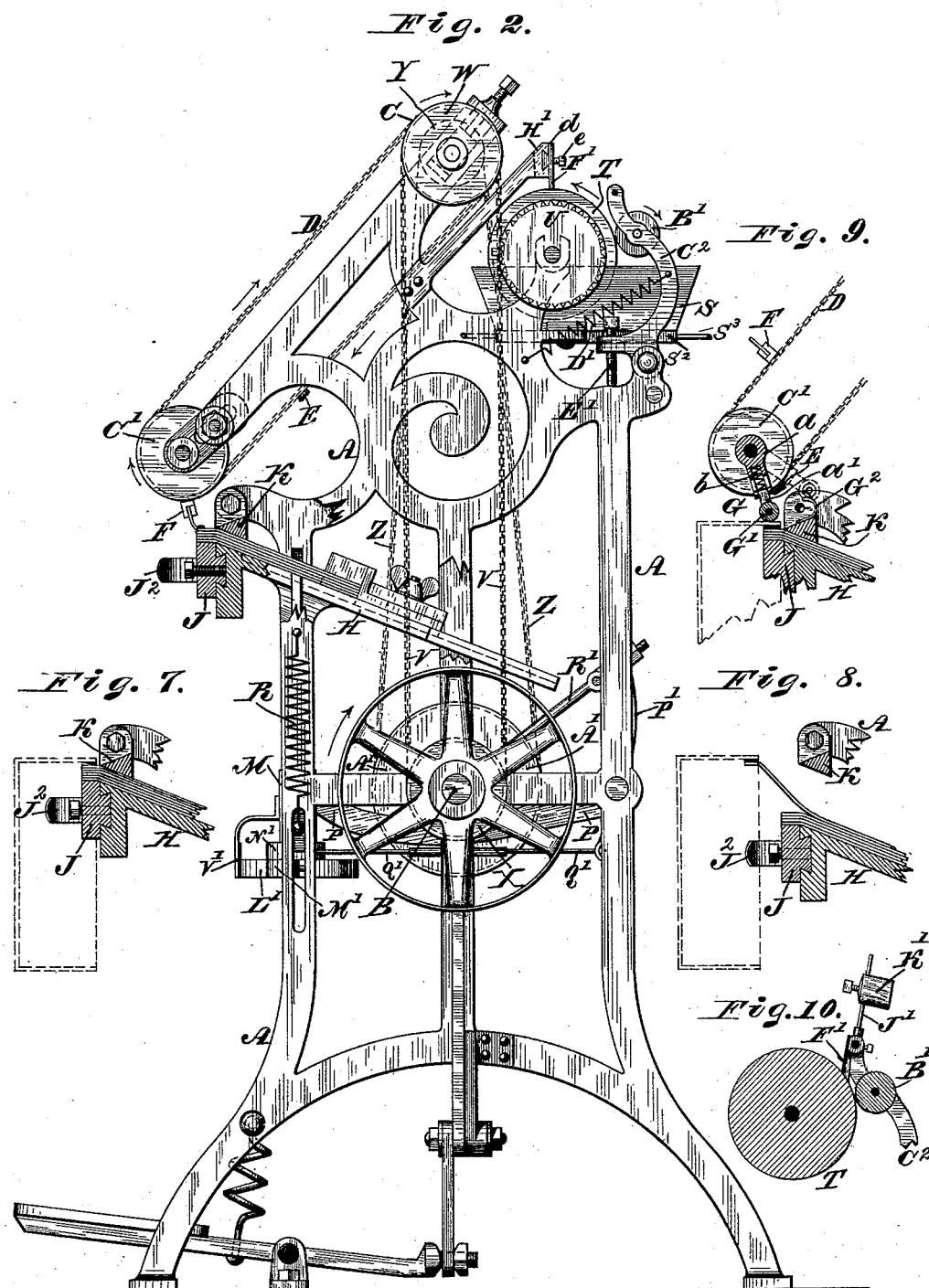
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G. A. BISLER.

MACHINE FOR AFFIXING FLIES TO PAPER BOXES.

No. 421,157.

Patented Feb. 11, 1890.



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3 Sheets—Sheet 3.

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MACHINE FOR AFFIXING FLIES TO PAPER BOXES.

No. 421,157.

Patented Feb. 11, 1890.

Fig. 3.

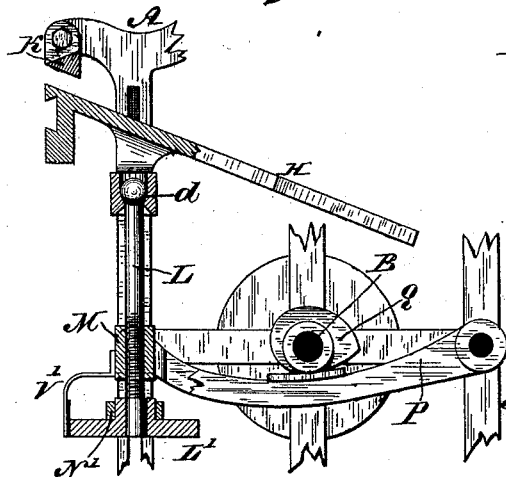


Fig. 4.

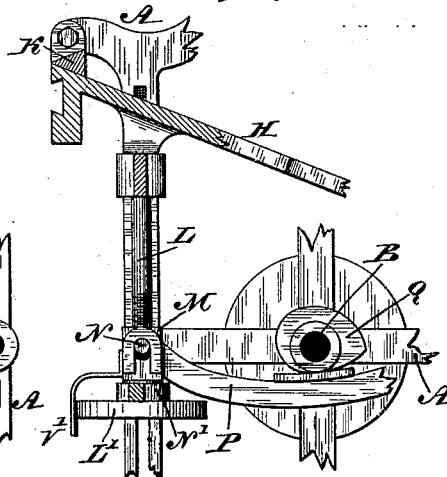


Fig. 5.

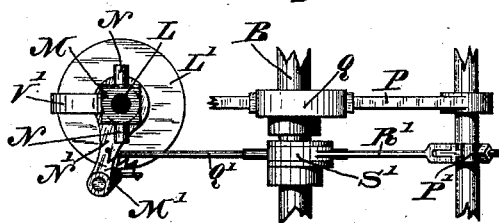
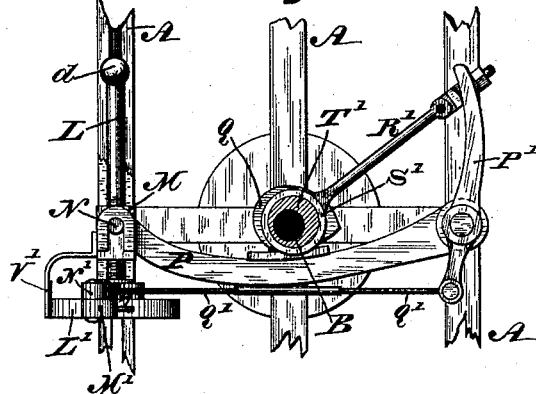


Fig. 6.



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UNITED STATES PATENT OFFICE.

GUSTAV A. BISLER, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR AFFIXING FLIES TO PAPER BOXES.

SPECIFICATION forming part of Letters Patent No. 421,157, dated February 11, 1890.

Application filed April 23, 1888. Serial No. 272,187. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV A. BISLER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Machines for Affixing Flies to Paper Boxes, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a machine for readily affixing flies or strips to paper boxes, the same embodying novel features, as will be hereinafter fully set forth.

Figure 1 represents an end view of a machine embodying my invention. Fig. 2 represents a partial side elevation and partial vertical section thereof. Figs. 3, 4, and 6 represent partial side elevations and partial vertical sections of the mechanism which operates the table of the machine. Fig. 5 represents a top view thereof. Figs. 7 and 8 represent vertical sections of the paper-holding devices. Fig. 9 represents a vertical section of the parts shown in Fig. 7, including the means for pressing the box and pasted or gummed sheet. Fig. 10 represents an adjustable scraper for the feeding-roller of the paste or gum trough.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A represents the frame of the machine, on which is mounted a shaft B, to which power is communicated, as herein set forth. On the upper part of the frame A are mounted pulleys C C', around which pass endless chains or belts D D, it being noticed that the lower pulleys C' are set out from the upper pulleys C, whereby the chains D occupy inclined or oblique positions. Connected with the chains is a slat or bar E, and also connected with said chains is a pasting or gumming brush F.

G represents a pressing device consisting of a roller G', the support whereof is formed of the parts a a', fitted at their ends to each other telescopically, with a spring b interposed between said parts, the part a being loosely fitted on the shaft of the lower pulley C' and having the larger portion thereof on one side

of the said shaft, the parts a', in which the roller G' is journaled, having projections or pins on their sides and guided in slots in the part a. Secured to the frame adjacent to the pulley C' is a spring G², against which the pressing device G is temporarily held, (see Fig. 9,) for purposes to be hereinafter set forth.

H represents a rising and falling table for holding the flies or pieces of paper to be pasted to the boxes, the same occupying an inclined position and carrying at its outer end a bed J, whose upper face is continuous of the upper face of the table, but extending in horizontal position, said bed being so disposed in relation to the brush F that on the motions of the chains D said brush passes above the top of the bed and necessarily comes in contact with a portion of the upper sheet of the pile of paper resting on the table and bed.

Secured to the frame A above the outer end of the table H is a bearing-block K, whose under face is inclined and so located that when the table rises it carries the pile of paper against said block K, and thus clamps the same, as will be seen in Fig. 2. The table H is guided on the frame A and connected by the ball-and-socket joint d with a screw L, which latter passes through the threaded boss or nut M, which is provided with journals N. Fitted on the journals is the bifurcated end of an arm P, which is pivoted to the frame A and engaged by the cam Q, so that said arm P is depressed and the table H is accordingly lowered, said cam being connected with the driving-shaft B of the machine.

To projections at the lower end of the table H, passing through slots in the frame A, are secured the lower ends of the springs R, the upper ends being fastened to the frame, the tendency of the springs being to elevate the table and the projections serving in the slots as guides to secure a vertical movement of said table, it being noticed that the arms P and the springs R are alternately operated. It will be seen that as the table moves in a right-lined direction and the arm P has radial motions, the screw L, owing to its ball-

and-socket connection with the table H, conforms to the motion of the arm P, thus preventing strain on the parts with which the screw is connected.

5 At the top of the frame A is supported a paste or gum cup or trough S, in which dips a roller T, one end of the shaft whereof carries a sprocket-wheel U, with which engages an endless chain or belt V, which passes
10 around a pulley W, loosely mounted on the shaft of the top pulley C, and around a pulley X, loosely mounted on the shaft B, motion being imparted to said pulley W from the pulley X. Keyed or otherwise firmly secured to the shaft B opposite to the pulley X
15 is a pulley A', around which passes a chain or belt Z, said chain or belt also passing around a pulley Y, secured to the shaft of the pulleys C, it being seen that when the pulleys C are rotated motion is communicated
20 to the endless chains or belts D, and owing to the chain V the gumming or pasting roller T is caused to be rotated. The pulley X is the loose pulley of a clutch X' on the end of
25 the shaft B, whereby the machine may be started and stopped, as required. The roller T is so located in relation to the chains D that the brush F in its motions therewith takes up the gum or paste, so that the said
30 brush F is supplied with the same, said brush subsequently reaching the flies or paper and applying the gum or paste thereto, as is evident.

In order to adjust the quantity of paste or gum taken up by the roller T, I employ a
35 distributing-roller B', which is mounted on pivotal arms or brackets C², mounted on the frame A, said roller B' being in contact with the roller T and held thereagainst by the
40 springs D', which are connected with the pivotal arms or brackets C² and the frame A, the position of the brackets C² relative to the roller T being regulated by means of screws E', which pass through the lower limbs of the
45 brackets C² and bear against adjacent parts of the frame A. Supported above the roller T is a scraper F', which bears against said roller and is formed in sections placed side by side, removably attached, as at d', to a bar
50 H' on the frame A, retained by screws e, whereby either section may be removed, leaving the corresponding portions of the roller uncovered, thus adapting the roller for service with boxes of different dimensions. In
55 order to adjust the pressure of the sections of the scrapers on the rollers said sections may be pivoted to the brackets C², as in Fig. 10, and have connected with them rods J', with weights K', the tendency of which is to force the ends of the sections against the periphery of the roller T, the pressure being adjusted by moving the weights K'. The bed J is also
60 made in sections placed side by side and removably connected with the table H, so that the width of the bed may be adjusted relatively to boxes of different dimensions. Se-

cured to the lower end of the screw L is a plate or disk L', whose periphery is engaged by a pawl M', pivoted to an arm N', which latter is freely fitted on the hub of the plate or
70 disk L'.

In the frame A, adjacent to the shaft B, is mounted a swinging lever P', which is connected with the arm N' by a rod Q', said lever being engaged by the outer slotted end
75 of an oscillating arm R', whose inner end is provided with a yoke S', which encircles the eccentric T', the latter being secured to the shaft B, whereby an oscillating motion is imparted to the arm R', and consequently to
80 the pivoted lever P', connected therewith, a reciprocating motion to the rod Q' and an oscillating motion to the arm N', so that the pawl M' alternately engages with and rides freely over the plate L', so that said plate
85 rotates intermittently and causes similar rotation of the screw L, whereby the table H is gradually moved nearer to the bearing-block K without interfering with the rising and falling motions of said table. By this
90 provision as the pile of paper on the table and bed gradually becomes reduced in thickness the table gradually advances more closely to the block K, thus causing the pile of paper to be properly clamped even until the last
95 sheet remains on the table.

The bed is properly supplied with sheets of paper and power communicated to the machine A, the chains or belts D, which constitute aprons, are moved, and the brush F
100 applies paste or gum over the end of the top sheet of paper, as in Fig. 2, the table H being in elevated position. The box is now presented in such manner that the inner face of one of its sides rests on the pasted or gummed
105 end of the sheet of paper. (See Fig. 7.) The presser now advances, and its roller G' rides over the side of the box which is uppermost, thus firmly compressing said side and the pasted sheet. The table now descends, and
110 the box, with its attached strip or sheet, is removed, as will be seen in Fig. 8. The table again ascends, the top sheet of paper is pasted or gummed, and another side of the box presented to said sheet, so as to adhere thereto,
115 after which said sheet and side are compressed, and thus the operations are continued until the box has the desired number of sheets of paper affixed thereto.

In order to facilitate the application of the
120 box to the bed J and hold the same thereon, the sections of the latter are provided with forwardly or outwardly extending guides J², which are located at the sides of said sections.

Connected with the threaded boss M is a
125 brake V', which bears against the disk L' and prevents improper rotation of said screw.

The cup, trough, or pot S has a false bottom forming a steam-heating chamber S², so that the glue, paste, gum, or other adhesive
130 material employed may be heated and kept in proper fluid condition, said chamber hav-

ing inlet and outlet pipes S^3 S^4 , respectively, for steam and exhaust or water of condensation.

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

1. In a machine for affixing flies to paper boxes, a frame, a table supported on a vertical screw, a boss secured to said screw and having journals, pivoted arms engaging said journals, and a driving-shaft with cam thereon, the latter engaging said pivoted arm, said parts being engaged substantially as described.

2. A frame, in combination with a table supported on a vertical screw, a boss secured to said screw and having journals, a pivoted arm engaging said journals, a driving-shaft with a cam thereon, and springs secured to the table and frame, substantially as and for the purpose set forth.

3. In a machine for affixing flies to paper boxes, an inclined rising and falling table having a horizontal bed projecting from the front end thereof, and a pasting-brush having mechanism, substantially as described, for causing said brush to contact with the portion of the sheets on said horizontal bed, said parts being combined substantially as described.

4. In a machine for affixing flies to paper boxes, a frame with horizontal parallel shafts in the upper portion of the same, pulleys on said shafts, belts or bands connecting said pulleys, a driving-shaft with a pulley, and a belt connecting said driving-shaft pulley and a pulley on the upper horizontal shaft, a pasting-brush F , secured to the bands which connect the pulleys on the parallel shaft, and a rising and falling table with bed at outer end, said parts being combined substantially as described.

5. A table, a pasting-brush, and an apron carrying said brush, in combination with a presser, a spring for temporarily supporting said presser, and means connected with said apron for advancing said presser, substantially as described.

6. In a machine for affixing flies to paper boxes, a frame, a driving-shaft journaled therein and having a pulley thereon, a shaft journaled in the upper part of the frame carrying a pulley, a band connecting said pulleys, a trough, a roller dipping in said trough and having a pulley in contact with and operated by said band-pulley, said parts being combined substantially as described.

7. In a machine for affixing flies to paper boxes, a frame, a driving-shaft with a cam thereon, a table, a spring secured to the table and the frame and adapted to raise said table, a screw supporting said table and having at its lower end a plate or disk, a threaded boss having journals on its sides, a lever pivoted to the frame and having a bifurcated end engaging said journals, a bearing-block

above said table, an eccentric on said driving-shaft, an arm with yoke at inner end encircling said eccentric and having a slotted outer end, a pivoted arm engaging said slotted end, an arm loosely mounted on the screw and having a pawl and a rod connected to said last-mentioned arm, and the pivoted arm, said parts being combined substantially as and for the purpose set forth.

8. In a machine for affixing flies to paper boxes, a table having a sectional horizontal front bed, substantially as and for the purpose set forth.

9. In a machine for affixing flies to paper boxes, a paste-trough, a roller in said trough, pivoted bracket-arms with rollers, springs connected to said arms and the frame of the machine, and a screw passing through one limb of the bracket-arms and bearing against the frame of the machine, said parts being combined substantially as and for the purpose set forth.

10. The combination of a frame, a driving-shaft journaled therein, an inclined table guided in said frame, and a ball-and-socket joint support for said table, and mechanism, substantially as described, connected with said support and said shaft for lowering said table, a spring for raising said table, and a block having an inclined under side secured to said frame and adapted to clamp the contents of the table in place, substantially as described.

11. The combination of a frame, a driving-shaft journaled therein, a table guided in said frame, a spring for raising said table, the screw L , having ball-and-socket joint connection with said table, the threaded boss M , with journal N , the arm or lever P , pivoted to the frame and having a bifurcated end fitting on the journal, and the cam Q on the driving-shaft and adapted to engage the said lever P , substantially as described.

12. The frame A , in combination with the trough S , with the roller T dipping in the latter, the brackets C^2 , pivoted to the frame and carrying the distributing-roller B' , and a spring secured to said brackets and frame, substantially as described.

13. The frame A , in combination with the trough S , the latter having the roller T dipping in the same, pivoted brackets C^2 , carrying a distributing-roller, and a screw passing through the lower arm of the bracket and bearing against the frame A , substantially as described.

14. The frame A , with a driving-shaft journaled therein, a table guided in said frame, a spring for raising said table, a screw with ball-and-socket joint at upper end supporting said table, a journaled boss in which said screw is secured, a disk on the lower end of the screw, an arm loosely fitted on the hub of the disk and carrying a pawl engaging the periphery thereof, a pivoted lever slotted at its upper end and having its lower end connected

by a rod with the said arm on the hub of the disk, and a rod with one end fitted in the slotted end of the lever and the other yoked to an eccentric on the driving-shaft, said
5 parts being combined substantially as described.

15. A machine for affixing flies to paper boxes having a shaft with a pressing device freely mounted thereon, said device consisting of the parts *a a'*, the part *a* having the

larger portion thereof on one side of the shaft and the parts *a'* fitting in the part *a*, a spring between said parts *a'* and *a*, and a roller journaled in said parts *a'*, said parts being combined substantially as described.

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