(No Model.) 3 Sheets—Sheet 1.

K. GOLDSCHMIDT.

APPARATUS FOR ATTACHING FILLETS TO FLATS OF CARD CLOTHING.

No. 577,918. Patented Mar. 2, 1897.

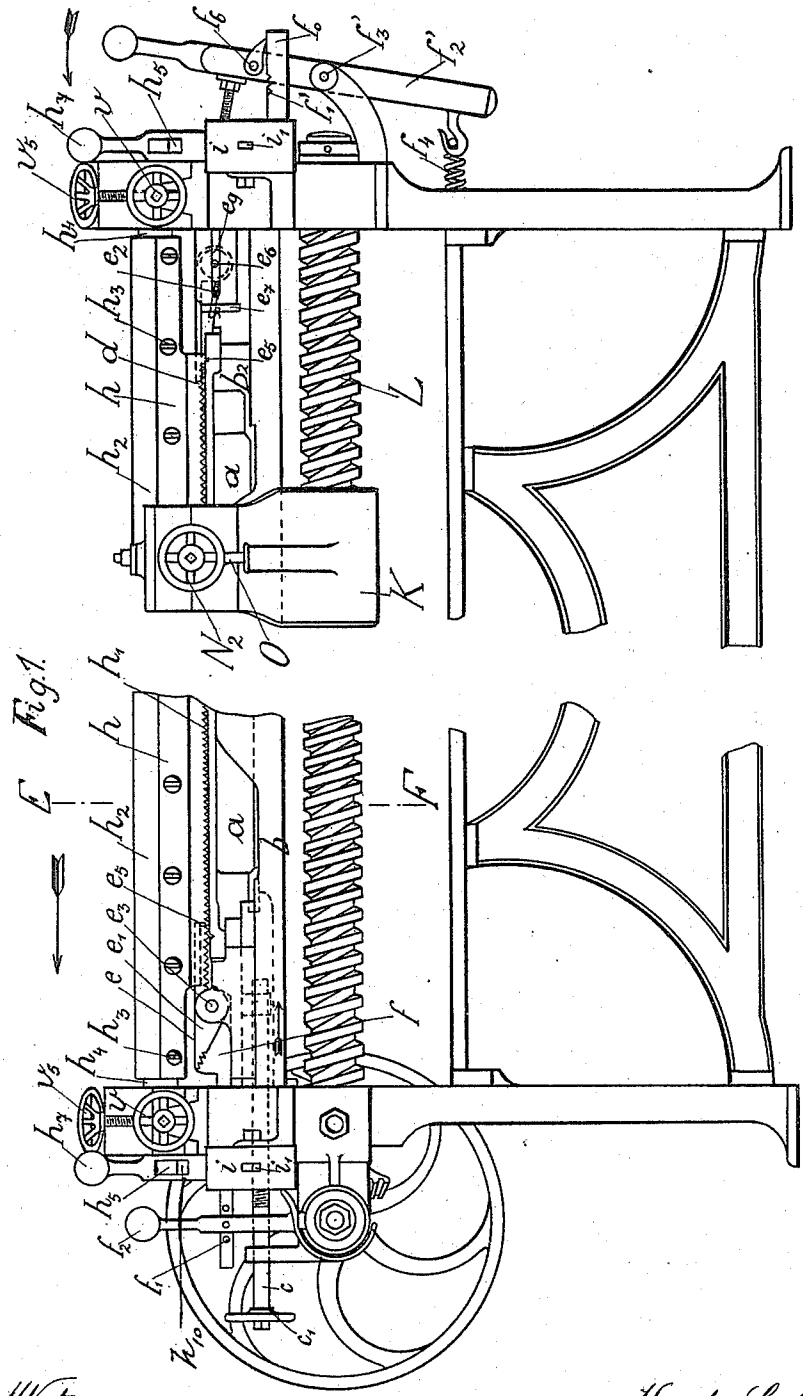

Fig. 1.

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(No Model.) 3 Sheets—Sheet 2.

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Fig. 2.

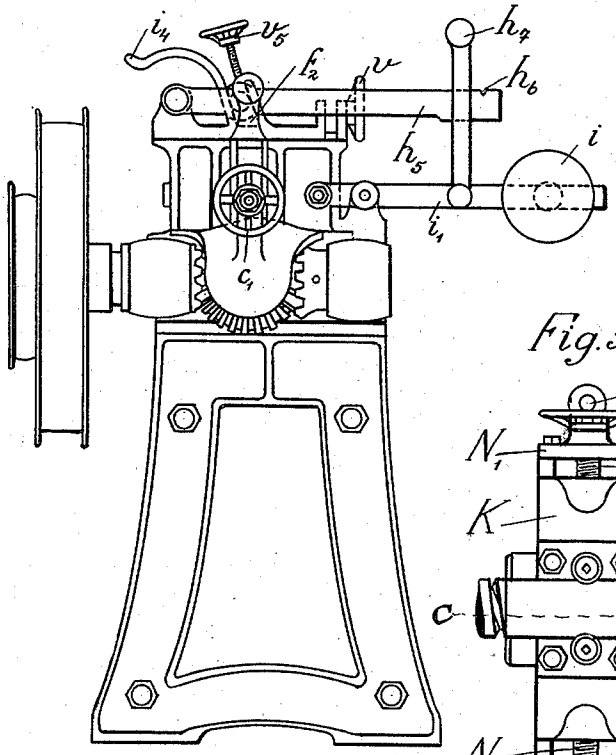


Fig. 5a.

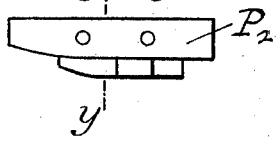


Fig. 5b.

Fig. 5c.

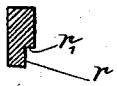


Fig. 3.

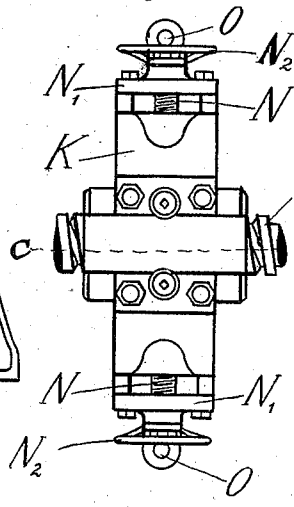


Fig. 6.

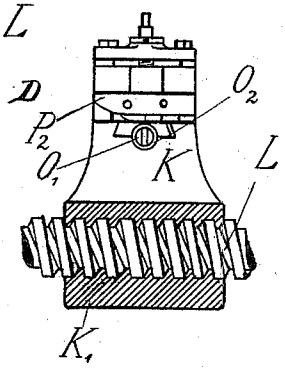


Fig. 4

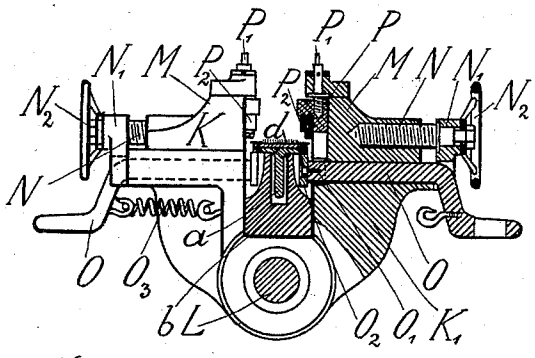


Fig. 7.

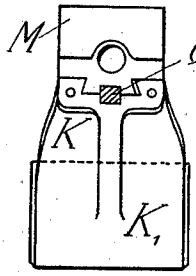
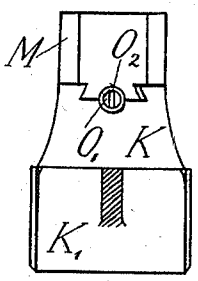


Fig. 8.



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(No Model.) 3 Sheets—Sheet 3.

K. GOLDSCHMIDT.

APPARATUS FOR ATTACHING FILLETS TO FLATS OF CARD CLOTHING.

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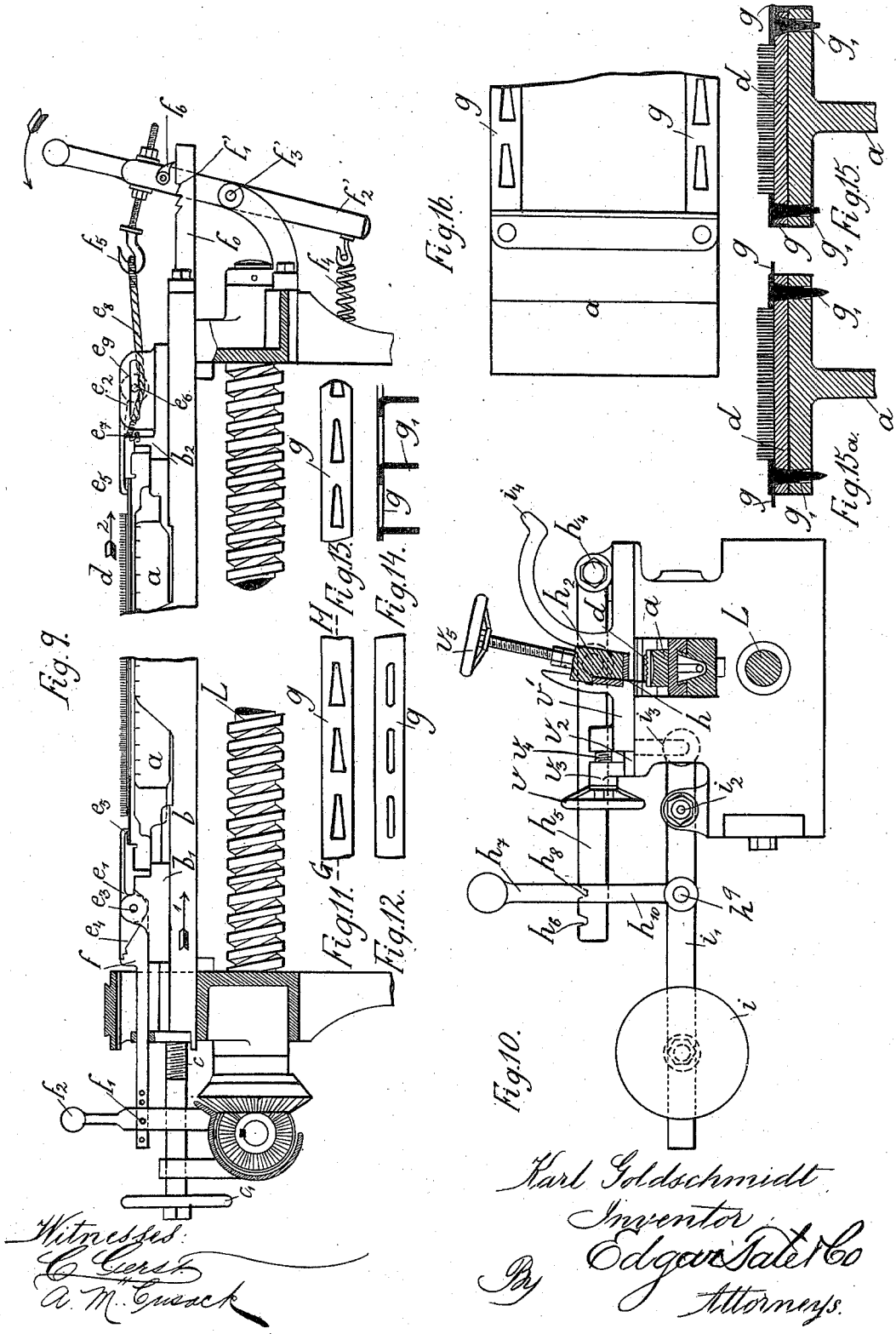

Fig. 9.

Fig. 10.

Fig. 11.

Fig. 12.

Fig. 13.

Fig. 14.

Fig. 15.

Fig. 15a.

Fig. 16.

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UNITED STATES PATENT OFFICE.

KARL GOLDSCHMIDT, OF BRÜNN, AUSTRIA-HUNGARY.

APPARATUS FOR ATTACHING FILLETS TO FLATS OF CARD-CLOTHING.

SPECIFICATION forming part of Letters Patent No. 577,918, dated March 2, 1897.

Application filed July 20, 1894. Serial No. 518,152. (No model.) Patented in England June 12, 1894, No. 11,402; in Belgium June 30, 1894, No. 110,456; in Spain August 28, 1894, No. 16,044; in Austria September 20, 1894, No. 44/4,977; in France November 5, 1894, No. 239,261; in Italy November 19, 1894, XXIX, 37,657, and LXXIV, 84; in Switzerland November 30, 1894, No. 8,552, and in Germany May 16, 1895, No. 81,142.

To all whom it may concern:

Be it known that I, KARL GOLDSCHMIDT, a subject of the Emperor of Austria-Hungary, residing at Brünn, in the Province of Moravia, Austria-Hungary, have invented certain new and useful Improvements in Apparatus for Attaching Fillets to the Flats of Card-Clothing, (for which I have obtained Letters Patent as follows: in Austria, No. 44/4,977, granted September 20, 1894; in France, No. 239,261, granted November 5, 1894; in Germany, No. 81,142, granted May 16, 1895; in Belgium, No. 110,456, granted June 30, 1894; in Great Britain, No. 11,402, granted June 12, 1894; in Switzerland, No. 8,552, granted November 30, 1894; in Italy, Reg. Gen., XXIX, 37,657, Reg. Att., LXXIV, 84, granted November 19, 1894, and in Spain, No. 566/16,044, granted August 28, 1894;) and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to use the same.

This invention has relation to a certain new and useful improvement for attaching the fillets on the flats of the revolving cards; and the object thereof is to provide an improved apparatus for mounting the fillets on the flats; and with this and other objects in view the invention consists in the construction, combination, and arrangement of parts hereinafter more fully described in the accompanying specification and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the stretching device. Fig. 2 is an end elevation of Fig. 1 from the left. Fig. 3 is a plan view of the head supporting the adjustable block. Fig. 4 is a cross-section of the head. Fig. 5^a is a detail of one of the clamping blocks. Fig. 5^b is an end view of the clamp-block. Fig. 5^c is a sectional view on the line $y\ y$ of Fig. 5^a. Fig. 6 is a section on the line C D of Fig. 3. Figs. 7 and 8 show further details of the head. Fig. 9 is a longitudinal section of the stretching device. Fig. 10 is a section on line E F of Fig. 1, looking in the direction of the arrow. Figs. 11, 12, and 13 are plan views of the steel strips of holders with variously-formed tongues. Fig. 14 is a section on line G H of Fig. 11. Fig. 15 shows a cross-section of a flat when stretched. Fig. 15^a shows the flat when the steel strips or holders have been placed in position on the side edges of the fillet, and Fig. 16 is a plan view of the flat.

The flat a is first of all placed in position in a trough-like bed-plate b between a traveling or adjustable and a stationary block $b'\ b^2$, mounted at the left and right ends of the frame of the machine, respectively, the adjustable block b' being worked to and fro by means of a hand-wheel c' at the end of a screw c, fixed in said block, while the stationary block is firmly fastened to the frame. The block b' is then worked forward, so as to engage with and pin the flat a vise-like between it and the stationary block. The flat being now immovable, the fillet d is laid onto same.

The fillets are very often made from one to three millimeters narrower and five to twenty-five millimeters shorter than the flat in order to allow for stretching. When this is the case, I stretch the fillet in both longitudinal and lateral directions, taking the longitudinal direction first in the way I will now describe.

I provide the blocks $b'\ b^2$, holding the flat in position, with catches $e'\ e^2$, of which e' turns or balances on a pin or pivot e^3 and is formed with an oblique surface e^4 on its under left portion, while its right side tapers and is formed into a hook e^5. Against the said oblique under surface e^4 is inclined a pressing-lever f, fixed by means of a pin f' in a guide-frame f^2 in such way that pressure on said lever forces the left end of the catch e^4 upward and consequently the right end or hook e^5 downward, causing the latter to engage with and pass through the fillet, so as to hold the same fast. The guide-frame f^2 mentioned is firmly screwed or otherwise fastened to the frame of the machine. The function of the second catch e^2 is to enable the fillet to be pressed against the flat and at the same time to stretch said fillet lengthwise. Said catch e^2 is pivoted on the pin e^6 and is provided on its left side with a hook e^7 for holding a cord e^8. A pulley e^9 is also fastened on the said pin e^6 for guiding said cord. A prolongation or projecting part of the frame b is provided

with notches f_1' and serves as a guide for a double lever f'_2, pivoted at f'_3 and held in position by a spring f^4. On the upper half of the lever f'_2 is a hook f_5, Fig. 9, which is connected by a rope e^8, running over the pulley e^6, with the hook e^7 of the catch. On the lever f'_2 a pawl f_6 is also arranged. In order to lay the fillet on the flat, the lever f'_2 is pulled by hand toward the left in the direction of the arrow, whereupon the spring f^4 becomes stretched and the pawl f_6 falls simultaneously into one of the notches f'_1, the lever f'_2 being thus held in a fixed position. The fillet is now pushed under the hook e^5 and the pawl f_6 released, whereupon, in consequence of the contraction of the spring f^4, the lever f'_2 is drawn back into its original position, thereby stretching the cord e^8 and pressing the hook against the fillet, which is thus stretched longitudinally in the direction of the arrows 1 and 2.

Having stretched the fillet lengthwise, as above, I stretch the same laterally as follows: I first of all perforate the fillet along its right side, by means of any suitable tool, in such way that the perforations correspond to the holes in the flat underneath. I then lay on the fillet one of the steel holders or strips g, as shown in Figs. 11 to 14, in such way that the tongues g' of the same pass through the fillet, through the hole in the flat, and project underneath said flat, the side edge of said steel meanwhile projecting somewhat over the side edge of the fillet, as shown in Fig. 15ª. In order that this position of the steel strip g may be sufficient to firmly hold the fillet, the tongues g' of said strip are made broader above than the diameter of the holes in the flat. After fastening the fillet on the right side of the flat, as described, I stretch the former laterally by means of the following arrangement: Above the bed on which the flat rests is a cover-like pressing and stretching device, Figs. 1 and 10. Said device consists of a gun-metal bar h^2, on which is fastened, by means of screws h^3, a steel plate h, having a notched lower edge or teeth h'. Each end of the metal bar h^2 is pivoted onto a swivel-pin h^4, fitted in the frame, and by means of which the pressing and stretching contrivance can be raised to enable the flat a, with its fillet d, to be placed in position on the bed-plate b. The bar h^2 has at each end an arm h^5, provided with notches h^6 and passing through levers h^7. Said levers h^7, turning on pivots h^9, are provided with triangular pieces h^8, Fig. 10, which engage with the notches h^6. A lever i', carrying a movable weight i, is pivoted onto the frame at i^2, and when the stretching device is raised is supported by its arm i^3, resting against the frame of the machine.

While the flat a is being laid in the bed-plate b and while the fillet d is being laid on the same, stretched lengthwise and secured on its right side by means of a steel strip g, the pressing and stretching device is kept in a raised position, resting on arm i^4.

After the flat a has been placed in position and the fillet prepared in the way described it is requisite to stretch the latter in case it be narrower than the flat. For this purpose the pressing and stretching device is lowered, which causes the steel plate to engage with the left loose edges or side of the fillet d, Fig. 10, and by means of the teeth h' of said plate the fillet is held fast. The lever h^7 is then pushed onto the arm h^5, which passes through the slot h^{10}, said arm being pressed downward by the weight i, and the steel plate h thus caused to press the fillet firmly against the flat. As is seen in Fig. 10, the metal bar h^2 is supported in slides v' on guides v^2 of the frame, said bar being movable to and fro by turning the screw-spindle v^4, working in the female screw v^3, by means of a hand-wheel v. On turning the hand-wheel v the metal bar h^2 is moved laterally to the left and with it the steel plate h, holding fast by means of its teeth h' the fillet d. The latter being thus stretched, it is perforated on the left side in such way that its perforations exactly correspond to the holes in the flat a, and is then fastened by means of a steel strip g, as in the case of the right side, being now in the position shown in Fig. 15ª. It will be remembered that the upper parts of the tongues g' of the steel strips g are broader than the diameter of the holes in the flat, and that the fillet is firmly secured without the tongues g' being bent back after said tongues have been firmly pressed into position. When said tongues are pressed back, therefore, there can be no danger of the fillet getting jerked out of position, the more so when the sides of the steel strips are also bent over at right angles, as shown in Fig. 15, since the fillet is not only firmly held from underneath, but also at the sides, which is an important advantage in that the steel strips lie in one and the same level with the side face of the flat. For carrying out these operations I provide a head K, containing pressing-blocks, as shown in Figs. 3, 4, 6, 7, and 8. The under part of said head serves as a matrix for the screw spindle or shaft L, which is driven by power transmitted through conical change-wheels in the usual way. When the work is begun, the head K is on the right side of the machine. Said head consists of the lower part K', in which are arranged the supports M M, which slide in a dovetailed groove or bed by means of a screw N, Fig. 4, which works into a fixed matrix N'. The supports M M are moved to and fro by means of a hand-wheel N^2. Into the head K are pushed slide-arms O, which carry small screw-studs O', on which rest rollers O^2.

Through the action of a spiral spring O^3 the arms O are constantly drawn inward. The consequence of this is that the rollers O^2 deflect the projecting portions of the tongue

g' when the head K is moved to the left by turning the screw spindle or shaft L. On the supports M M are arranged the supports P P, which can be adjusted in vertical direction by means of screws P′ P′, and to which supports are screwed clamping-blocks P^2 P^2, Figs. 4 and 6. These clamping-blocks taper toward the ends, in order to deflect to a right angle the projecting edges of the steel strips g on turning the screw-shaft L and moving the head K to the left simultaneously with the bending back or deflecting of the projecting portions of the tongues g', Fig. 15. For the sake of clearness a clamping-block is shown in detail in Figs. 5^a, 5^b, and 5^c, in which Fig. 5^a is a front elevation, Fig. 5^b an elevation of the side of the block which engages with and bends the projecting edges of the strip, and Fig. 5^c is a section on line y y of Fig. 5^a. From Fig. 5^c it will be seen that the faces r r' of the blocks form an angle with each other, which is ninety degrees, for the purpose of bending downward the projecting sides of the strips.

I claim—

1. In an apparatus for fastening fillets to flats of cards, the combination with a trough-like bed-plate b, of adjustable block b' and stationary block b^2 mounted thereon, and a hand-wheel and screw adapted to adjust the said block b', catches e', e^2, respectively, attached to said blocks, the former being pivoted on pin e^3 and having an oblique surface e^4 on its under left side, while its right tapers into a hook e^5, and the catch e^2 being pivoted on a pin e^6 and provided on its left side with a hook e^7 for holding a cord e^8, a lever f pivoted on pin f' in guide-frame f^2 and adapted to force upward an end catch e' and the hook e^5 downward, a pulley e^9, fixed on the pin e^6 for guiding the cord e^8, a double lever f'_2 pivoted on frame b, and held in position by spring f^4 and provided with hook f^5 which is connected by the cord e^8 with the hook e^7, and a pawl f^6 on the lever f'_2, all constructed and arranged substantially as herein shown and described.

2. In an apparatus for fastening fillets to flats, the combination of plate h provided with teeth h', bar h^2 movable by screw-spindle and hand-wheel secured on said plate by screws h^3, swivel-pins h^4 pivoting said bar, arms h^5 on each end of said bar provided with notches h^6, levers h^7 provided with triangular pieces h^8 and pivoted on pivots h^9, and lever i' carrying a movable weight and pivoted on frame at i^2, all constructed and arranged substantially as herein shown and described.

3. In an apparatus for fastening fillets to flats constructed substantially as herein shown and described, the combination of head K, pressing-blocks in said head, screw-spindle L, supports M in said head, screw N, hand-wheel N^2, slide-arms O carrying screw-studs O′, supporting-rollers O^2, spiral spring O^3, supports P, screws P′, and clamping-blocks P^2, all constructed, arranged and adapted to operate as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

KARL GOLDSCHMIDT.

Witnesses:

HEINRICH VINZ,

W. DROCHOKOUPIL.