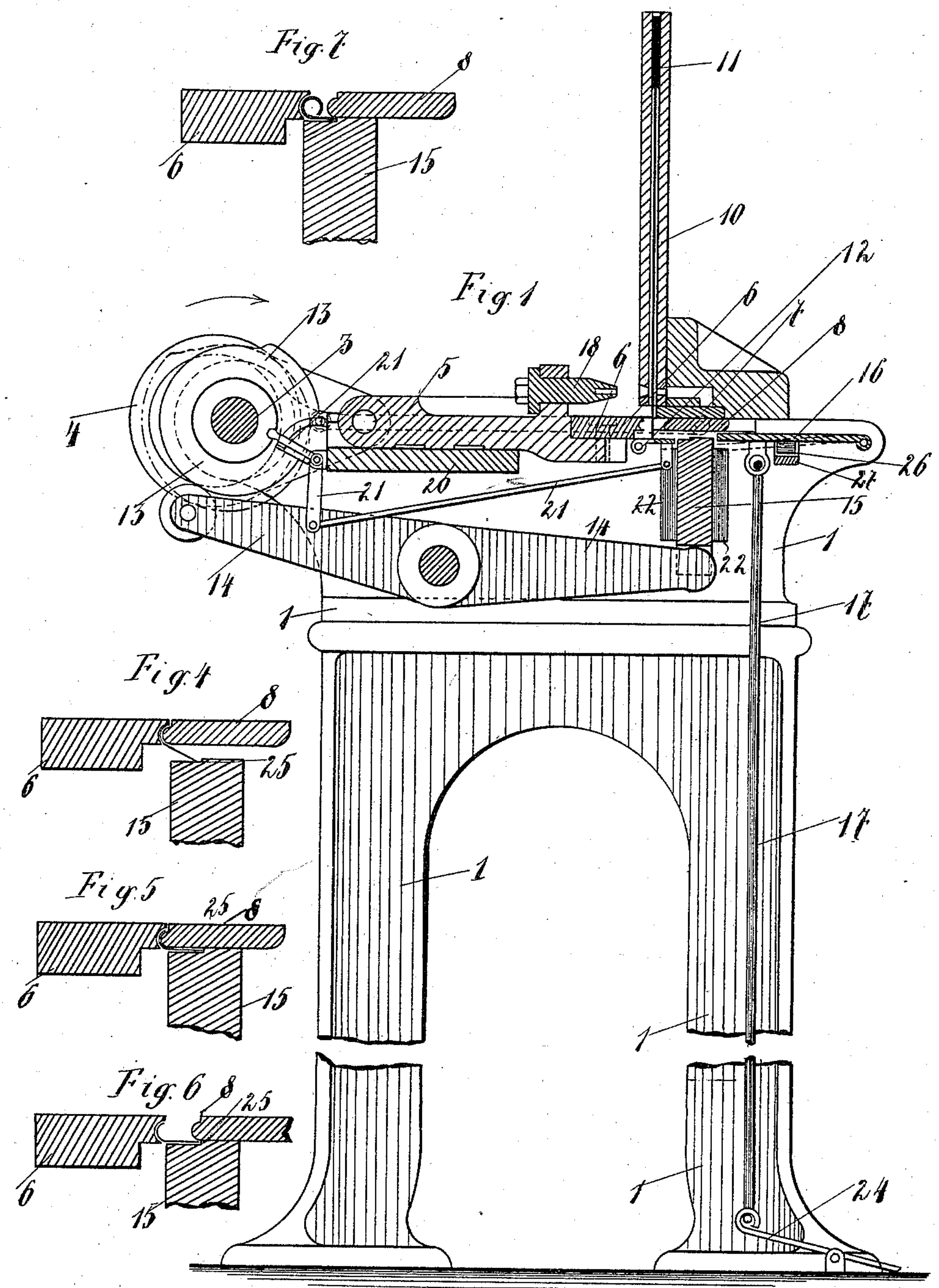
(No Model.) 2 Sheets—Sheet 1.

M. FUNKE.

MACHINE FOR BODERING PLACARDS, &c.

No. 526,307. **Patented Sept. 18, 1894.**



WITNESSES:

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BY Goepel & Raegener

ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

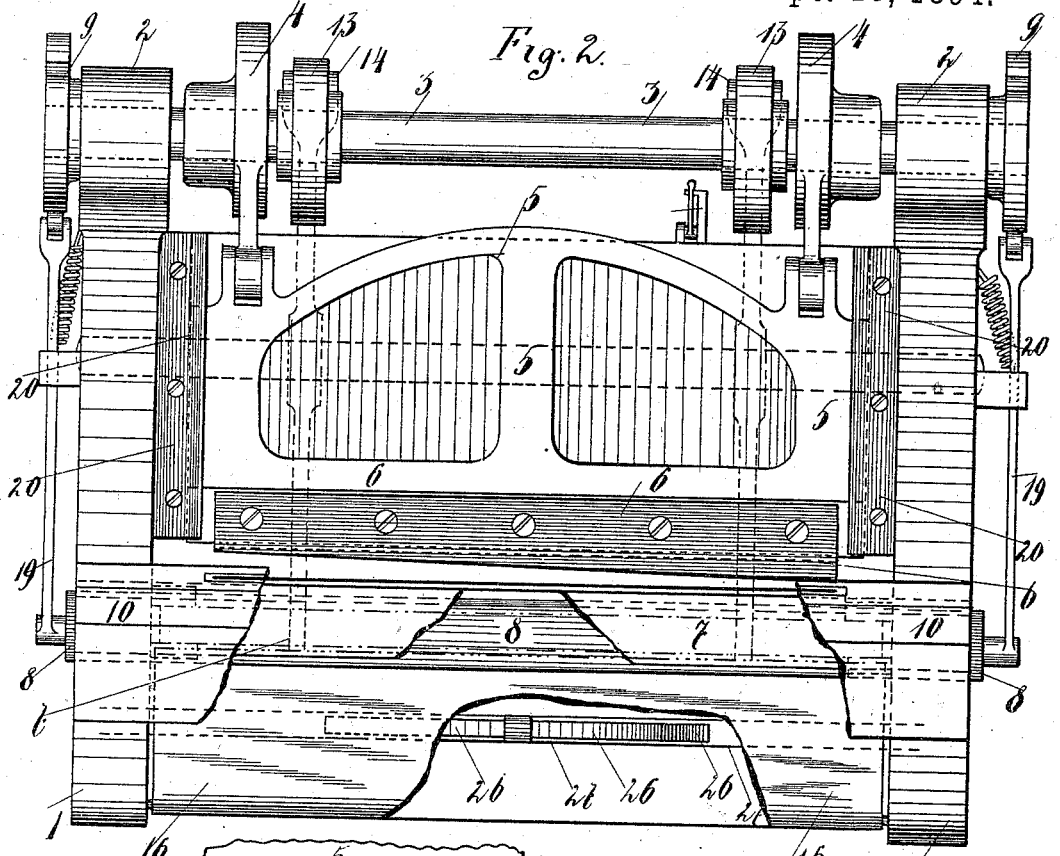

Fig. 8.

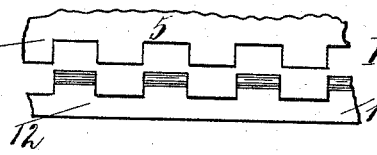

Fig. 3.

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UNITED STATES PATENT OFFICE.

MAX FUNKE, OF DRESDEN, GERMANY.

MACHINE FOR BORDERING PLACARDS, &c.

SPECIFICATION forming part of Letters Patent No. 526,307, dated September 18, 1894.

Application filed October 5, 1893. Serial No. 487,214. (No model.)

To all whom it may concern:

Be it known that I, MAX FUNKE, a subject of the King of Saxony, residing at the city of Dresden, in the Kingdom of Saxony, Germany, have invented certain new and useful Improvements in Machines for Bordering Placards and Similar Sheets, of which the following is a specification.

The object of my invention is to provide a new and improved machine for making tubular borders or frames from sheet-metal and at the same time, when desired, attaching said borders to display cards, sheets, &c.

In the accompanying drawings, illustrating my improved machine, Figure 1 is a vertical transverse sectional view of my improved machine for making and applying tubular sheet-metal borders on show cards and the like. Fig. 2 is a plan-view of the same, and Fig. 3 is a side view of the same. Figs. 4 to 7 are detail views of the blades and other parts showing them in different detail and Fig. 8 is a view from below of frame 5 and hinged bar 12.

Similar figures of reference indicate corresponding parts.

On the supporting-frame 1 of the machine the two bearings 2 for the driving-shaft 3 are fixed, from which driving-shaft the several parts of the machine are operated. Near the two ends of the shaft 3 the two eccentrics 4 are mounted and operate the horizontally-reciprocating frame 5, which is guided in suitable ways, 20 to the front edge of which frame 5 the cutting and shaping blade 6 is fastened by means of screws, said blades serving for cutting and shaping the sheet-metal. Opposite the blade 6 the counter-blade 7 is arranged, under which the shaping-blade 8 is mounted, which blade 8 is shifted transversely to its length by means of connecting-rods 19 from cams 9 on the ends of the shaft 3. The edge of the shaping-blade 8 is shaped convexly, whereas the blade 6 is shaped concavely, the adjacent edges of said blades 6 and 8 being so shaped as to fit on each other, so that part of a sheet of metal placed between said blades 6, 7 and 8 is cut off and at the same time bent the same as the configuration of the edge of said blades 6 and 8. Above the counter-blade 7 the guides 10 for the sheet-metal to be worked are arranged vertically, and said sheet of metal is weighted by a bar 11 resting on the top of the same and between the guides 10.

A flat bar 12 is hinged along one of its edges on the bed-plate 1 of the machine and can be actuated, that is swung into vertical or horizontal position and locked in place by means of a system of levers 21, 21. On said flat bar the bottom edge of the metal sheet rests while a strip is being cut from the same by the blades 6 and 7, the flat bar being in horizontal position. The strip cut off by the blade is thus always of uniform width. To prevent frame 5 striking against the flat bar 12 which lies in the same plane with the former, on its forward motion, both frame 5 and bar 12 are recessed so that the recesses of the one receive the lugs formed by the recesses of the other (Fig. 8). The cams 13 on the shaft 3 actuate by means of the lever 14, a presser-bar 15 reciprocating in vertical guides 22 and placed below the shaping blade 8, which presser-bar serves for holding the strip of metal that has been cut off against the under side of the blade 8, until the concave surface of blade 6 has formed the same into a tubular rim or border. To prevent the metal strips held by the presser-bar 15 (Figs. 4 to 7) from slipping back on the backward movement of the blade 8, said presser-bar is cut away to the front, the thickness of one strip, so that the rear edge of the strip comes to be against the projecting edge part 25 of presser-bar 15, and is thus prevented from being drawn backward by blade 8. To the back of the frame 7 is pivoted the table 16 and between the same and the blade 8, the show-card or other placard which is to be provided with a metal border can be inserted. After the border has been applied to the sheet, the table 16 is lowered by means of a treadle 24 and treadle-bar 17 into the position shown in dotted lines, to permit of readily removing the show-card that has been provided with a rim or border. Immediately beneath the table 16 and attached to a part 27 of the frame, is a spring 26 which acts on table 16 and tends to keep it in its normal or upper position when not

depressed by treadle 24. The plate 5 is also provided with a perforating or embossing die 18 for the purpose of providing the necessary embossing and perforations on the border. The machine thus not only serves for producing tubular metal border strips but also for applying strips at the same time on the sheets or cards.

The drawings show the machine in a position of rest and its operation in detail is as follows: When the shaft 3 is turned in the direction from left to right, the eccentrics and cams on the same are moved toward the front. The cams 9 and 13 produce a forward and backward movement of the blade 8 and presser-bar 15 at times only, whereas, the eccentrics produce a uniform reciprocating movement of the frame 5 and consequently of blade 6. At the beginning of the rotation of shaft 3 the blade 8 and presser-bar 15 are at rest. During this time the blade 6 which is slightly inclined to facilitate cutting, cuts a strip of sheet-metal off the plate in the guides 10 and pushes the same forward until it rests against the blade 8 and presses the said strip firmly against the molded edge of said blade 8, whereby a half-round shape is given to part of this strip, as shown in Fig. 4. Hereupon both blades 6 and counter-blade 8 slide slightly forward under the influence of cams 9 and connecting-rods 19, until the front edge of blade 6 forms an almost straight line with the presser-bar 15. At the same moment this presser-bar 15 rises under the action of the levers 14, actuated by the cams 13, and the blade 8 under the influence of cam 9, rapidly moves backward a distance required for properly shaping the tubular border. By the uniform forward movement of the frame 5 with its blade 6 the tube is completed, as the approximately half round bent portion slides along the concave surface of the blade 6 and is rolled up into a tube (Fig. 7). At the same time the plate previously inserted in the guides 11 is perforated or embossed. Then all the parts return into their original position. If tubular shaped borders only are made, the same when finished drop into a suitable receptacle by turning the flat bar 12 by means of the system of levers 21. In providing show-cards with tubular borders, the operation is the same, with the exception that after the strips of sheet-metal have been pressed against the blade 8 the card is inserted between the table 16 and the blade 8. Then the presser-bar 15 rises and the metal strips, with the edge of the card, is pressed against the blade 8. The latter suddenly moves back as described above—and by the continual movement in the same direction of the plate 6 the metal strips with the edge of the card are rolled up tubular-shaped, so that further fastening of the border on the sheet is not necessary. The table 16 is thereupon lowered by means of treadle 24 and treadle-bar 17, and the bordered sheet can easily be removed, the table 16 returning automatically to its upper or normal position under the influence of spring 26.

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

1. A machine for making tubular borders for show-cards and the like, constructed with a movable cutting-blade having a concave edge, a movable shaping-blade opposite the cutting-blade and having a convex edge, a punching and embossing stamp connected with the cutting-blade, and means for operating said blades and stamp, substantially as set forth.

2. A machine for making tubular borders for show-cards and the like, constructed with a reciprocating cutting blade having a concave edge, a reciprocating shaping-blade hav- a convex edge, a vertically-movable preser-bar below the shaping-blade, and means for moving said cutting-blade transversely to their length and moving the presser-bar vertically to said blades.

3. In a machine for making tubular borders for show-cards and the like, the combination with a driving-shaft, of eccentrics and cams on the same, a reciprocating frame, a cutting-blade on the same, a reciprocating frame from the eccentrics on the shaft, a shaping-blade opposite the cutting-blade, means for operating said shaping-blade from the pans on the shaft, a presser-bar below the shaping-blade guided to move vertically to said shaping-blade, and pivoted levers acted upon by cams on the shaft and acting on the presser-bar, substantially as set forth.

4. In a machine for making tubular borders for show-cards and the like, the combination with a reciprocating frame and means for reciprocating the same, of a cutting-blade on said frame, a shaping-blade opposite the cutting-blade, means for shifting said shaping-blade transversely to its length toward and from the cutting-blade, a presser-bar below the shaping-blade, means for moving said presser-bar vertically, and a pivoted table in front of the shaping-blade, substantially as set forth.

5. In a machine for making tubular borders for show-cards and the like, the combination with a reciprocating frame, of a cutting-blade on the same, a shaping-blade mounted to move toward and from the cutting edge of the cutting-blade, a presser-bar below the shaping-blade, which presser-bar is mounted to move vertically, a pivoted table, a hook on said table, and a lug on the presser-bar engaging said hook, substantially as set forth.

6. A machine for making tubular borders for show-cards and the like, constructed with a reciprocating cutting-blade, a fixed cutting-blade toward and from which the reciprocating-blade moves, a shaping-blade below the

fixed cutting-blade, which shaping-blade is mounted to move toward and from the cutting-edge of the cutting-blade, the cutting-edge of the cutting-blade being shaped concavely and the adjacent edge of the shaping-blade being shaped convexly, substantially as set forth.

In testimony that I claim the foregoing as my invention I have hereunto set my hand in the presence of two witnesses.

MAX FUNKE.

Witnesses:
RUD. SCHMIDT,
HERNANDO DE SOTO.