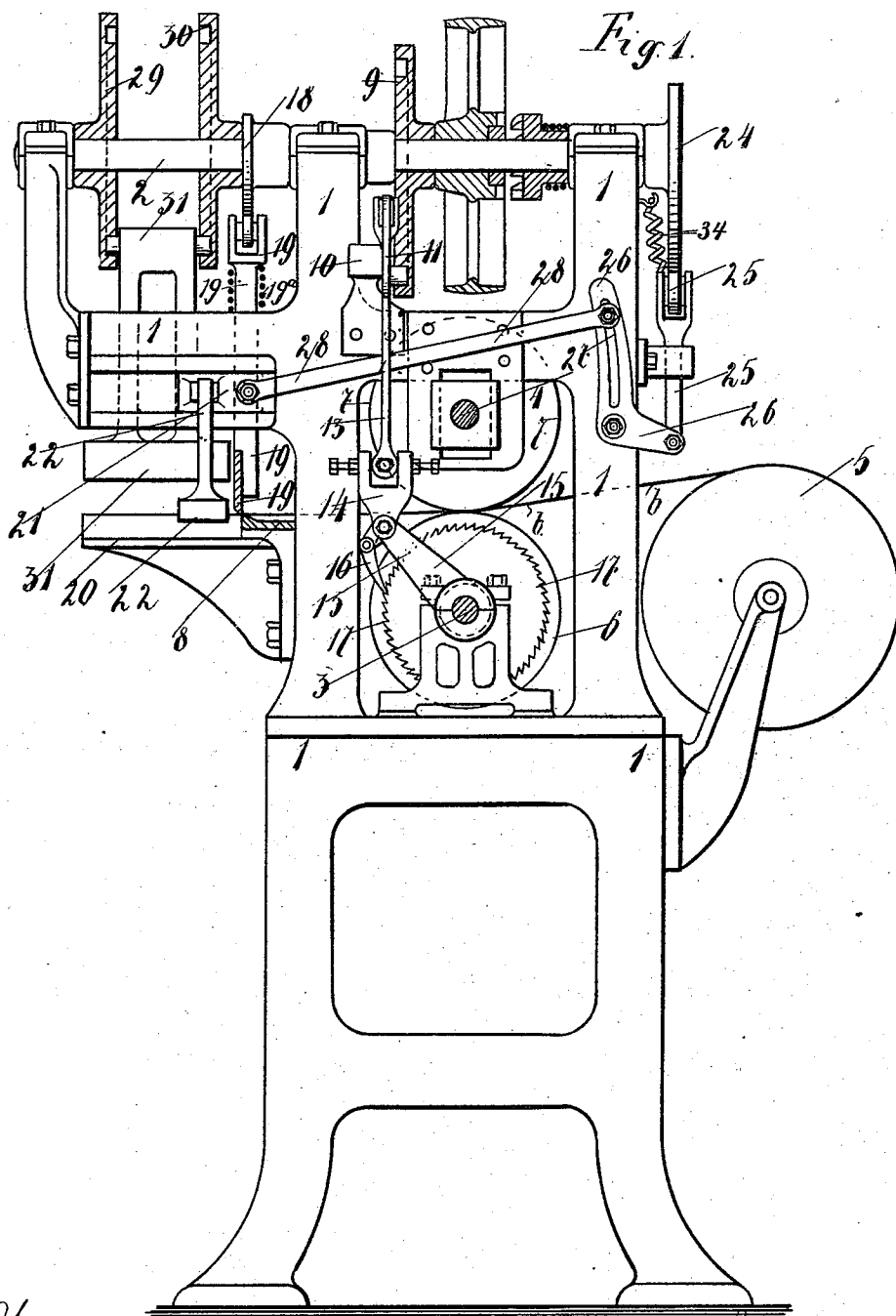


E. SALTZKORN & L. NICOLAI.

MACHINE FOR FASTENING METAL STRIPS ON PASTEBOARD, &c.
No. 529,752. Patented Nov. 27, 1894.



Witnesses:
John E. Parker
W. Fleischmann

Inventors:
Emil Saltz Korn & Ludwig Nicolai
by their Attorney,
James Pettit.

(No Model.)

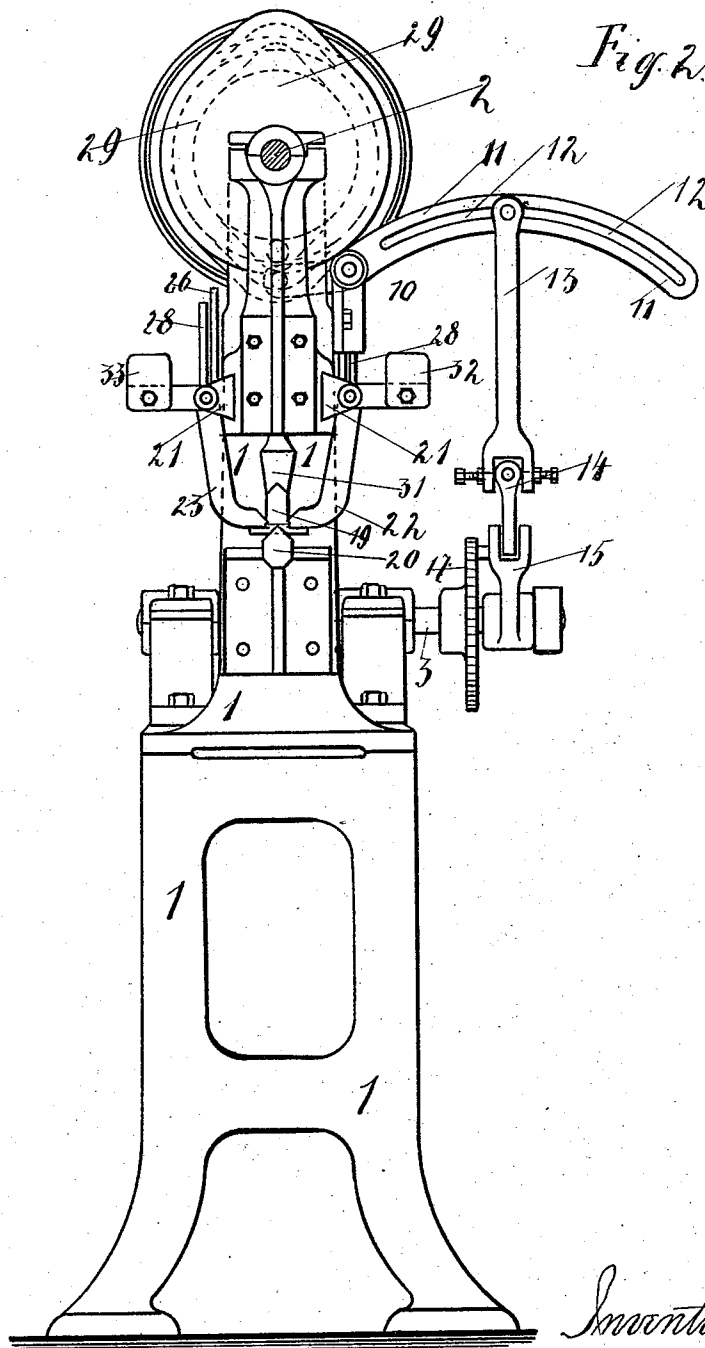
2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

EMIL SALTZKORN AND LUDWIG NICOLAI, OF DRESDEN, GERMANY.

MACHINE FOR FASTENING METAL STRIPS ON PASTEBOARD, &c.

SPECIFICATION forming part of Letters Patent No. 529,752, dated November 27, 1894.

Application filed November 25, 1893. Serial No. 491,952. (No model.)

To all whom it may concern:

Be it known that we, EMIL SALTZKORN and LUDWIG NICOLAI, subjects of the King of Saxony, residing in the city of Dresden, in the Kingdom of Saxony, German Empire, have invented certain new and useful Improvements in Machines for Fastening Metal Strips on Pasteboard, Wood, and the Like, of which the following is a specification.

Our invention relates to certain improvements in machines for attaching metal strips to pasteboard boxes and the like, being especially adapted for use in uniting the meeting edges of pasteboard boxes in lieu of pasting the same together.

The present invention relates more particularly to the mechanism employed for manufacturing such attaching strips from a continuous strip fed to the machine and in the mechanism for conveying such manufactured strips to the point where they are attached to the box, as more fully set forth hereinafter.

In the accompanying drawings:—Figure 1 is a side elevation, partially in section, of a machine constructed in accordance with our invention, and Fig. 2 is a front elevation of the same.

The operating parts of the machine are supported in a suitably shaped frame, 1, at the upper portion of which is journaled a longitudinal shaft, 2, which carries a number of operating cams from which all the moving parts are actuated. Journaled in suitable boxes carried by the frame are transverse shafts, 3 and 4 on which are mounted respectively the feed rolls, 6 and 7, the peripheries of which are of a shape corresponding to the contour, in cross section, of the strip, *b*, from which the smaller strips are to be manufactured. This strip, *b*, is wound upon a spool, 5, journaled on a shaft at the rear end of the frame and the strip is fed intermittently by the rolls to a cutting knife, 19, and from thence is carried to the mechanism by which it is attached to the boxes. The step by step feeding movement of the rolls is effected by a cam, 9, secured to and rotating with the shaft, 2, and adapted to act upon one arm of a lever, 11, fulcrumed at 10 to the frame, the opposite arm of the lever being curved and provided with a curved slot, 12, in which is secured one end of a connecting bar, 13, the

opposite end of which is connected through a universal coupling, 14, with a lever, 15, fulcrumed loosely to the shaft, 3, and carrying at its outer end a pawl, 16, adapted to engage the teeth of a ratchet wheel, 17, secured to the shaft, 3, of the lower feed roll, 6, so that at each rotation of the shaft, 2, the cam, 9, will act through the lever, 11, and bar 13, upon the pawl, 16, and revolve the wheel, 17, to a greater or less extent, dependent upon the position to which the bar, 13, has been adjusted in the slot 12 of the lever, 11; the greater the distance of the bar from the fulcrum point 10, the greater the extent of the movement of the pawl and the wheel 17, and vice versa.

Near the forward end of the shaft, 2, is secured a cam, 18, adapted to act upon an anti-friction roller carried by the upper end of a knife bar 19, the latter being held up in contact with the cam by a coiled spring, 19^a, surrounding the shank of the bar, and after the strip, *b*, has been fed forward for a predetermined distance, the cam 18, will operate upon the knife 19, and the latter acting in conjunction with the stationary knife edge 8, will sever that portion of the strip projecting forward of the knife.

At the front of the machine is a table, 20, of a contour dependent upon the character of the work and immediately above the table is a vertically guided die 31, from which project pins adapted to grooved cams 29 and 30 on the shaft 2, the die and table co-acting to press the severed strip upon the pasteboard, the machine in the present instance being designed to supply such strips to the meeting edges of the sides and ends of the box and the table and die having suitably inclined faces for convenience in adjusting in position the edges of the box to be acted upon and to produce the desired effect upon the strip.

To convey the severed strip from the knives to the point where it is to be acted upon by the die we employ two holding claws 22 and 23 pivoted at their upper ends to horizontally moving slides 21 adapted to suitable guide-ways in the frame and at their lower ends having recessed faces adapted to receive the edges of the strip as the latter is fed forward by the action of the feed rollers and before the knife has descended and being held in

engagement with the opposite edges of the strip by weights 32, 33 secured to arms projecting beyond the fulcrum points of the claws. These slides 21 are connected by rods 5 28 on opposite sides of the machine to the slotted arms of bell crank levers 26, fulcrumed to the frame and having their opposite arms coupled by a pin connected to a vertically guided bar 25 carrying an antifriction roller 10 held in contact with a cam 24, on the shaft 2, by a coiled tension spring 34 and the extent of movement of the slides 21 being governed by the distance of the end of the rods 28, from the fulcrum point of the bell crank levers 26, it being understood that the movement of these holding claws is in inverse proportion to the movement of the feed rollers 6 and 7, or in other words, the longer the metal strip desired, the shorter the movement of 20 the claws to transfer the severed strip to the front edge of the table. After the metal strip has been cut, and transferred to the proper position, the die 31, conforming to the shape of the table or anvil 20, descends by the action of the cams 29 and 30 and presses the metal strip into or onto the objects formerly laid in position on the table or anvil, to unite the same. By the down stroke of the die the claws 22 and 23 are caused to disengage the 30 edges of the metal strip, the opposite sides of the die being inclined for the purpose, but return to their normal position in readiness to receive the next end of the metal strip as soon as the die ascends.

35 It will be understood that this mechanism may be employed for a variety of purposes other than the manufacture of paper boxes such, for instance, as the manufacture of staples and metallic connections of various natures to be applied to the securing together 40 or ornamentation of various materials and that the strip employed for the purpose may be either plain or ornamental or of a contour in cross section suitable for the purpose for which it is designed, the feeding rollers and 45 cutting knife being of corresponding shape.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

50 1. The combination of the frame, the strip feeding devices, a cutting knife, a table, a die adapted to co-act with said table, pivoted holding claws adapted to convey the severed portions of the strip from the cutting knife to a 55 point beneath the die and mechanism for effecting the reciprocation of said holding claws, substantially as specified.

2. The combination with the frame, the strip carrying spool, mechanism for feeding such strip intermittently, a work-table, a die 60 adapted to co-act therewith, a cutting knife adapted to sever from the strip that portion of the latter fed beyond its cutting edge, and opposite holding claws adapted to engage with the edges of the strip and to convey the 65 severed portion of the latter from the knife to a position beneath the die, substantially as specified.

3. The combination of the frame, the strip holding spool, feed rollers, mechanism for 70 positively rotating one of said feed rollers, a cutting knife, holding claws adapted to engage with the edges of the strip and convey the severed portion of the latter from the cutting knife to a point where it is to be acted 75 upon, a die adapted to act upon the said strip, the opposite faces of such die being inclined and adapted to separate the holding claws and to effect the release of the strip, substantially as specified. 80

4. The combination of the frame, the strip holding spool, mechanism for feeding the strip intermittently, a cutting knife, a depressing cam therefor, a worktable, a vertically guided die adapted to co-act with the table, actuating 85 cams for said die slides 21, adapted to guide-ways in the frame, strip carrying claws 22 and 23 fulcrumed to said slides and adapted to engage with the opposite edges of the strip and to convey the latter to a point beneath 90 the die, and counterweights 32, 33, normally tending to keep such holding claws in engagement with the edges of the strip, substantially as specified.

5. The combination of the frame, a strip 95 holding spool, mechanism for intermittently feeding and severing portions from the same, a die, holding claws adapted to convey the severed strip from the knife to a point beneath the die, horizontally moving slides to 100 which said claws are pivoted, slotted bell crank levers fulcrumed to the frame, a connecting rod extending therefrom to the slides, a vertically guided bar, 25, connected to said bell crank lever, and a cam 24, adapted to act 105 upon said bar, substantially as specified.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

EMIL SALTZKORN.
LUDWIG NICOLAI.

Witnesses:

HERNANDO DE SOTO,
MARTHA LOHMANN.