

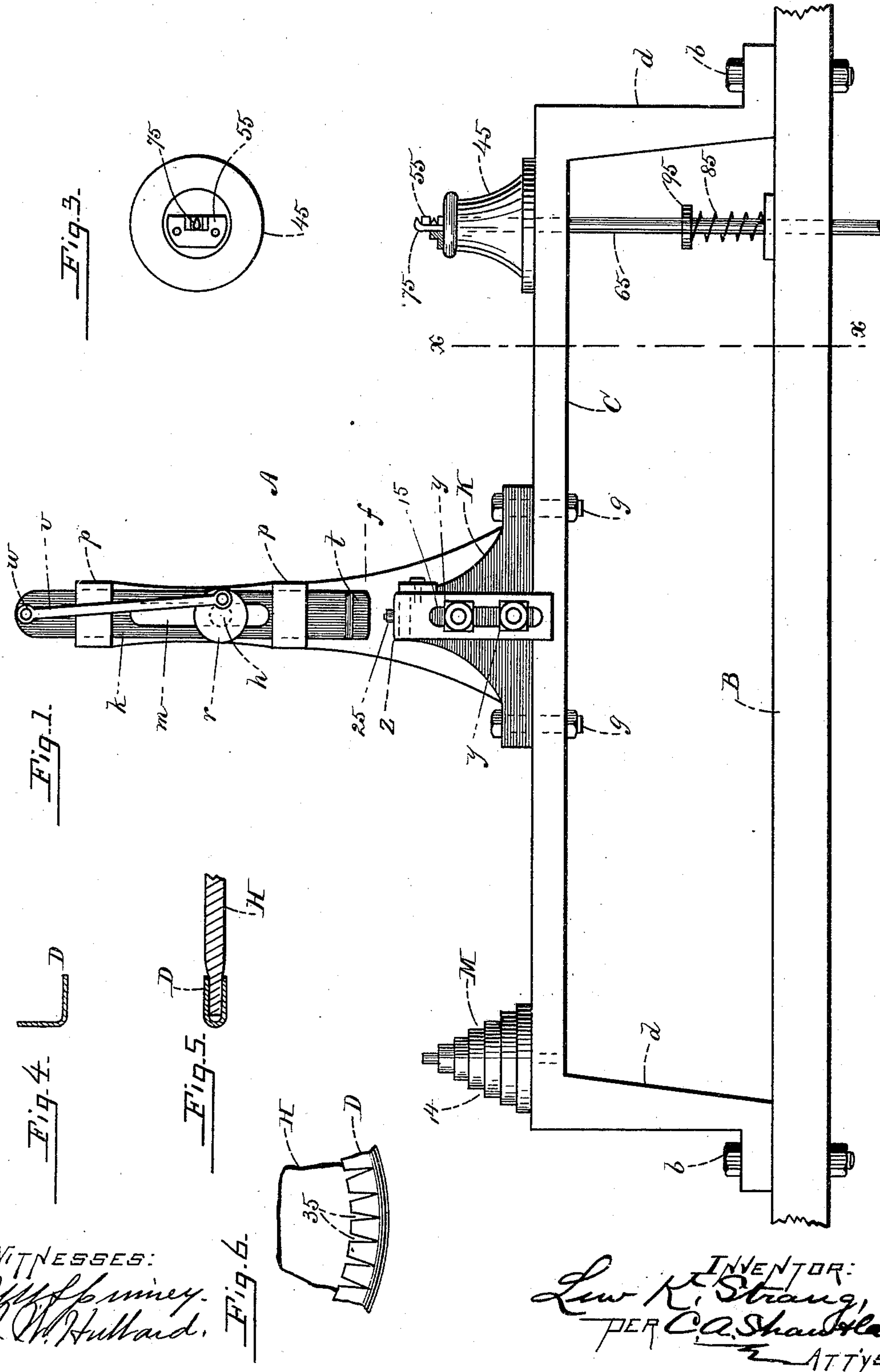
(No Model.)

2 Sheets—Sheet 1.

L. K. STRANG.
BINDING MACHINE.

No. 397,524.

Patented Feb. 12, 1889.



WITNESSES:
E. J. Sprinney,
L. W. Hubbard.

INVENTOR:
L. K. Strang,
PER C. A. Shaw, Jr.,
ATTY.

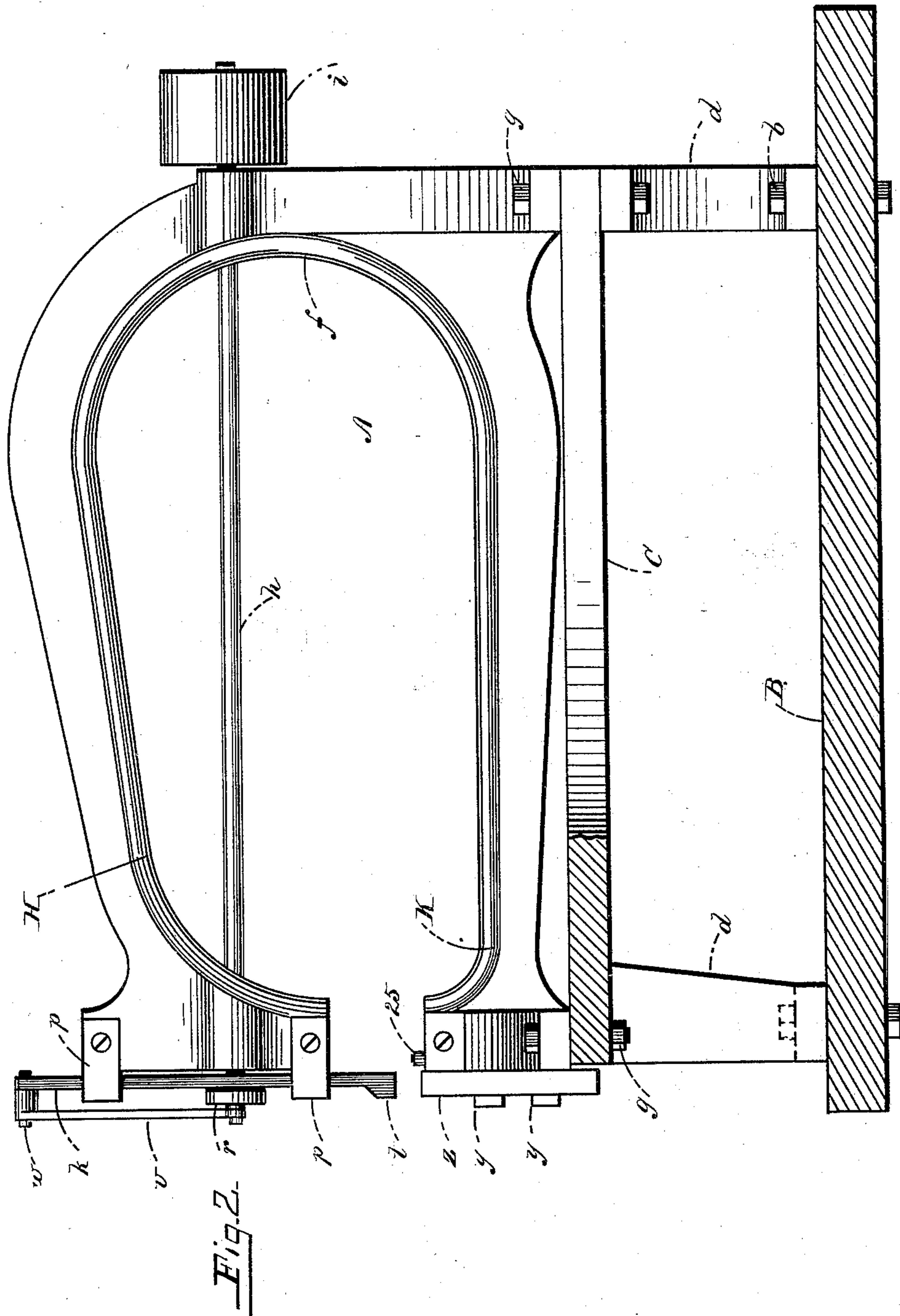
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UNITED STATES PATENT OFFICE.

LEW K. STRANG, OF HAVERHILL, MASSACHUSETTS, ASSIGNOR TO HIMSELF
AND JOHN D. WELDON, OF SAME PLACE.

BINDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 397,524, dated February 12, 1889.

Application filed September 29, 1888. Serial No. 286,786. (No model.)

To all whom it may concern:

Be it known that I, LEW K. STRANG, of Haverhill, in the county of Essex, State of Massachusetts, have invented a certain new and useful Improvement in Binding-Machines, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation of my improved binder; Fig. 2, a side elevation of the same, the table being shown in section, taken on line *x x* in Fig. 1; Fig. 3, a top plan view of the notching-die; and Figs. 4, 5, and 6, sectional views showing the binding-strip applied.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to appliances for attaching metallic binding to paper board and similar material; and it consists in certain novel features, as hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the body of the machine, B the table, and C the stand.

The table B is of any form or construction, the stand C being secured thereto by bolts *b*, passing through the legs *d* into said table.

The body A consists of two curved metallic arms, H K, their rear ends being formed integral at *f*, and the lower arm, K, secured to the stand C at its front and rear ends by bolts *g*. A longitudinally-arranged shaft, *h*, bearing a driving-pulley, *i*, on its rear end, is journaled horizontally in the upper arm, H. A plate, *k*, provided with a slot, *m*, adapted to receive the shaft *h*, is fitted to slide vertically on the front end of the arm H in guide-rings *p*, secured to said arm. The lower end of said plate is provided with a lateral boss projec-

tion, *t*, forming a hammer, the use of which is hereinafter described.

A circular disk, *r*, is secured to the forward end of the shaft *h*, and pivoted by its lower end to the face of said disk. Near the periphery thereof is a vertically-arranged lever-arm, *v*, the upper end of said arm being centrally pivoted at *w* to the top of the plate *k*.

A vertically-arranged bed-plate, *z*, is secured to the outer end of the arm K, directly under the hammer *t*, by means of bolts and nuts, said bolts passing through a slot, 15, in said plate, and into said arm, said plate being thereby vertically adjustable. Fitted to revolve on a pin in the top of the arm K, near the bed-plate, is a guide-roll, 25.

The binding-strip D consists of a flat piece of sheet metal, which is bent longitudinally, so that it is V-shaped in cross-section, as shown in Fig. 4.

The paper-board or similar material, H, to be bound is placed within the strip D, which is laid upon the bed-plate *z* and against the guide-roll 25. Power being applied to the pulley *i*, the plate *k* is caused to move alternately up and down at each revolution of the shaft *h*, thus forcing the hammer *t* against the upturned edge of the binding-strip D, and binding or clinching it onto the edge of the paper H, as shown in Fig. 5, the paper being guided over the bed-plate by the operator as rapidly as necessary.

To compensate for the difference in thickness of the material H, the bed-plate *z* is made vertically adjustable by the nuts and bolts *y*, as described, thus preventing the binding-strip from being forced into said material and weakening or cutting it at the edges, or rendering the surface thereof uneven—a particularly objectionable feature when the apparatus is employed for binding shoe-patterns or similar articles.

It is customary to cut V-shaped notches in the edges of the binding-strip D to enable it to be readily bent to conform to the shape of the corners of the article being bound. A bed-piece, 45, is secured to the stand C, preferably at the right of the body A. A die, 55, is disposed centrally on the top of the bed-piece 45, said die being of such shape as to

readily receive the V-shaped binding-strip D. A rod, 65, is fitted to slide vertically in the table B and stand C and passes upward through the bed-piece 45. The rod 65 is operated by an ordinary treadle mechanism (not shown) disposed below the table B. A V-shaped cutting-die, 75, is secured to the upper end of the rod 65, and is fitted to work vertically in the bed-die 55. A stiff coiled spring, 85, is disposed around the rod 65, between an annular flange, 95, on said rod and the table B, the purpose of said spring being to keep the die 75 elevated.

In the use of the dies the binding-strip D is passed longitudinally into the bed-die 55, so that its edges pass under the cutting-die 75. By compressing the treadle the rod 65 is forced downward against the pressure of the spring 85, causing the cutting-die 75 to descend and cut the V-shaped slots 35 in the edge of the binding-strip, said spring returning the die to its original position as the treadle is released, in a manner that will be readily understood by all conversant with such matters without a more explicit description. A cone, M, is disposed at the opposite side of the stand C, said cone being provided with a series of circular forming-edges, 14, of different diameters, as shown in Fig. 1. The binding-strip D, after being cut by the die 75, is placed on one of the forming-edges, 14, of the cone M, and bent to conform to the curve to which it is to be applied.

Having thus explained my invention, what I claim is—

1. In a device of the character described, the combination of a body, a horizontally-arranged shaft journaled in said body and bearing a driving-pulley at one end and a circular disk on the opposite end, a hammering-plate fitted to slide vertically on said body and provided with a slot for said shaft, a crank-rod pivoted to said disk and the upper end of said plate, and a vertically-adjustable bed-plate secured to said body below said hammering-plate, substantially as set forth.

2. In a device of the character described, the combination of a body comprising two longitudinally-arranged arms, a horizontally-arranged shaft journaled in the upper arm of said

body and bearing a disk on its forward end, a hammering-plate fitted to slide vertically on the forward end of said upper arm and provided with a slot for said shaft, a crank-rod pivoted to said disk and plate, a vertically-adjustable bed-plate secured to the forward end of the lower arm of said body in alignment with said hammering-plate, and a guide-roll journaled on said lower arm, substantially as specified.

3. In a device of the character described, the combination of the table B, provided with the stand C, the bed-piece 45, the rod 65, fitted to slide vertically in said stand and provided with the spring 85, the bed-die 55, adapted to receive the edges of the binding-strip D, the V-shaped cutting-die 75, secured to said rod and fitted to slide vertically in said bed-die, and treadle mechanism for operating said rod, substantially as set forth.

4. In a device of the character described, the combination of the body A, having the arms H K, the shaft *h*, journaled in the arm H and bearing the pulley *i* and disk *r*, the hammer-plate *k*, fitted to slide vertically on said arm and provided with the slot *m*, the crank-rod *v*, pivoted to said disk and plate, and the vertically-adjustable bed-plate *z*, secured to the arm K in alignment with the plate *k*, substantially as and for the purpose set forth.

5. In a device of the character described, the combination of the body A, having the arms K H, the stand C, the shaft *h*, journaled in the arm H and bearing the pulley *i* and disk *r*, the plate *k*, fitted to slide vertically in rings *p* on the arm H and provided with the slot *m* and boss *t*, the crank-rod *v*, pivoted to said disk and plate, the vertically-adjustable bed-plate *z*, secured to the arm K in alignment with said hammer-plate, and the guide-roll 25, journaled in said arm K, all being arranged to operate substantially as specified.

LEW K. STRANG.

Witnesses:

FRANK M. WHITMAN,
NATHL. C. BARTLETT.