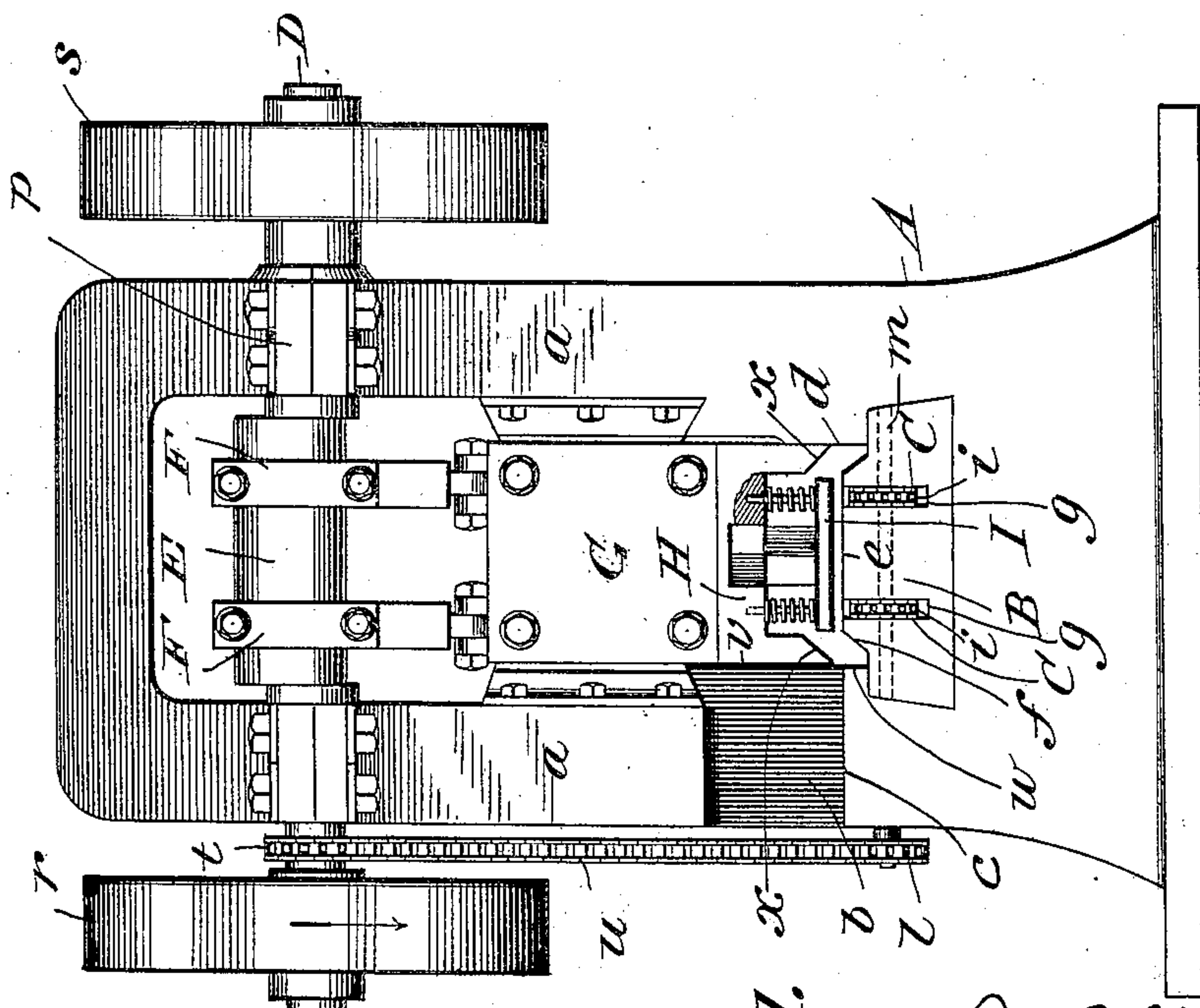
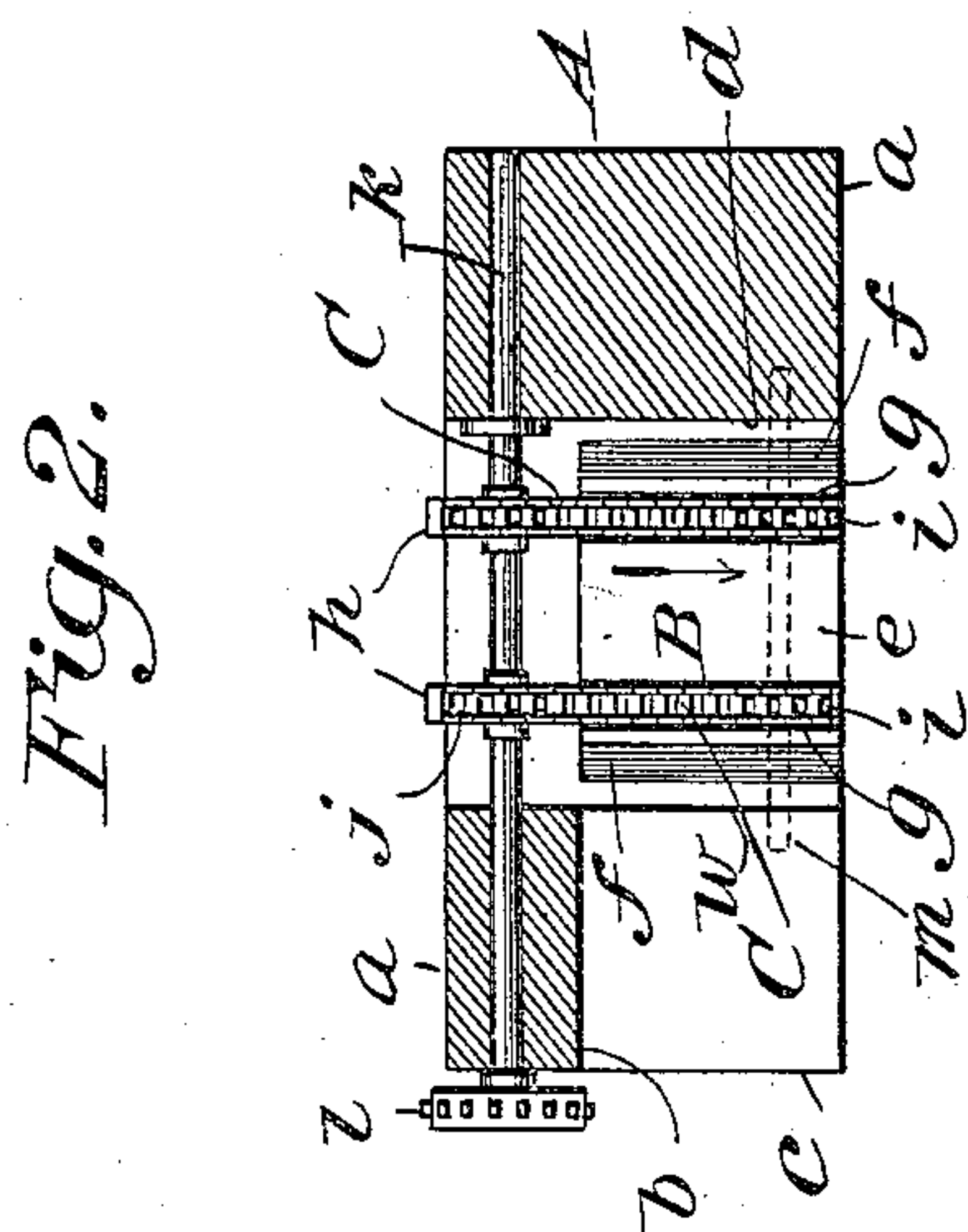


No. 886,382.

PATENTED MAY 5, 1908.

J. R. MAIN.  
MACHINE FOR CUTTING AND SHAPING METAL.

APPLICATION FILED JAN. 13, 1908.



Witnesses  
Phil E. Barnes  
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By

Fig. 1.

J. R. Main.

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# UNITED STATES PATENT OFFICE.

JAMES RAY MAIN, OF CALLERY, PENNSYLVANIA.

## MACHINE FOR CUTTING AND SHAPING METAL.

No. 886,382.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed January 13, 1908. Serial No. 410,633.

*To all whom it may concern:*

Be it known that I, JAMES RAY MAIN, citizen of the United States, residing at Callery, in the county of Butler and State of Pennsylvania, have invented new and useful Improvements in Machines for Cutting and Shaping Metal, of which the following is a specification.

My invention pertains to the cutting and shaping of sheet-metal; and it contemplates the provision of a simple and inexpensive machine designed more especially for cutting a bar of metal and shaping the same in one operation to form a strap calculated to be used to advantage in binding a pack of sheet-steel or other plates.

The invention will be fully understood from the following description and claims when the same are read in connection with the drawings, accompanying and forming part of this specification in which:

Figure 1 is a front elevation illustrating the best practical embodiment of my invention known to me. Fig. 2 is a horizontal section taken through the machine in a plane immediately above the lower shaping member thereof. Fig. 3 is a perspective view showing one of the binders which constitute the product of the machine.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which:

A is the main frame of the machine, which may be of any construction compatible with the purpose of my invention, though I prefer to make it in the manner illustrated—i. e., with uprights *a* and with a recess *b* in the face or forward side of one upright, the lower wall *c* of which recess is designed to serve as a table or work-support in the manner presently described. The inner side of the upright *a* that is not recessed is designed at the point *d* to form a stop for the bar or strip of iron from which the binding straps are cut in the manner hereinafter detailed.

Suitably positioned in the main frame A so that its upper side is flush with the table *c* is the lower shaping member B. This member B is provided at the ends of its flat upper side *e* with inclines *f*; and it is also provided in its upper side with two (more or less) grooves *g* for the passage of the upper stretches of sprocket belts C. These sprocket belts C are each provided with a projection *h*, and, as best shown in Fig. 2, said belts are arranged on forward idler sprocket

wheels *i* and on rear sprocket wheels *j*, the latter being fixed on a shaft *k* which is journaled in the main frame A and is equipped at one end with a sprocket wheel *l*. It will be noticed at this point that while the shaft *k* is journaled in the main frame A, the shaft *m* which carries the idler sprocket wheels *i* is positioned in the shaping member B and may therefore be placed in said shaping member precedent to the arrangement of the same in the main frame A.

Journaled in suitable bearings *p* in the main frame A is a shaft D having at its ends band pulleys *r* and *s* or other gears through which it may be rotated in the direction indicated by arrow in Fig. 1. At a point alongside the main frame A the shaft D is provided with a sprocket wheel *t*, and the said wheel *t* is connected through a sprocket belt *u* with the sprocket wheel *l* on the shaft *k*. That portion of the shaft D which rests between the uprights *a* of the main frame forms an eccentric E, and the said eccentric is disposed in straps F which are pivotally or otherwise suitably connected at their lower ends to a rectilinearly movable plunger G guided between the uprights *a*. The said plunger G carries at its lower end the upper shaping member H of my improvements, and this latter member by reason of one of its ends *v* being disposed vertically and arranged in a vertical plane closely adjacent to that of the inner end *w* of the table *c* is enabled on the down movement of the plunger to make a shear cut and thereby neatly sever the forward portion of the bar or strip of iron from the remainder thereof. It will also be noticed that the upper member *h* is provided with inclines *x* opposed to and designed to cooperate with the inclines *f* of the base member B in bending the end portions of the piece of iron subsequent to the disconnection thereof from the bar or strip of iron.

As shown in Fig. 1, the upper member H is equipped with a spring-backed plunger I which normally rests in the position illustrated in said figure. The said spring-backed plunger has for its office to engage and hold the bar or strip of iron in proper position during the cutting of the said bar or strip in the manner before described.

In the practical operation of my novel machine, the shaft D is rotated in the direction indicated by arrow in Fig. 1, and consequently the upper stretches of the belts C are moved in the direction indicated by arrow in



Fig. 2 or toward the front of the machine. The bar or strip of metal from which the binders are to be produced is fed from the left toward the right over the table *c* and over the upper side *e* of the lower shaping member B until the forward end of said bar or strip brings up against the inner side of the unrecessed upright *a*. Then when the plunger G is moved downward it will be seen that the end *v* of the upper member H will cooperate with the end *w* of the table *c* to cut the bar or strip, and then said member H will cooperate with the member B to bend the end portions of the piece of iron downward after the manner illustrated in Fig. 3. Immediately before the cutting of the metal in the manner described, the spring-backed plunger I will have engaged the portion of the metal resting on the lower member B to hold the metal against displacement incident to the cutting operation, and on the upward movement of the plunger G and subsequent to the cutting and shaping operations described, the projections *h* on the belts C will move forward and engaging the binder on the member B will push said binder forward off the said member B with the result that the binder will drop on the floor in front of the machine. From this latter it will be understood that all the operator of the machine has to do is to feed the bar or strip of metal step by step to the machine in the manner before described.

Notwithstanding the efficiency of my novel machine as shown and described, it will be appreciated that the said machine is simple, inexpensive and compact in construction and as a whole is well adapted to withstand the usage to which machines of corresponding character are ordinarily subjected.

The construction herein illustrated and described constitutes the best embodiment of my invention of which I am cognizant, but it is obvious that in the future practice of the invention such changes or modifications may be made as fairly fall within the scope of my invention as defined in the claims appended.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:

1. In a machine for the purpose described, the combination of a frame having a table the inner end of which is disposed at a right angle to its surface, a shaping member arranged in the frame and having a flat side ar-

ranged flush with the surface of the table and also having a groove in said flat side, a belt one stretch of which is movable through said groove; the belt being provided with a projection, a combined cutting and shaping member guided in the frame and movable toward and from the first named member and having an end arranged to cooperate with the said end of the table in making a shear cut, a spring-backed plunger carried by and arranged to move toward and from the second named member, a shaft journaled in the frame, a connection intermediate the said shaft and the second named member for reciprocating the latter by the former, and a driving connection between said shaft, and the said belt.

2. In a machine for the purpose described, the combination of a frame having uprights and also having a recess in the face of one upright, the lower wall of which recess forms a table the inner end of which is disposed at a right angle to its surface, a shaping member arranged in the frame at the lower end of the space between the uprights, and having a flat upper side arranged flush with the surface of the table, and inclined end portions, and also having grooves in said upper side, belts the upper stretches of which are movable through the said grooves; the said belts being provided with projections, a vertically movable combined cutting and shaping member guided in the frame and having inclined portions opposed to the inclined portions of the fixed shaping member and also having an end arranged to cooperate with the said end of the table in making a shear cut, a spring-packed plunger carried by and arranged to move vertically with respect to the combined cutting and shaping member and also arranged to hold the stock on the fixed member during the cutting operation, a shaft journaled in the frame, a connection intermediate the said shaft and the combined cutting and shaping member for reciprocating the latter by the former, and a driving connection between said shaft and the said belts.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES RAY MAIN.

Witnesses:

WILLIAM A. SLOAN,  
M. J. FORSYTHE.