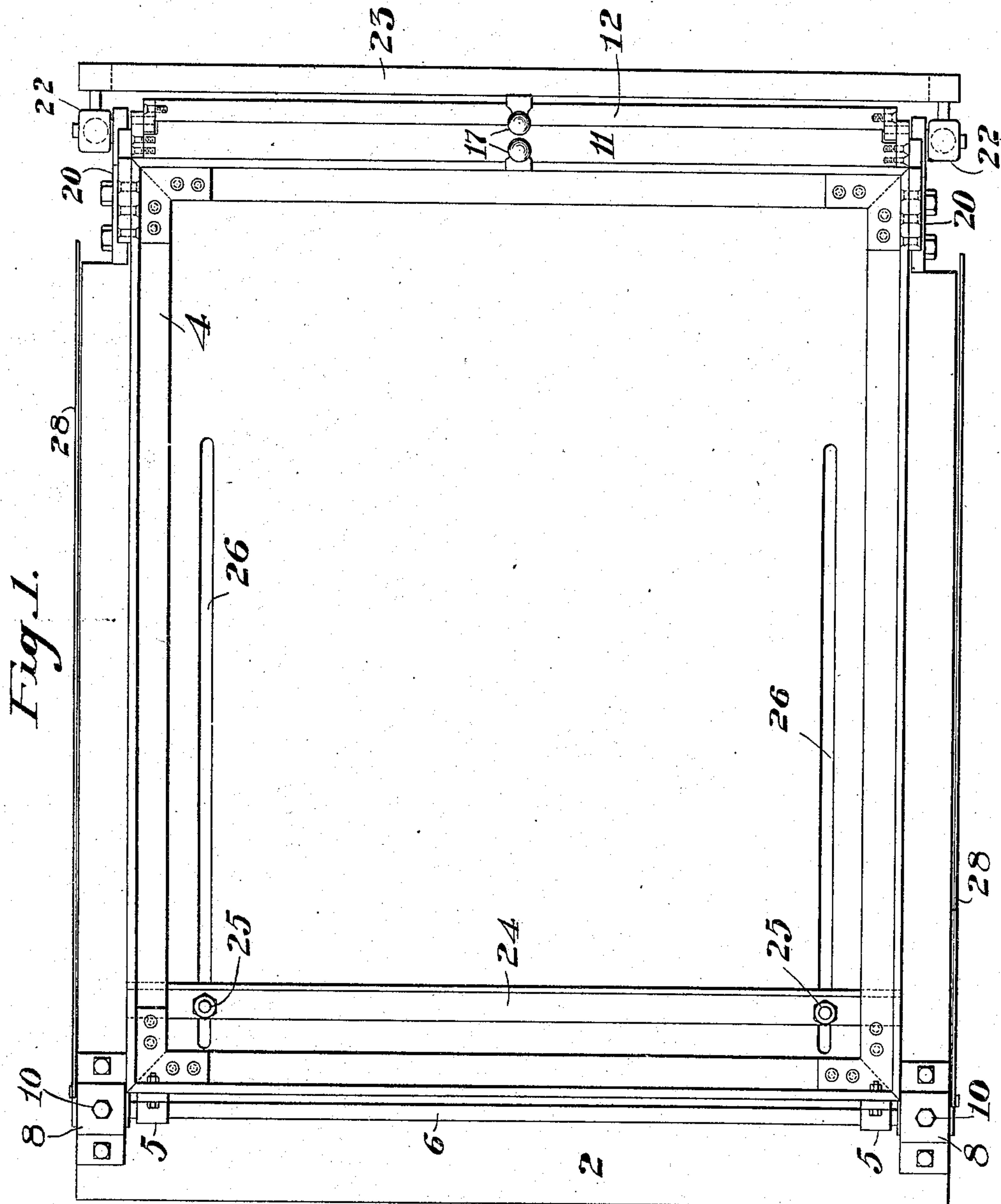


A. R. McARTHUR.
 APPARATUS FOR FORMING SHEET METAL PACKAGES.
 APPLICATION FILED JAN. 15, 1909.

936,799.

Patented Oct. 12, 1909.
 3 SHEETS—SHEET 1.



WITNESSES

R. A. Baldwin
G. L. Winters

INVENTOR

A. R. McArthur
by W. H. Hynes, Attorney

A. R. McARTHUR.
 APPARATUS FOR FORMING SHEET METAL PACKAGES.
 APPLICATION FILED JAN 15, 1909.

936,799.

Patented Oct. 12, 1909.

3 SHEETS—SHEET 2.

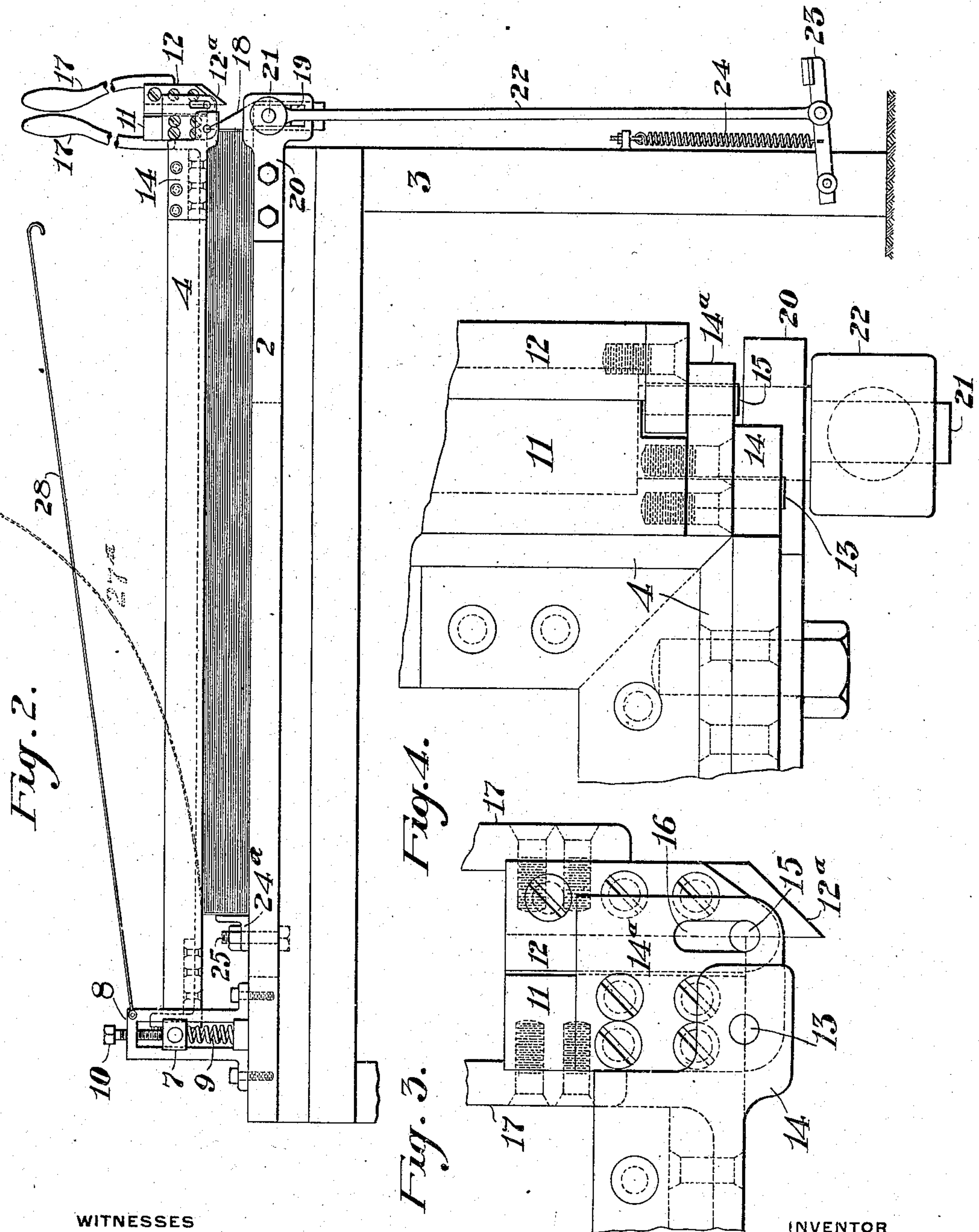


Fig. 2.

Fig. 3.

Fig. 4.

WITNESSES

R. A. Balderson
 G. L. Winters

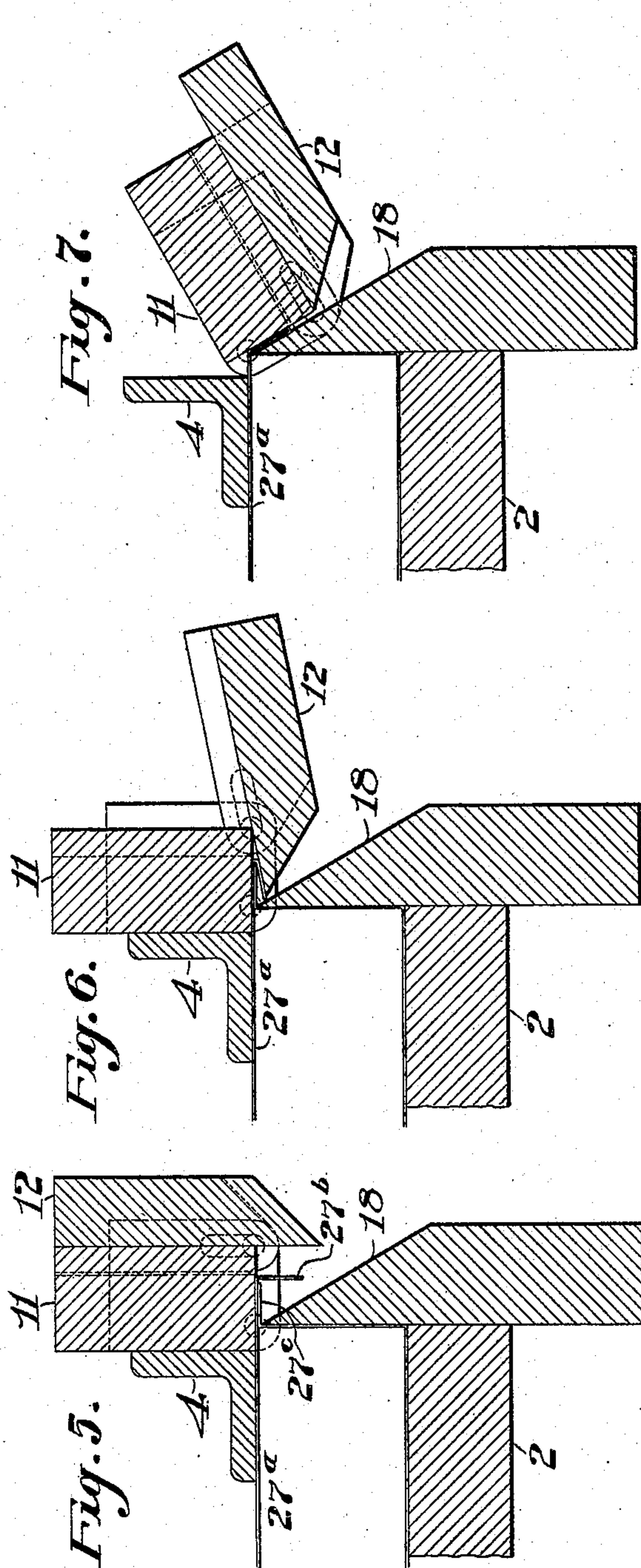
INVENTOR

A. R. McArthur
 by Wallace Rymos & Partners
 his attys

A. R. McARTHUR.
 APPARATUS FOR FORMING SHEET METAL PACKAGES.
 APPLICATION FILED JAN. 15, 1909.

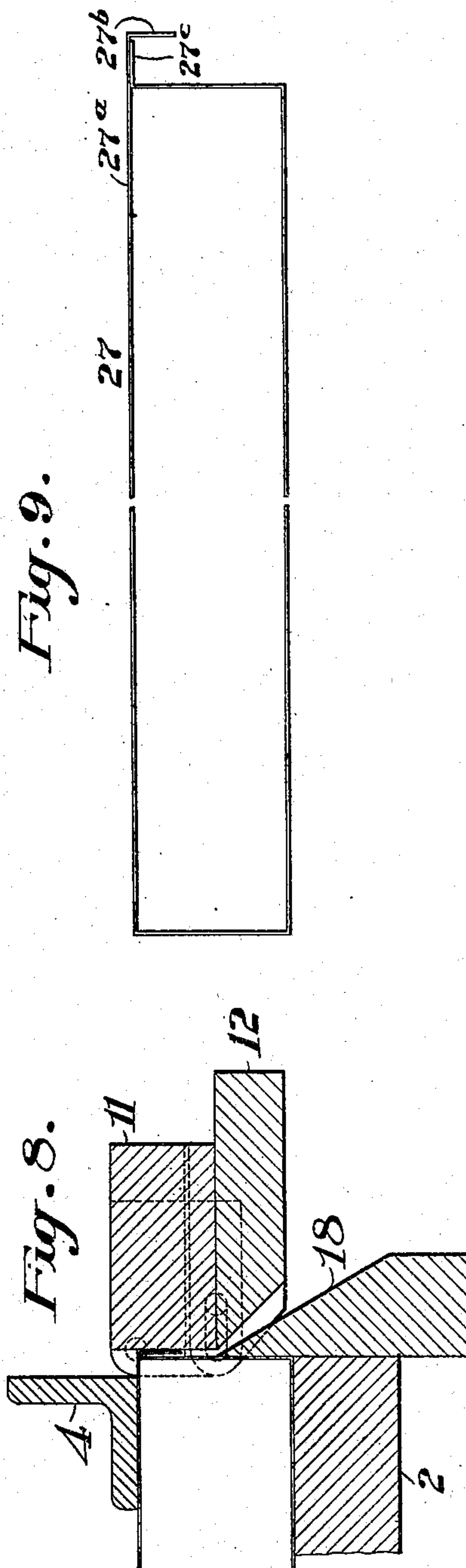
936,799.

Patented Oct. 12, 1909.
 3 SHEETS—SHEET 3.



WITNESSES

R. H. Balderson
J. E. McIntire



INVENTOR

A. R. McArthur
 by *Barclay Dymos & Pomeroy*
his attys

UNITED STATES PATENT OFFICE.

ARTHUR R. McARTHUR, OF ELWOOD, INDIANA, ASSIGNOR TO AMERICAN SHEET & TIN
PLATE COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF NEW
JERSEY.

APPARATUS FOR FORMING SHEET-METAL PACKAGES.

936,799.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed January 15, 1909. Serial No. 472,437.

To all whom it may concern:

Be it known that I, ARTHUR R. McARTHUR, of Elwood, Madison county, Indiana, have invented a new and useful Apparatus
5 for Forming Sheet-Metal Packages, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

10 Figure 1 is a plan view of a machine embodying my invention. Fig. 2 is a side elevation of the same, with a portion of the frame broken away. Figs. 3 and 4 are detail views showing portions of the dies in
15 side elevation and plan respectively; Figs. 5, 6, 7 and 8 are detail section views illustrating different steps in the forming operation, and Fig. 9 is an end view of the sheet metal wrapper.

20 My invention has relation to apparatus for forming sheet metal packages of the general class described and claimed in the patents of H. E. Marks Nos. 857,744 and 874,779 of June 18th and December 24th
25 1907.

The invention is designed to provide means for use in assembling packages of this class and for securing sheet metal wrappers thereto, which is simple in its character and
30 operation and by which the work can be efficiently and rapidly done.

The nature of my invention will be best understood by reference to the accompanying drawings in which I have shown the
35 preferred embodiment thereof and which will now be described, it being premised, however, that various changes may be made in the details of construction and arrangement by those skilled in the art without departing from the spirit and scope of my invention, as defined in the appended claims.

40 In these drawings the numeral 2 designates a suitable bed or table which may be supported at any convenient height by frame
45 work 3, and upon which the work is performed.

4 designates a rectangular frame provided at its rear end with lugs or projections 5 which carry a transverse shaft 6, whose end
50 portions are journaled in boxes 7. These boxes are arranged to slide vertically in openings or windows of the brackets or housings 8, being seated upon springs 9 against which they are held by adjusting screws 10.

The purpose of this construction is to permit the frame 4 to be adjusted at the desired
55 height above the table 2 to suit packages of different thickness. Extending transversely across the opposite or front end of the frame 4 are two dies 11 and 12. The die 11 is
60 provided at each end at its lower rear corner portion with a pivot 13 which is journaled in plates or brackets 14 secured to the frame 4. The die 12 is also provided with a pivot 15 at each end, which is journaled in a vertically
65 extending slot 16 in the plate or bracket 14^a secured to die 11. Each die is provided at the central portion of the frame 4 with an upwardly projecting handle 17. The die 12 has a beveled working edge 12^a.
70

18 is a lower cooperating die also having a beveled outer edge and which extends transversely of the table 2 below the dies 11 and 12. The die 18 is mounted at its ends in vertical slots or openings 19 in plates 20,
75 screwed to the sides of the table 2, and has a laterally projecting pin or stud 21 at each end, which is engaged by a rod or link 22 extending downwardly to a foot lever or
80 treadle 23.

24 is a spring which is attached to the frame 3 at one end and to the foot lever or treadle at its opposite end and which acts to return the treadle to its normal position.

24^a is a back stop for the rear edge of the
85 package to be formed. This stop extends transversely across the upper surface of the table 2, being secured by bolts 25 which extend through elongated longitudinally extending slots 26 in the table and which provide means for the adjustment of the back
90 stop to suit packages of different lengths.

The operation is as follows:—The sheet metal wrapper 27 which is to inclose package and which is of the form shown in Fig. 9, is
95 placed upon the table 2, as indicated in Fig. 2, the frame 4 having been thrown upwardly and backwardly upon its pivots. The top portion 27^a of the wrapper, which is formed at its free edge with the L-shaped
100 flange 27^b is bent upwardly, as shown in dotted lines in Fig. 2, and is engaged with a suitable supporting device, such as indicated at 28. The metal sheets which are to be inclosed by the wrapper and which form
105 the package, are now placed within the wrapper until the latter is filled. The top number 27^a of the wrapper is disengaged

from the supporting device 28, and the frame 4 is brought forwardly and downwardly upon the package as shown in Fig. 2. The L-shaped flange 27^b of the wrapper is resting upon the short straight flange 27^c on the end member of the wrapper, as shown in Figs. 2, 5 and 9, and the lower die 18 is in the position shown in Figs. 2, 5, 6 and 7. The handle 17 of the die 12 is then pushed downwardly and forwardly to bring said die into the position shown in Fig. 6, thus bending the depending portion of the flange 27^b backwardly underneath the flange 27^c. The handle 17 of the die 11 is now operated to move said die on its pivots into the position shown in Fig. 7, thereby bending the flanges 27^b and 27^c downwardly against the beveled face of the lower die 18. The lower die is now retracted by means of the foot lever or treadle 23, and the two dies 11 and 12 are moved downwardly into the position shown in Fig. 8, thereby bending and seaming flanges 27^b and 27^c against the end portion of the wrapper in the manner shown in Fig. 8. The dies are then returned to their former positions. The frame 4 is thrown backwardly on its pivots; the completed package is removed, and another wrapper is then placed on the table 2.

The invention provides simple and convenient means whereby the packages may be readily and rapidly assembled and completed. It will be obvious that various changes can be made in the details of construction and arrangement. Thus the table or bed may be of any suitable construction; the dies may be differently supported and operated; die-carrying frame 4 may be differently constructed and operated and any suitable supporting means may be used in place of the supports 28, all without departing from my invention as defined in the appended claims.

I claim:—

1. In apparatus of the character described, a table or support upon which the package wrappers are placed and the packages assembled thereon, a vertically movable frame and having each a hinged or pivoted mounting above and extending back over the table or support, a pair of dies carried by said frame, means for separately actuating the two dies, and a coacting die carried by the support, substantially as described.

2. In apparatus of the character described, a table or support upon which the package wrappers are placed and the packages assembled thereon, a vertically movable frame above and extending back over the table or support, a pair of dies carried by said frame and capable of joint and also of independent pivotal movement, means for separately actuating the two dies, and a coacting die car-

ried by the support, together with means for moving the last named die toward and away from the other dies, substantially as described.

3. In apparatus of the character described, a support upon which the package wrappers are placed, a hinged or pivoted frame above the support, a pair of transverse dies carried by the free end portion of said frame, one of said dies being pivoted to the frame, and the other die being pivoted to the first named die, a coöperating die arranged transversely of the support, and means for separately actuating the three dies, substantially as described.

4. In apparatus of the character described, a table or support, a frame above the table or support and hinged or pivoted thereto at the rear end portion of the support, a pair of transverse bending dies carried by the front end portion of the frame, said dies being movable with and also independently of the support, and coöperating bending means carried by the support, substantially as described.

5. In apparatus of the character described, a support for the package to be formed, a vertically movable die carrier above the support, coöperating bending dies carried by the die carrier and by the support, and means for holding a portion of the package wrapper in elevated position while the package is being assembled; substantially as described.

6. Apparatus of the character described, comprising a support for the package to be formed, a die carrier above the support, a pair of dies carried by the die carrier, each of said dies being pivoted at its ends, means for separately actuating the two dies, and a coöperating bending die carried by the support, together with means for moving the last named die toward and away from the other dies; substantially as described.

7. Apparatus of the character described, comprising a support for the package to be formed, a vertically movable die carrier over the support, dies pivotally mounted on the die carrier and arranged to bend and close the meeting edges of the package wrapper upon each other, and another coöperating die against which the closed edges of the wrapper are bent, together with means for retracting the last named die to permit the first named dies to complete the closing in of said edges; substantially as described.

In testimony whereof, I have hereunto set my hand.

ARTHUR R. McARTHUR.

Witnesses:

E. H. RODGERS,
FRED J. MEYBIN.