

April 16, 1935.

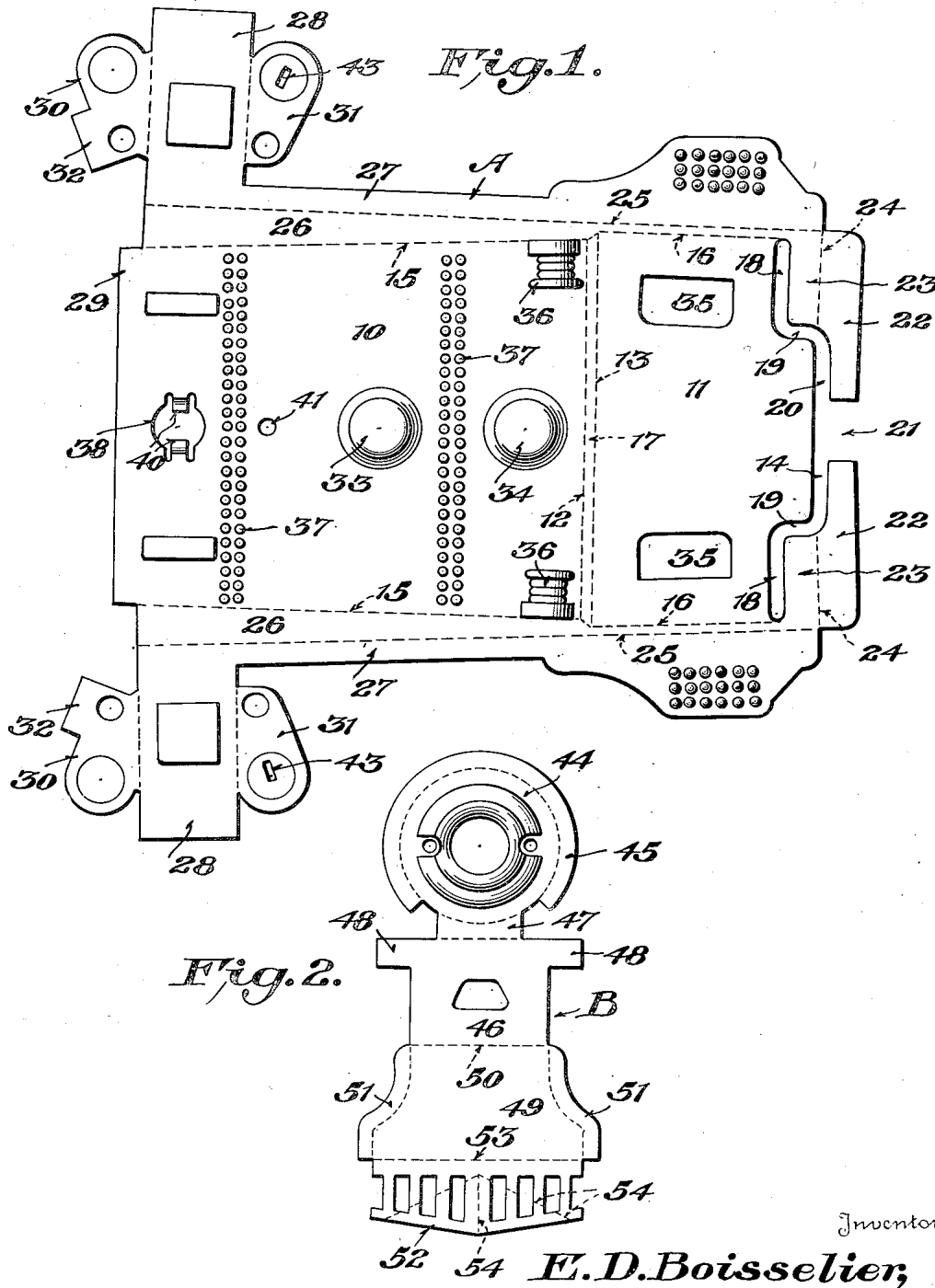
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1,997,922

TOY LOCOMOTIVE CONSTRUCTION

Filed June 26, 1934

3 Sheets-Sheet 1



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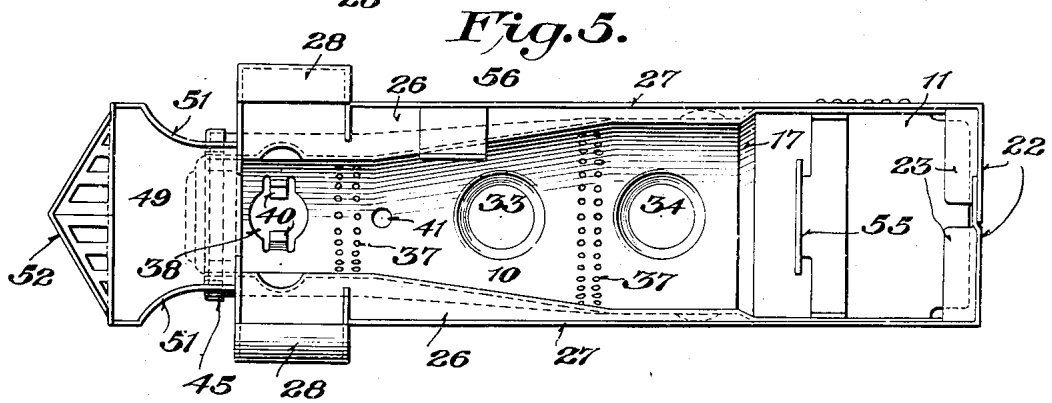
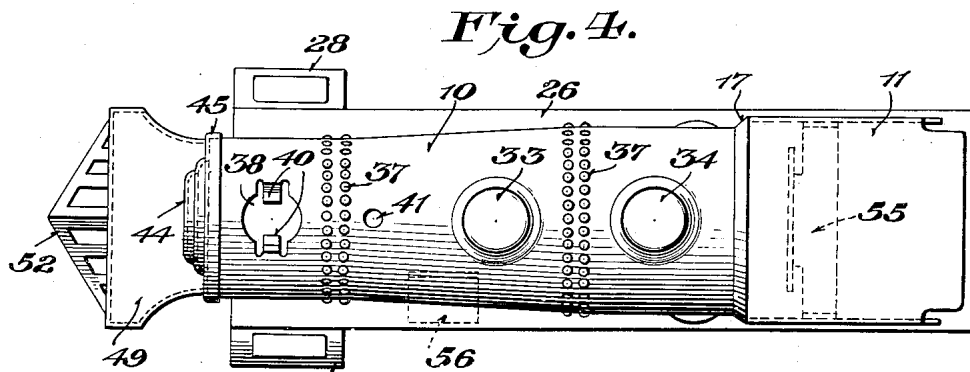
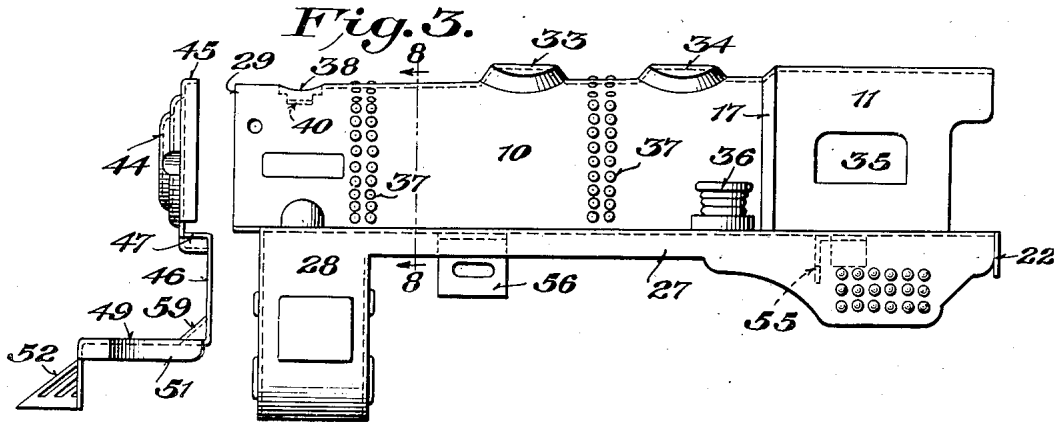
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3 Sheets-Sheet 2



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Fig. 6.

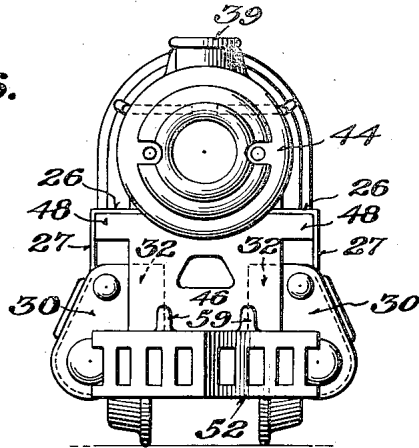


Fig. 7.

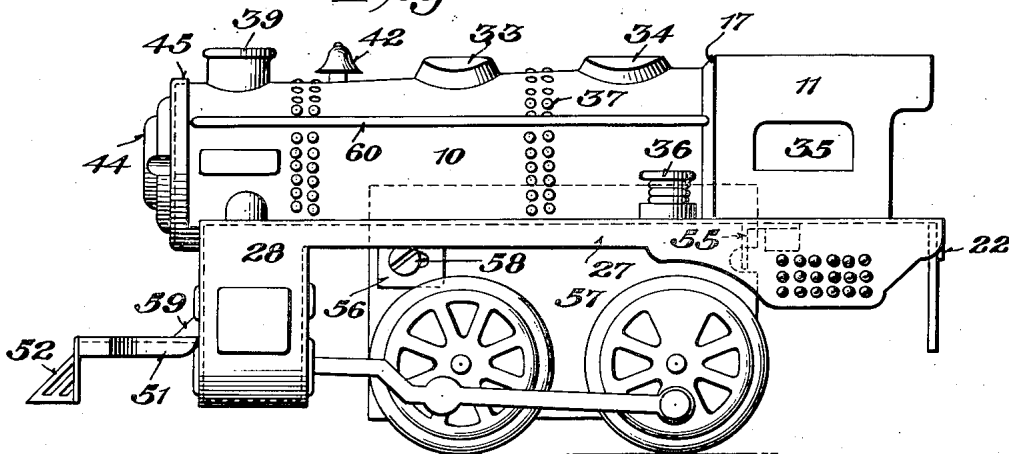
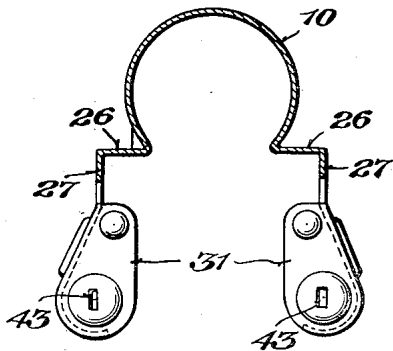


Fig. 8.



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TOY LOCOMOTIVE CONSTRUCTION

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15 Claims. (Cl. 46—48)

This invention relates to toy locomotives and to the production thereof, and has generally in view to provide for the low production cost of strong, durable toy locomotive bodies closely simulating large or ordinary commercial locomotives.

According to the present invention, a toy locomotive body is formed from sheet metal blanks, in which connection one of the important objects of the invention is to provide for the forming of a complete locomotive body including boiler, cab, frame, cylinders, boiler head, pilot, etc. from only two blanks which are easy to stamp, to bend or otherwise form to shape and to assemble with each other, whereby the finished locomotive body is, as aforesaid, of low production cost.

More particularly, another important object of the invention is to provide a pair of blanks having a novel assembled relationship such that one serves effectively to hold a part of the other in its bent or formed condition.

Another object of the invention is to provide for an overlapping relationship of a pair of the elements of one of the blanks when the latter is bent or formed to shape so that by spot welding or otherwise readily and easily fastening said overlapping elements together all of the adjacent parts of the blank are held rigidly and securely in their bent or formed condition.

With the foregoing and various other objects in view, which will become more fully apparent as the nature of the invention is better understood, the same consists in the novel features of the blanks, the manner of bending or forming them to shape, the cooperative relationship between the blanks when bent or formed to shape and when assembled with each other, and in the various other features of combination, arrangement and mode of forming and assembling the blanks as will be hereinafter more fully described, illustrated in the accompanying drawings and defined in the appended claims.

In the drawings, wherein like characters of reference denote corresponding parts in the different related views:—

Figure 1 is a plan view of a typical locomotive body blank having the features of the invention.

Figure 2 is a plan view of another typical locomotive body blank having the features of the invention and designed for cooperation with a blank of the character shown in Fig. 1.

Figure 3 is a side elevation showing the blanks of Figs. 1 and 2 bent or formed to shape and in separated relationship.

Figure 4 is a top plan view showing the formed blanks of Fig. 3 assembled with each other.

Figure 5 is a bottom plan view showing the formed blanks of Fig. 3 assembled with each other.

Figure 6 is a front view of the formed and assembled blanks.

Figure 7 is a side elevation of a complete toy locomotive produced in accordance with the invention; and

Figure 8 is a cross section on the line 8—8 of Fig. 3.

Referring to the drawings in detail, first with particular reference to what will be termed the "boiler-cab" sheet metal blank illustrated in Fig. 1 and designated generally as A, it will be observed that said blank comprises two main body portions designated as 10 and 11, respectively, the former of which is of somewhat elongated, generally rectangular shape and extends from the front or left hand end of the blank rearwardly to the dotted line 12, and the latter of which is disposed rearwardly of the portion 10 and extends forwardly to the dotted line 13 paralleling the dotted line 12 immediately rearwardly thereof, the rear limit of the portion 11 being defined by the front edge of a transverse slot 14.

The side limits of the body portion 10 are indicated by the longitudinally extending dotted lines 15, 15, and while these lines may be parallel to each other, they preferably converge somewhat towards the front of the blank as shown. On the other hand, the side limits of the body portion 11 are indicated by the longitudinally extending dotted lines 16, 16, and while these lines may also be parallel to each other, they preferably converge somewhat rearwardly. Moreover, the front end of the portion 11, defined by the dotted line 13, preferably is of somewhat greater width than the rear of the portion 10, defined by the dotted line 12, so that the relatively narrow, transversely extending strip 17 between the portions 10 and 11 is of rearwardly flaring form.

The end portions 18 of the slot 14 extend from the side limits of the portion 11 of the blank inwardly suitable distances, thence rearwardly as at 19 and again inwardly into meeting relationship in a medial portion 20 which opens through the rear edge of the blank A, medially thereof, as indicated at 21. Thus, rearwardly of the body portion 11 is formed a pair of tongues 22, 22 having inwardly directed free end portions disposed rearwardly of the rearmost limit of the body portion 11 as defined by the medial portion 20 of the slot 14, and also having outer end por-

tions the forward parts 23, 23 of which are disposed forwardly of the said rearmost limit of the body portion 11.

The outer ends of the tongues 22, 22 define the width of the blank A at the rear thereof, and, as shown, this width is somewhat greater than the width of the rear part of the portion 11 of the blank extends a short distance forwardly to fold lines 24, 24 which extend transversely of the blank and divide the forward parts 23 of the tongues 22 from the rear parts thereof. From the points of junction of the fold lines 24, 24 with the outer ends of the tongues 22, 22, other fold lines 25, 25 extend forwardly, somewhat outwardly of and parallel to the side limits of the portion 11 as defined by the dotted lines 16, 16, to the front end of the blank A. Thereby, narrow strips 26, 26 are defined between the fold lines 25, 25 and the side limits of the portions 10 and 11 of the blank, the portions of said strips contiguous to the body portion 10 being of forwardly divergent form as is manifest.

Outwardly of the strips 26, 26, between the fold lines 25, 25 and the side edges of the blank A are strips 27, 27 which terminate at their rear ends in alinement with the fold lines 24, 24 and at their forward ends in outwardly directed tongues 28, 28, respectively, the forward edges of which are alined with the forward edges of the strips 26, 26 and are disposed somewhat to the rear of the forward edge of the body portion 10 so that the forward part of said body portion constitutes in effect a flange 29 projecting forwardly from the blank A as shown.

Extending forwardly from each tongue 28 is a tongue 29, of a shape to simulate the forward end or head of a locomotive steam chest and cylinder, while extending rearwardly from each tongue 28 is a reversely disposed, substantially duplicate tongue 31 of a shape to simulate the rear end of a locomotive steam chest and cylinder. In addition, each tongue 30 is provided with a forwardly directed tongue 32.

In forming a toy locomotive body from a stamped or otherwise suitably produced blank of the character illustrated in Fig. 1 the folding of the blank along the various fold lines does not necessarily follow any prescribed order but, on the contrary, may be considerably varied, and, as a matter of fact, some or all of the folds may be produced simultaneously. In any event, the body portions 10 and 11 are bent by a pressing operation or otherwise into open-bottom substantially tubular form with the portion 11 stepped upwardly from the portion 10 as permitted by the strip 17 interposed between said portions, the portion 10 thus being caused to simulate a locomotive boiler and the portion 11 a locomotive cab.

Due to the forwardly convergent shape of the portion 10, said portion, when bent into substantially tubular form, is of forwardly tapering shape in accordance with commercial locomotive construction. At the same time, due to the drawing of the metal in producing the stepped formation 17, the sides of the cab simulating portion 11 become parallel or substantially parallel.

In their bent condition, the bottom edges of the portions 10 and 11 correspond to the fold lines 15 and 16, and from these fold lines the strips 26 are directed outwardly, thereby simulating the walk boards usually located at the sides of a locomotive boiler and cab. On the other hand, the strips 27 are bent downwardly from the strips 26 along the fold lines 25 and

serve to stiffen the fabrication and at the same time to simulate the side portions of a locomotive below the boiler, it being pointed out in this connection that the rear portions of the strips 27 in the present instance are shaped and embossed to simulate the sides of a locomotive fire-box.

Either before or after bending of the blank along the fold lines 25, 25, the tongues 30, 31 are bent to extend laterally inward from the tongues 28 and the free end portions of said tongues 28 are bent around the bottom curved edges of said tongues 30, 31, thereby to simulate the steam chests and cylinders of a locomotive.

As the body portions 10, 11 of the blank are bent into substantially tubular form the portions 23 of the tongues 22 remain in a common plane and are caused to move inwardly relative to each other to simulate a cab floor. At the same time, the tongues 22 proper, which are bent downwardly along the fold lines 24, are caused to assume an overlapping relationship at their free ends so that they may readily be fastened together as by riveting, spot welding or any other suitable manner to hold the rear portion of the body rigidly in shape.

Either prior to, during or after the blank A is bent or formed to shape, the same preferably is pressed and pinched at desired points to provide for example, simulations 33, 34 of steam and sand domes, respectively, cab window openings 35, air pumps 36, boiler rivets 37 and, if desired, simulations of any other parts of a commercial locomotive as may be desired. In this connection it will be observed that an opening 38 is punched in the body portion 10 for the reception of a separate smokestack simulating element 39 and that tongues 40 are formed to project into said opening 38 for use in fastening the smokestack simulating element to the body portion 10. Also, it will be noted that an opening 41 is punched in the body portion 10 to receive the post of a bell simulating element 42, and that the tongues 31 are punched to provide piston rod accommodating openings 43.

Referring now to what will be termed the "boiler head-pilot" blank illustrated in Fig. 2 of the drawings and designated generally as B, it will be observed that said blank comprises a top portion 44 of substantially circular shape having a marginal flange 45; a medial portion 46 of substantially rectangular shape joined to the top portion 44 by a neck 47 and having at its upper end laterally extending wings 48; a portion 49 of downwardly and outwardly curved form below the medial portion 46 joined with the latter portion along a fold line 50 and flanged at its sides as indicated at 51, and a pilot or cow catcher simulating portion 52 below and joined to the portion 49 along a fold line 53.

The blank B is pressed or otherwise formed to shape by bending the flange 45 rearwardly, by bending the neck 47 rearwardly, by bending the medial portion 46 to extend downwardly from the neck 47, by bending the portion 49 along the fold line 50 to extend forwardly from the portion 46 by bending downwardly the flanges 51 from the portion 49 to stiffen said portion, by bending the portion 52 downwardly from the portion 49 along the fold line 53, and by bending the portion 52 along the fold lines 54 thereof into cow-catcher shape as illustrated in Figs. 3 to 6 of the drawings.

Prior to, during or after bending the blank B to shape, the same is or may be pressed as desired to provide locomotive front end simulating formations, and after said blank has been formed

to shape it is assembled with the formed blank A by engaging the flange 45 over the front end portion 29 of the boiler simulating body of said blank A. Thereby the front end of the boiler simulating body of the blank A is held in shape by the portions 44, 45 of the blank B as is manifest. Moreover, in the assembled relationship of the formed blanks A and B, the wings 48 of the blank B fit into and close the open front ends of the spaces below the strips 26 and inwardly of the strips 27 of the blank A, and the medial portion 46 of the blank B overlies the tongues 32 of the blank A so that by riveting, spot welding or otherwise suitably fastening said tongues 32 and said medial portion 46 together, the entire front end of the locomotive body is held rigidly and securely in formed condition.

To provide for equipping the locomotive body with a spring motor, electric motor or other driving means, a transversely extending support 55 is riveted, spot welded or otherwise suitably fastened at a desired point between the sides of the body, and a second support 56 is similarly fastened to one of the strips 26 or 27. Then all that is required to complete the toy is to assemble a wheeled spring or electric motor 57 with the top body through the instrumentality of screws or other fasteners 58 engaged with the supports 55, 56.

Preferably, but not necessarily, diagonal reinforcing ribs 59 are produced between the portions 45 and 49 of the blank B during forming of said blank. Also, preferably, but not necessarily, wires 60 are suitably fastened to the body A to simulate the usual hand rails of commercial locomotives.

As is manifest from the foregoing description considered in connection with the drawings, the stamping of the blanks A and B, the forming of said blanks to shape, and the assembling and fastening together of the formed blanks are relatively inexpensive, simple matters. Consequently, toy locomotives produced in accordance with the invention are of relatively low production cost. Moreover, due to the cooperative relationship between the sections A and B and to the manner of fastening the rear end of the section A and the sections A and B together, the toy is exceptionally strong and durable.

Reverting to the blank A, it is pointed out that due to the forwardly converging relationship of the fold lines 15, 15, resulting in the formed boiler body being of forwardly tapering form, the front, side portions of the blank are drawn inwardly during bending or forming of the blank to shape. For this reason the fold lines 25, 25 are made forwardly diverging so that when the blank is formed to shape, said fold lines 25, 25 and the depending strips 27 have a parallel or substantially parallel relationship. Of course, if the fold lines 15, 15 should be parallel the formed boiler body would be cylindrical, in which event the fold lines 25, 25 would be parallel.

Without further description it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art, and it will of course be understood that changes in the form, proportion and minor details of construction may be resorted to, without departing from the spirit of the invention and scope of the appended claims.

I claim:—

1. A one-piece blank of sheet material to be bent to produce a toy locomotive body, said blank comprising a portion to be formed into a boiler

simulating body, a second portion to be formed into a cab simulating body, strips at the sides of said portions to be bent outwardly therefrom to simulate locomotive walk boards, other strips outwardly of said first mentioned strips to be bent downwardly therefrom to simulate a locomotive frame below the walk boards thereof, tongues extending outwardly from said second mentioned strips to be bent to simulate the sides of cylinders, and other tongues extending from the sides of said first mentioned tongues to be bent to simulate the front and rear ends of cylinders, the parts simulating the front ends of the cylinders having tongues extending therefrom to be fastened to a second blank to complete the front end of the locomotive.

2. A blank as set forth in claim 1 in which the portion thereof to be bent into boiler body simulating form is provided with a smokestack receiving opening and with tongues projecting into said opening for use in attaching a smokestack to said portion.

3. A one-piece blank of sheet material to be bent to produce a toy locomotive body, said blank comprising a portion to be formed into a boiler simulating body, a second portion rearwardly of said first mentioned portion to be formed into a cab simulating body, and tongues at the rear of said second mentioned portion for cooperation to simulate a cab floor.

4. A one-piece blank of sheet material to be bent to produce a toy locomotive body, said blank comprising a portion to be formed into a boiler simulating body, a second portion rearwardly of said first mentioned portion to be formed into a cab simulating body, and tongues at the rear of said second mentioned portion for cooperation to simulate a cab floor, said tongues including portions to be brought into overlapping relationship and to be fastened together to secure the cab portion of the locomotive body in formed condition.

5. A one-piece blank of sheet material to be bent to produce a toy locomotive body, said blank comprising a portion to be formed into a boiler simulating body, and a second portion rearwardly of said first mentioned portion to be formed into a cab simulating body, the rear end of said second mentioned portion being defined by a slot in the blank opening through the medial portion of the rear edge thereof and extending outwardly, thence forwardly and thence again outwardly to its respective ends to provide tongues rearwardly of said second mentioned portion for the purpose set forth.

6. A sheet metal toy locomotive comprising an open bottom substantially tubular boiler and cab simulating body, and tongues integral with the cab body and disposed in overlapping relationship and fastened together to maintain a rigid status of the rear end portion of the locomotive body.

7. A sheet metal toy locomotive comprising an open-bottom substantially tubular one-piece boiler and cab simulating body, tongues integral with said body at the rear thereof and disposed in overlapping relationship and fastened together to maintain a rigid status of the rear end portion of the body, and a one-piece boiler head and pilot simulating body having a disk-like boiler head bracing and holding the front end of the boiler body against spreading, the boiler body having integral cylinder simulating formations fastened to said boiler head and pilot simulating body.

8. A sheet metal toy locomotive comprising

- boiler and cab simulating portions, strips extending outwardly from the boiler body to simulate walk boards, strips extending downwardly from said first mentioned strips to simulate locomotive frame below the walk boards thereof, cylinder simulating formations constituted by extensions of said second mentioned strips, a boiler head and pilot simulating body joined to the forward end of the boiler simulating body, and wings on said boiler head and pilot simulating body closing the spaces below the first mentioned strips and inwardly of the second mentioned strips of said boiler and cab simulating body.
9. A one-piece sheet-material toy locomotive body comprising an open-bottom substantially tubular boiler and cab simulating body, and tongues on the respective side portions of said body extending inwardly therefrom and adapted to be joined together to maintain the substantially tubular form of said body.
10. A one-piece blank of sheet material to be bent to produce a toy locomotive body, said blank comprising a portion to be formed into a boiler simulating body, and a second portion rearwardly of said first mentioned portion to be formed into a cab simulating body, said second mentioned portion having a transversely extending slot opening through the rear edge of said second mentioned portion to provide a pair of tongues to be brought together to constitute a floor for the cab by bending of the blank to impart boiler and cab simulating form thereto.
11. A one-piece blank of sheet-material to be bent to produce a toy locomotive body, said blank comprising a portion to be formed into a boiler simulating body, and a second portion rearwardly of said first mentioned portion to be formed into a cab simulating body, said second mentioned portion being slotted to provide a pair of formations to be brought into cooperative relationship to constitute a cab floor by bending of the blank to impart boiler and cab simulating form thereto.
12. In a toy locomotive, a sheet metal boiler simulating body having an opening to receive a smoke stack simulating part, said body further having tongues extending into said opening to serve as supports for the smoke stack simulating part.
13. A two part locomotive body comprising a one-piece sheet metal first part shaped and bent to provide an open bottom substantially tubular boiler and cab simulating body, and a one-piece sheet metal second part to be shaped and bent to provide parts simulating a boiler head and a pilot, the boiler head portion of the second part having means interengaging with the boiler simulating portion of said first part to maintain the final form of the latter, and the pilot simulating part also having a rigid connection with the main body blank.
14. A toy locomotive construction comprising a main one-piece body blank of sheet material having a portion shaped and bent into a boiler simulating body, a rear portion shaped and bent into a cab simulating body and formed at its front corners with a tongue formation adapted to be bent downwardly and inwardly forming a cylinder body and cylinder-end simulating members and a one-piece boiler head and pilot blank rigidly interfitting with the front end of the boiler and also with the cylinder simulating parts.
15. A toy locomotive construction comprising a main body forming blank provided at its front corners with tongues adapted to be bent downwardly and inwardly to simulate the body and front and rear ends of the steam cylinders and a second one-piece blank comprising a disk-like top portion simulating a boiler head adapted to rigidly interfit with the front end of the boiler body and a depending portion having a rigid engagement with the cylinder portions of the body blank and forwardly thereof shaped to provide a part simulating a pilot or cowcatcher.

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