United States Patent

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[54] COMPACT EMBOSSING TOOL

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[52] **U.S. Cl.** **197/6.7**, 101/18

[51] **Int. Cl.** **B41j 1/30**

[58] **Field of Search** 197/6.7; 101/18

[56] **References Cited**

UNITED STATES PATENTS

3,239,048	3/1966	Bogeaus	197/6.7
3,330,397	7/1967	Schwartz et al	197/6.7

Primary Examiner—Edgar S. Burr

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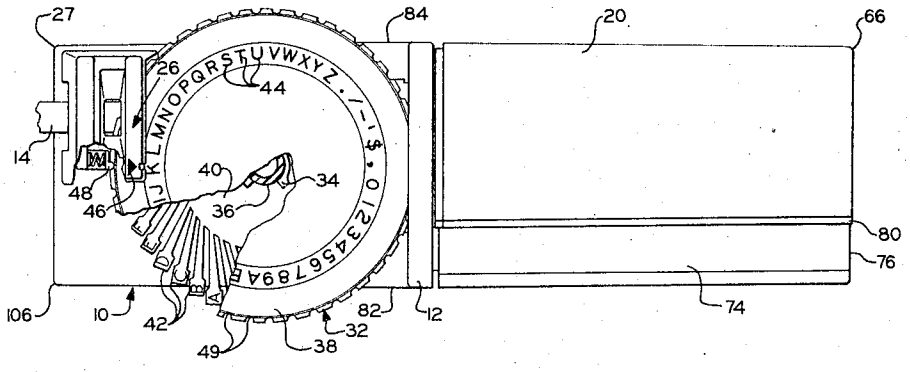
[57] **ABSTRACT**

An embossing tool for embossing indicia in an elongate strip of embossable material, the tool having a generally rectangular frame, an embossing station adjacent a first corner of the frame, embossing means at the embossing station, an actuating lever pivoted at one end thereof adjacent a diagonally opposite second corner of the frame, a supply of strip material held adjacent a third corner, and a link pivoted at one end thereof adjacent a fourth corner of the frame diagonally opposite the third corner, the lever and link being arranged end-to-end in general alignment between the second and fourth corners and coupled at juxtaposed ends thereof such that upon depression of the actuating lever by an actuating force applied thereto adjacent the juxtaposed ends, the link will be pivoted laterally to operate actuating means for actuating the embossing means at the embossing station.

14 Claims, 9 Drawing Figures



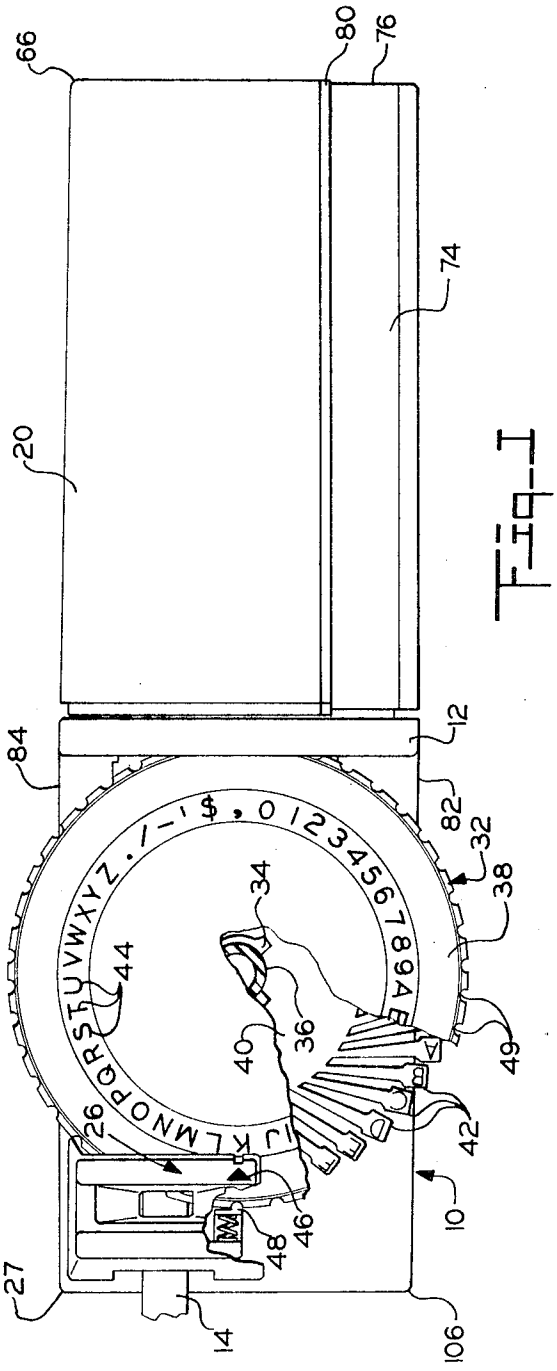


FIG. 1

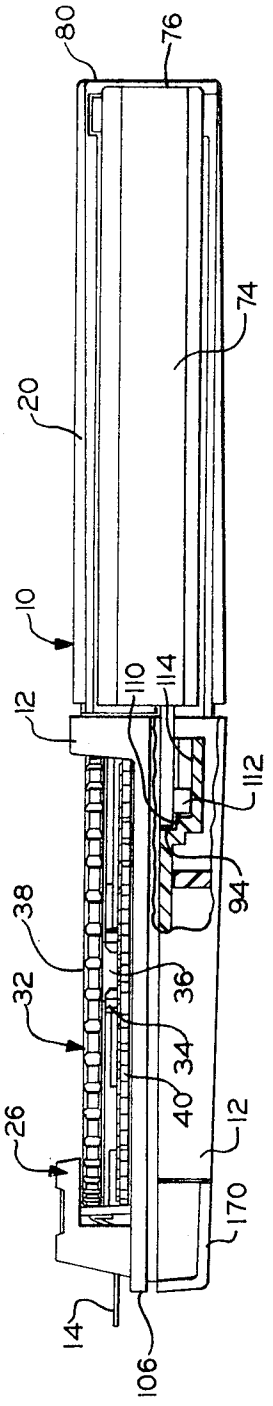


FIG. 2

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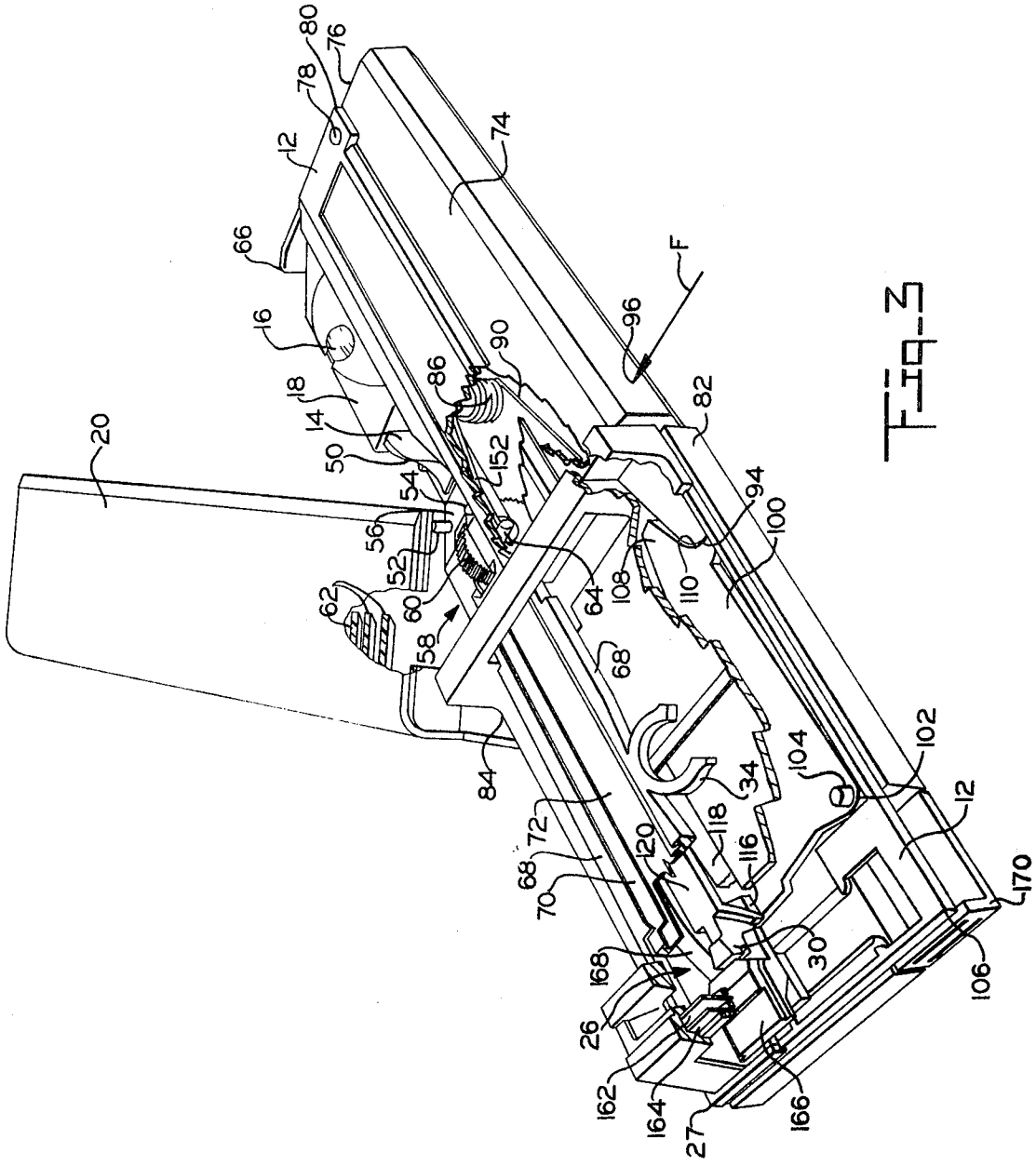

FIG. 2

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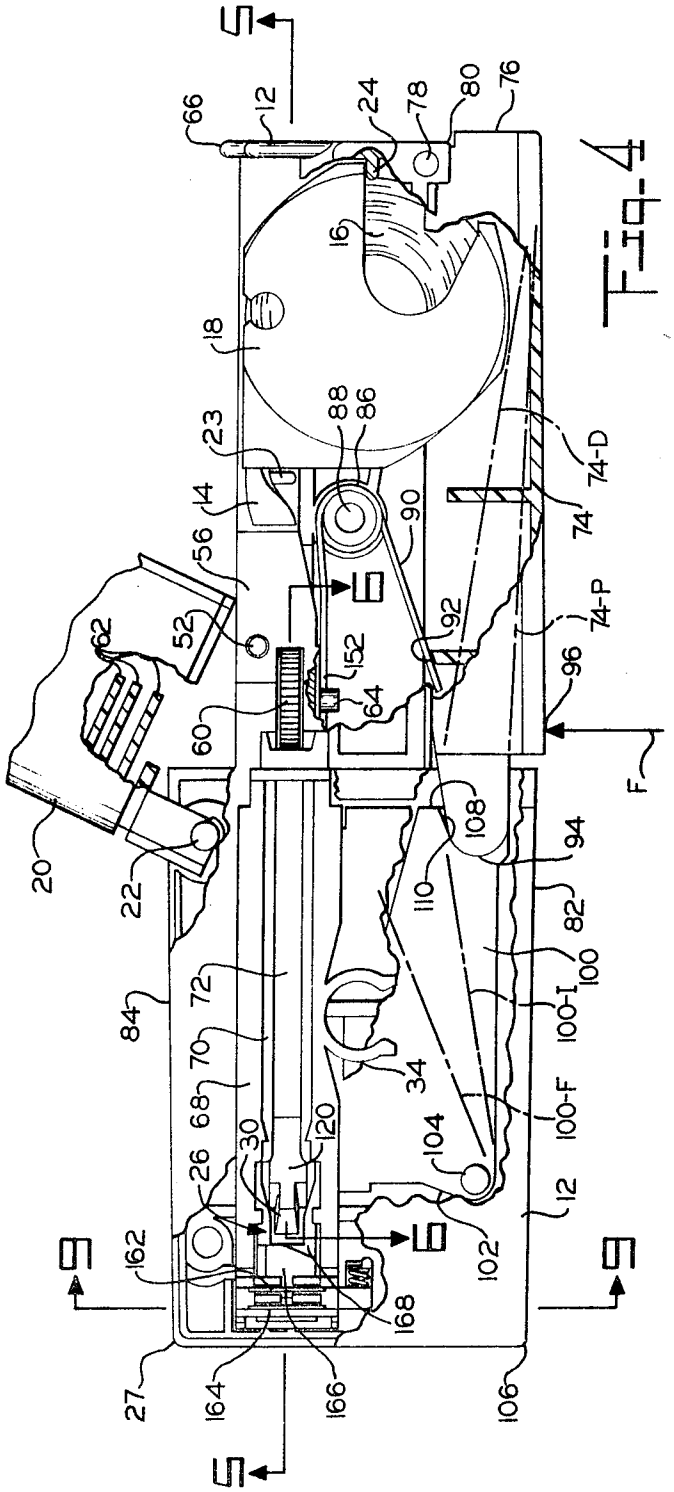

Fig-4

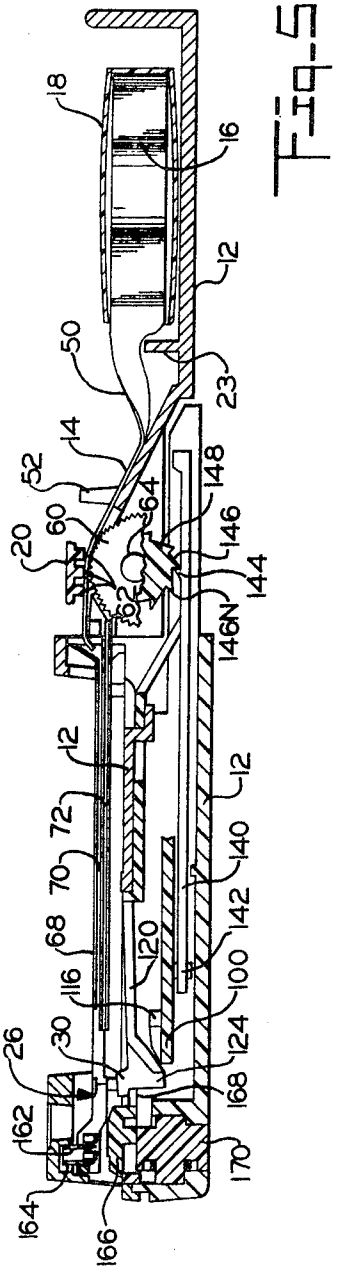

Fig-5

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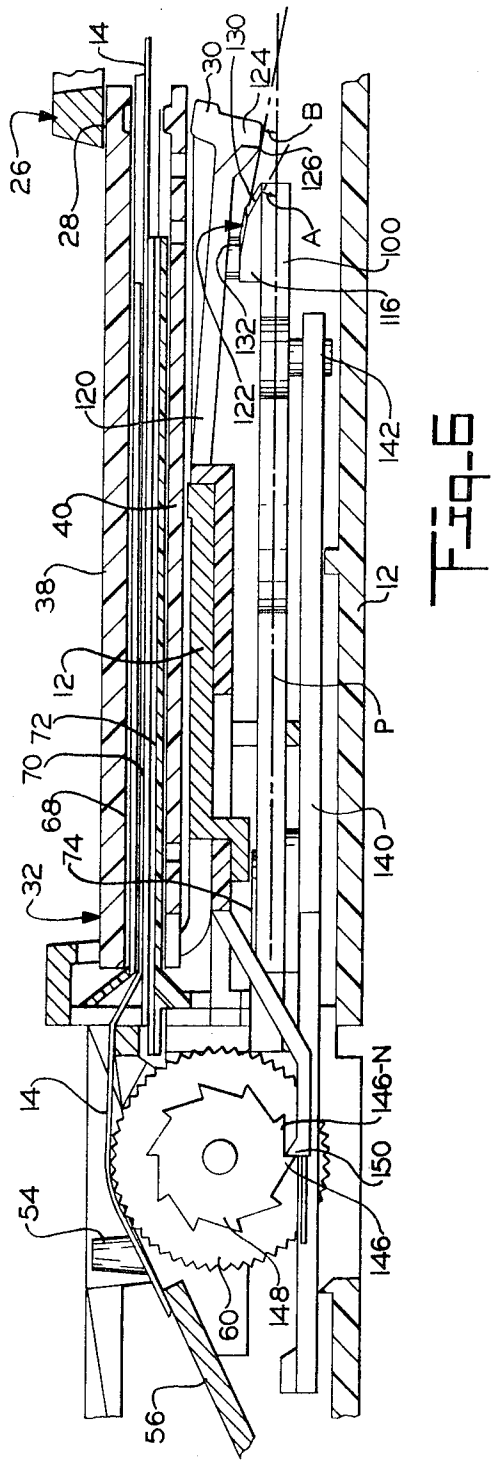

FIG-6

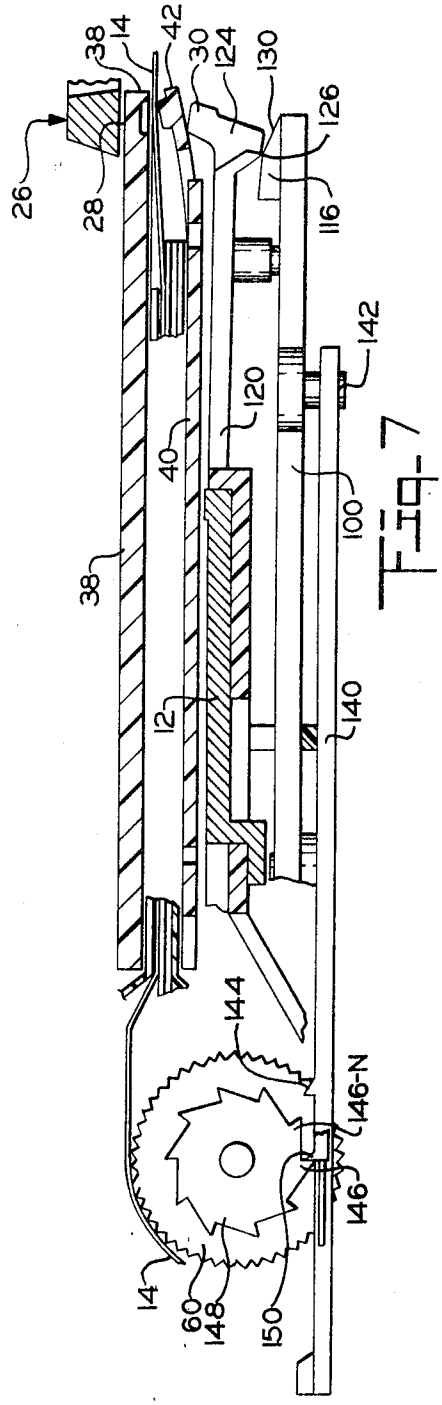

FIG-7

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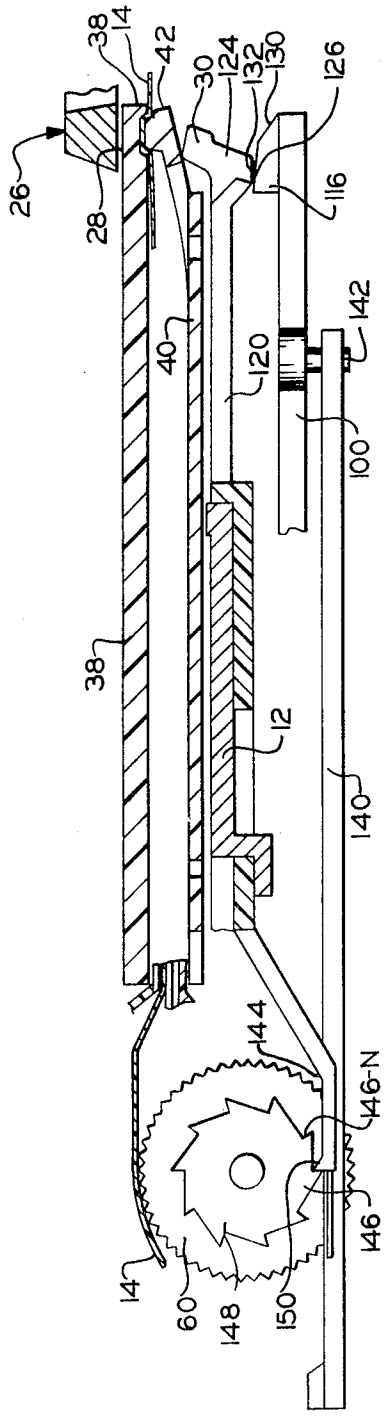
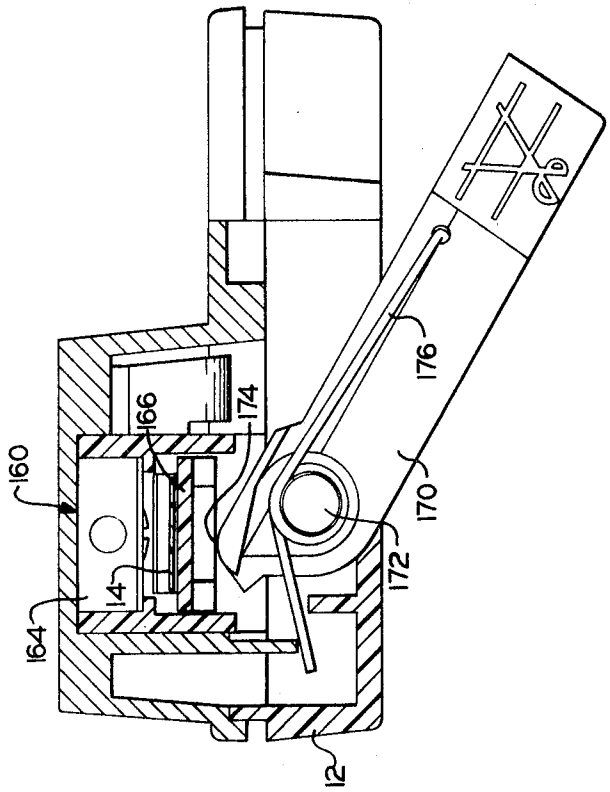


FIG-8

FIG-9



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COMPACT EMBOSSING TOOL

The present invention relates generally to embossing tools for embossing indicia upon embossable strip material and pertains, more specifically, to a compact, hand-operated embossing tool.

A variety of embossing tools is presently available for establishing embossments in strips of embossable material in the fabrication of labels, signs, plates, tags and like embossed articles. More recently, such tools have been developed for embossing various indicia on thin plastic strips formed of sheeted thermoplastic synthetic resins which are capable of being cold-formed to establish a contrast color relief enfigurement therein.

The prevalence of such embossing tools has led to attempts at rendering such tolls more compact so that these tools are more readily carried on the person. However, difficulties have arisen in attempting to reduce the dimensions and minimize the bulk of the tool contour configuration without decreasing the size of the tape to be embossed or degrading the quality of the embossment.

It is therefore an important object of the invention to provide a compact embossing tool of minimal dimensions and bulk which is capable of embossing indicia comparable in size and quality to those embossed through the use of relatively larger, more bulky tools, upon comparable full-size strips of embossable material.

Another object of the invention is to provide an embossing tool of the type described in which manual actuating forces are more effectively translated into embossing pressure so as to hold such forces to a minimum without degrading the quality of the embossments.

Still another object of the invention is to provide a hand-held embossing tool in which the actuating force applied to the tool is applied at a location where the hand can most effectively exert such a force while the hand grips the tool.

A further object of the invention is to provide a hand-held embossing tool which is well-balanced in the hand and provides increased ease of operation.

A still further object of the invention is to provide an embossing tool which is relatively slim in at least one dimension, thus rendering the tool easy to carry in a pocket or in a shallow holder or receptacle and rendering the tool easy to transport and store.

Still another object of the invention is to provide an embossing tool of aesthetically pleasing appearance and which is economically constructed of a minimum number of readily fabricated component parts.

The above objects, as well as still further objects and advantages, are attained by the invention which may be described briefly as an embossing tool for embossing indicia in embossable material, the tool comprising a frame, an embossing station on the frame, embossing means located at the embossing station, means on the frame for selectively actuating the embossing means at the embossing station, an actuating lever having opposite first and second ends, means mounting the first end of the actuating lever for pivotal movement upon the frame, and means coupling the actuating means with the second end of the actuating lever such that pivotal movement of the actuating lever in response to an actuating force applied to the actuating lever in response to an actuating force applied to the actuating lever adjacent the second end thereof will operate the actuating means to actuate the embossing means at the embossing station. Preferably, the actuating means includes a link having opposite first and second ends, means mounting the first end of the link for pivotal movement upon the frame, the actuating lever and the link being in end-to-end arrangement upon the frame in general alignment with one another, with the second end of the link juxtaposed with the second end of the actuating lever, the coupling means coupling the juxtaposed second ends of the lever and the link such that the pivotal movement of the lever will pivotally move the link, and means movable in response to such pivotal movement of the link for actuating the embossing means at the embossing station.

The invention will be more fully understood, while still further objects and advantages will be revealed, in the following detailed description of a preferred embodiment of the invention illustrated in the accompanying drawing, in which:

FIG. 1 is a top plan view of an embossing tool constructed in accordance with the invention;

FIG. 2 is a side elevational view of the embossing tool;

FIG. 3 is a perspective view of the embossing tool with portions removed or cut away to reveal the internal construction of the embossing tool;

FIG. 4 is a cut-away top plan view of the embossing tool;

FIG. 5 is a longitudinal cross-sectional view taken along line 5—5 of FIG. 4;

FIG. 6 is an enlarged longitudinal cross-sectional view taken along line 6—6 of FIG. 4;

FIG. 7 is a fragmentary view similar to FIG. 6 illustrating some of the same component parts in another operating position;

FIG. 8 is a fragmentary view similar to FIG. 7, but with the component parts in another operating position; and

FIG. 9 is an enlarged cross-sectional view taken along line 9—9 of FIG. 4.

Referring now to the drawing, and especially to FIGS. 1 and 2 thereof, an embossing tool constructed in accordance with the invention is illustrated at 10. Tool 10 has a housing or frame 12 which is generally rectangular in configuration both in plan and in elevation. The tool is designed to emboss selected indicia or characters on an elongate strip of embossable material such as the variety of thermoplastic synthetic resins currently available in the form of plastic tapes of various widths, one of which is shown in the form of tape 14 supplied in a coil or roll 16 carried within a magazine 18 (see FIG. 4) received within the frame 12 through a door 20, which is hinged to the frame at 22, the magazine being properly located and held within the frame by a pair of abutments 23 and 24 integral with the frame 12.

Embossing of the tape 14 is accomplished at an embossing station 26 located adjacent a first corner 27 of the rectangular configuration of the frame 12. Embossing means shown in the form of an embossing die set 28 (see FIG. 6) is located at the embossing station 26 in position to be actuated by an actuating member 30 located below the die set 28 and mounted upon the frame 12 for reciprocating movement toward and away from the die set. Die set 28 is one of a series of die sets located in selector means shown in a form of a selector wheel 32 which is mounted for rotation upon the frame 12 by means of a spring clip 34 carried by the frame and engaging a spindle 36 which is integral with the selector wheel.

The selector wheel 32 is made up of upper and lower disk members 38 and 40, respectively, one of which carries the die and the other of which carries the punch of each die set. The upper and lower disk members 38 nd 40 are spaced apart axially by the spindle 36 such that each die set is normally open around the selector wheel and tape 14 can follow a path which passes between the disk members to the embossing station 26. The lower disk member 40 is divided into a plurality of generally radially extending fingers 42, each of which carries one of the portions of a die set, any of the fingers 42 being resiliently deflectable upwardly to bring the punch and die portions of a particular die set into mutual engagement. Since the upper and lower disk members 38 and 40 and the spindle 36 are integral, both disk members will rotate together, without relative rotation, upon rotation of the selector wheel 32.

As best seen in FIG. 1, the upper disk member 38 is provided with visible indicia 44 on the outer face thereof corresponding to the characters which can be embossed by the selectable die sets. The visible indicia 44 are staggered or circumferentially spaced from their corresponding die sets so that when a particular die set is located at the embossing station 26 the corresponding visible indicia is located at an index mark 46 to assure proper location of a selected die set at the embossing station. The selector wheel 32 is positively retained at a selected indexed position by a detent 48 which coopera-

tively engages any one of the plurality of notches **49** in the periphery of the upper disk **38**.

The selector wheel **32** may be removed from the frame **12** of the tool **10** and replaced with any one of a number of selector wheels provided with a variety of embossable characters of different styles and sizes by merely sliding the selector wheel laterally to disengage the spindle **36** from the clip **34**.

Referring now to FIGS. **3** through **5**, tape **14** is fed from supply roll **16** and is twisted through one-quarter of a turn at **50** in order to pass between guide posts **52** and **54** and proceed along a ramp **56** to feed means **58** which advances tape **14** in prescribed increments by means of a feed roll **60** which frictionally grips the tape **14** where the tape is pinched between the surface of the feed roll and one or more of the pressure pads **62** carried by the door **20** and juxtaposed with the surface of the feed roll when the door is closed. The feed roll **60** may be rotated in a counterclockwise direction (as viewed in FIG. **5**) along with shaft **64** upon which the feed roll is mounted, shaft **64** itself being mounted upon the frame **12** for both rotational movement and for lateral displacement toward and away from the pressure pads **62**, all as will be explained in greater detail hereinafter.

The tape **14** proceeds along a path of travel which extends longitudinally between the location where the tape leaves the supply roll **16**, which location is adjacent another corner **66** of the rectangular configuration of the frame **12**, toward the embossing station **26** and passes from the feed roll **60** into a tape guide **68**. The tape guide **68** is provided with alternate tracks **70** and **72** of different widths so as to accommodate tapes of different widths and the particular tape is inserted into the proper track **70** or **72** to pass between the upper and lower disks **38** and **40** of the selector wheel while in such a track so as to be positively guided to the embossing station.

Embossing of tape **14** is accomplished by displacing operator means, illustrated in the form of an actuating handle or lever **74** one end **76** of which is pivotally mounted to the frame at **78** adjacent still another corner **80** of the rectangular configuration of the frame, corner **80** being diagonally opposite the corner **27** adjacent which the embossing station **26** is located, in a lateral direction from the side **82** of the rectangular configuration to the opposite side **84** thereof to depress the lever **74** against the resilient bias of a return spring **86** mounted upon a post **88** of the frame **12** and having a first arm **90** engaging the actuating lever **74** at **92**. Depression of the actuating lever **74** is accomplished by grasping the closed access door **20** and the frame **12** in the vicinity of the door which serve as a convenient handle such that the index finger is placed adjacent the other end **94** of the actuating lever to exert an actuating force F at **96** (also see FIG. **1**).

Depression of the actuating lever **74** operates actuating means which includes a link **100** pivoted at one end **102** thereof to the frame **12** at pin **104** adjacent a fourth corner **106** of the rectangular configuration of the frame, diagonally opposite to the corner **66**. The second end **108** of the link **100** is coupled with the second end **94** of the lever **74** by virtue of the end **94** of the lever being received within a complementary recess **110** in the end **108** of the link and a pin **112** (see FIG. **2**) which is integral with the end **94** of the lever, entering a complementary slot **114** in the link. A cam member **116** is carried by the link **100** such that upon depression of the actuating lever the link will be pivoted about **104** and the cam member **116** will travel along a path of travel to intersect the actuating member **30** and move the actuating member upwardly.

As best seen in FIG. **4**, the actuating lever **74** and the link **100** are arranged in end-to-end relationship and normally the actuating lever and the link are longitudinally aligned between the second and fourth corners **80** and **106**, spaced laterally from the embossing station **26**, with the actuating lever at a rest position and the link at a corresponding initial position. The actuating lever **74** may be depressed to pass through a partially depressed position, shown in phantom at **74–P**, to a fully depressed position, shown in phantom at **74–D**. In response to such movement of the actuating lever **74**, the link **100** is pivoted from its initial position through an intermediate position, indicated in phantom at **100–I**, corresponding to the partially depressed position of the lever, to a final position, indicated in phantom at **100–F**, corresponding to the fully depressed position of the lever. Such movement of the link **100** will move the cam member **116** between a first position, illustrated in FIG. **6** and corresponding to the initial position of the link, to a second position, illustrated in FIG. **7** and corresponding to the intermediate position of the link, to a third position, illustrated in FIG. **8** and corresponding to the final position of the link.

Turning now to FIGS. **6** through **8**, the actuating member **30** is supported upon the frame **12** by a cantilever **120** which resiliently biases the actuating member **30** downwardly away from the lower disk **40** of the selector wheel **32**. The cam member **116** carried by the link **100** is provided with a cam surface **122**, and a cam follower **124**, which depends from the actuating member **30** and is integral therewith, is provided with a corresponding follower surface **126** which is engaged by the cam surface **122** as the cam member **116** moves between the first, second and third positions thereof.

Upon depression of the actuating lever **74**, the lever and the link **100** move in a lateral plane P and the cam surface **122** moves parallel to that plane. The cam surface **122** is provided with a first surface portion **130**, which is inclined at an angle A with respect to the lateral plane P, and a second surface portion **132**, which is inclined at an angle B with respect to the lateral plane P. As the cam member **116** is moved from its first position to its second position, the first surface portion **130** engages the follower surface **126** to move the cam follower **124** upwardly to deflect the cantilever **120** and move the actuating member **30** upwardly against the finger **42** of the lower disk **40** to raise the finger **42** toward the tape **14** and toward the upper disk **38**, as illustrated in FIG. **7**. As the cam member **116** moves from the second position thereof to the third position, the second surface portion **132** will engage the follower surface **126** to move the actuating member **30** upwardly still further, as illustrated in FIG. **8**, to fully operate the die set **28** at the embossing station **26** and effect an embossment in the tape.

Since deflection of the cantilever **120** and the finger **42** prior to actual embossment of the tape **14** may be effected with much less effort than the effort required to operate the die set during embossing of the tape, angle A is made greater than angle B so that the ratio between the lateral displacement of the actuating lever **74** and the corresponding upward displacement of the cam follower **124** is greater as the lever moves from the partially depressed position **74–P** to the fully depressed position **74–D** than when the lever moves from the rest position toward the partially depressed position. Thus, upon the application of an actuating force upon the actuating lever **74**, displacement of the lever will be translated into relatively rapid upward movement of the actuating member **30** over a relatively large upward displacement as the actuating lever moves from the rest position to the partially depressed position, and displacement of the lever **74** will be translated into slower movement of the actuating member under greater pressure to effect an embossment during movement of the actuating lever from the partially depressed position to the fully depressed position. At the same time, for any given actuating force F, the pressure available at the actuating member **30** to operate the die set **28** during actual embossment of the tape (as the cam member **116** moves from the second to the third position thereof) is multiplied so as to be greater than the pressure available at the actuating member **30** to merely raise the actuating member **30** and the finger **42** (as the cam member **116** moves from the first to the second position thereof). In this manner, actual displacement of the actuating lever **74** is held to a minimum without sacrificing the attainment of the relatively high embossing pressure necessary for well-defined high-quality embossments. Such a conservation of the movement of the actuating lever results in a concomitant reduction in the dimensions of the tool **10**. Additionally,

application of the actuating force F at **96** enables force F to be exerted by the index finger of the hand which grasps the tool and, since the index finger can most comfortably and most effectively exert a greater amount of force than the remainder of the hand, the tool accommodates the greatest gripping force at the most effective location for translation of the gripping force into an embossing pressure. Furthermore, since actuating force F is applied along the side **82** intermediate the corners **80** and **106**, a better balance is attained during operation of the tool.

Referring back to FIG. **5**, as well as to FIGS. **6**, **7** and **8**, a slide member **140** is connected to the link **100** at **142** and reciprocates longitudinally in response to pivotal movement of the link. The slide member **140** is somewhat resilient laterally and carries a pawl tooth **144** which normally rests against a corresponding ratchet tooth **146** carried by a ratchet wheel **148** which is integral with the feed roll **60**. Upon movement of the link **100** from its initial position to its intermediate position, the slide member **140** will be moved to the left, as viewed in FIG. **5** (to the right as viewed in FIGS. **6**, **7** and **8**) until the pawl tooth **144** is resiliently deflected over the crest of the next adjacent ratchet tooth **146–N**, as seen in FIG. **7**. Rotation of the ratchet wheel **148** during such movement of the slide member is precluded by a stop member **150** which engages the ratchet tooth **146**. Upon return of the link **100** from the intermediate position to the initial position thereof, the slide member **140** will be moved to the right, as viewed in FIG. **5** (to the left as viewed in FIG. **6**), the pawl tooth **144** will engage the ratchet tooth **146–N** and the ratchet wheel **148** will be indexed through one increment of rotation to rotate the feed roll **60** through a corresponding increment of rotation and thereby advance the tape **14** through a corresponding increment of advancement, the stop member **150** being resiliently deflected over the crest of the ratchet tooth **146–N** to permit such rotation. Proper pressure is maintained between the surface of the feed roll **60** and the pressure pad(s) **62** by a second arm **152** of the spring **86** (see FIGS. **3** and **4**) which urges the shaft **64** upwardly to bring the feed roll surface into proper engagement with the tape **14**.

Upon completion of the particular embossed article, the article may be severed from the tape **14** by cut-off means illustrated at **160** in the form of knife blades **162** and **164** located vertically above the path of tape **14** and an anvil **166** located below the path of tape **14**. As best seen in FIGS. **3**, **4**, **5** and **9**, the anvil **166** is carried by a pair of resiliently deflectable cantilever members **168** affixed to the frame **12** of the tool **10** and is normally spaced away from the blades **162** and **164** so as to allow free passage of tape **14** from the tape guide **68** into the cut-off means **160**. When the last embossment of a particular embossed article is completed, the tape is indexed until the last embossment emerges from the tool and a second lever **170**, also pivotally mounted upon the frame **12** at **172**, is drawn downwardly, as seen in FIG. **9**, so that a cam portion **174** thereof is brought into engagement with the anvil **166** and the anvil is deflected upwardly. Such upward movement of the anvil will bring tape **14** against cutting blades **162** and **164**. Blade **162** will then sever the tape while blade **164** will establish a tab at the severed end of the completed embossed article for facilitating the subsequent removal of a backing strip which is generally present as a part of the embossable strip material. Upon completion of the cutting operation, lever **170** is released and a return spring **176** will return the lever **170** to its normal rest position enabling the resiliency of the cantilever member **168** to return the anvil **166** to its normal rest position, both rest positions being illustrated in FIGS. **3** through **5**.

The generally rectangular configuration of the frame **12** together with the arrangement by which the actuating lever **74** is pivoted adjacent one corner **80** of the frame and the actuating force F is applied to the actuating lever intermediate the corners **80** and **106** of the frame enables a highly effective and compact construction. Thus, the pivoted end **76** of the lever **74** and the tape supply are adjacent one another while the opposite end **94** thereof, which undergoes maximum displacement, is remote from he tape supply so that adequate displacement of the lever is attained without magnifying the dimensions of the tool to accommodate the tape supply. In addition, the location of the selector wheel **32** for rotation in a plane parallel to the lateral plane P of movement of the actuating lever **74** and the link **100** and the corresponding location of the path of travel of the tape **14** allow the tool to remain relatively slim in the elevational dimension so that the tool is easily carried in a pocket or in a shallow receptacle and is easily stored.

It is to be understood that the above detailed description of an embodiment of the invention is provided by way of example only. Various details of design and construction may be modified without departing from the true spirit and scope of the invention as set forth in the appended claims.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An embossing tool for embossing indicia in embossable material, said tool comprising:
- a frame;
- an embossing station on the frame;
- embossing means located at the embossing station;
- an actuating lever having opposite first and second ends;
- means mounting the first end of the actuating lever for pivotal movement upon the frame;
- a link having opposite first and second ends;
- means mounting the first end of the link for pivotal movement upon the frame;
- said actuating lever and said link being in end-to-end arrangement upon the frame in general alignment with one another, with the second end of the link juxtaposed with the second end of the actuating lever, said lever and said link extending in a longitudinal direction along said frame, being spaced laterally from said embossing station and mounted for movement in a lateral direction;
- means directly coupling the second end of the link with the second end of the actuating lever such that pivotal movement of the lever will pivotally move the link; and
- means movable in response to such pivotal movement of the link to actuate the embossing means at the embossing station in a direction generally perpendicular to the longitudinal and lateral directions for embossing during pivotal movement of the actuating lever in response to an actuating force applied to the actuating lever between the pivotal mounting means thereof and the coupling means.

2. The embossing tool of claim **1** wherein said embossing means comprises a plurality of embossing die sets mounted upon said frame for rotational movement about an axis perpendicular to said longitudinal and lateral directions and spaced laterally from said embossing station such that the path of movement of the die sets passes through the embossing station.

3. The embossing tool of claim **1** wherein the embossable material is an elongate strip, said embossing station is located adjacent the first end of said link and the tool includes:
- means on said frame for holding a supply of said strip material on the frame adjacent the first end of the actuating lever; and
- means on said frame for advancing the strip from the supply to the embossing station along a longitudinal path of travel spaced laterally from said lever and said link.

4. The embossing tool of claim **1** wherein:
- said actuating lever and said link move in a common lateral plane;
- said lever is movable between a rest position, a partially depressed position and a fully depressed position; said link is movable in response to the lever between an initial position corresponding to said rest position, an intermediate position corresponding to said partially depressed position and a final position corresponding to said fully depressed position; and
- said actuating means further includes

a cam follower located at said embossing station and mounted for movement perpendicular to said lateral plane to actuate the embossing means located at the embossing station,

a cam member movable along a path of travel parallel to said lateral plane in response to movement of said link, said cam member being movable between a first position corresponding to said initial position, a second position corresponding to said intermediate position and a third position corresponding to said final position, the path of travel of the cam member intersecting said cam follower,

said cam member and said cam follower having complementary surfaces for engaging one another, said surfaces including a first surface portion inclined at a first angle to said lateral plane and a second surface portion inclined at a second angle to said lateral plane, the second angle being smaller than the first angle such that as the cam member moves from said first position to said second position, the cam member and the cam follower are engaged with one another along the first surface portion and, as the cam member moves from said second position to said third position, the cam member and the cam follower are engaged with one another along the second surface portion so that the ratio between the displacement of the actuating lever and the corresponding displacement of the cam follower is greater as the actuating lever moves from the partially depressed position toward the fully depressed position than when the actuating lever moves from the rest position toward the partially depressed position.

5. The embossing tool of claim **4** wherein said first and second surface portions are located upon said cam member.

6. In an embossing tool for embossing indicia in embossable material:

a frame;

an embossing station on the frame;

embossing means located at the embossing station;

an actuating lever mounted upon the frame for movement between a rest position, a partially depressed position and a fully depressed position; and

means on the frame for selectively actuating the embossing means at the embossing station, said actuating means including

a cam follower located at the embossing station and movable along a path of movement to actuate the embossing means located at the embossing station,

a cam member movable in response to movement of said actuating lever, said cam member being movable along a path of travel transverse to said path of movement of the cam follower between a first position corresponding to said rest position, a second position corresponding to said partially depressed position and a third position corresponding to said fully depressed position, the path of travel intersecting said cam follower,

said cam member and said cam follower having complementary surfaces for engaging one another, said surfaces including a first surface portion inclined at a first angle to said path of travel and a second surface portion inclined at a second angle to said path of travel, the second angle being smaller than the first angle such that as the cam member moves from said first position to said second position, the cam member and the cam follower are engaged with one another along the first surface portion and, as the cam member moves from said second position to said third position, the cam member and the cam follower are engaged with one another along the second surface portion so that the ratio between the displacement of the actuating lever and the corresponding displacement of the cam follower is greater as the actuating lever moves from the partially depressed position toward the fully depressed position than when the actuating lever moves from the rest position toward the partially depressed position.

7. The invention of claim **6** wherein said first and second surface portions are located upon said cam member.

8. The invention of claim **6** wherein said actuating lever has opposite first and second ends, said invention including:

means mounting the first end of the actuating lever for pivotal movement upon the frame; and

means directly coupling the actuating means with the second end of the actuating lever for operating the actuating means to actuate the embossing means at the embossing station for embossing during pivotal movement of the actuating lever in response to an actuating force applied to the actuating lever between the pivotal mounting means and the coupling means.

9. An embossing tool for embossing indicia in an elongate strip of embossable material, said tool comprising:

a frame having a generally rectangular configuration including four corners;

an embossing station on the frame adjacent a first one of said four corners;

embossing means located at the embossing station;

means on the frame for selectively actuating the embossing means at the embossing station;

an actuating lever having opposite first and second ends;

means mounting the first end of the actuating lever for pivotal movement upon the frame adjacent a second one of said four corners, diagonally opposite the first one of said corners;

means on the frame for holding a supply of said strip material adjacent a third one of said four corners;

a link having opposite first and second ends;

means mounting the first end of the link for pivotal movement upon the frame adjacent a fourth one of said four corners, diagonally opposite to the third one of said corners;

said actuating lever and said link being arranged end-to-end in general longitudinal alignment with one another along one side of said rectangular configuration between said second and fourth corners with the second end of the lever juxtaposed with the second end of the link when said lever is in a rest position and said link is in an initial position;

said actuating lever being movable laterally within a lateral plane toward and away from the opposite side of said rectangular configuration, which extends between first and third corners, between said rest position, a partially depressed position and a fully depressed position in response to an actuating force applied to said lever adjacent the second end thereof;

means coupling the second end of the actuating lever with the second end of the link such that the link will move, in response to movement of the lever, laterally within said lateral plane toward and away from said opposite side between said initial position, an intermediate position corresponding to the partially depressed position of the lever and a final position corresponding to the fully depressed position of the lever;

a cam follower mounted upon said frame for movement perpendicular to said lateral plane at the embossing station for actuating the embossing means at the embossing station, said cam follower having a follower surface;

a cam member carried by said link for movement along a path of travel parallel to said lateral plane between a first position corresponding to the initial position of the link, a second position corresponding to the intermediate position of the link and a third position corresponding to the final position of the link, said cam member having a cam surface for engaging the follower surface as the cam member moves along said path of travel to move the cam follower and actuate the embossing means at the embossing station.

10. The embossing tool of claim **9** wherein the longitudinal length of the actuating lever between the ends thereof and the longitudinal length of the link between the ends thereof are so

proportioned as to enable said actuating force to be applied to said lever at a longitudinal location essentially intermediate said second and fourth corners.

11. The embossing tool of claim 9 including means for advancing the strip from the supply to the embossing means along a longitudinal path of travel lying between said first and third corners in response to return of the actuating lever from the partially depressed position to the rest position and the corresponding return of the link from the intermediate position to the initial position.

12. The embossing tool of claim 9 wherein said embossing means includes:

a selector wheel;

a plurality of embossing die sets carried by said selector wheel;

means mounting said selector wheel upon the frame for rotation in a plane parallel to said lateral plane with one of said die sets located at the embossing station, the relative location of the die sets and the mounting means being such that any one of said die sets may be located at the embossing station by selective indexing of the selector wheel.

13. The embossing tool of claim 9 wherein one of said cam and follower surfaces has first and second surface portions, said first surface portion being inclined at a first angle to said lateral plane and said second surface portion being inclined at a second angle to said lateral plane, the second angle being smaller than the first angle such that as the cam member moves from said first position to said second position, the cam member and the cam follower are engaged with one another along the first surface portion and as the cam member moves from said second position to said third position, the cam member and the cam follower are engaged with one another along the second surface portion such that the ratio between the displacement of the actuating lever and the corresponding displacement of the cam follower is greater as the lever moves from the partially depressed position to the fully depressed position than when the lever moves from the rest position toward the partially depressed position.

14. The embossing tool of claim 13 wherein said first and second surface portions are located upon the cam surface.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,664,477 Dated May 23, 1972

Inventor(s) Georg Fritz Bremer

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

The name of the patentee is incorrect in the title page in that "Bermer" should read --Bremer-- at both occurrences
Column 1, line 16, "tolls" should read --tools--
Column 2, line 53, "nd" should read --and--
Column 5, line 47, "normallv" should read --normally--
Column 6, line 67,a new paragraph should begin with the word "said"
Column 7, line 39, "partiallv" should read --partially--
Column 10,line 16, "fullv" should read --fully--

Signed and sealed this 17th day of October 1972.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents

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