Feb. 7, 1961 L. F. HANSEN 2,970,856

DOOR LATCH

Filed July 18, 1958

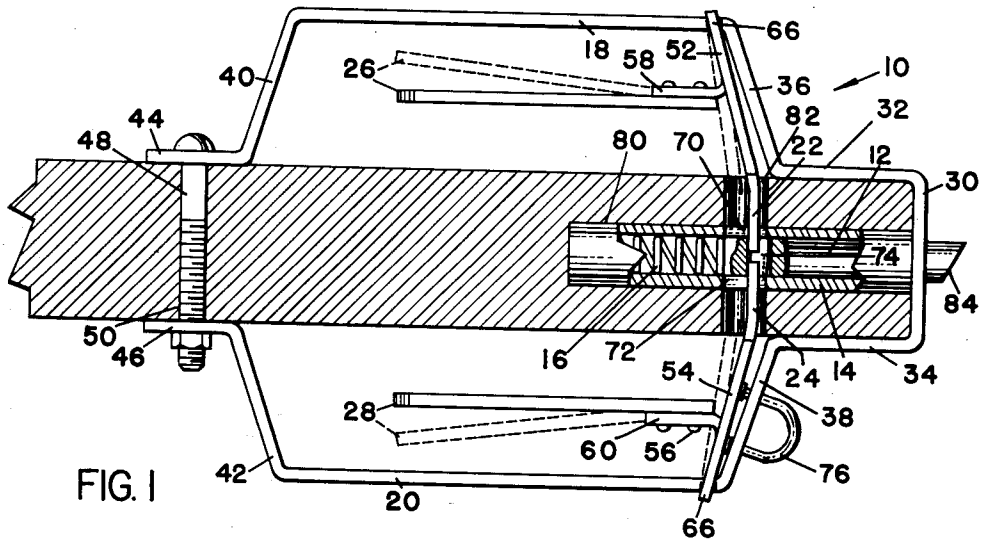


FIG. 1

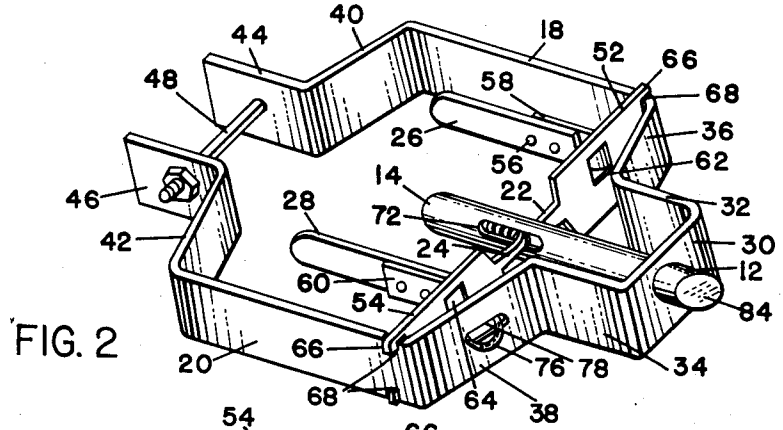


FIG. 2

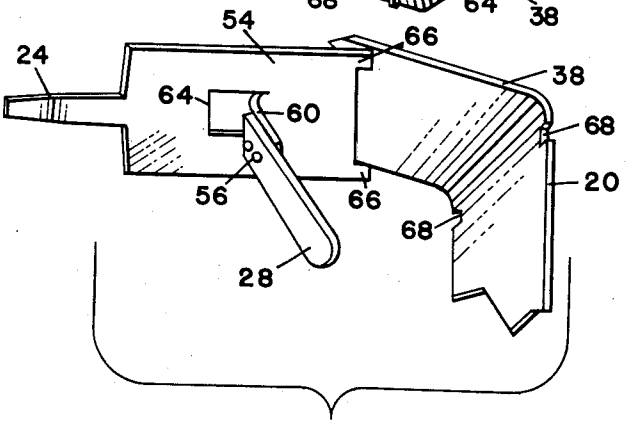


FIG. 3

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DOOR LATCH

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1 Claim. (Cl. 292—173)

This invention relates to latches particularly designed for use on doors such as provided in residences, apartments, offices, and the like, and in particular a latch having handles extended on both sides of a door with a lock bolt sildably mounted in the latch and connected to gripping levers in the handles whereby upon gripping the handles and levers the lock bolt may be withdrawn and a door locked in the closed position by the bolt, released.

The purpose of this invention is to provide a door latch that operates with a sliding action thereby obviating the necessity of turning a knob and eliminating the intricate latching elements of a conventional door lock.

Various types of door latching and locking devices have been provided and some have used handles of the bar type, however, relatively complicated apparatus has been required for operating the lock bolt by the handles and such devices are not only costly, but are difficult to install.

With this thought in mind this invention contemplates a door latch in which the parts are struck from sheet material and readily assembled to provide a complete unit, and wherein to install the latch on a door it is only necessary to drill one hole in the edge of the door for the lock bolt, another hole through the door for the bolt operating fingers, and another hole through the door for a mounting bolt.

The object of this invention is, therefore, to provide a door latch that is installed by drilling several holes in the edge of the door.

Another object of the invention is to provide a door latch having a lock bolt in which the bolt is actuated to a released position by drawing a lever in a handle projecting from a side surface of a door toward the handle with the fingers of a hand gripping the handle.

Another object of the invention is to provide a latch for a door in which substantially all parts of the latch are struck from sheet material.

Another important object of the invention is to provide a latch for a door in which the parts are assembled without welding or the like and in which the parts are readily taken apart.

A further object of the invention is to provide a door latch which is of a simple and economical construction.

Heretofore, it has been the practice to use simple and conventional types of locks on barn doors, grain bins and other out-buildings on farms, such as, for example, the hook and eye, the drop bar and spring loaded bolt actuated by a lever-type handle.

It is known that livestock can become quite adept at nosing or rubbing the conventional type locking means into an unlocked or open position. This is very much a problem especially in grain bin doors, wherein livestock can easily nose of the ordinary latches and gain access to the grain bins causing damage and possible over-eating.

It is therefore a particular object of my invention to provide a simple and inexpensive door latch designed

for use on barn doors and the like, the construction of which prevents livestock from opening the door.

Yet another object is to provide a door latch of inexpensive and simple construction for use on warehouse doors, garages doors and the like , having great advantage in the ease of operation especially if a worker is carrying an article whereby his arm movements are limited.

With these and other objects and advantages in view the invention embodies a lock bolt slidably mounted in a tubular casing and urged outwardly by a spring, substantialy U-shaped bars providing handles positioned on opposite sides of a door with the tubular casing and lock bolt positioned in the edge of the door and between the handles, and fingers acuated by levers mounted in the handles and positioned with the fingers extended into an opening in the lock bolt whereby upon gripping the handles and levers therein the lock bolt is withdrawn by the fingers.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings, wherein:

Figure 1 is a sectional plan through the outer portion of a door looking downwardly upon the door latch of this invention.

Figure 2 is a perspective view of the improved door latch with the door omitted, and with the parts shown on a reduced scale.

Figure 3 is a view showing the mounting and operating elements of the lock bolt actuating fingers of the improved door latch.

While one embodiment of the invention is illustrated in the above-referred-to drawings, it is to be understood that they are merely for the purpose of illustration and that various changes in construction may be resorted to in the course of manufacture in order that the invention may be utilized to the best advantage according to circumstances which may arise, without in any manner departing from the spirit and intention of the device, which is to be limtied only in accordance with the appended claim. And while there is stated the primary field of utility of the invention, it remains obvious that it may be employed in any other capacity wherein it may be found applicable.

In the accompanying drawings and in the following specification, the same reference characters are used to designate the same parts and elements throughout, and in which the numeral **10** refers to the invention in its entirety, numeral **12** indicating a lock bolt slidably mounted in a tube **14** and urged outwardly by a spring **16**, numerals **18** and **20** bars of handles formed to be positioned on opposite sides of a door, numerals **22** and **24** fingers positioned in ends of the handles and numerals **26** and **28** levers positioned in the handles and operatively connected to the fingers.

The parts forming the handles are formed from a continuous strip or bar bent midway of the length thereof to form a U-shaped section having an end bar **30** designed to extend across the edge of a door, parallel side bars **32** and **34** positioned to nest against the side surfaces of the door, and outwardly inclined bars **36** and **38** connecting the ends of the bars **32** and **34** to ends of the handle bars **18** and **20**. The opposite ends of the handle bars are connected by inclined sections **40** and **42** to flanges **44** and **46** in which a bolt **48** is positioned. The bolt extends through an opening **50** in the door for retaining the handles in position.

The fingers **22** and **24** extend from inner ends of plates **52** and **54** and the levers **26** and **28** are secured by rivets **56** or the like to tabs **58** and **60** struck from openings **62** and **64** in the plates **52** and **54**. The outer ends of the plates **52** and **54** are provided with ears **66** that are positioned in notches **68** in the ends of the

handle bars where outer ends of the plates are anchored in the ends of the handles. The fingers extend through slots 70 and 72 in the sides of the tube 14 and into an opening 74 in the lock bolt, and with the parts positioned as shown in Figure 1 gripping the levers 26 and 28 by fingers of hands on the handles draws the levers toward the handles whereby the fingers are drawn inwardly drawing the lock bolt into the tube and releasing the door from a latch plate or the like in the door jamb or frame.

One of the plates 52 or 54 may be provided with a loop 76 that extends through a slot 78 in the inclined plate associated therewith whereby a lock may be inserted through the loop to retain the latch in the locked position. The locking loop may be positioned on either the inside or outside of the door, or loops may be provided on both sides, as may be desired.

The simple door latch of this invention may be installed by drilling a hole 80 into the edge of a door and cutting or drilling a transversely disposed opening 82 through the door and through which the fingers extend into the opening of the lock bolt. The fingers are inserted through the opening 82 into the opening of the lock bolt and the handles are slid over the assembly and secured in position by the bolt 48 which is positioned in the opening 50.

The extended end of the lock bolt is provided with a beveled surface 84 and accidental displacement of the bolt from the assembly is prevented by the fingers which extend into the openings in the bolt.

From the foregoing specification, it will become apparent that the invention disclosed will adequately accomplish the functions for which it has been designed and in an economical manner and that its simplicity, accuracy, and ease of operation are such as to provide a relatively inexpensive device considering what it will accomplish, and that it will find an important place in the art to which it appertains when once placed on the market.

It is though that persons skilled in the art to which the invention relates will be able to obtain a clear understanding of the invention after considering the description in connection with the drawings. Therefore, a more lengthy description is regarded as unnecessary.

Changes in shape, size, and arrangement of details and parts such as come within the purview of the invention claimed may be resorted to in actual practice, if desired.

Having now described the invention that which is claimed to be new and desired to be procured by Letters Patent, is:

In a door latch, the combination which comprises a pair of substantially U-shaped handles connected by a U-shaped element, the U-shaped element being designed to be positioned over the edge of a door with the handles on opposite sides of the door, means for mounting the handles on the door, a tube having openings in the sides mounted in the edge of the door and positioned in registering relation with an opening in the U-shaped element of the handles, a lock bolt having an opening therein slidably mounted in the tube, plates having fingers extended from inner ends thereof and having ears on the outer ends, the plates being positioned with the ears extended into notches in edges of the handles and with the fingers extended through the openings in the sides of the tube and into the opening in the lock bolt, levers extended from the plates and positioned in the handles for actuating the fingers to withdraw the lock bolt, and a loop extended from one of the plates through a slot in and end of a handle providing means for locking the device with the lock bolt extended.

References Cited in the file of this patent

UNITED STATES PATENTS

1,167,011	Nelson	Jan. 4, 1916
1,501,208	Ferguson	July 15, 1924
1,789,405	Hansen	Jan. 20, 1931
1,989,801	Halinka	Feb. 5, 1935
2,699,963	Hampton	Jan. 18, 1955
2,764,440	Marko	Sept. 25, 1956