

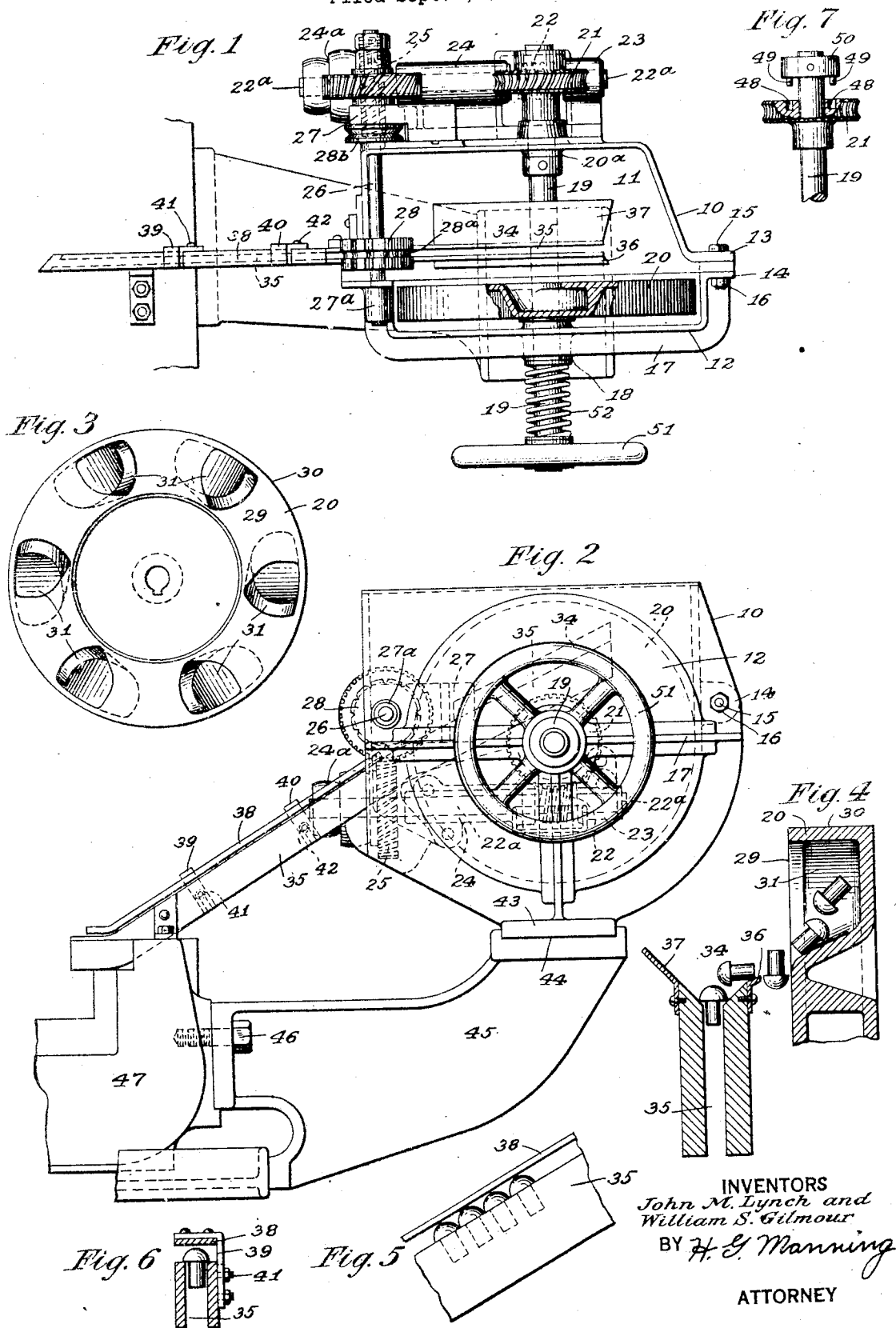
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MACHINE FOR FEEDING HEADED BLANKS

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MACHINE FOR FEEDING HEADED BLANKS.

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This invention relates to machines for feeding headed blanks with their headed ends upward, and more particularly to an attachment for continuously feeding such blanks to a threading, slotting, riveting or other similar automatic machine.

One object of the invention is to provide a machine of the above nature which will be simple, cheap to manufacture, easy to install, and very efficient and durable in use.

With this and other objects in view, there has been illustrated on the accompanying drawings one form in which the invention may be conveniently embodied in practice.

This invention is an improvement over the invention disclosed in Letters Patent #1,104,029, granted to Karl Weiss on July 21, 1914.

Fig. 1 represents a top plan view of a blank feeding attachment together with a portion of an automatic machine to which the blanks are to be fed, certain parts being broken away for clearness.

Fig. 2 is a side elevation of the same.

Fig. 3 is a detailed view of the blank feeding bucket wheel, shown detached from the remainder of the machine.

Fig. 4 is a sectional view, on an enlarged scale, and with parts broken away, of the bucket wheel and the guide way for directing the headed blanks into the chute.

Fig. 5 is a detailed view, on an enlarged scale, of a portion of the chute and the cover rail for preventing blanks escaping upwardly therefrom.

Fig. 6 is a sectional view of the same on a slightly reduced scale.

Fig. 7 is a detailed view partly in section of the clutch mechanism, by means of which the blank feeding wheel is detachably connected to a source of power.

Referring now to the drawings in which like reference numerals denote corresponding parts throughout the several views, the numeral 10 generally indicates a hopper, said hopper being open at the top and comprising a substantially U-shaped vertical blank-holding section 11 and a vertical cover plate 12. The blank-holding section 11 and the cover plate 12 are provided with aligned flanges 13 and 14 adapted to contact with each other and connected rigidly together by means of the bolts 15 and nuts 16. The cover plate 12 is provided with a horizontal

stiffening rib 17, said rib having an enlarged central boss 18 forming one bearing for a shaft 19 of a blank feeding bucket wheel 20. The other end of the shaft 19 is adapted to fit within an enlarged boss 20^a projecting inwardly from the blank holding section of the hopper. The bucket wheel 20 is adapted to be driven in a clockwise direction as viewed in Fig. 3 by any suitable mechanism, but in the preferred embodiment herein disclosed, the shaft 19 is provided with a vertical worm wheel 21 located at a point outside the hopper and adapted to mesh with a horizontal worm 22 carried by a driving shaft 22^a mounted in bearings 23 and 24 parallel to the hopper 10. The driving shaft 22^a is provided at its opposite end with a two-step cone pulley 24^a adapted to be driven by a suitable belt, not shown. A spiral gear 25 is mounted on the shaft 22^a adjacent the pulley 24^a and is adapted to drive a similar spiral gear arranged at right angles thereto and carried by a secondary shaft 26 mounted in bearings 27 and 27^a.

The secondary shaft 26 is located near the discharge end of the hopper above the blank delivering chute to be hereinafter more fully described. A "kicker" or blank rejecting wheel 28 is rigidly mounted on the shaft 26, and is slightly spaced from the chute so as to cause any blanks which may lie in improper position on the chute to be thrown back into the hopper. The kicker 28 has a notched groove 28^a in its circumference, said groove being adapted to allow the heads of blanks which lie in proper position to slide freely down the chute. A pulley 28^b having a V-shaped groove is also mounted on the secondary shaft 26, and is adapted to receive a belt for driving an agitator, not shown, said agitator being adapted to intermittently strike the chute and vibrate it in order to assist the blanks in their downward movement.

The blank feeding bucket wheel 20 comprises a hollow cylindrical member having a flat face 29 and a continuous outer rim 30, the cylindrical member being open at its outer side. A series of buckets 31 are pressed out of the metal of the inner flat face of the bucket wheel. The buckets are closed at their tops by the rim 30 of the bucket wheel, and are provided with flat base sections

parallel to the flat face 20. Each bucket 31 is provided at its forward end with a laterally inclined end wall adapted to deflect blanks toward the front of the feed wheel.

The buckets are adapted to pick up the blanks, indicated by 33, from the blank holding section 11 of the hopper while the buckets are moving upwardly, and to deliver said blanks to a guide way 34 leading to an inclined chute 35 when the buckets are traveling downwardly.

The guide way 34 is provided with a pair of diverging flanges 36 and 37, the flange 36 of said guide way being sufficiently spaced from the flat surface 29 of the bucket wheel to permit blanks to freely pass therebetween. The guide way 34 feeds the blanks to an inclined chute 35 by means of which the blanks are delivered to the automatic machine whereby they are to be used. The chute 35 is provided with vertical parallel side sections spaced apart so as to admit only the necks of the blanks. The chute is supported in any suitable manner, and is adapted to extend through a suitable opening in the hopper at a point slightly below the rejecting wheel 28. The rejecting wheel has a notched groove in its circumference which just receives the heads of blanks lying in proper position in the chute 35 and permits them to slide down freely. All blanks not in proper position in the chute, however, are engaged by the notches of the rejecting wheel 28 and thrown back into the hopper.

In order to prevent any possibility of the blanks jumping out of the portion of the chute outside the hopper, a cover rail 38 is provided, said rail extending from the hopper to the delivery point of the chute. The rail 38 is held in place by means of a pair of angle brackets 39 and 40 which are secured to the side of the chute in any suitable manner, as by screws 41 and 42.

The hopper is supported in position by means of a base portion 43 which fits within a groove 44 in a supporting member 45. The supporting member 45 is secured in any suitable manner as by bolts 46 to the base 47 of the machine receiving the blanks. In order to permit the bucket wheel to be operated by hand, whenever desired, the worm wheel 21 is loosely mounted on the shaft 19, and is provided with a series of sockets 48 within which a series of pins 49 of a clutch member 50 are adapted to seat, as clearly shown in Fig. 7. The opposite end of the shaft 19 from the clutch member 49 is provided with a hand wheel 51 rigidly secured thereon. A spiral spring 52 is located on the shaft 19 between the cover plate 12 and the hub of the hand wheel 51 in order to exert pressure on the shaft to normally keep the pins 49 of the clutch 50 in engagement with the sockets 48. When it is desired to operate the

bucket wheel by hand, it will merely be necessary to push upon the handle 51 until the clutch pins 49 have been disengaged from the sockets 48.

One important advantage of this invention is that the bucket wheel may be readily disconnected from the driving mechanism, whereby the device may be readily adjusted and obstructions and other causes of stoppage may be removed.

A further advantage lies in the fact that the buckets of the blank feeding wheel are located on one side instead of on the end of the wheel. By means of this construction, the headed blanks will be more positively delivered to the chute.

While there has been disclosed in this specification one form in which the invention may be embodied, it is to be understood that this form is shown for the purpose of illustration only, and that the invention is not to be limited to the specific disclosure, but may be modified and embodied in various other forms without departing from its spirit. In short, the invention includes all the modifications and embodiments coming within the scope of the following claims.

Having thus fully described the invention, what is claimed as new, and for which it is desired to secure Letters Patent, is:

1. In a blank feeding machine, a hopper adapted to contain a quantity of headed blanks, a feed wheel mounted to rotate vertically within the hopper and located adjacent one side thereof, said feed wheel having side buckets opening only on the inner side of said wheel and facing into the hopper away from the side with which the wheel is adjacent, and adapted to collect blanks from the body of said hopper, and an inclined chute projecting into the hopper and arranged parallel and contiguous to said feed wheel, for receiving the blanks fed from said feed wheel, each bucket provided at its forward end with a laterally inclined end wall adapted to deflect blanks toward the front of the feed wheel and to the inclined chute.

2. In a blank feeding machine, a hopper adapted to contain a quantity of headed blanks, a feed wheel mounted to rotate vertically within the hopper and located adjacent one side thereof, said feed wheel having side buckets open only on the inner side of said wheel and facing into the hopper away from the side with which the wheel is adjacent and adapted to collect blanks from the body of said hopper, driving mechanism for said feed wheel, and an inclined chute projecting into the hopper and arranged contiguous to said feed wheel for receiving the blanks fed from said feed wheel, each bucket provided at its forward end wall with a laterally inclined end wall adapted to deflect blanks toward the front of the said wheel and toward the inclined chute, said feed

wheel being detachably connected to the driving mechanism.

3. In a blank feeding machine, a hopper adapted to contain a quantity of headed
5 blanks, a feed wheel mounted to rotate vertically within the hopper and located adjacent one side thereof, said feed wheel having side buckets open only on the inner side of
10 said wheel and facing into the hopper away from the side with which the wheel is adjacent and adapted to collect blanks from the body of said hopper, and an inclined chute projecting into the hopper and arranged contiguous to said feed wheel, for receiving the
15 blanks fed from said feed wheel, each bucket provided at its forward end wall with a laterally inclined end wall adapted to deflect blanks toward the front of the feed wheel and toward the inclined chute, and means
20 for preventing blanks from escaping upwardly from said chute.

4. In a blank feeding machine, a hopper

adapted to contain a quantity of headed blanks, a feed wheel mounted to rotate vertically within the hopper and located along
25 one side thereof, said feed wheel having side buckets opening only on the inner side of said wheel and facing into the hopper away from the side with which the wheel is adjacent and adapted to collect blanks from the
30 body of said hopper, an inclined chute projecting into the hopper and arranged contiguous to said feed wheel for receiving the blanks fed from said feed wheel, each bucket provided at its forward end wall with a laterally inclined end wall adapted to deflect
35 blanks toward the front of the feed wheel and toward the inclined chute, and means for preventing blanks from escaping upwardly from said chute. 40

In testimony whereof, we have affixed our signatures to this specification.

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