WICKE *v.* OSTRUM.

1. The invention embraced by letters-patent No. 38,924, granted June 16, 1863, to George Wicke, for an improvement in machines for nailing boxes, is a new combination of old elements, all of which are necessary to the validity of his letters.
2. The fourth and fifth claims of those letters, fairly construed, are for the combination of the cam, gate, and treadle of the adjustable carriage, table, and slide, with the elements of the other claims, and they are not infringed by machines manufactured substantially in accordance with letters-patent No. 172,579, granted Jan. 25, 1876, to Henry P. Ostrum, for an improvement in machines for nailing boxes.

APPEAL from the Circuit Court of the United States for the Southern District of New York.

This is a suit by William Wicke against Henry P. Ostrum to restrain the alleged infringement by the latter of letters-patent No. 38,924, granted June 16, 1863, to George Wicke, for an improvement in machines for nailing boxes, of which letters the complainant is the owner. The defendant denied the infringement, and alleged that the machines made, used, and sold by him were manufactured substantially as specified and claimed in letters-patent No. 172,579, granted to him Jan. 25, 1876, for an improvement in machines for nailing boxes.

The specification and drawings of Wicke's machine are as follows: —

"*To all whom it may concern:*

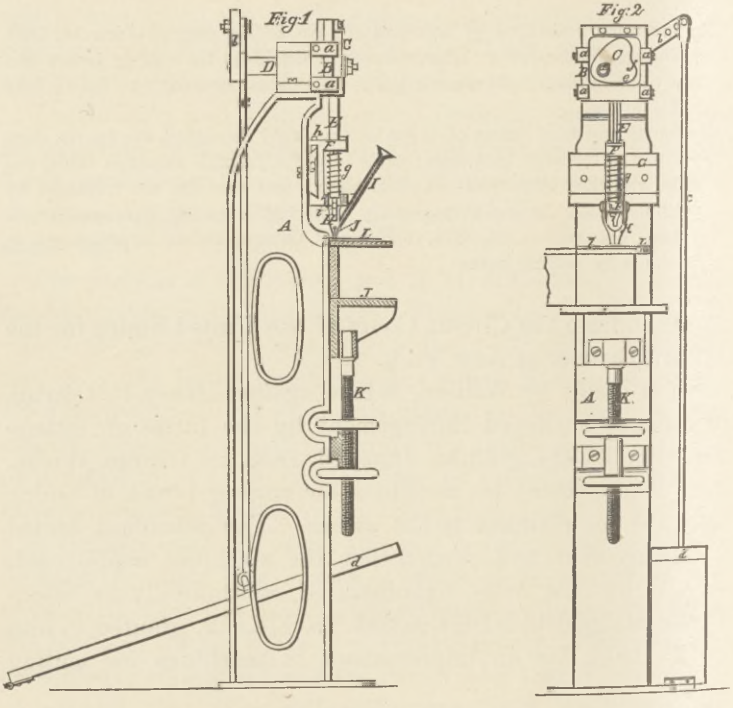
"Be it known that I, George Wicke, of the city, county, and State of New York, have invented a new and improved machine for nailing boxes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of the specification, in which —

"Fig. 1 represents a sectional side elevation of my invention.

"Fig. 2 is a front elevation of the same.

"Similar letters of reference in both views indicate corresponding parts. The object of this invention is to drive the nails which hold together the several boards constituting a box for cigars or for other articles. The nails are generally driven by a hammer, each

nail for itself, which obviously is a very tedious operation. This invention consists in the employment of grooved spring jaws for



the purpose of holding the nails and to guide them to the proper place, and it consists further in combining with said spring jaws a corresponding number of rising and falling plungers for the purpose of driving each nail singly and all at the same time; and also in arranging said plungers with globe or disk shaped collars in such a manner that they spread the grooved spring jaws at the proper moment and allow the heads of the nails to pass; also in arranging the cam that serves to depress the plungers with a circular portion in such a manner that the plungers cannot be depressed any further than necessary to drive the nails; finally, in the general arrangement and combination of all the parts, so that the plungers and jaws as well as the table which supports the boards can be adjusted according to the different sizes of boxes to be made.

"To enable others skilled in the art to make and use my invention, I will proceed to describe it.

"*A* represents a frame of cast-iron or of any other suitable material. Secured to the upper part of this frame by means of angular guide-pieces, *a*, is the rising and falling gate *B*, which is operated by means of a cam, *C*, on the end of a shaft, *D*, which connects by an arm *b* and rod *c* with a treadle, *d*.

"The cam *C*, on being turned in the direction of the arrow marked on it in Figure 2, depresses the gate *B*, until the circular portion *e f* bears upon the gate. This portion of the cam is made to form part of a circle described from the centre of shaft *D*, so that the cam may be turned more or less without depressing the gate *B* any further than desirable.

"The gate *B* acts on one or more plungers, *E*, each of which moves up and down in a carriage, *F*, and a spring, *g*, has the tendency to raise the plunger after the same has been depressed, or to keep it up when not exposed to the action of any power. The carriage *F* slides in a lateral direction on ways *G*, and it is adjusted at the proper point where the nail is to be driven by set screws *h*. A series of plungers to correspond to the number of nails to be driven simultaneously may be so arranged that, by depressing the treadle, all the plungers are depressed and consequently all the nails inserted at the same time.

"The lower end of the plunger *E* is turned down, as clearly shown in the drawing, leaving them just large enough to cover the heads of the nails to be driven, and a disk-shaped collar, *i*, is formed at a short distance above the lower ends.

"When depressed, the plunger enters the spring jaws *H*, which are secured to the sides of the carriage *F*. These jaws are provided with grooves, *j*, to receive the nails (see Figure 1), and they are so formed that when the plunger descends, the disk-shaped collar *i* spreads the same, allowing the head of the nail to pass freely through the grooves *j*.

"The nails are fed through an inclined tubular channel, *I*, one after the other, and if several plungers are used, the whole series are depressed by one motion of the cam *C*.

"A table, *J*, on the lower portion of the frame *A*, serves to support the boards to be nailed, and this table is adjustable by means of screw spindle *K*; said boards are adjusted in the correct position by a slide, *L*, which is adjustable in a groove *l*. A small recess in the frame *A* allows the horizontal boards to project very little beyond the edge of the vertical board, so that the rough edges of the boards can be removed by the aid of a plane after the nailing has been accomplished.

"The table *J*, the slide *L*, and the plunger or plungers can thus be adjusted to suit boxes of different size, and the nails are driven simultaneously by one motion of the foot.

"What I claim as new, and desire to secure by letters-patent, is —

"1st, The employment of the grooved spring jaws, *H*, substantially as described for the purpose of receiving the nails, and to guide them to their proper places.

"2d, The combination with the spring jaws, *H*, of the rising and falling plunger, *E*, constructed and operated substantially as and for the purpose described.

"3d, Arranging the plunger, *E*, with a disk-shaped collar, *i*, or its equivalent, to operate in combination with the spring jaws, *H*, substantially as and for the purpose described.

"4th, The arrangement of the circular portion, *e*, *f*, on the cam, *C*, to operate in combination with the gate, *B*, and treadle, *d*, substantially as and for the purpose set forth.

"5th, The arrangement and combination of one or more adjustable carriages *F*, table *J*, and slide *L*, constructed and operating in the manner and for the purpose substantially as specified."

Ostrum's specification and drawings are as follows: —

"*To all whom it may concern:*

"Be it known that I, Henry P. Ostrum, of the city and county of New Haven, State of Connecticut, have invented an improvement in machines for nailing boxes, and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use it, reference being had to the accompanying drawing, forming a part of this specification, in which —

"Figure 1 is a direct end view or elevation of the end of the machine. Figure 2 is a perspective view of the machine.

"My invention relates to that class of machines which are used for nailing together the sides and ends of boxes, in which any required number of nails may be simultaneously driven by a treadle or other means, and consists in a novel construction and arrangement of parts hereinafter more fully set forth and claimed.

"The letter *A*, Fig. 2, indicates a platform of cast-iron, having projections on its under side in which the rod *y*, screws *p p*, and rock shaft *G*, turn, and on which the ratchets *o o* move back and forth. This platform, with the legs attached, constitutes the frame of the machine. The rest *B* is a straight bar of metal extending

across and beyond the platform *A*, and has pins *x x* passing through holes in the same, which are forced down upon the ratchets *o o* by

Fig. 1.

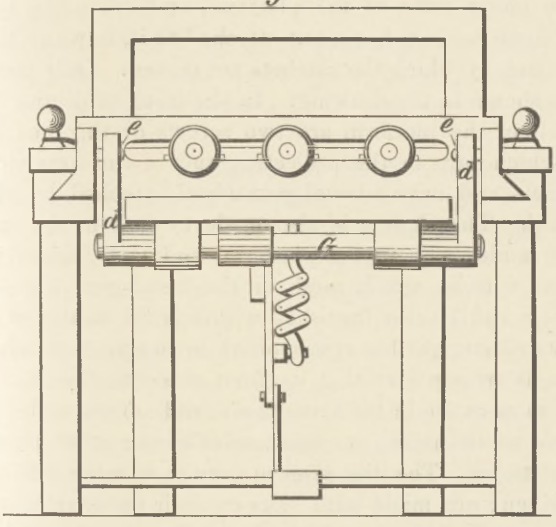
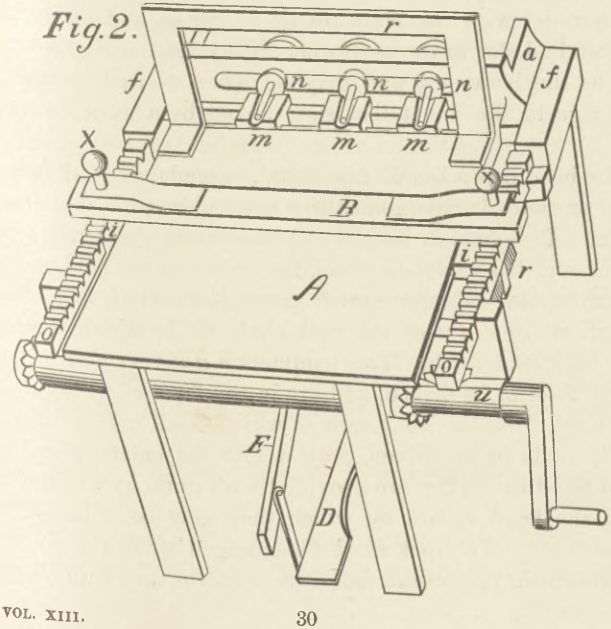


Fig. 2.



springs attached to the rest. It is also provided with the guides *i i*, which slide between the side edges of the platform and the ratchets *o o*. The ratchets *o o* are straight bars of iron with notches on their upper sides, and are movable back and forth, on the projections from the under sides of the platform, and extending beyond it. Each of these ratchets has a nut attached to it, in which the screws *p p* turn and by which the ratchets are moved. Only one of these screws is shown in the drawing. In the front projection from the under side of the platform are two screws or threaded bolts *p p*, Fig. 2, which turn in the projection and in the nuts attached to the ratchets, and have a bevel-gear wheel attached, by which they are turned. The shaft *y* is also made to turn in the projections from the under side of the platform, and is furnished with two bevel-gear wheels, which mesh in the bevel-gear wheels on the screws *p p*, and is also furnished with a crank on one of its ends. The elevated straight bar *r*, supported on two posts attached to the platform, is arranged so that its front side and the front ends of the dies *m m m* are in the same plane, and serves to hold one of the pieces to be nailed at right angles to the other piece resting on the platform. The dies *m m m* vary in number with the nails to be driven; are made with slots on their upper sides, which are enlarged at their ends nearest the hammers, to correspond with the size of the heads of the nails placed in them; and to allow the nails to lie parallel with the platform, or nearly so, and are fitted into the dovetailed slot in the platform. They are loosely held in their places by the hammers, and may be, when desired, securely held by a wedge in the dovetailed slot, moved by a screw on its outer end.

"The head *a* is a bar of cast metal, extends across the platform, and has on its ends enlargements or cross-pieces, which slide on the platform. It is held in its place by the pieces, *f f*, screwed to the platform, and has a slot in which the hammers are held, and a pin, *e*, in each of the enlargements or cross-pieces which fit in the slots in the short arms *d d* of the rock shaft *G*, by which the head is moved back and forth. The hammers *n n n* vary also in number with the nails to be driven, and are in the form of a threaded bolt with a head, from the front ends of which small rods, a little larger than the nails to be driven, project into the enlarged end of the slots in the dies. They are provided with nuts, by which they are held in the head *a*, and by which they may be adjusted at any distance apart. The rock shaft *G*, arranged under the platform, is made to turn in projections from the platform, and with a long arm

E extending nearly to the front side of the machine; also with two short upright arms, *d d*, having slots in their ends. A spiral spring extends from the long arm, and is attached to the under side of the platform, and draws the arm upwards, while the short arms move the head *a* backward.

"The treadle *D* is a part of, or is attached to, a bar, extending to a shaft pivoted to two of the legs of the frame, or is otherwise suitably constructed; it is also suitably connected to the long arm of the rock shaft.

"With the above description of the parts of my machine, its operation will be readily understood. As the pieces to be nailed together are placed, the one perpendicularly against the front ends of the dies *m m m*, and against the elevated bar *a*, and the other on the platform against the first, and as the rest *B* is adjusted against it by the pins *x x*, operating on the ratchets *o o*, as pawls, the pieces are then screwed together between the dies *m m m*, and the rest *B*, by turning the rod *y*, geared to the screws *p p*, moving the ratchets *o o*, and the rest *B*. The frame *A*, the dies *m m m*, and the rest *B*, adjusted by the pins *x x*, acting on the ratchets *o o*, and moved by the screws *p p*, co-operate to tightly hold the pieces to be nailed. The pieces being thus held, as the treadle *D* is forced downward, the head *a*, with the hammers *n n n*, is forced forward, driving the nails placed in the slots in the dies *m m m*, to their places, nailing the two pieces together.

"I am aware of the patent granted to M. Blaser, No. 155,284, Sept. 22, 1874, and hereby disclaim the same.

"I claim as my invention —

"The combination of frame *A*, treadle *D*, rock shaft *G*, head *a*, provided with one or more adjustable hammers, *n n*, one or more adjustable dies, *m m*, and the rest *B*, all the said parts constructed and combined substantially as set forth."

The court, on final hearing, dismissed the bill, and the complainant appealed.

Mr. Arthur v. Briesen for the appellant.

Mr. William T. Birdsall and *Mr. N. A. Calkins, contra.*

MR. CHIEF JUSTICE WAITE delivered the opinion of the court.

The patent sued on in this case is for a machine for nailing boxes, invented by George Wicke. Before this invention nails

were driven singly, and by hand. By the machine more than one could be driven at the same time.

In the description of the invention which accompanied the application for the patent, the inventor said, in effect, that it consisted in the employment of grooved spring jaws for the purpose of holding the nails and guiding them to their places, combined with a corresponding number of rising and falling plungers for driving each nail singly and at the same time. The plungers were made with globe or disk shaped collars, so adjusted or arranged that they would spread the spring jaws at the proper moment to allow the heads of the nails to pass. To depress the plungers, he arranged a cam, so formed and fitted as to have spent its force when the nail was driven to its place. "Finally," he said his invention consisted "in the general arrangement and combination of all its parts, so that the plungers and jaws, as well as the table which supports the boards, can be adjusted according to the different sizes of the boxes to be made." He then described the construction of the different parts of the machine and the manner of its operation, from which, and the drawings and models, it appears that the machine was an upright one, by means of which the nails were to be driven vertically.

With such a machine the nails must necessarily be held in place by some mechanical device until they were guided to and fastened in the board. A nail implies a head larger than its point, and, if it is to be driven vertically, some provision must be made for directing the point carefully to its proper place, and then letting the head pass without obstruction as it is driven. Such clearly was the office of the "grooved spring jaws" and the "globe or disk shaped collars" of the plungers in this machine.

To make the claims of his letters-patent intelligible, they must be read in connection with the specifications to which they relate, and in this way it becomes apparent that the object of the inventor was to secure a patent for a new combination of old elements. Grooved spring jaws were confessedly very old. So were rods of iron with curvilinear projections, like those called plungers, and cams, of almost any shape, and treadles, and levers, and adjustable carriages, tables, and slides.

The use of these things separately could not be patented. But the combination of them so as to produce a machine useful for driving nails was new. This the inventor might claim, and, so far as anything appears, he was entitled to a patent for the employment of spring jaws in the combination and for the purpose described in his specifications; for the combination of his peculiarly shaped plungers with spring jaws for the purposes of such a machine; for the use of the cam he described in combination with the gate and treadle to drive his machine; and for the adjustable carriage, table, and slide when used on such a machine as his. He was entitled also to the benefit of all the mechanical equivalents of his several elements, known at the time of his invention, if used in the same combination.

As has already been seen, Wicke made an upright machine. For such a machine the combination of all his several elements was necessary. If any one, or its mechanical equivalent, was left out, an upright machine like his could not be operated successfully. A combination of other elements, not the equivalents of his, would be a different machine, and consequently not an infringement. From the evidence it is clear he was the first to put into practical use the idea of driving more than one nail at the same time in the manufacture of boxes by the use of machinery. The idea he could not patent, but his contrivance to make it practically useful he could. By his patent he appropriated to himself only so much of the field of invention which his idea embraced as was covered by the machine described in his specification and claimed in his application.

The defendant conceived the idea of driving nails horizontally instead of vertically, and made a machine for that purpose, which he patented. He does not use the spring jaws or the peculiar shaped plungers of the Wicke machine, because he does not need them. As his object is to drive the nails horizontally, they can be laid in a groove and held there by gravity until forced into the board. Having no spring jaws to be opened, he need not shape his plunger or driver so as to effect that object. He thus has been enabled to dispense with two elements of Wicke's combination, in the absence of which that machine could not be successfully worked. Neither has he substituted any mechanical equivalent for what he has thus

put aside. By changing the form of the machine and the manner of its operation, he has no need of any such contrivances. He may use the equivalent of one half of the spring jaw of Wicke's machine, but he does not want the other half, or anything else in its place, as the nail will lie where it is put until driven into the board. He accomplishes by natural causes what Wicke required a mechanical contrivance to do. His machine will not do the work of Wicke's, that is to say, drive a nail vertically, nor will Wicke's do that of his, and drive horizontally. The truth is, the two machines are entirely unlike, and while they both drive more nails than one at the same time, they do it in different ways. That of Wicke, operating verti cally, requires all the elements of his combination, while that of the defendant, doing its work in another way, is made by leaving out two elements which are indispensable to Wicke.

The fair construction of the fourth and fifth claims is that they are for the combination of the cam, gate, and treadle, or the adjustable carriage, table, and slide, with the elements of the other claims. It is possible that if there had been nothing more done by the defendant than to put into the machine of Wicke his rock shaft and attachments in the place of the cam, the shaft would be considered as the equivalent of that element in Wicke's device. So, too, the bed, slides, and gauges of the defendant's machine, if used in that of Wicke, might be considered the same in effect as the adjustable carriage, table, and slide which he contrived. But these contrivances of the defendant are not used in combination with any of the other devices of Wicke, and, therefore, they do not infringe his claims.

On the whole, we are clearly of the opinion that the court below was right in holding, as it did, that no infringement had been proven.

Decree affirmed.