

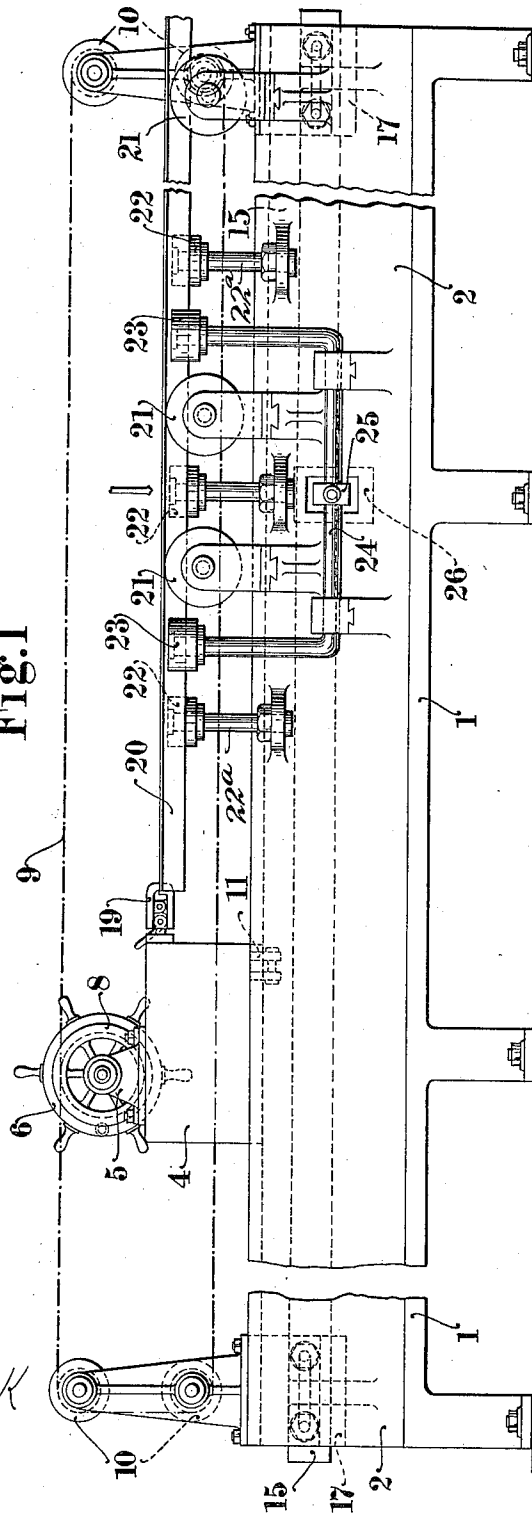
1,023,740.

A. KOLASSA.
SPACING MACHINE.
APPLICATION FILED JAN. 30, 1911.

Patented Apr. 16, 1912.

4 SHEETS—SHEET 1.

Fig. 1



Witnesses:
C. L. Frank
Clara Burger

Inventor
Anton Kolassa
by *[Signature]*
his Attorney

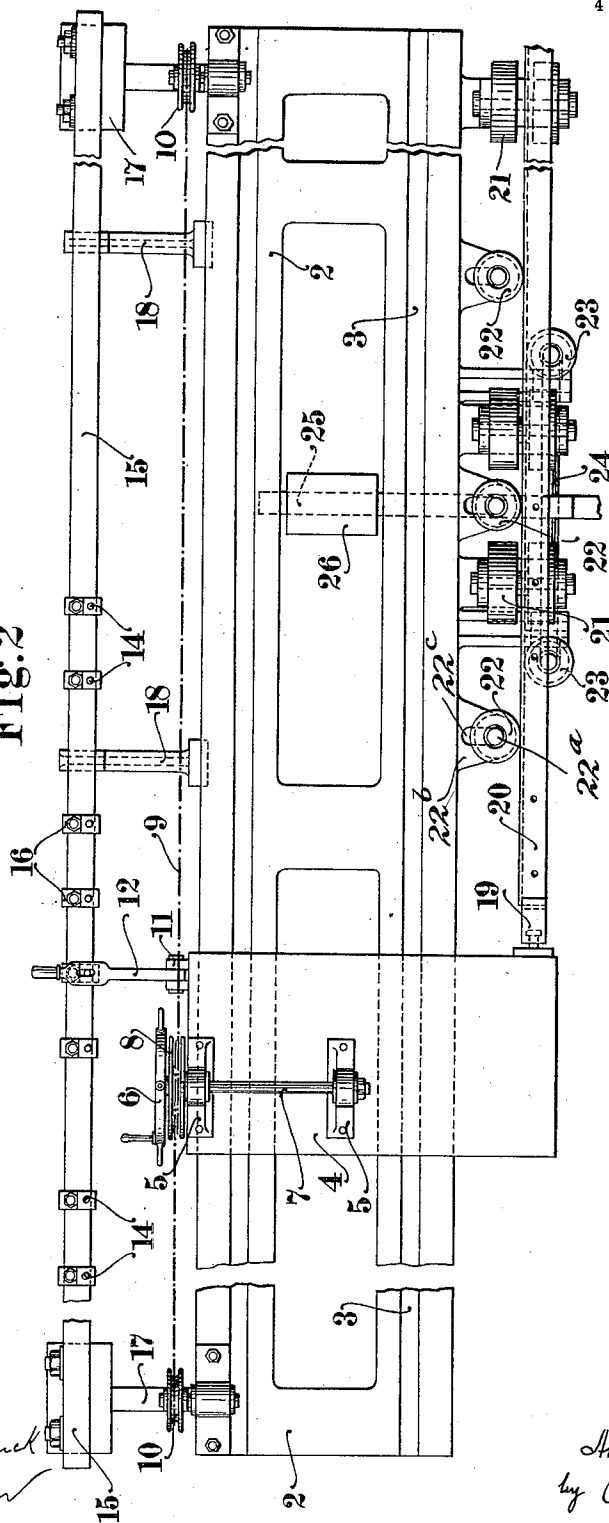
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4 SHEETS-SHEET 2.

Fig. 2



Witnesses:
A. Kolassa, Frank
Oliver, Ingers

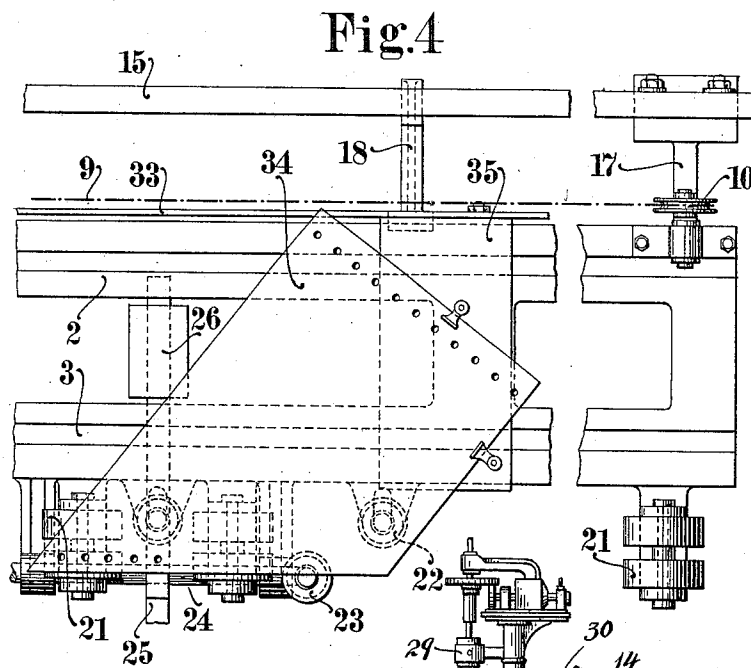
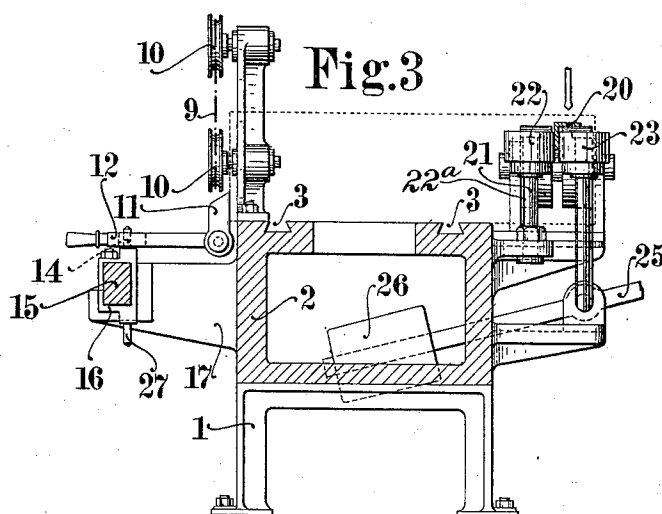
Inventor
Anton Kolassa
by *[Signature]*
his Attorney

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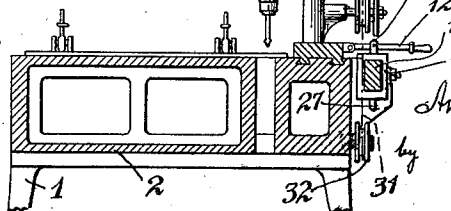
Patented Apr. 16, 1912.

4 SHEETS-SHEET 3.



Witnesses:
Charles Frank
Clara Singer

Fig. 7.



Inventor

Anton Kolassa

by *Anton Kolassa*
his Attorney

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4 SHEETS-SHEET 4.

Fig.5

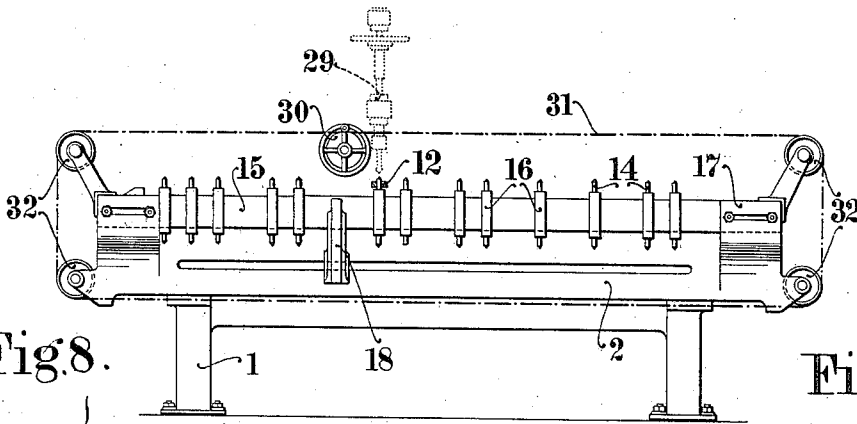


Fig.8.

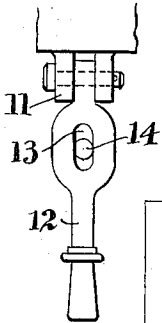


Fig.9.

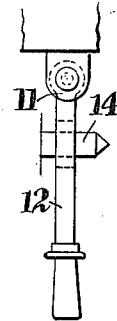


Fig.6

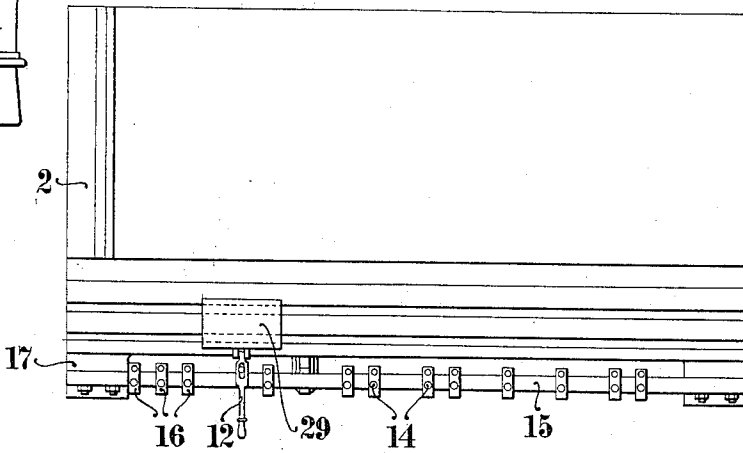


Fig.11.

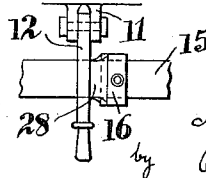
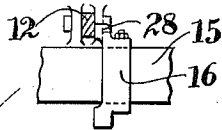


Fig.10.



Witnesses:

Klaus Frank

Clara Burger

Inventor

Anton Kolassa

by

his Attorney

UNITED STATES PATENT OFFICE.

ANTON KOLASSA, OF VIENNA, AUSTRIA-HUNGARY.

SPACING-MACHINE.

1,023,740.

Specification of Letters Patent.

Patented Apr. 16, 1912.

Application filed January 30, 1911. Serial No. 605,402.

To all whom it may concern:

Be it known that I, ANTON KOLASSA, a subject of the Emperor of Austria-Hungary, residing in Vienna, Austria-Hungary, have invented an Improvement in Spacing-Machines, of which the following is a specification.

The object is to provide a machine of the nature stated embodying such characteristics that after the workpiece has been positioned in the machine the same may be accurately drilled, punched or stamped in accordance with predetermined spacing points for the drilling, punching or stamping operations.

Two forms of this invention are illustrated by way of examples in the accompanying drawings in which:—

Figure 1 is a front elevation, Fig. 2 is a plan, and Fig. 3 is an end elevation partly in vertical section, of one form of the apparatus. Fig. 4 is a partial plan of the apparatus, showing a plate fixed in position for treatment. Fig. 5 is a front elevation, Fig. 6 is a plan, and Fig. 7 is an end elevation partly in vertical section, of a modified form of the apparatus. Figs. 8 to 11 are enlarged views of certain details.

Referring first to Figs. 1 to 3, 1 is the framing for supporting the bed 2 formed with grooves 3 or similar guides in which a table 4 is adapted to slide longitudinally of the machine. The table 4 carries in bearings 5 a rope pulley 8 operated by means of a handwheel 6 on a shaft 7. An endless rope 9 is wound around the pulley 8 and over guide rollers 10 mounted in brackets attached to the bed 2. In a bearing 11 on one side of the table 4, there is rotatably mounted a hand lever 12 formed with a slot-like recess 13 (Figs. 8 and 9) engaging pins 14 carried by movable stops 16 which can be slid along and adjusted on a bar 15 for the purpose of holding the table in a determined position. The bar 15 is clamped in brackets 17. In cases where a large number of stops are required for a work piece of great length and one bar would not be sufficiently long for the purpose, two or more bars are used, which are butt-jointed and supported in brackets 18 capable of being slid along the bed 2. The stops 16 are adjusted in position on the work-piece when the latter is removed from the work-table by the operator. The adjustment of the stops when once made for a whole series

of work pieces can be easily checked by the shop foreman, so as to insure the perfect accuracy of the whole of the work. The stops are then finally fixed in position on the bar 15 by means of bolts or the like. A vise-like clamping device 19 is provided on the other side of the table 4 for holding the work piece to be drilled or punched. The work piece 20, shown for example, as an angle bar is placed upon grooved rollers 21, a suitable number of which are mounted in side brackets on the bed 2. These rollers are capable of side-wise adjustment to suit the width of the angle. The two rollers nearest the tool take the pressure exerted by the latter upon the work piece. Lateral shifting of the work piece across the bed of the machine is prevented partly by rollers 22, and partly by rollers 23. The rollers 23 are mounted on the ends of a U-shaped bar 24 which is adapted to turn in bearings in brackets fixed to the bed of the machine. A counterweight 26 or the like, carried by an arm 25 of the bar 24, has a tendency to force the rollers 23 against the depending limb of the angle 20 and thus keep the latter pressed against the rollers 23. The rollers 22 and 23 are capable of being adjusted and set to the width or thickness of the work-piece in its transverse direction. As will be noted upon reference to Fig. 2, each roller 22 is carried by a vertical shaft 22^a passing through a lug 22^b having a slot 22^c therein. The shaft 22^a is capable of being moved in the slot 22^c toward or away from the machine bed, so that in this manner the rollers 22 may be adjusted in relation to the material being operated on. After the stops 16 have been set to the desired spacing, and the work-piece has been fixed to the table 4, the handwheel 6 (or it may be a power driven pulley) is operated to turn the rope pulley 8 so as to cause the table 4 with the lever 12 connected thereto to move along the bed 2 until the lever 12 is brought with its slot 13 over the next pin 14 of the stops 16. At the same time the lever 12 is moved down on to the stop 16 in such a manner that the pin 14 enters the slot 13 and thus prevents the further movement of the table. By this movement and fixing of the table by the lever 12 and pin 14, the work-piece 20 has now been brought to the working point determined by the spacing and it can now be drilled or punched. After the drilling or punching at this point, the lever 12 is turned

up, and the table 4 is moved farther on until the lever meets the pin 14 of the next stop 16. Then the lever is turned down so that its slot 13 engages the said pin 14 whereby the movement of the table 4 is again limited in accordance with the spacing, and the work piece 20 has been shifted to the working point determined by the spacing. These operations are repeated until the last stop has been reached. In order to drill or punch other work-pieces according to the same spacing as before, it is merely sufficient to fix the next work-piece in the machine without altering the positions of the adjusted stops 16 on the bar 15. The stops 16 are provided on their upper sides with the pins 14, and on their lower sides with pins 27 which are situated exactly under the top pins. These pins 27 serve to enable the foreman to adjust stops on a second or third bar away from the table for the purpose of obtaining a general idea of the distribution of the holes of the several rows of rivets in the entire work-piece. The construction of the stops 16 with pins 14 and 27 has the advantage that the whole bar with the stops can be turned, without having to turn the heavy work piece.

Figs. 10 and 11 show another construction of the stops 16 in which stop faces 28 are employed against which the levers 12 (formed without slots in this case) strike.

In the construction of the improved apparatus shown in Figs. 5, 6 and 7, the work piece is stationary, and the drilling, punching or other machine is arranged to slide in longitudinal guide grooves or the like in the bed of the apparatus, but the adjustment of the machine by means of a lever connected thereto and the adjusted stops on a bar fixed in the said bed, is effected similarly to the manner employed in the construction just described. The machine 29 (shown as a drilling machine) is provided with a hand or power driven rope pulley 30 around which a rope 31 is coiled that runs over guide pulleys 32. The exact adjustment of the working point of the machine 29 is insured by means of the lever 12 which is pivoted to the machine 29 and has a slot 13 adapted to engage the pins 14 of the stops 16 on the bar 15.

Besides flat bars, angles and different sections, the improved apparatus is capable of dealing with plates. The plate, to be drilled for instance, is fixed on a table slidable in the same guide grooves, which is rigidly but adjustably, connected by means of a rod or the like to the table that carries the driving mechanism and the adjusting lever. A construction of this kind is shown by way of example in plan in Fig. 4. 33 is the rod that connects the table 4 to the table 35 carrying the plate 34 fixed on it. The plate runs on the rollers 22 which are arranged

on the bed 2 on a level with the top of the table 35.

In practice it is simply necessary for the operator to have the workpiece in place in the machine and to adjust the stops 14 according to the workshop plan and then start the machine to drill, punch or stamp the workpiece.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In a machine of the character described, the combination of a frame having a bed plate, of a carriage slidable on the bed plate, brackets projecting from one side of the frame, a bar removably mounted in said brackets, upper and lower pins adjustably mounted on said bar, and means supported by the carriage for step-by-step engagement with one set of the pins to hold the carriage in adjusted position.

2. In a machine of the character described, the combination of a frame having a bed plate, of a carriage slidable on the bed plate, brackets secured to one side of the frame, a bar mounted in said brackets, a plurality of sleeves embracing the bar and having oppositely extending pins, the bar being removable from said brackets and replaceable therein to present either set of pins in position to form stops, means on the carriage to engage said pin-stops and thereby hold the carriage in adjusted positions on the bed plate.

3. In a machine of the character specified, the combination with a frame having a bed plate, of a carriage slidably mounted on said plate, a bar extending parallel to one side of the machine, a plurality of stops adjustable along said bar, each stop comprising a sleeve embracing the bar and an upwardly extending pin, and a lever on said carriage, said lever having an eye intermediate its ends adapted to successively engage said stops and hold the carriage in adjusted position.

4. In a machine of the character specified, the combination with a frame having a bed plate, of a carriage slidably mounted on said plate, a bar extending parallel to one side of the machine, a plurality of sleeves slidable on said bar each sleeve having an upper pin and a lower pin in line with each other, and means on the carriage for successively engaging said upper pins to hold the carriage in adjusted position.

5. In a machine of the character specified, the combination with a frame provided with a bed plate, of a carriage slidably mounted on said plate, a lever, having an eye intermediate its ends, pivotally supported by said carriage, a plurality of stops adjustable along one of the edges of the bed plate, each said stop having an upwardly projecting

pin adapted to be engaged by the eye in the lever, supporting rollers at the side of the machine opposite that where the stops are arranged, and presser rollers adapted to
5 suitably retain the work piece.

6. In a machine of the character specified, the combination with a frame having a bed plate thereon, a carriage slidable on the bed plate, a bar arranged parallel to one side
10 of the bed of the machine, a plurality of stops adjustable on said bar, each said stop having an upwardly projecting pin, a lever pivoted to the carriage on the side adjacent the stops, said lever having provided inter-
15 mediate its ends an eye which is adapted to engage the pins on the stops, a supplementary carriage connected to said first named carriage and means whereby said
20 carriages may be moved along the bed plate.

7. In a machine of the character described, the combination of a frame having a bed plate, of a carriage slidable on the bed plate, adjustable stops arranged parallel to one
25 side of the bed plate, means supported by the carriage to engage the stops and thereby hold the carriage in adjusted positions, means for adjusting the stops, rollers mount-
30 ed on the frame for the support of the piece-work, means whereby piece-work may be connected to said carriage for movement

over said rollers, the rollers being adjustable, and other rollers arranged for lateral movement with relation to the bed plate and adapted to engage opposite sides of the piece-work.

8. In a machine of the character described, the combination of a frame having a bed plate, of a carriage slidable on the bed plate, adjustable stops arranged parallel to one
40 side of the bed plate, means supported by the carriage to engage the stops and thereby hold the carriage in adjusted positions, means for adjusting the stops, rollers mounted on the frame for the support of the piece-
45 work, means whereby piece-work may be connected to said carriage for movement over said rollers, the rollers being adjustable, a second set of rollers adjustably mounted
50 on the frame, a U-shaped member swingingly mounted on the frame, a third set of rollers which are carried by the legs of the U-shaped member for coöperation with the
55 second set of rollers to prevent lateral shifting of the piece-work with relation to the bed plate, and a counterbalancing weight secured to the U-shaped member.

ANTON KOLASSA.

Witnesses:

JOSEF FABRY,

AUGUST FUGGER.