S. SEGAL.

GAGE FOR FILING TUMBLERS OF LOCKS.

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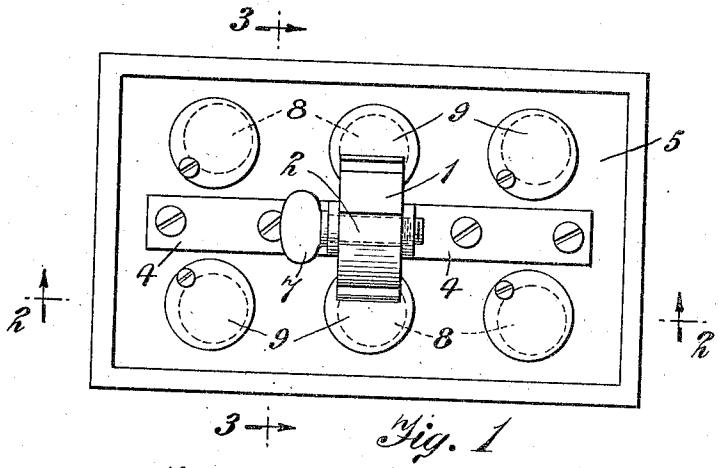


Fig. 1

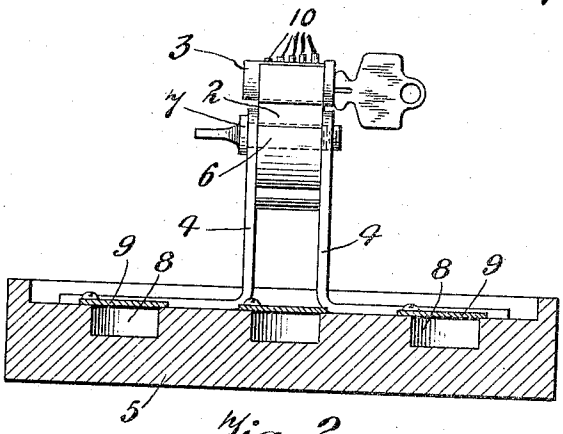


Fig. 2

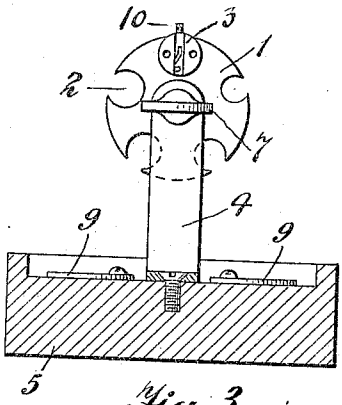


Fig. 3

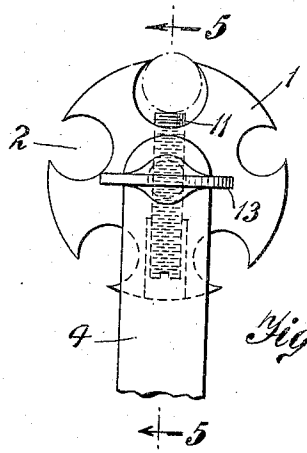


Fig. 4

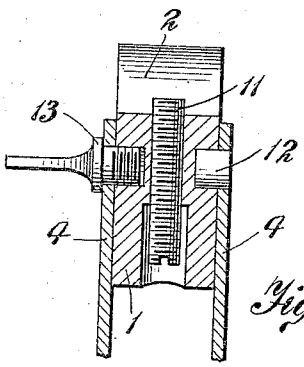


Fig. 5

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GAGE FOR FILING TUMBLERS OF LOCKS.

1,307,379. Specification of Letters Patent. Patented June 24, 1919.

Application filed January 9, 1919. Serial No. 270,370.

To all whom it may concern:

Be it known that I, SAMUEL SEGAL, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Gages for Filing Tumblers of Locks, of which the following is a specification.

My invention relates to a jig for use in holding the cylinders of tumbler locks in the operation of filing the ends of the tumbler actuating pins to length to make them register or coincide with the periphery of the cylinder or barrel.

The invention is particularly useful for holding the cylinders of that class of tumbler locks in which the cylinder has a central key hole and a series of radially extending tumbler actuating pins projecting into the key hole and engaging the pins by their inner ends while their outer ends engage the spring-backed tumblers or tumbler pins which are mounted in the hub in which the cylinder is socketed and are adapted, by projecting into the holes in the cylinder, to lock the cylinder against rotation until they are raised by the tumbler actuating pins to coincidence with the periphery of the cylinder to allow said cylinder to turn.

The object of the invention is to provide a jig by which the operation of filing the projecting ends of the tumbler actuating pins to the proper length, so that upon insertion of the key into the cylinder, they will lift the tumblers to proper position, may be facilitated.

To this end the invention consists in the construction of a jig hereinafter described and embodying a socket adapted to hold and permit the cylinder to be turned on its longitudinal axis, said socket having a longitudinal slot on its side to expose the ends of the tumbler actuating pins when the cylinder, with key inserted therein, is placed in the socket or holder.

The invention further consists in details of construction whereby the jig is adapted to hold cylinders of different sizes for the filing of said actuating pins.

In the accompanying drawings Figure 1 is a plan of a device embodying my invention when mounted upon a suitable base or box adapted to hold assorted sizes of tumbler actuating pins and tumblers.

Fig. 2 is a vertical section of the device on the line 2—2 Fig. 1.

Fig. 3 is a transverse section on the line 3—3 Fig. 1.

Fig. 4 is a side elevation of a preferred form of my invention and

Fig. 5 is a vertical section on the line 5—5 of Fig. 4.

1 indicates a block of metal having one or more sockets or openings 2 each adapted to receive and hold firmly in horizontal position the cylinder 3 of the lock during the filing operation. The lock cylinder, however, may be turned on its longitudinal axis in said socket when the ends of the tumbler actuating pins are filed down to coincidence with the periphery of the cylinder. As shown, the block 1 is provided preferably with a number of horizontal sockets or openings 2 adapted for use with cylinders of graduated size. Said block 1 is mounted upon suitable standards 4 secured to a base 5 and is adapted to turn upon its horizontal axis and to be clamped with the desired opening located at the top by means of a clamp screw and spindle 6 which pass through the standards, one of which is tapped to receive the threaded end of the screw or spindle while the other is engaged by a flange 7 on said screw so that, by tightening up the screw, the standards 4 will be clamped against the sides of the lock and hold it firmly in position. The intermediate portion of the spindle or pin is made plain or unthreaded so that the block may turn freely therein. The base 5 may be provided with a number of pockets 8 to receive tumblers and tumbler actuating pins, each said opening being closed by a cover plate 9.

3 indicates the cylinder of a lock in position in the jig with the ends of the tumbler actuating pins 10 exposed for filing. This exposure of the ends for filing is provided by the longitudinal slot in the edge or side of the block at one side of the socket which receives the cylinder.

In the operation the cylinder is inserted with the key in place and with the ends of the actuating pin blanks exposed as shown, and the ends of the pins are filed down until the barrel or cylinder can be turned to bring them within the unbroken or unslotted portion of the socket. Furthermore, to facili-

tate the operation, the periphery of the chuck falls away or is cut down away from the edges of the slot as shown. This permits the ends of the tumblers to be filed off so that they will be curved to the periphery of the barrel or cylinder. This falling away of the periphery is readily provided by the circular form of the block, as shown, but the circular form is not necessary since the purpose is merely to permit the file to be readily employed to file off the exposed end of the pin to a curve conforming to the curve of the periphery of the cylinder.

As shown the block or chuck is provided with a number of openings 2 to permit it to be employed with different sizes of cylinder barrel. To provide for finer gradations in size of cylinder barrels, however, I prefer to employ the constructions shown in Figs. 2 and 3. In this instance one of the sockets is provided with a set screw 11 projecting into the side thereof opposite the slot or opening in the periphery of the block. This screw may be adjusted so that the cylinder whose pins are being filed will be supported at three points in the periphery of the circle, two such points being the edges of the slot and the third the end of the screw, thereby permitting the cylinder to be held firmly during filing but to be turned on its longitudinal axis in the socket or holder thus provided.

In the construction illustrated in Figs. 4 and 5 the block is supported upon the standards 4 by a pintle or journal support extending from each standard partially through the block to allow space for the set screw. One of said pintles or supports consists of the set screw 13 engaged in an opening in the side of the block tapped to receive it. By tightening the screw 13 the block or jig may be fixed in position with any one of the openings or sockets in uppermost position.

In the construction shown in Figs. 1, 2 and 3 said supports are made slightly springy but this feature is not required with the construction shown in Figs. 4 and 5.

In the operation of filing the ends of the actuating pins by the use of this apparatus the key to be used with the lock is inserted in the lock cylinder and the actuating pin blanks are inserted in openings in the side of the cylinder and seated against the wards of the key to be used, the ends of the actuating pins being exposed, as shown, above the periphery of the cylinder. Said cylinder is then inserted transversely into the socket into which it is adapted to fit, and if no socket of the proper size is embraced among those provided in the block, it is placed in the socket into which the screw 11 projects and the latter is set up to lightly hold the cylinder in the position indicated in Fig. 4. Before or after inserting the cylinder the block is preferably adjusted so that the socket in which the cylinder is inserted will be in uppermost position and with the ends of the pins exposed in the transverse opening or slot on the periphery. The set screw on the side of the block is then set to firmly hold the jig while the barrel or cylinder is free to turn in the socket so far as the exposed ends of the tumblers will permit it to do so before they engage with the edges of the slot in the socket. The filing is then conducted until the ends of the pins are filed down so as to be flush with the outer surface of the cylinder and preferably to a curve the same as the curve of the cylinder, after which the barrel can be turned past the edges of the slot, this fact indicating to the workman that the filing of the pins to a proper length has been completed.

As will be seen, no particular care is necessary on the part of the workman. He carries on the filing until by trial the barrel or cylinder may turn to bring the pin ends within the unbroken portion of the periphery of the socket and when this occurs he knows that the operation is completed.

As will be obvious, my invention may be carried out in a jig provided with one socket only adapting it to be employed with one size of cylinder barrel only. I prefer, however, to employ a series of sockets of graduated size and, for further and finer adjustment of size of socket to size of barrel, provide the gage pin 11 projecting transversely into one of said sockets.

What I claim as my invention is:

1. A filing jig for locks of the character described, having a socket adapted to hold and permit the lock cylinder to be turned on its longitudinal axis, said socket having a longitudinal slot in its side to expose the ends of the tumbler actuating pins.

2. A filing jig for locks of the character described, having a series of transversely graduated openings or sockets each adapted to hold the cylinder of a lock and permit it to be turned therein on its longitudinal axis, each said socket having a slot at its side to expose the ends of the blanks forming the tumbler actuating pins while the cylinder with the block key inserted therein is mounted in said socket.

3. A jig for filing the tumbler actuating pins in locks of the character described, said jig comprising a block mounted on a horizontal axis and adjustable around said axis, said block having a series of transverse openings forming sockets graduated in size to receive and hold lock cylinders of graduated sizes and means for clamping said block in any desired position on its longitudinal axis.

4. A filing jig for locks of the character described, comprising a socketed block the

socket of which forms an opening for holding and permitting rotation of the lock cylinder therein during filing of the exposed ends of the tumbler actuating pins and an adjustable pin extending into said socket opposite the opening through which the ends of the actuating pin blanks are exposed.

Signed at New York, in the county of New York and State of New York, this 8th day of January, A. D. 1919.

SAMUEL SEGAL.

Witnesses:
F. B. TOWNSEND,
IRENE LEFKOWITZ.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."