

RADIO CODE MANUAL

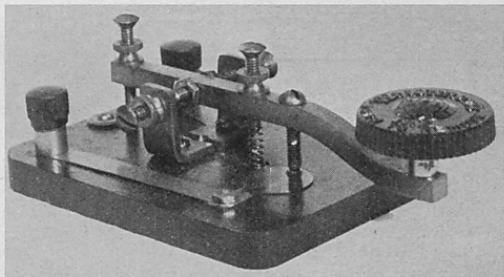
*Twenty Lessons
on the Radio Code and Selected Projects
on Code-learning Equipment*

BY

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Lieutenant (Technician) (Communications) U. S. N. R. (Retired);
Member Institute of Radio Engineers*

Extract on Building
"A Simple Telegraph Key"



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method of connecting up the set will become apparent from the diagrams. There are six terminals along the back of the board. The first two are for the batteries, as indicated in the wiring diagram; the remaining four terminals are for the headphones. If only one pair of headphones are used, connect to terminals *C* and *F*. If two pairs of headphones are used, connect one pair to terminals *C* and *D* and the other pair to terminals *E* and *F*. In this way the two pairs of headphones are connected in series. Notice that terminals *D* and *E* are a double Fahnestock clip or two single clips connected. In the oscillator shown in Fig. 12 the double Fahnestock clip was not used although it is desirable.

PROJECT 4

A Simple Telegraph Key

A professional looking radio key can be made by the beginner or experimenter at a cost of a few cents for parts. This key is very satisfactory in every respect, as will be seen from Fig. 15. It is made of a short piece of $\frac{1}{4}$ -inch-square brass rod and a few other parts easily procurable. Its construction is clearly shown in the mechanical drawings, Fig. 16. As exact dimensions are shown in the drawings, no difficulty should be experienced in making this key.

A unique way of providing contact points that may be easily renewed when necessary by the ingenious builder is to use ignition contact points. These points may be obtained from almost any automobile supply store or direct from Sears, Roebuck and Company by

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mail. These points are usually listed in the mail-order catalogue indexes as *Contact points, auto.*

The point mounted on the circular-ended spring is used for the bottom contact as shown in Fig. 15. The other contact is removed from its spring by filing off its back and is soldered to the upper contact screw which passes through the arm of the key. A slight indentation is provided in the end of this screw by marking it with

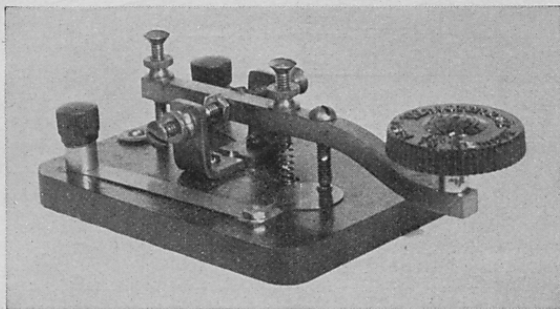


FIG. 15.—A homemade key. This key is very inexpensive to make and utilizes tungsten contacts.

a punch and drilling, first with a small drill (about No. 38) and later with a slightly larger drill. The stem of the contact should fit into this hole to provide a support for the contact. The screw is then screwed through the arm, turned over, and held in position for soldering the contact to it. First tin the screw, and then put a speck of soldering flux on the back of the contact. With a pair of tweezers, hold it in position on the end of the screw, and apply the tip of the soldering iron. In a few moments the solder applied to the screw

will melt and hold the contact firmly. The contact may now be cleaned off around its edges with a file, excess solder being thus removed. It is now ready for use.

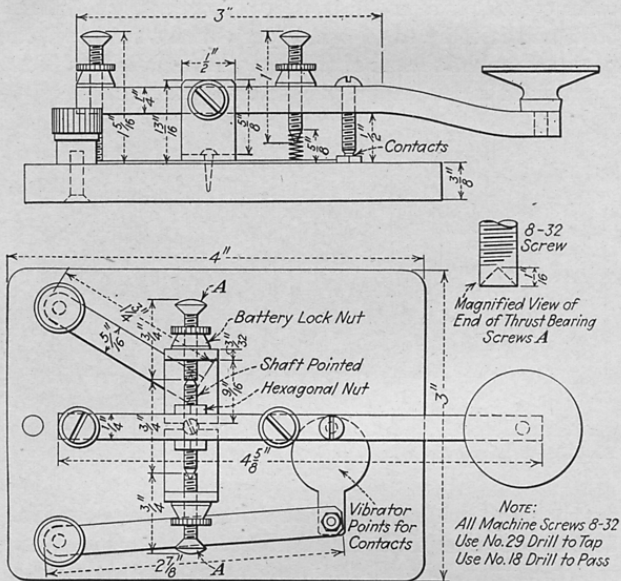


FIG. 16.—Mechanical drawing of homemade key.

The side thrust screws are drilled out at their ends, as shown in the magnified view of these screws in Fig. 16. The bearing rod on which the key arm swings is pointed at both ends and thus fits snugly into the thrust screws. An easy way to bring the bearing-rod ends to a point is to fasten a hand drill in a vise so that it may be turned

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with the right hand. The bearing rod is then fastened in the drill chuck and the drill rotated by turning the crank. With the left hand, hold a flat file against the end of the rod to be pointed. In a short time the file will bring the rod end down to a point. The rod is then reversed and the opposite end pointed in the same manner.

An excellent key knob may be made from the top of an ink-bottle cork. This knob is shown in Fig. 15. Remove the cork from the composition top, and scrape it clean, leaving only a shell. Next, solder a $\frac{1}{2}$ -inch 8-32 flathead machine screw to a piece of circular brass or copper just large enough to fit into the composition top. Turn the top upside down, place the screw assembly in position, pack the knob with a plastic cement such as *plastic wood* or *Tilette*, and allow to harden. The knob is now ready to be screwed into the key arm. If desired, a regulation key knob may be purchased.

The key base may be finished with mahogany-varnish stain or in some other suitable way to suit the taste of the builder. When the key is ready for final assembly, the brass parts should be carefully polished. If possible, these parts should be given a coat of clear lacquer which will keep the key always looking bright and clean. The constructional work required to make this key will become clear from studying Figs. 15 and 16.

PROJECT 5

A Single-wire Buzzer Line

An entertaining, as well as instructive, way of getting code practice under the actual operating conditions of two separate stations may be had by installing a two-

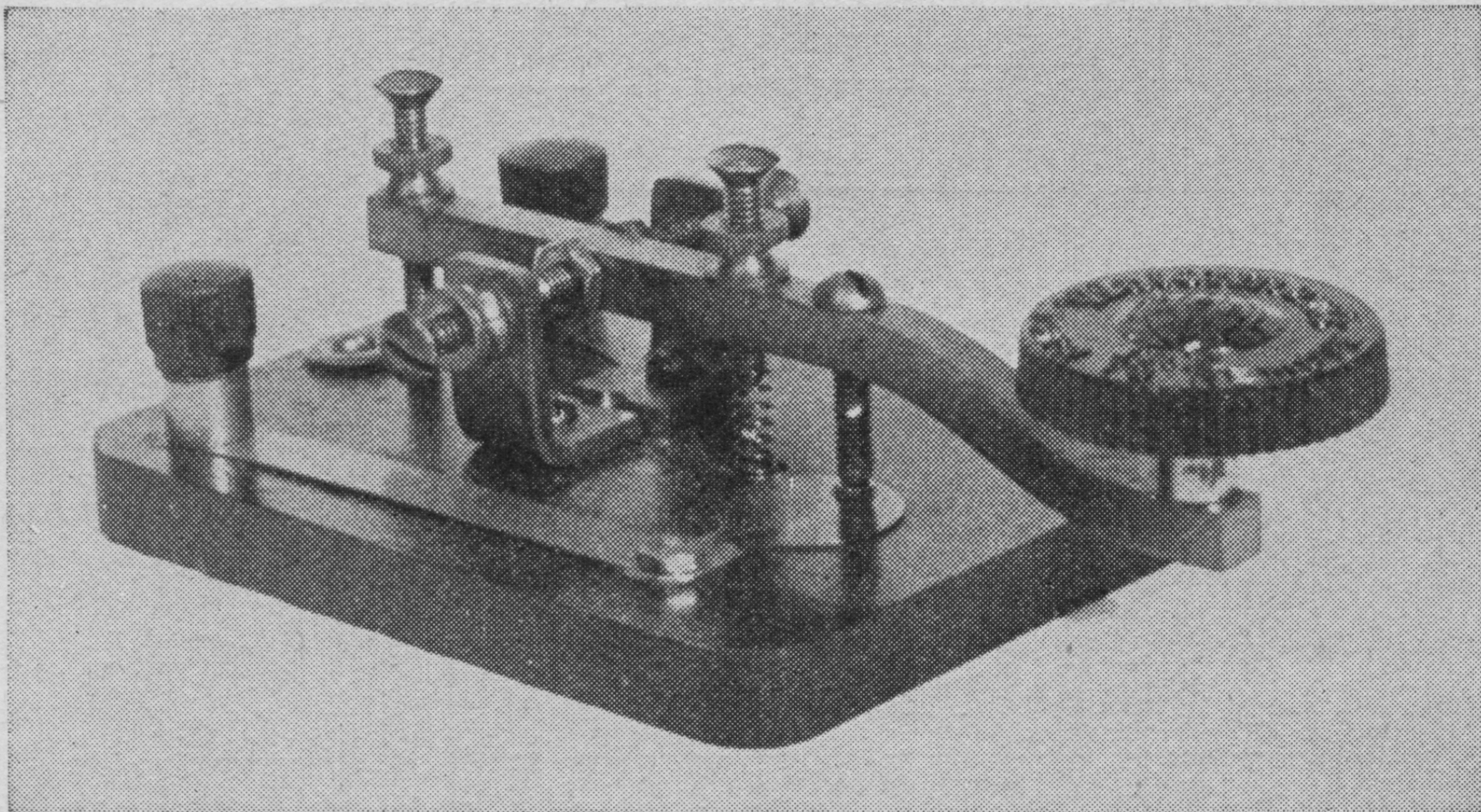


FIG. 15.—A homemade key. This key is very inexpensive to make and utilizes tungsten contacts.

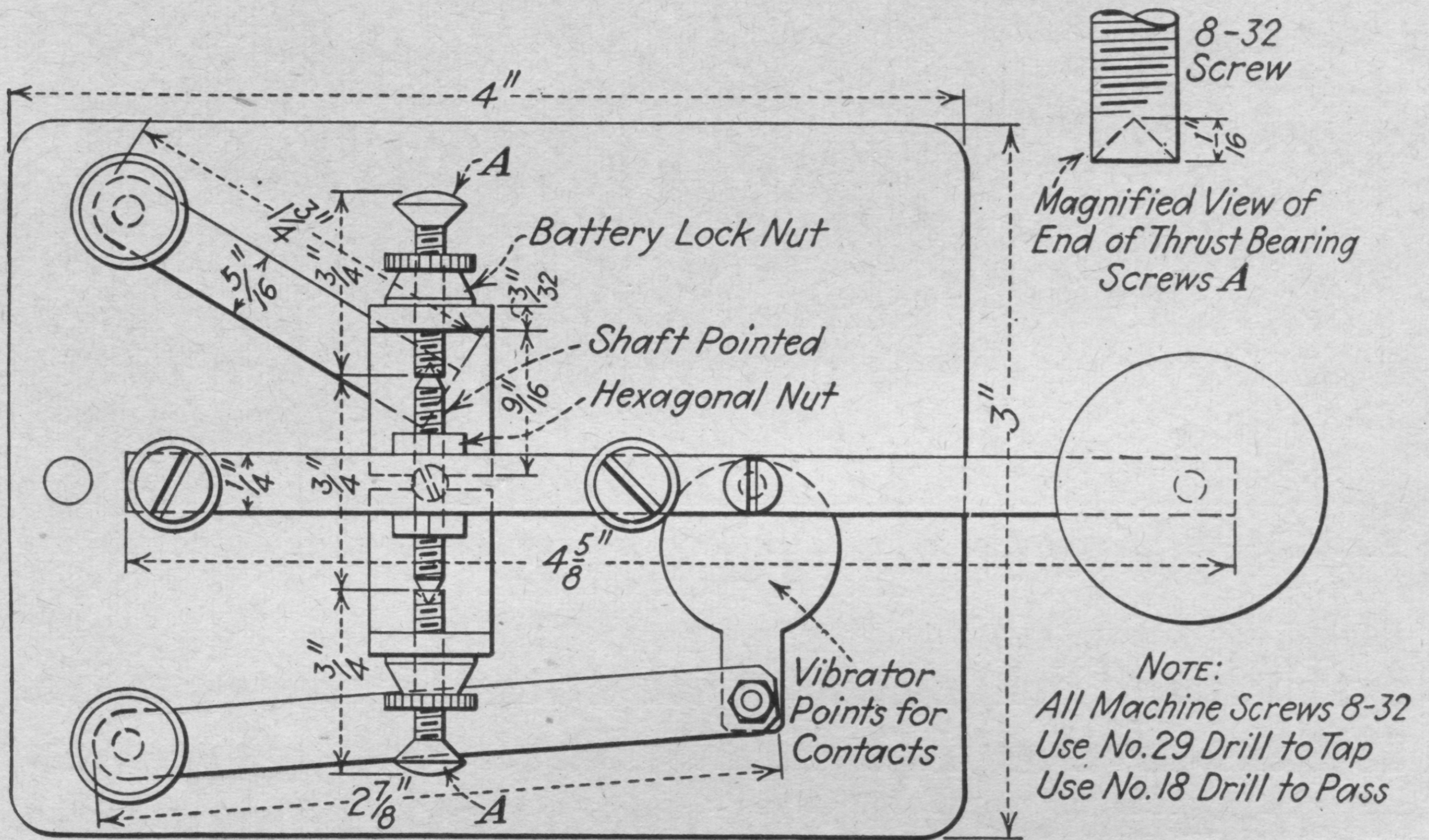
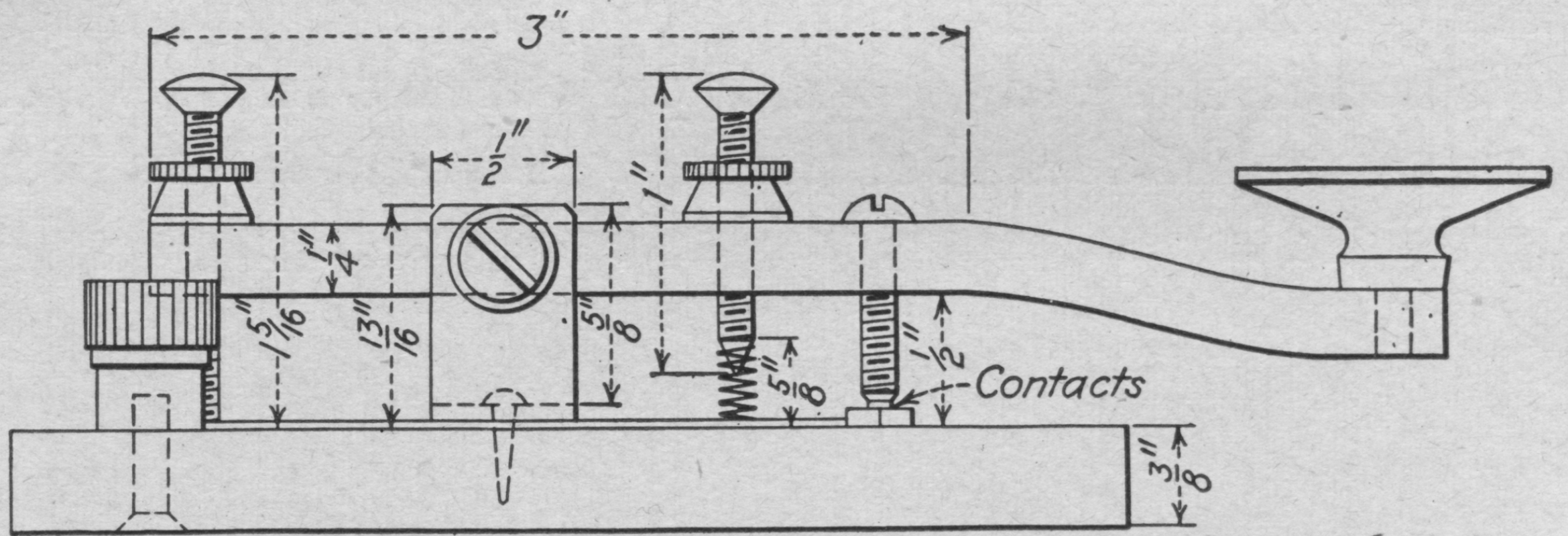


FIG. 16.—Mechanical drawing of homemade key.