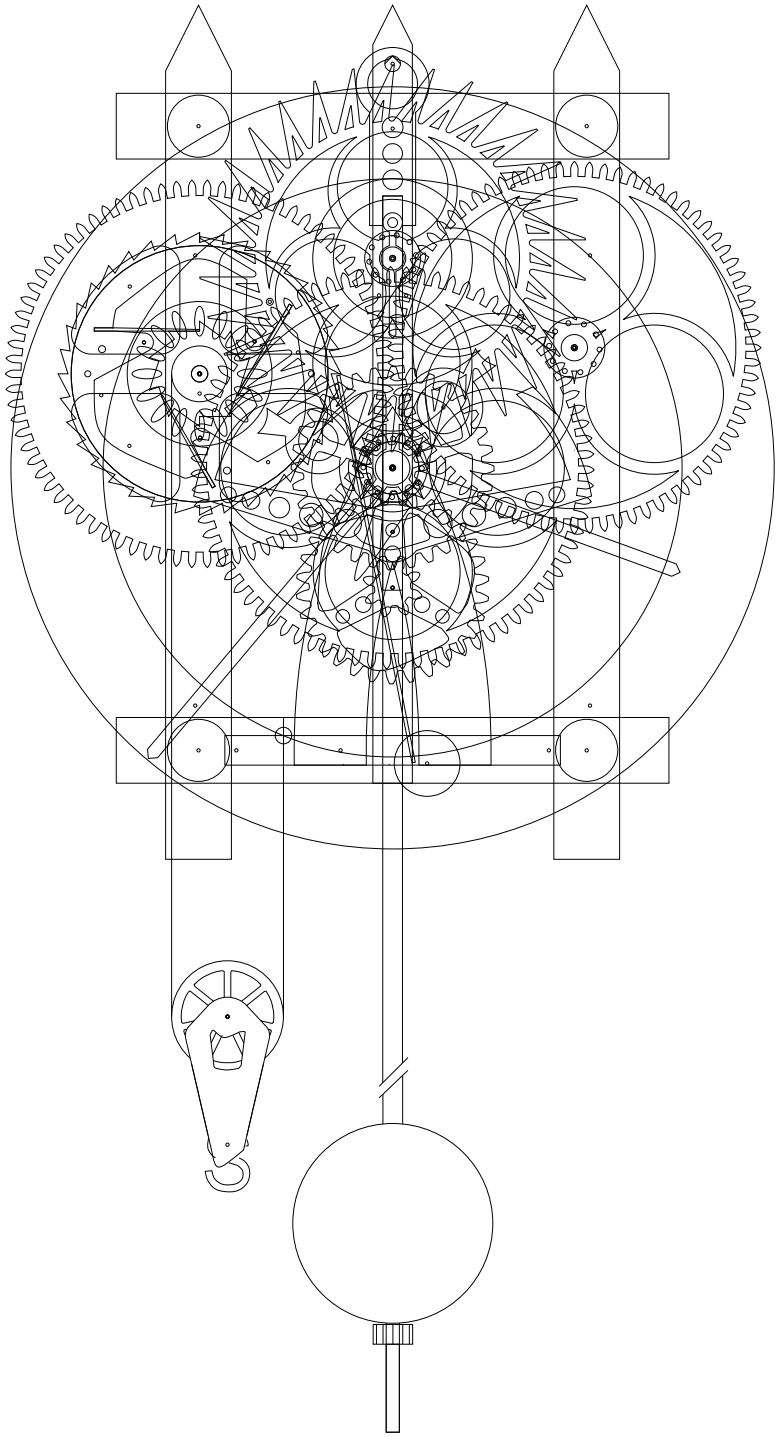
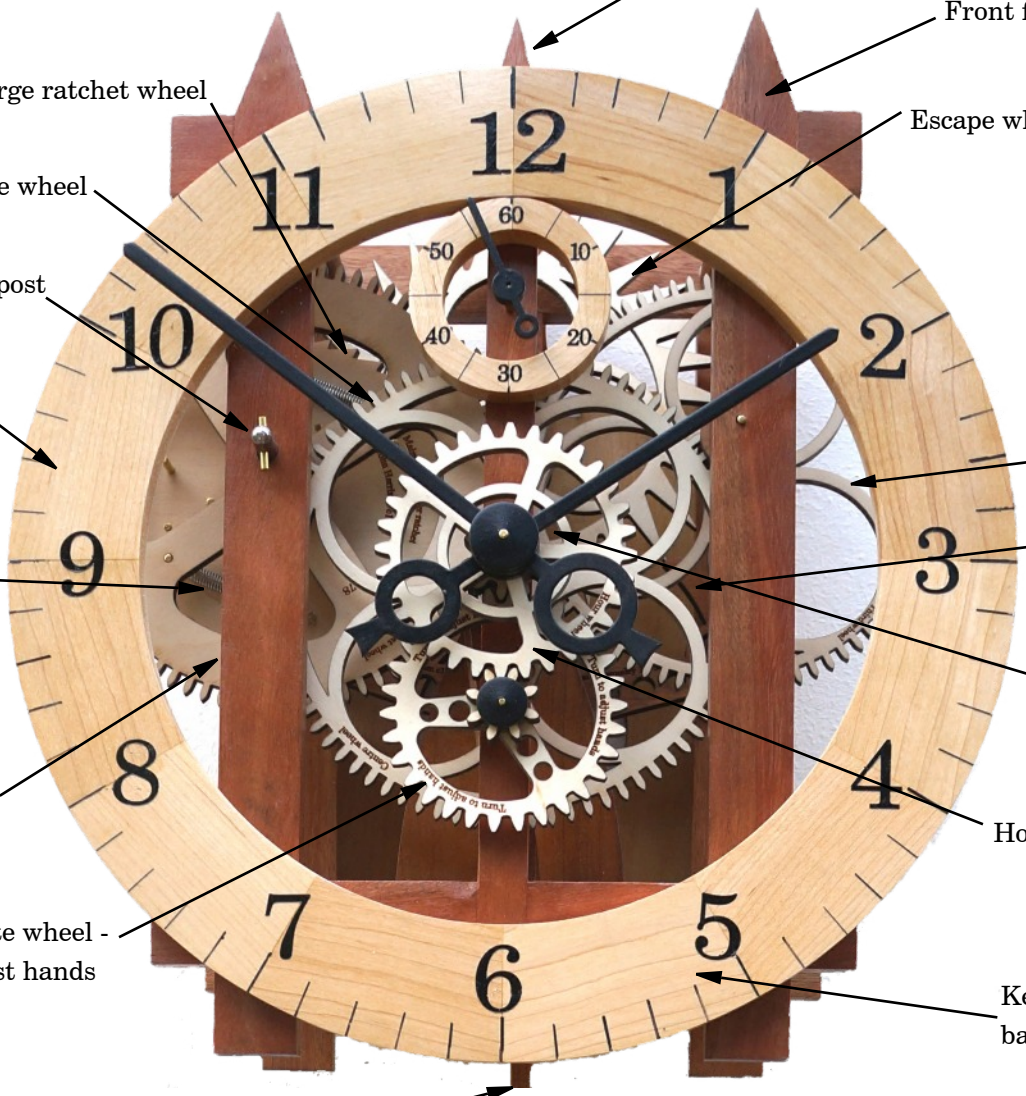
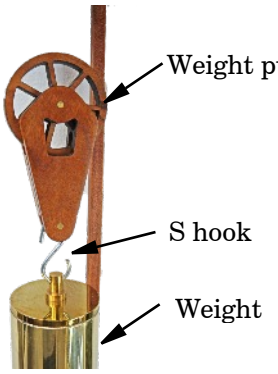


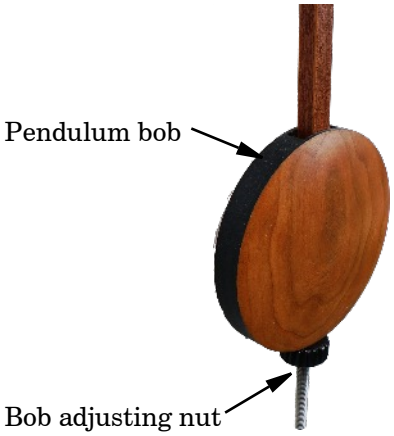
User's manual

http://www.tobysleighclocks.co.uk

Clock part names







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Choosing a suitable location.

The following points need consideration.

- Avoid anywhere prone to strong drafts.
- Avoid anywhere where people passing could brush against the pendulum.
- Make sure the clock is high enough above any dado rail to allow the pendulum to swing freely.
- To achieve the maximum run time the bottom of the weight when fully wound should be 56" above the floor. It can be higher but the clock should be easily accessible for winding. Any lower and the time between windings will be reduced.
- If applicable, keep pendulum away from furniture that any cat regularly uses.
- The weight weighs over 10 lbs so bear this in mind when positioning the clock. In the unlikely event of the cord breaking, where will the weight fall?

Important. Do NOT remove the cord retaining clip yet.

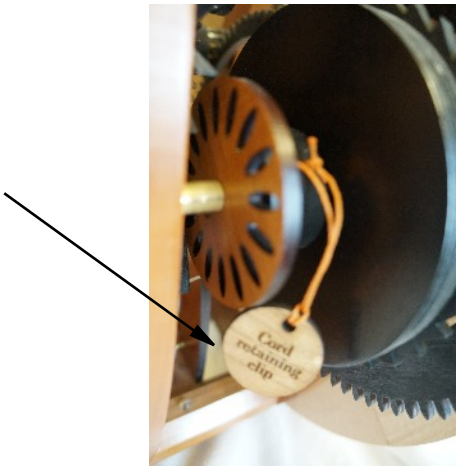

Table showing run time for different heights of the upper mounting screw

Upper screw height above floor inches	Drop under weight inches	Run time Hours	Run time days
73	46	157.6	6.6
75	48	164.4	6.9
77	50	171.3	7.1
79	52	178.1	7.4
81	54	185	7.7
83	56	191.8	8
85	58	198.7	8.3
87	60	205.5	8.6
89	62	212.4	8.8

Mounting clock on wall

You will need a pozidrive screwdriver, tape measure and a spirit level.

1. Using the run time table above as a guide, decide how high on the wall you want to mount the clock. It might be preferable to lose some run time by mounting the clock lower as this will make it easier to wind up.
2. Make a mark on the wall for the top mounting screw at the chosen height. Make a second mark 9" down from the top screw mark. This must be exactly vertical from the first screw mark. The weight of the clock is taken by the top screw, the lower screw holds it vertical.
3. Depending on the wall either use plugs or screw straight in if above a wooden stud. Use the screws provided and screw in until the screw heads are 3/8" above the wall surface. If your wall is particularly rough or unsound use appropriately longer screws than those provided.
4. Check that the two screws are exactly vertically aligned.
5. Check that the two heads are the same distance out from the wall then put the spirit level across the two heads. If the wall is out of plumb you might need to pack under one of the screws.

Wall plate removed from clock to show wall mounting screws just below the surface.

6. Mount the clock on the screws. The screw heads should be just below the surface of the wall plate. Put the spirit level on the face of the frame to check it is vertical. If not, put packing under a screw to adjust. Make sure the top screw is as far along the slot as possible.

Assemble pendulum.

1. Line up the two halves of the pendulum shaft with the blue tape strips uppermost and the pendulum bob black side uppermost. I.e. All pendulum components are now front side down.
2. Push the upper half of the pendulum shaft into the square brass joining piece and lightly tighten the grub screw with the supplied 2mm Allen key.
3. Push the rod on the bottom of pendulum shaft through the pendulum bob.
4. Screw the black adjusting knob onto the threaded rod and screw in until top of the bob is just touching the blue tape on the pendulum shaft. This will ensure that the clock will keep reasonable time from the start. All the blue tape can now be removed.

Fit pendulum.

1. Feed the top of the pendulum shaft up between the wall plate and the rear frame of the clock. While doing this tilt the escapement away from the pendulum shaft.
2. Place the oval cut-out on the shaft over the pendulum support post. To make it easier rotate the shaft through 90 degrees.
3. When the oval is over the post, centre the pendulum. then lift it up until the bottom of the oval is against the support post. Hold it there and move the escapement to the centre of its travel. Lower the pendulum gently and the shaft should slide down between the two brass pins on the crutch. Test for this by slightly moving the pendulum, the escapement will move with it.
4. Make sure the pendulum is centred on the pendulum support post. It must not touch the wall plate or the lower screw if this has not been screwed in far enough, nor should it rub on the crutch body. It must swing easily and not rub anywhere.

Rear view with wall plate removed showing crutch & brass pins. N.B. Type 1 frame shown.

Fit dial.

The large dial (chapter ring) is a push fit onto the three brass pins on the front of the frame. Manoeuvre the dial over the hour and minute hands, locate the pin at 12 o'clock in the corresponding hole in the back of the dial then rotate the dial until the lower two pins locate in their holes. Squeeze the dial & frame together to mount the dial fully on the pins.

Fit weight.

1 Thread the S hook on the weight pulley through the hole in the weight suspension post.
2 Making sure that the cord is around the weight pulley the gently lower the weight to let the cord take the weight.
3. **Remove the cord retaining clip**. Keep it safe for future use as it must be clipped over the cord & barrel any time the weight is removed from the clock. If this is not done there is a good chance the cord will unwind and become tangled with the movement.

Start the clock.

Gently move the pendulum to one side & release. The clock should run but if not exactly in beat it will eventually stop.
To get it in beat, watch the escapement as it is hit by the escape wheel. Both arms of the escapement should hit the escape wheel by the same amount. Also listen to the tick tocks, they should be even. If the clock has stopped see which arm of the escapement is resting on the escape wheel. Holding the pendulum still move the escapement very slightly so that the arm touching is moved away from the escape wheel The link between the pendulum and the escapement is designed to allow the escapement to rotate relative to the pendulum.
This adjustment is very critical, if only slightly out the clock may run for 10 minutes or more before stopping.

Once it is running consistently do not fiddle with the pendulum or escapement.

Setting the time.

Set the hands to the correct time by turning the intermediate wheel. This is the wheel below the centre of the clock face and is labelled "Turn to adjust hands". Never set the time by moving the hands directly, they are a push fit on the arbors and will soon work loose if moved by hand. The intermediate wheel can be used to set the time whether the clock is running or stopped.

Adjusting and winding.

The time keeping is adjusted by the knob at the end of the pendulum rod. Assume the clock is running slow. Screw the knob further up the rod so the bob is lifted up slightly. If the bob was repositioned in line with the blue tape as described above the clock should be keeping reasonable time, in which case adjust by no more than 1 turn at a time until the clock starts to run fast, then back off the knob by half a turn until it runs slow again, then adjust up by ¼ turn etc etc.

Set the correct time by rotating the intermediate wheel, which is labelled. Do **NOT** move the hands directly as they are a push fit on their arbors and moving each hand alone will put it out of sync with the other hand. Also the push fit will eventually wear and the hands will drop down by gravity.

Always try to wind the clock **before it has fully wound down & stopped.** This is because either on stopping or on starting the escapement could hit the tip of a tooth on the escape wheel and get knocked out of beat. As this clock is fitted with a maintaining mechanism there is no risk of this happening as the clock is kept running whilst being wound up.

The key can be stored by locating the key shaft in the hole in the left hand side of the base plate of the clock.

Cleaning

Any dust build-up is best removed by gently blowing it away. The arbor pivots should never need lubrication as they are all graphite coated.
The brass weight can be removed for polishing without stopping the clock by following these instructions carefully.

1. Rotate the large ratchet wheel anti-clockwise until it stops. You will hear one or two clicks. This will ensure that the maintaining mechanism has maximum power.
2. **Replace the cord retaining clip** over the cord on the winding barrel.
3. Remove the weight, making sure that the weight pulley or cord does not obstruct the pendulum.
4. You will now have at least ten minutes to clean and shine the brass weight using any suitable metal polish.
5. Replace the weight on the S hook and let the cord take the load.
6. Make sure the cord is in the guide pulley just above the hole in the base plate.
7. **Remove the cord retaining clip** from the barrel and keep it safe for next time.

Troubleshooting.

If the clock stops you need to identify where the problem has arisen, IE in the movement or in the pendulum / beat adjustment.

To locate where the problem lies.
Very gently move the pendulum to one side while watching the escape wheel. If this moves smartly as the pendulum is moved back & forth then the problem is not in the movement.
If the escape wheel does not move, or moves very sluggishly, then it is a movement problem.

1. Problems in the movement.

1 Check that the key is not stored incorrectly and is not touching the escape wheel.
2 Check the weight has not fully unwound from barrel. Is there any obstruction preventing the weight from falling?
3 Check that the weight cord has not become badly crossed over on the barrel.
4 Check each arbor has a slight front/back play, about 1 to 2 mm. Gently push/pull each wheel in turn.
5 Check that the hands are not interfering with each other or any part of the chapter ring. Same for the seconds hand.
6 Gently rotate each wheel in turn whilst moving the pendulum.
7 Check that there is a small gap between the back of the cannon pinion and the front of the frame. The cannon pinion is held on to the centre arbor by a leather plug under a hex head grub screw. (2 mm or 2.5 mm) This cannot be too tight to allow the hands to turn when manually setting the time. However if it is too loose the cannon pinion can move very slightly along the arbor over time. If this has happened slightly tweak the cannon pinion grub screw with appropriate size Allen key.

After each of the above steps check the escape wheel movement.

All the above steps can be taken without taking the clock off the wall. If you want to remove the clock from the wall then follow these steps.

1. **Replace the cord retaining clip** over the winding barrel. If this is not done the cord may well unwind itself off the barrel and get in a tangle.
2 Remove the weight.
3 Remove the pendulum.
4 Lift the clock up slightly then forward over the mounting screws.
N.B. Do not lift by the chapter ring as this is a push fit onto pins in the frame and could come off mid lift.

2. Other reasons for stopping.

1. Have there been any cats, dogs, small children, escaped hamsters or domestic staff in the vicinity recently? If so restart the clock.
2. Have any normally closed windows been opened recently? A strong draught can be enough to upset the pendulum.
3 Was the clock allowed to completely run down recently. If so there is a good chance that the still swinging pendulum pushed the escapement onto a tooth of the stationary escape wheel thereby moving the crutch slightly on the escapement arbor and putting the clock out of beat. Restart the clock following the "Start the clock" instructions above.
4 The crutch is held on to the escapement arbor by a leather plug under a hex head grub screw. (2.5 mm) This is to allow the crutch to be rotated relative to the escapement to adjust the beat. If this grub screw is not tight enough then over time the crutch can move enough to put the clock out of beat. The screw can be slightly tightened by using a long Allen key through the hole in the side of the wall mounting plate. Take care not to over tighten and strip the thread in the crutch.
5 Is the pendulum shaft rubbing anywhere?

In the event that you are still having problems please email me at ;

tobysleighclocks@btinternet.com

Toby Sleigh January 2015

Revised 2/8/2015