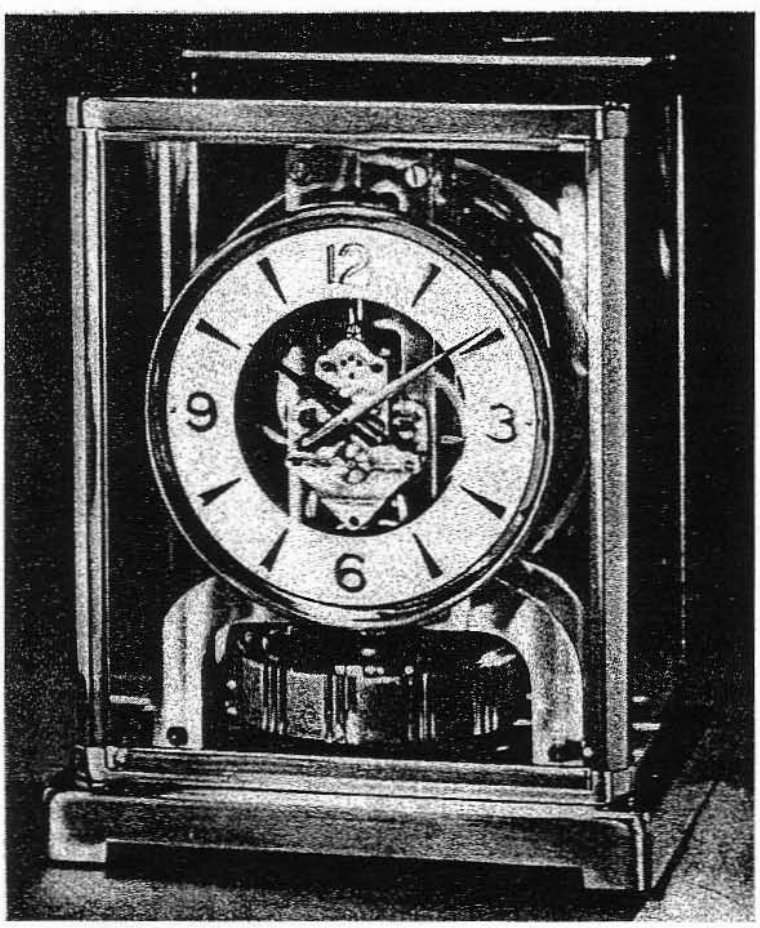
JAEGER-LECOULTRE

REPAIR NOTES

CALIBRE N° 526

ATMOS CLASSIC

See instructions supplied with each clock



Lives on Air

THE PERPETUAL MOTION CLOCK

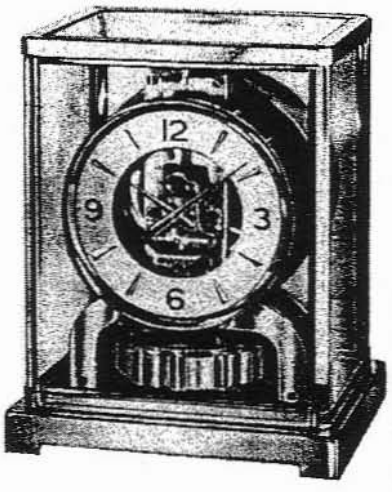
In the illustrations, the numbers in circles, for example (21), correspond to paragraph numbers in the text. The designation of each part and the number after it correspond to the terms used in the repair material catalogue.

JAEGER-LECOULTRE

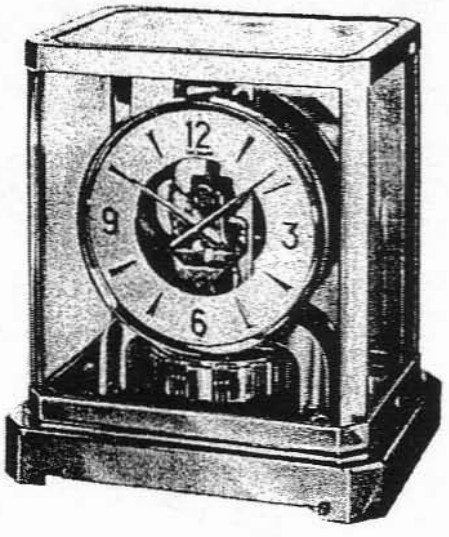
ATMOS

• La pendule qui marche sans aucune intervention humaine.
• Se remonte par les variations de la temperature.

Dimensions:
__ATMOS V_526 = long. 180 x larg. 135 x haut 223 mm
__ATMOS VI_528 = long. 210 x larg. 165 x haut 235 mm



ATMOS V
Cal. 526



ATMOS V
Cal. 526

La numerotation des pieces est propre a l' Atmos el n'a aucune relation avec la numerotation des fournitures des autres calibres ou celle du dictionnaire F. H.

Le signe - devant la designation d'une piece signifie que celle-ci n'est pas representee sur l'illustration.

Les numeros des calibres (522, 526, etc.....) apres la designation d'une piece signifient que celle-ci ne concerne que ces calibres.

Les pieces ne sont pas toutes representees a la meme echelle.

LL est tres important de mentionner sur les commandes:
__ Le numero de la fourniture
__ Le numero de reference du calibre insculpe au bas de la platine du mouvement d'hologerie.

CAUTION

VERY IMPORTANT

LUBRICATION

No part of the train and escapement assembly should be lubricated.

MAIN MOVEMENT

Only the two pivots of the intermediate wheel No. 3497 and the barrel arbor No. 3485 (figs. 3 and 4) should receive a small quantity of oil (Chronax D or E, or Moebius No. 3).

To determine the cause of a stopping, check the following points:

1. See that the clock is correctly leveled.
2. Check that the power reaches the escapement.
3. See that the hands are perfectly free.

To take the movement out of the case and initial dismantling:

4. Lock the balance.
5. Unscrew the four clock fixing screws No. 3557, which are beneath the base.
6. Take out the movement, and lay it on the motor casing.
7. Remove the hands with tool No. 4 (fig. 11). The hands should be perfectly balanced.

(8.) Remove the dial by unscrewing the motor knobs 3519 (fig. 3) with key No. 5 (fig. 11).

(9.) Remove the motor by unscrewing the motor knobs 3519 (fig. 3) with key No. 5 (fig. 11).

(10) Check that the motor is in good condition (fig. 1 and 2).

Complete Dismantling and Inspection

(11) Take off the movement containing the train and escapement after unscrewing the two movement fixings screws No. 3556 (fig. 3). (Use fixture No. 7 in fig. 11)

Caution

Hold the intermediate wheel No. 3497 (fig. 4) to:

a) Prevent the mainspring from unwinding too quickly.

b) Take care not to bend the lever fork No. 3410 (fig. 3 and 5).

c) Count the number of turns of the mainspring by letting it run down slowly (4 to 6 turns is normal).

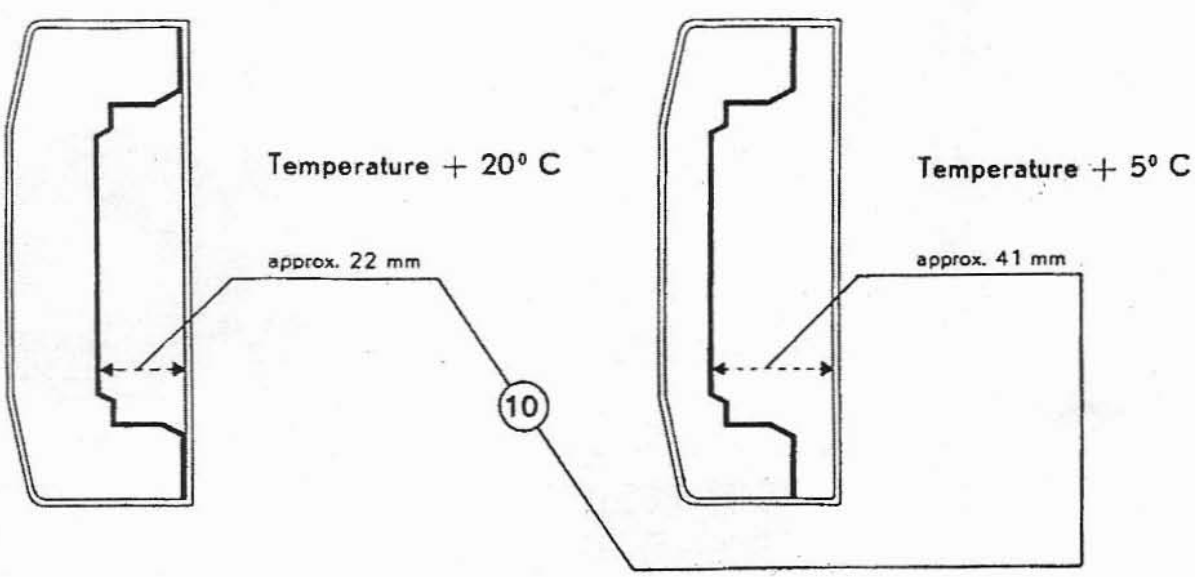
(12) Examine the train and escapement.

(13) Check the poise of the jeweled pallet fork and staff No. 3410. It should be slightly heavy on the fork side: when it stops it should be vertical (very important, see fig. 5).

(14) Check the winding of the mainspring. Compress the coil spring No. 3494 (fig. 4) by hand as many times as may be required, preventing the train from running. When this spring no longer extends, winding us sufficient (4 to 6 turns is not within these limits, check the following points:

Fig. 1

Fig. 2



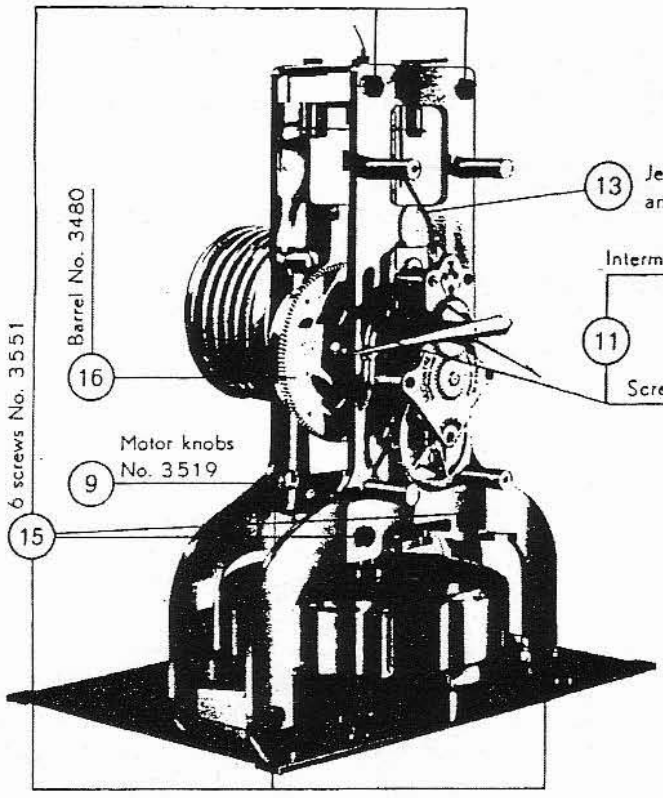


Fig. 3

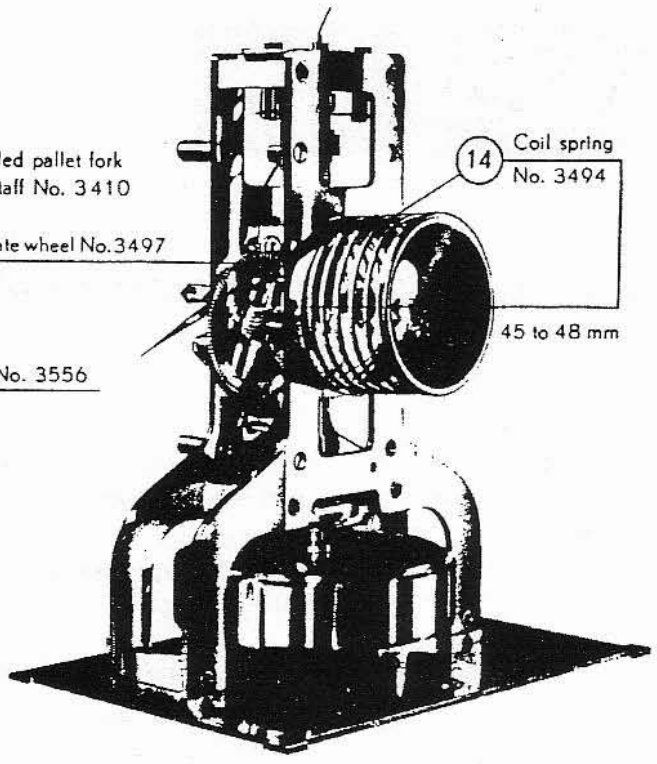


Fig. 4

a) See whether the coil spring No. 3494 is deformed.
b) Check that the chain No. 3491 is pinned up for a total spring length of between 45 and 48 mm (See fig. 4). If a correction is required, use tool No. 2 in fig. 11 to engage and pull on the chain.
c) The chain No. 3491 must not be twisted.
d) After having removed the spring No. 3494 the pulley mounted on the plate should be absolutely free.

(15) Remove the plate by unscrewing the six screws No. 3551 (fig. 3).
(16) Remove the barrel No. 3480 (fig. 3).

17. Remove the intermediate wheel and pinion No. 3497. Only the two assemblies last mentioned should be lubricated slightly (Chronax D or E or Moebius No. 3). Lubricate after cleaning and check the condition of the pivots and holes. See fig. 6 for details of mainspring and bridle.

Refer to fig. 7 when dismantling the balance and checking its component parts.

(18) Remove the blocking spring No. 3502.

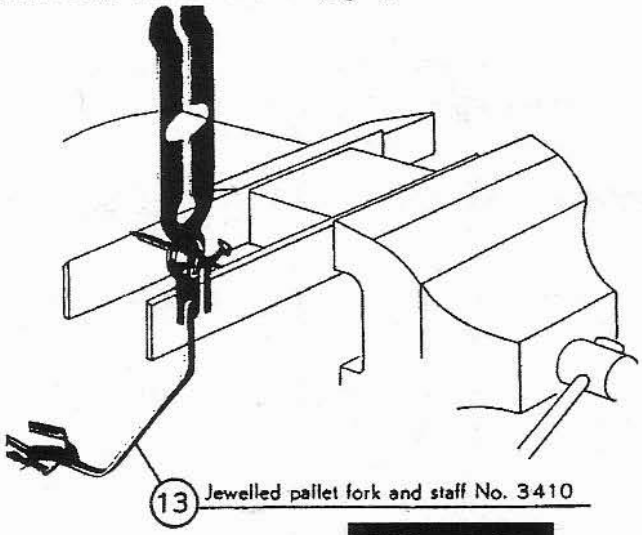


Fig. 5

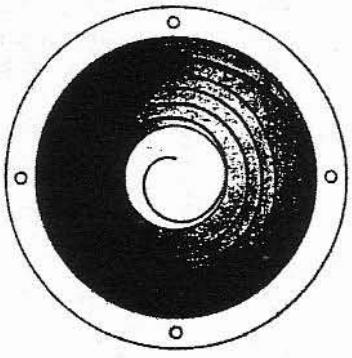


Fig. 6

⑲ Unscrew the suspension cannon wire screw No. 3555, and the screw for regulating clamp and slide spring No. 3553.

⑳ Pull slowly on the suspension wire pin No. 3518, supporting the balance and lowering it gently, taking care that the regulating clamp No. 3510 does not jam in its mounting, and that it follows the balance in its downward movement.

㉑ Remove the balance No. 3498 by unscrewing the centering point No. 3520 with key No. 6 (fig. 11).

㉒ Unscrew the wire clamp screw No. 3561, and check the following points:

a) That the wire is truly on the axis of the screw, without any distortion.

b) That the wire us tightly locked in the screw.

c) That the regulating clamp No. 3510 grips sufficiently to support a load of about 30 grammes without slipping. The two jaws of the clamp should be truly parallel, and grip the wire by their extremities (See fig. 8).

㉓ The inside of the balance rube must be perfectly clean.

CAUTION: The banking washer No. 3524 must never be disturbed.

㉔ The roller staff No. 3508 must be perfectly free.

㉕ The roller No. 3506 must be free on the balance tube, and the roller spring No. 3504 must not be stretched.

㉖ Before replacing the balance, check the distance between the regulating spring 3512 and the regulator No. 3513.

Assembling the balance (fig. 7)

27. Replace the suspension wire inside the balance tube with wool No. 3 (fig. 11).
28. Thoroughly tighten the wire clamp screw No. 3561.
29. Put the balance in position, and secure it with the centering point No. 3520.
30. Check the poise of the assembly as follows (See fig. 10):

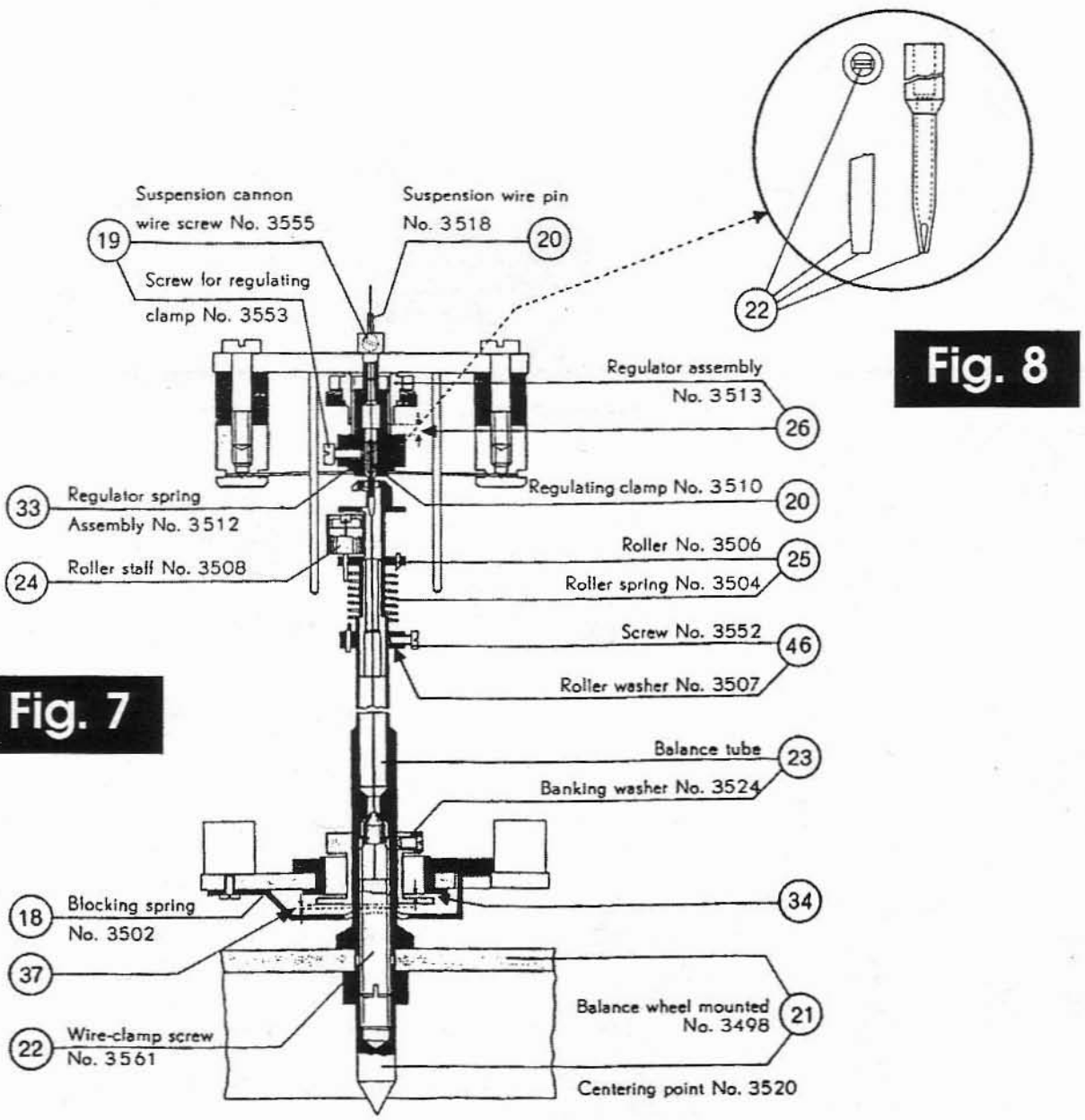


Fig. 8

Fig. 7

Unit 1/100 mm

ASSEMBLING THE MOVEMENT

The order of assembly is as follows:

39 The barrel (completely assembled) No. 3480 (fig. 3).
40 The intermediate wheel and pinion No. 3497 (fig. 4).
41 The plate.
42 Hook the pulley spring No. 3495 to its stud.
43 The coil spring No. 3494 (fig. 4).
44 The train and escapement (fig. 3).
45 Check the action of the lever (if a correction is required, re-check its poise). (See para, No. 13, and fig. 5.)
46 Check whether the roller staff No. 3508 is correctly positioned. If this is not the case, rotate the roller No. 350 by turning the roller washer No. 3507 (tighten the screw No. 3552 securely). See fig. 7.
47 Wind the mainspring by pressing on the coil spring No. 3494 (fig. 4) as many times as may be required (See para. No. 14).
48 Put on the motor.

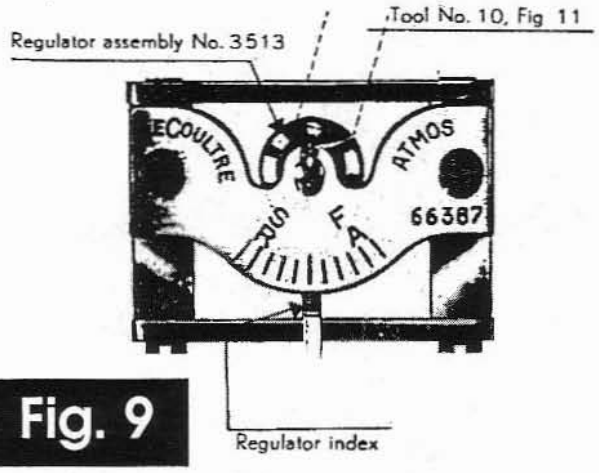


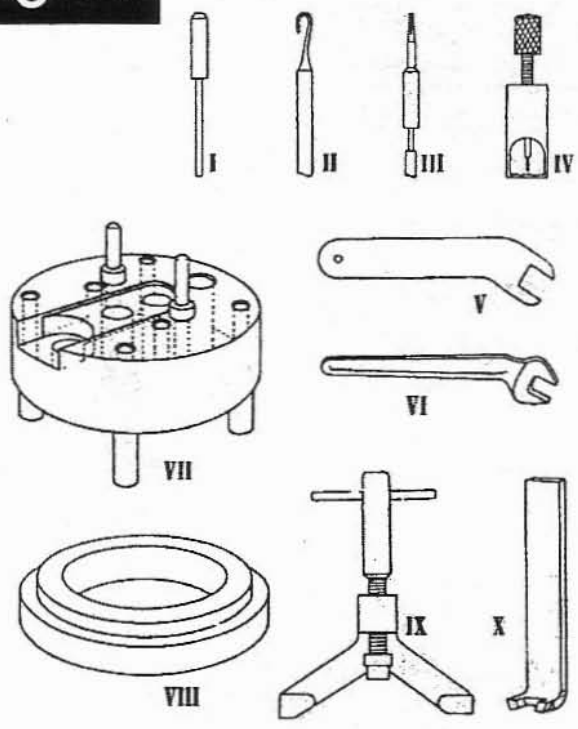
Fig. 9

ADJUSTMENT

Period of oscillation = Time of 2 swings or half-cycles = 60 seconds.
CAUTION - (in case of replacement of suspension wire.) For errors in excess of 2 1/2 minutes in 24 hours, regulating studs or weights should be added to the balance, or removed from it. Balance weigh No. 3521 = 11 minutes in 24 hours per mm, of thickness.
The weights of regulating studs or balance weights must be exactly equal. If they have to be changed, check them on a highly sensitive balance to ensure that the poise of the balance assembly is not disturbed.
For errors less than 2 1/2 minutes per day, move the regulator No. 3513 (fig. 9). (One scale division on the bridge = 10 sec. per day). If the regulator comes to one end of the scale it is possible to bring it back to the other end, without affecting the rate of the clock, and then continue adjustment in the same direction. To do this, the regulating spring assembly No. 3512 must be held stationary with too No. 10 (fig. 11), while the regulator is moved backwards (See fig. 9).

TOOLS FOR REPAIR WORK

Fig. 11



I Tube for passing the suspension wire inside the upper bridge to mount the balance.

II Tool for engaging the chain inside the coil spring to pull it back.

III Tool for threading the wire inside the balance.

IV Tool for removing the minute hand.

V Key for motor nut.

VI Key for cylindrical nut which attached the balance to its tube.

VII Fixture for holding the train and escapement assembly.

VIII Ring for raising the balance to suspend it.

IX Tool for correcting the poise of the balance.

X Tool for holding the regulator assembly while the index is being displaced.

a) Slide the regulating clamp No. 3510 down into the roller No. 3506.
b) Grip the wire in a pair of slide tongs.
c) Hold the tongs in the vice.
d) Rotate the balance very slightly.
e) The balance is poised when the regulating clamp remains truly centered in the hole of the roller. If this is not the case, it will be necessary to correct it by bending the tube at as low a point as possible with tool No. 9 (fig. 11).

31. Put the tube (tool No. 1, fig. 11) inside suspension cannon.
32. Place the balance on the ring (tool No. 8, fig. 11).

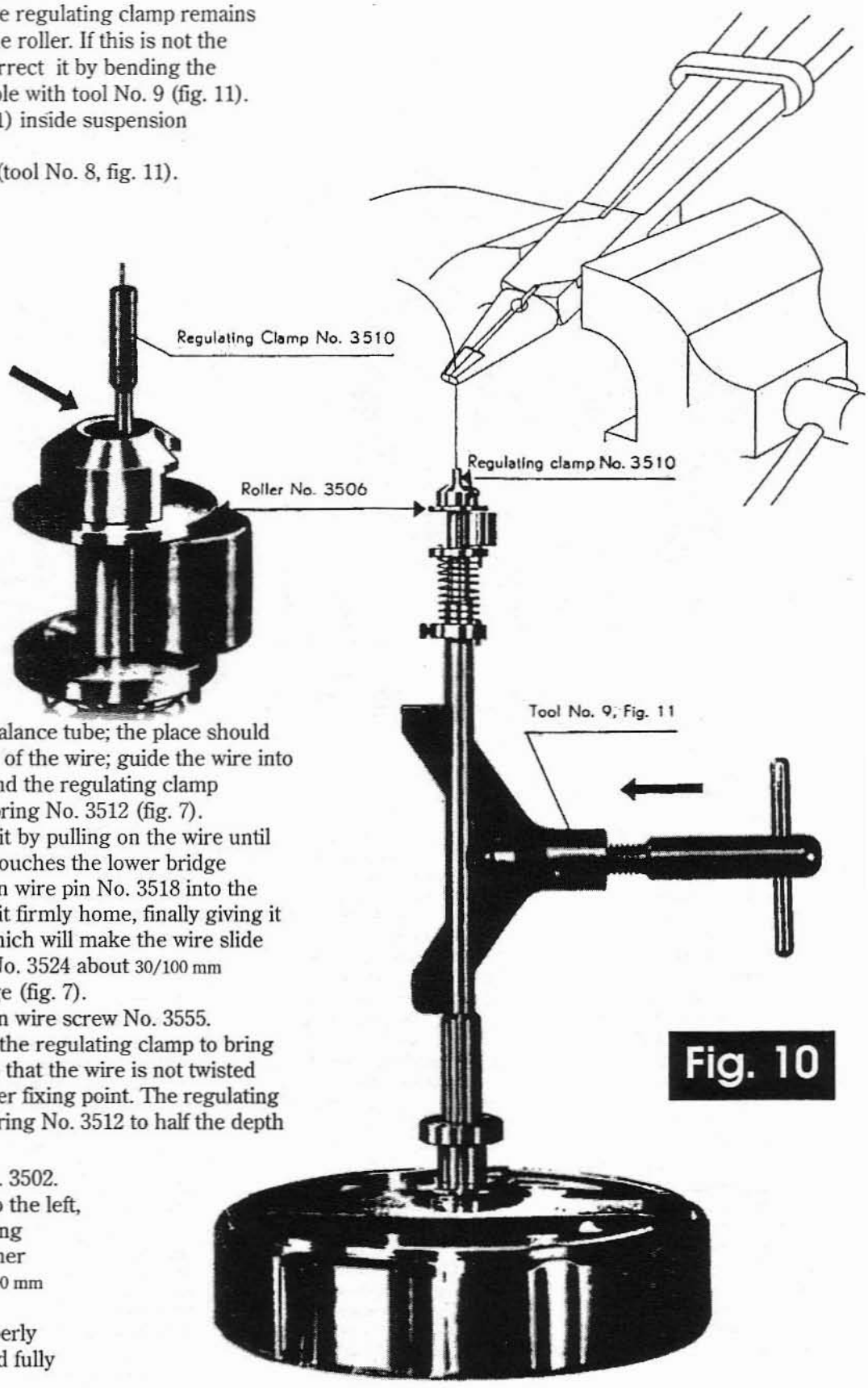
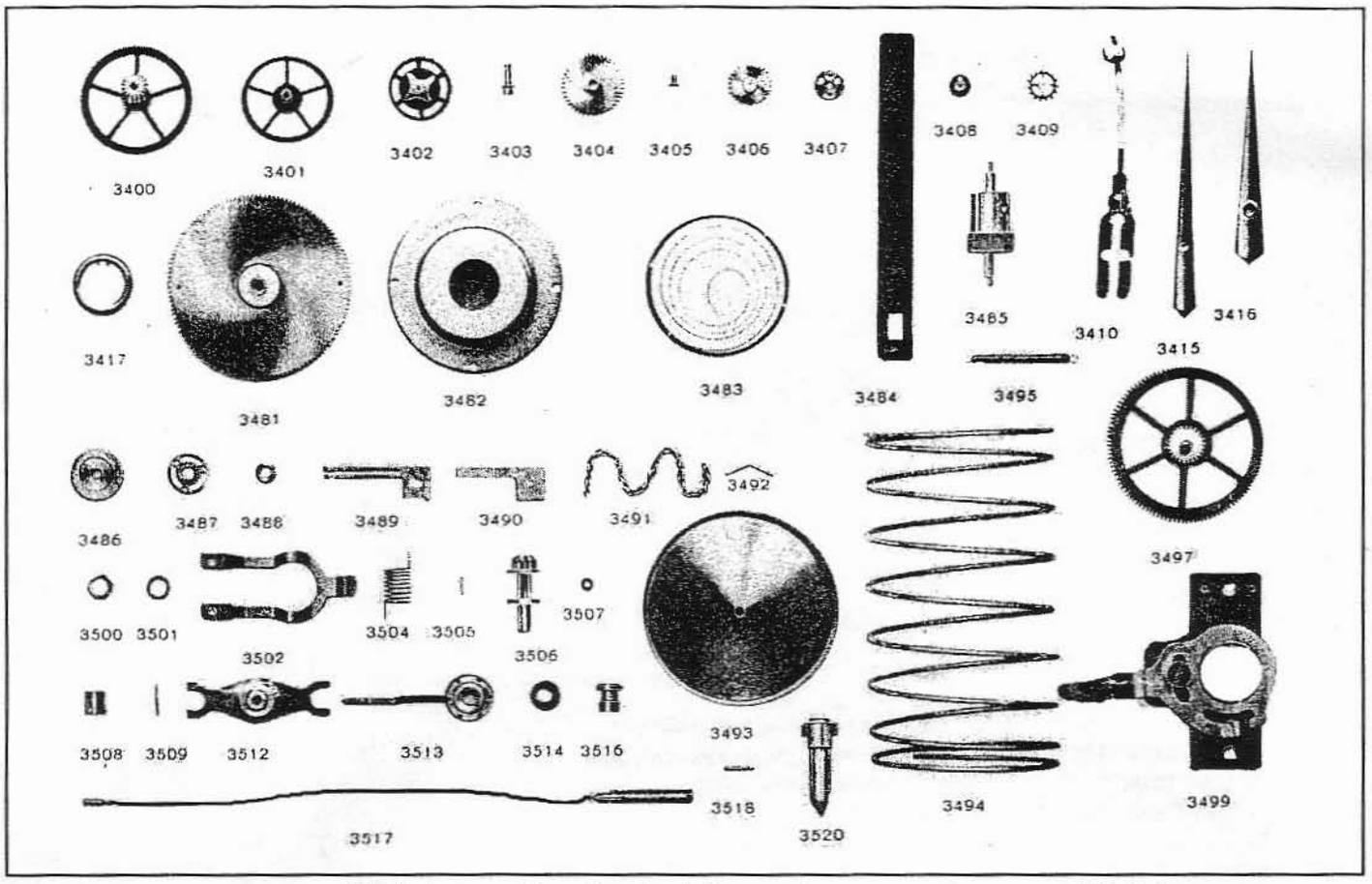


Fig. 10

(33) Lower the movement on the balance tube; the place should be truly parallel to the flat face of the wire; guide the wire into the tube (tool No. 1, fig. 11), and the regulating clamp No. 3510 into the regulating spring No. 3512 (fig. 7).
(34) To suspend the balance, raise it by pulling on the wire until the banking washer No. 3524 touches the lower bridge No. 3499. Insert the suspension wire pin No. 3518 into the suspension cannon, and press it firmly home, finally giving it a light blow with a hammer, which will make the wire slide and give the banking washer No. 3524 about 30/100 mm clearance from the lower bridge (fig. 7).
35. Tighten the suspension cannon wire screw No. 3555.
36. Rotate the two flat surfaces of the regulating clamp to bring them parallel with the plate, so that the wire is not twisted between the clamp and its upper fixing point. The regulating clamp enters the regulating spring No. 3512 to half the depth of the cone (fig. 8).
(37) Put on the blocking spring No. 3502. With the blocking lever over to the left, the clearance between the spring No. 3502 and the banking washer No. 3524 should be about 40/100 mm (See fig. 7).
38. Check that the balance is properly locked when the lever is moved fully over to the right.

CAL. -- ATMOS -- 526
CAL. -- ATMOS -- 528
+ Cal. 522 - 532

JAEGER-LECOULTRE



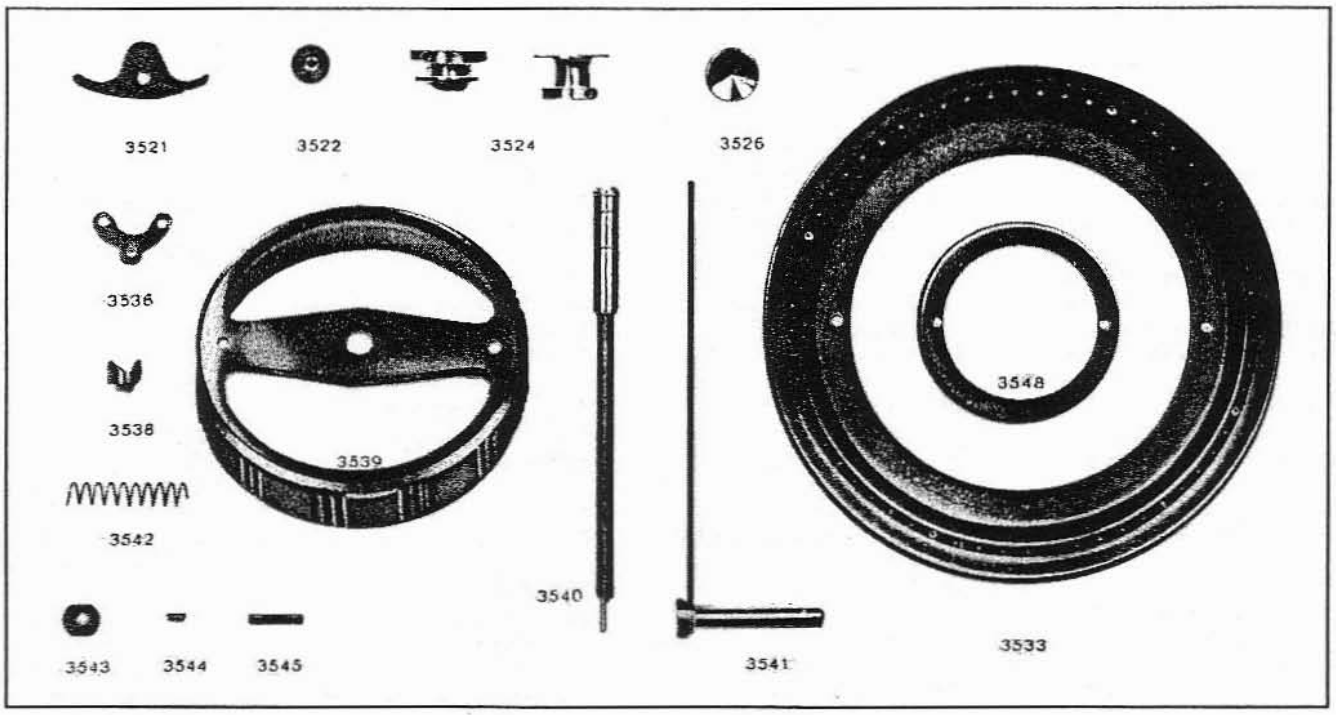
Mouvement

3400 Roue de grand-moyenne
3401 Roue de petite moyenne
3402 Roue de champ
3403 Tube de centre (palier roue a canon)
3404 Roue a canon
3405 Boucnan de pivotement
3406 Roue de minuterie
3407 Plague c-pivot 2 pierres
3408 Plaque c-pivot 1 pierre
3409 Roue d'ancre
3410 Ancre, tige el fourchette assembles
3414- Cadran (indiquer teinte, signespour 528, indiquer forme)
3415 Aiguilies des minutes
3416 Aiguilies des heures
3417 Niveau (526.528)
3481 Barillet
3482 Couvercle de barillet
3483 Ressort de barillet
3484 Bride
3485 Axe. bonde el rochet
3486 Poulie de chaine el de ressort
3487 Cliquet de ressort
3488 Rondelle de poulie
3489 Ressort de rochet (cliquet de rochet)
3490 Contre-ressort (lame d'appui)
3491 Chaine
3492 Arret de chaine
3493 Guide de ressort
3494 Ressort o 52
3495 Ressort de poulie
3497 Roue intermediaire
3499 Pont inferieur monte (522.526.532)
3500 Rondelle cambree (biocage) (522.526.532)
3501 Rondelle de friction (biocage) (522.526.532)
3502 Ressort de biocage (522.526.532)
3504 Ressort de plateau
3505 Goupille de ressort de plateau
3506 Plateau
3507 Rondelle de plateau
3508 Cheville de plateau
3509 Aiguilie de cheville de plateau
3512 Canon el ressort de reglage
3513 Raquette mantee
3514 Rondelle d'appui de pont superieur
3516 Pilier (de ressort de reglage)
3517 Fil de suspension monte
3518 Goupille de fil de suspension
3520 Pointe de centrage mobile (522.526.532)

Movement

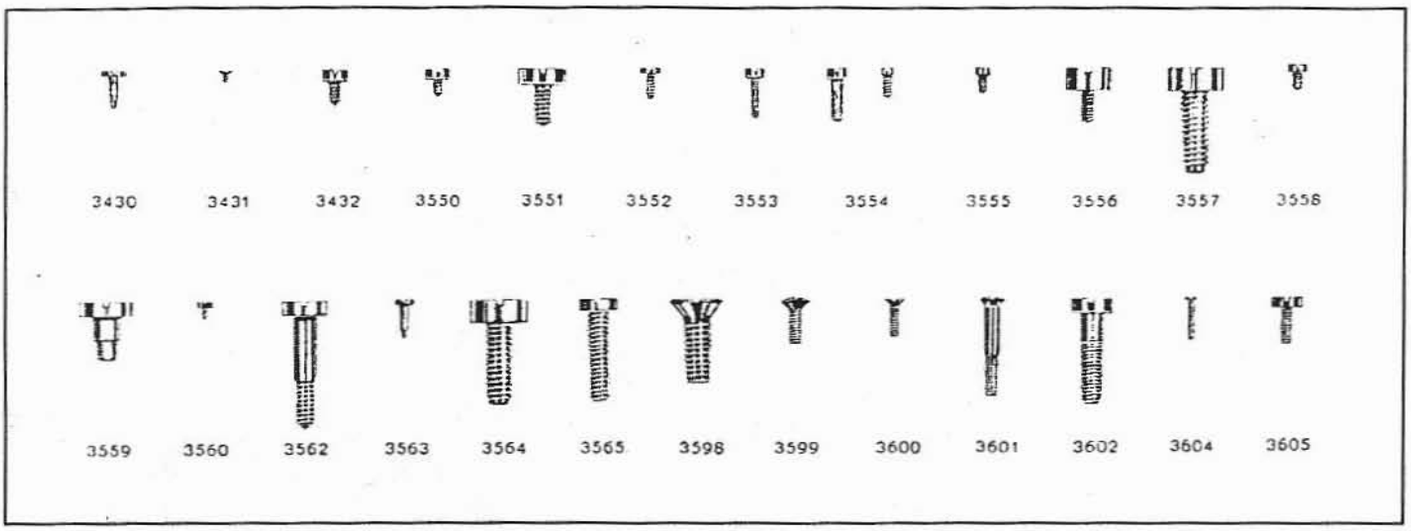
3400 Center wheel
3401 Third wheel
3402 Fourth wheel
3403 Hour wheel stud
3404 Hour wheel
3405 Bush
3406 Minute wheel
3407 End-stone two jewels
3408 End-stone one jewel
3409 Escapement wheel
3410 Fallet with fork and staff, mounted
3414- Dial (state colour, figures and for cal. 528 shape of dial)
3415 Minute hand
3416 Hour hand
3417 Water level (526.528)
3481 Barrel
3482 Barrel cover
3483 Mainspring
3484 Bridle
3485 Axle, core and ratchet, mounted
3486 Chain and spring pulley
3487 Spring click
3488 Pulley washer
3489 Racket click
3490 Counter spring (support blade)
3491 Chain
3492 Chain stopper
3493 Spring guide
3494 Coil spring o 52
3495 Pulley spring
3497 Intermediate wheel
3499 Lower bridge, mounted (522.526.532)
3500 Bent locking washer (522.526.532)
3501 Friction washer (locking) (522.526.532)
3502 Stopping spring (522.526.53
3504 Roller spring
3505 Roller spring pin
3506 Roller
3507 Roller washer
3508 Roller staff
3509 Roller staff pin
3512 Regulating cannon and spri
3513 Complete regulator
3514 Upper bridge support wash
3516 Regulating spring pillar
3517 Suspension wire, mounted
3518 Suspension cannon wire pir
3520 Moving centering point (522.526.532)

JAEGER-LECOULTRE



3521 Masse de reglage (1-1.5- 2mm)
3522 Plot de reglage (epaisseur 6 a 11 mm par 0.5 mm)
3524 Canon de bulee
3526 Ecrou cylindrique (528)
3533 Lunette rehaut (pour 528, indiquer forme)
3526 Pont d'ancre
3538 Canon mobile (528)
3539 Balancier
3540 Tige de balancier
3541 Bras de biocage (528)
3542 Ressort exterieur de biocage (528)
3543 C-ecrou bras de biocage (528)
3544 Ressort interieur de biocage (528)
3545 Axe interieur de biocage (528)
3548 Guide de ressort du couvercle

3521 Regulating mass (1-1.5- 2mm)
3522 Regulating stud (thickness 6 to 11 mm in 0.5 mm)
3524 Banking washer
3526 Cylindrical nut (528)
3533 Dial rest (for cal. 528, state shape of dial)
3526 Lower bridge
3538 Moving tube (528)
3539 Balance wheel
3540 Balance wheel tube
3541 Stop finger (528)
3542 Outside stopping spring (528)
3543 Counter nut stop finger (528)
3544 Inner stop spring (528)
3545 Inner stop arbor (528)
3548 Cover spring guide



Pierres

3450- Pierre de grand-moyenne dessus el dessous
3451- Pierre petite moyenne dessus
3452- Pierre petite moyenne dessous
3453- Pierre champ dessous
3454- Pierre roue eshappement el d'ancre dessus el dessous
3455- Pierre c-pivot
3457- Levee (palette) d'entree
3458- Levee (palette) de sortie

Vis

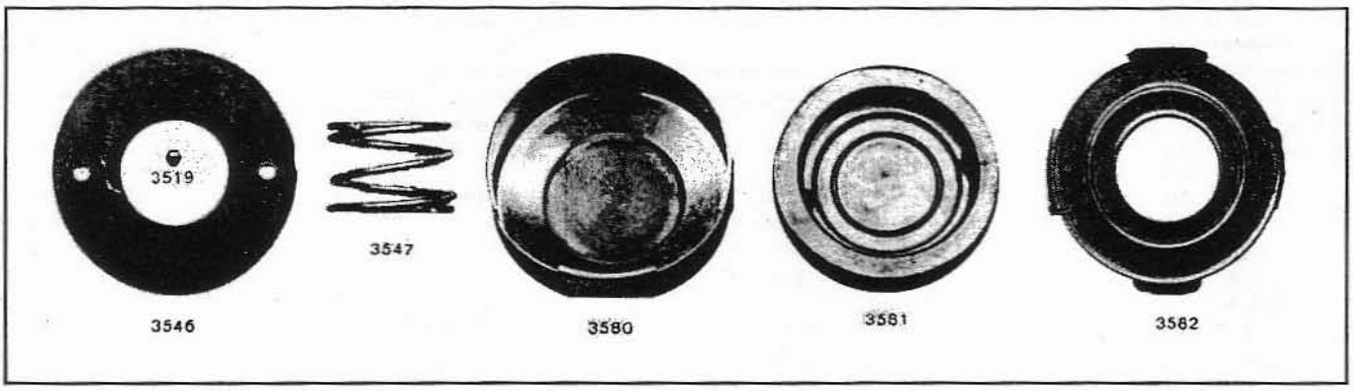
3430 Vis pilier 3/4 platine el pont d'ancre
3431 Vis c-pivot
3432 Vis canon mobile (528)
3550 Vis couvercle de barillet
3551 Vis platire el pont inferieur
3552 Vis platire el pont rondelle plateau
3553 Vis canon reglage el ressort lame (de rochet)
3554 Vis canon de bulee
3555 Vis canon de fil de suspension
3556 Vis fixation mouvement
3557 Vis de bascule el plaque de base (522.526.532)
3558 Vis ressort de biocage (522.526.532)
3559 Vis levier de biocage (522.526.532)
3560 Vis de cadran
3562 Vis pont superieur el balancier
3563 Vis lunetle - rehaut (support cadran)
3564 Vis de socle (528)
3565 Vis bras de biocage (528)
3598 Vis de montant (528)
3599 Vis de lunetle (de cabinet) (528)
3600 Vis de lunette (de porte) (522.532)
3601 Vis de couronnement dessus (522.526.532)
3602 Vis de couronnement dessous (522.526.532)
3604 Vis de goujon de cabinet (528)
3605 Vis de lunetle inferieure (de cabinet) (528)

Jewels

3450- Upper and bottom center wheel jewel (2d wheel)
3451- Upper third-wheel jewel
3452- Bottom third-wheel jewel
3453- Bottom fourth-wheel jewel
3454- Upper and bottom escape-wheel and lever jewel
3455- End piece jewel
3457- Entry pallet jewel
3458- Exit pallet jewel

Screw

3430 3/4 plate and pallet cock stud screw
3431 End stone screw
3432 Moveable cannon screw (528)
3550 Barrel cover screw
3551 Plate and bottom bridge screw
3552 Spring guide and roller washer screw
3553 Regulating cannon and spring screw
3554 Banking washer screw
3555 Suspension cannon wire screw
3556 Movement fixing screw
3557 Clock base and bottom plate screw (522.526.532)
3558 Stopping spring screw (522.526.532)
3559 Stopping lever screw (522.526.532)
3560 Dial screw
3562 Upper bridge and balance screw
3563 Dial rest screw
3564 Clock base screw (528)
3565 Stop-finger screw (528)
3598 Holder screw (528)
3599 Clock case bezel screw (528)
3600 Door front bezel screw) (522.532)
3601 Upper bezel screw (522.526.532)
3602 Bottom bezel screw (522.526.532)
3604 Clock case plug screw (528)
3605 Bottom bezel screw (case) (528)



Moteur

3519 Poulet de moteur
3546 Plaque de protection du moteur
3547 Ressort o 70 mm
3580 Boite de moteur
3581 Membrane complete, avec gaz
3582 Couvercle de moteur

Cabinet

3418- Pastille de cooutchouc
3583- Socle
3584- Cadre superieur
3585- Cadre inferieur (528)
3586- Montant (528)
3587- Montant arriere (522.526.532)
3588- Montant avant droit (522.526.532)
3589- Montant avant gauche (522.526.532)
3590- Lunette superieure (couronnement)
3591- Lunette inferieure (couronnement)
3592- Glace superieure
3593- Glace de cote
3594- Glace avant el arriere (528)
3595- Glace arriere (522.526.532)
3596- Glace-porte (522.526.532)
3597- Joint caoutchouc
3603- Goujan de cabinet (528)

Motor

3519 Motor knob
3546 Motor protecting plate
3547 Coil spring o 70 mm
3580 Metal drum
3581 Bellows
3582 Drum cover

Cabinet

3418- Rubber bush
3583- Clock base
3584- Upper frame
3585- Bottom frame (528)
3586- Holder (528)
3587- Back holder (522.526.532)
3588- Front holder (right) (522.526.532)
3589- Front holder (left) (522.526.532)
3590- Upper bezel
3591- Bottom bezel
3592- Upper glass
3593- Side glass
3594- Front and back glass (528)
3595- Back glass (522.526.532)
3596- Front glass (522.526.532)
3597- Rubber joint
3603- Clock case plug (528)

NOTES